APPENDIX I

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WILLIAM DAUBERT, ET UX., ETC., ET AL., PETITIONERS V. MERRELL DOW PHARMACEUTICALS, INC.

No. 92-102

SUPREME COURT OF THE UNITED STATES

509 U.S. 579; 113 S. Ct. 2786; 125 L. Ed. 2d 469; 1993 U.S. LEXIS 4408; 61 U.S.L.W. 4805; 27 U.S.P.Q.2D (BNA) 1200; CCH Prod. Liab. Rep. P13,494; 93 Cal. Daily Op. Service 4825; 93 Daily Journal DAR 8148; 23 ELR 20979; 7 Fla. L. Weekly Fed. S 632

March 30, 1993, Argued
June 28, 1993, Decided

PRIOR HISTORY: ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT.

DISPOSITION: 951 F.2d 1128, vacated and remanded.

DECISION: "General acceptance" of principle underlying scientific evidence held not to be necessary precondition to admissibility of such evidence under Federal Rules of Evidence.

SUMMARY: A minor child and his parents, together with another minor child and his mother, brought suit in a California state court against a drug company which had marketed the prescription drug Bendectin. The plaintiffs alleged that the children's birth defects had been caused by the mothers' ingestion of Bendectin during pregnancy. The suit was removed, on diversity grounds, to the United States District Court for the Southern District of California. The company moved for summary judgment and submitted, in support of the motion, the affidavit of an epidemiologist to the effect that no published epidemiological (human statistical) study had demonstrated a statistically significant association between Bendectin and birth defects. In response, the plaintiffs offered expert opinion testimony based on (1) test-tube and live-animal studies that had allegedly found a link between Bendectin and birth defects; (2) pharmacological studies that allegedly showed similarities between the chemical structure of Bendectin and that of substances known to cause birth defects; and (3) the reanalysis, or recalculation, of previously published epidemiological studies. The District Court, granting summary judgment in favor of the company, expressed the view that (1) scientific evidence is admissible under the Federal Rules of Evidence only if the principle on which such evidence is based is sufficiently established to have general acceptance in the field to which it belongs; (2) epidemiological studies were the most reliable evidence of causation of birth defects; (3) the testimony based on test-tube, live-animal, and pharmacological studies was inadmissible because such testimony was not based on epidemiological evidence; and (4) the testimony based on reanalyses was inadmissible because the reanalyses (a) apparently had never been published or subjected to peer review, and (b) failed to show a statistically significant association between Bendectin and birth defects (727 F Supp 570). The United States Court of Appeals for the Ninth Circuit, affirming on appeal, expressed the view that (1) expert opinion based on a scientific technique is inadmissible if the technique is not generally accepted as reliable in the relevant scientific community; and (2) under the general acceptance standard, the plaintiffs' evidence provided an insufficient foundation to allow admission of expert testimony that Bendectin caused birth defects (951 F2d 1128).

On certiorari, the United States Supreme Court vacated the Court of Appeals' judgment and remanded the case for further proceedings. In an opinion by Blackmun, J., expressing the unanimous view of the court as to holding 1 below, and joined by White, O'Connor, Scalia, Kennedy, Souter, and Thomas, JJ., as to holdings 2 and 3 below, it was held that (1) the "general acceptance" test of Frye v United States

(1923) 54 App DC 46, 293 F 1013, 34 ALR 145, was superseded by the Federal Rules of Evidence (FRE), and thus general acceptance is not a necessary precondition to the admissibility of scientific evidence under the FRE, given that (a) nothing in the text of Rule 702 of the FRE, governing expert testimony, establishes general acceptance as an absolute prerequisite to admissibility, and (b) there is no indication that Rule 702 or the FRE as a whole were intended to incorporate a general acceptance standard; (2) under the FRE, a federal trial judge must insure that any and all scientific testimony or evidence is not only relevant but reliable; and (3) in a federal case involving scientific evidence, evidentiary reliability is based on scientific validity.

Rehnquist, Ch. J., joined by Stevens, J., concurring in part and dissenting in part, (1) agreed that (a) the Frye "general acceptance" rule did not survive the enactment of the FRE, and (b) Rule 702 of the FRE confides to the trial judge some gatekeeping responsibility in deciding questions of the admissibility of proffered expert testimony; but (2) expressed the view that the Supreme Court should have left the further development of the area of the law in question to future cases.

LAWYERS' EDITION HEADNOTES:

[***LEdHN1]
EVIDENCE §641
expert scientific testimony -- admissibility -- general acceptance standard --
Headnote: [1A] [1B] [1C] [1D] [1E]

A standard under which the exclusive test for admitting expert scientific testimony is whether the principle on which such testimony is based has general acceptance in the field to which it belongs is not to be applied in federal trials; the "general acceptance" test of Frye v United States (1923) 54 App DC 46, 293 F 1013, 34 ALR 145, is superseded by the Federal Rules of Evidence (FRE), and thus general acceptance is not a necessary precondition to the admissibility of scientific evidence under the FRE, given that (1) nothing in the text of Rule 702 of the FRE, governing expert testimony, establishes general acceptance as an absolute prerequisite to admissibility; and (2) there is no indication that Rule 702 or the FRE as a whole are intended to incorporate a general acceptance standard, as (a) the drafting history makes no mention of the Frye decision, and (b) a rigid general acceptance requirement would be at odds with the liberal thrust of the FRE and their general approach of relaxing the traditional barriers to opinion testimony.

[***LEdHN2]
COURTS §538.11
construction of rules --
Headnote: [2]

A court properly interprets the legislatively enacted Federal Rules of Evidence as the court would interpret any statute.

[***LEdHN3]
EVIDENCE §641
expert scientific testimony -- reliability --
Headnote: [3A] [3B] [3C]

Under the Federal Rules of Evidence (FRE), a federal trial judge is not disabled from screening purportedly scientific evidence; rather, the trial judge must insure that any and all scientific testimony or evidence admitted is not only relevant but reliable; the primary locus of this obligation is Rule 702 of the FRE, which governs expert testimony as to scientific knowledge; for purposes of Rule 702, "scientific" implies a grounding in the methods and procedure of science, and "knowledge" connotes more than subjective belief or unsupported speculation; although it would be unreasonable to conclude that the subject of scientific testimony must be known to a certainty, Rule 702 requires that proposed scientific testimony be supported by appropriate validation--that is, good grounds--based on what is known; Rule 702's requirement that an expert's scientific testimony pertain to "scientific knowledge" establishes a standard of evidentiary reliability, that is, trustworthiness; in a federal case involving scientific evidence, evidentiary reliability is based on scientific validity. (Rehnquist, Ch. J., and Stevens, J., dissented in part from this holding.)

[***LEdHN4]
EVIDENCE §641
expert scientific testimony -- relevance --
Headnote: [4A] [4B]

The "helpfulness" standard of Rule 702 of the Federal Rules of Evidence (FRE), which requires that scientific evidence or testimony assist the trier of fact to understand the evidence or to determine a fact in issue--a condition that goes primarily to relevance--requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility; for purposes of Rule 702, expert testimony which does not relate to any issue in the case at hand is not relevant and thus is non-helpful.

[***LEdHN5]
EVIDENCE §641
expert witnesses --
Headnote: [5]

Unlike an ordinary witness, an expert witness is permitted wide latitude, under the Federal Rules of Evidence, to offer opinions, including those that are not based on firsthand knowledge or observation.

[***LEdHN6]
EVIDENCE §641
expert scientific testimony --
Headnote: [6]

Pursuant to Rule 104(a) of the Federal Rules of Evidence, governing preliminary questions concerning the admissibility of evidence, a federal trial judge who is faced with a proffer of expert scientific testimony must determine at the outset whether the expert is proposing to testify to scientific knowledge that will assist the trier of fact to understand or determine a fact in issue; this determination entails a preliminary assessment of (1) whether the reasoning or methodology underlying the testimony is scientifically valid, and (2) whether that reasoning or methodology properly can be applied to the facts in issue. (Rehnquist, Ch. J., and Stevens, J., dissented in part from this holding.)

[***LEdHN7]
EVIDENCE §383
burden of proof --
Headnote: [7A] [7B]

Matters to be determined by a federal trial court pursuant to Rule 104(a) of the Federal Rules of Evidence--that is, preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence--are to be established by a preponderance of proof.

[***LEdHN8]
EVIDENCE §67
science -- admissibility -- judicial notice --
Headnote: [8A] [8B]

The requirements of Rule 702 of the Federal Rules of Evidence (FRE) for the admissibility of expert scientific evidence do not apply specially or exclusively to unconventional evidence; however, theories that are so firmly established as to have attained the status of scientific law, such as the laws of thermodynamics, properly are subject to judicial notice under Rule 201 of the FRE.

[***LEdHN9]
EVIDENCE §641
expert scientific testimony -- admissibility --
Headnote: [9]

In determining whether a theory or technique is scientific knowledge that will assist the trier of fact, so as to be the basis of admissible evidence under Rule 702 of the Federal Rules of Evidence, (1) a key question to be answered is, ordinarily, whether the theory or technique can be and has been tested; (2) a pertinent consideration is whether the theory or technique has been subjected to peer review and publication, although the fact of publication, or lack thereof, in a peer-reviewed journal is not a dispositive consideration; (3) the court should ordinarily consider the known or potential rate of error of a particular scientific technique; (4) the assessment of reliability permits, but does not require, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance of the theory or technique within that community, as (a) widespread acceptance can be an important factor in ruling particular evidence admissible, and (b) a known technique that has been able to attract only minimal support within the scientific community may properly be viewed with skepticism; and (5) the inquiry is a flexible one, and the focus must be solely on principles and methodology, not on the conclusions that such principles and methodology generate. (Rehnquist, Ch. J., and Stevens, J., dissented in part from this holding.)

[***LEdHN10]
TRIAL §15
witnesses -- control --
Headnote: [10]

Since expert evidence can be both powerful and misleading because of the difficulty in evaluating such evidence, a federal trial judge--in weighing, under Rule 403 of the Federal Rules of Evidence, the possible danger of unfair prejudice resulting from such evidence against the evidence's probative force--exercises more control over experts than over lay witnesses.

[***LEdHN11]
EVIDENCE §641
SUMMARY JUDGMENT AND JUDGMENT ON PLEADINGS §1
TRIAL §199
WITNESSES §59
scientific testimony -- attack --
Headnote: [11]

In federal cases, the appropriate means of attacking scientific testimony, where the basis of such testimony meets the admissibility standards of Rule 702 of the Federal Rules of Evidence, are (1) vigorous cross-examination, (2) presentation of contrary evidence, and (3) careful instruction on the burden of proof; additionally, in the event that the trial court concludes that a scintilla of such evidence presented to support a position is insufficient to allow a reasonable juror to conclude that the position more likely than not is true, the court remains free to direct a judgment under Rule 50(a) of the Federal Rules of Civil Procedure (FRCP) and to grant summary judgment under Rule 56 of the FRCP.

[***LEdHN12]
APPEAL §1692.3
remand -- misconception of law --
Headnote: [12]

On certiorari to review a United States Court of Appeals judgment which upheld a United States District Court's ruling that proffered scientific evidence as to the alleged causation of birth defects was inadmissible, the United States Supreme Court will vacate the Court of Appeals' judgment and remand the case for further proceedings, where (1) the inquiries of the District Court and the Court of Appeals as to the admissibility of the evidence focused almost exclusively on whether the principle on which the evidence was based had gained "general acceptance," as gauged by publication and the decisions of other courts; and (2) the Supreme Court holds that general acceptance is not a necessary precondition to the admissibility of scientific evidence under the Federal Rules of Evidence.

SYLLABUS: Petitioners, two minor children and their parents, alleged in their suit against respondent that the children's serious birth defects had been caused by the mothers' prenatal ingestion of Bendectin, a prescription drug marketed by respondent. The District Court granted respondent summary judgment based on a well-credentialed expert's affidavit concluding, upon reviewing the extensive published scientific literature on the subject, that maternal use of Bendectin has not been shown to be a risk factor for human birth defects. Although petitioners had responded with the testimony of eight other well-credentialed experts, who based their conclusion that Bendectin can cause birth defects on animal studies, chemical structure analyses, and the unpublished "reanalysis" of previously published human statistical studies, the court determined that this evidence did not meet the applicable "general acceptance" standard for the admission of expert testimony. The Court of Appeals agreed and affirmed, citing *Frye* v. *United States*, 54 App. D.C. 46, 47, 293 F. 1013, 1014, for the rule that expert opinion based on a scientific technique is inadmissible unless the technique is "generally accepted" as reliable in the relevant scientific community.

Held: The Federal Rules of Evidence, not *Frye*, provide the standard for admitting expert scientific testimony in a federal trial. Pp. 585-597.

(a) *Frye*'s "general acceptance" test was superseded by the Rules' adoption. The Rules occupy the field, *United States* v. *Abel*, 469 U.S. 45, 49, 83 L. Ed. 2d 450, 105 S. Ct. 465, and, although the common law of evidence may serve as an aid to their application, *id.*, at 51-52, respondent's assertion that they somehow assimilated *Frye* is unconvincing. Nothing in the Rules as a whole or in the text and drafting history of Rule 702, which specifically governs expert testimony, gives any indication that "general acceptance" is a necessary precondition to the admissibility of scientific evidence. Moreover, such a rigid standard would be at odds with the Rules' liberal thrust and their general approach of relaxing the traditional barriers to "opinion" testimony. Pp. 585-589.

(b) The Rules -- especially Rule 702 -- place appropriate limits on the admissibility of purportedly scientific evidence by assigning to the trial judge the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand. The reliability standard is established by Rule 702's requirement that an expert's testimony pertain to "scientific . . . knowledge," since the adjective "scientific" implies a grounding in science's methods and procedures, while the word "knowledge" connotes a body of known facts or of ideas inferred from such facts or accepted as true on good grounds. The Rule's requirement that the testimony "assist the trier of fact to understand the evidence or to determine a fact in issue" goes primarily to relevance by demanding a valid scientific connection to the pertinent inquiry as a precondition to admissibility. Pp. 589-592.

(c) Faced with a proffer of expert scientific testimony under Rule 702, the trial judge, pursuant to Rule 104(a), must make a preliminary assessment of whether the testimony's underlying reasoning or methodology is scientifically valid and properly can be applied to the facts at issue. Many considerations will bear on the inquiry, including whether the theory or technique in question can be (and has been) tested, whether it has been subjected to peer review and publication, its known or potential error rate and the existence and maintenance of standards controlling its operation, and whether it has attracted widespread acceptance within a relevant scientific community. The inquiry is a flexible one, and its focus must be solely on principles and methodology, not on the conclusions that they generate. Throughout, the judge should also be mindful of other applicable Rules. Pp. 592-595.

(d) Cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof, rather than wholesale exclusion under an uncompromising "general acceptance" standard, is the appropriate means by which evidence based on valid principles may be challenged. That even limited screening by the trial judge, on occasion, will prevent the jury from hearing of authentic scientific breakthroughs is simply a consequence of the fact that the Rules are not designed to seek cosmic understanding but, rather, to resolve legal disputes. Pp. 595-597.

COUNSEL: Michael H. Gottesman argued the cause for petitioners. With him on the briefs were Kenneth J. Chesebro, Barry J. Nace, David L. Shapiro, and Mary G. Gillick.

Charles Fried argued the cause for respondent. With him on the brief were Charles R. Nesson, Joel I. Klein, Richard G. Taranto, Hall R. Marston, George E. Berry, Edward H. Stratemeier, and W. Glenn Forrester. *

* Briefs of amici curiae urging reversal were filed for the State of Texas et al. by Dan Morales, Attorney General of Texas, Mark Barnett, Attorney General of South Dakota, Marc Racicot, Attorney General of Montana, Larry EchoHawk, Attorney General of Idaho, and Brian Stuart Koukoutchos; for the American Society of Law, Medicine and Ethics et al. by Joan E. Bertin, Marsha S. Berzon, and Albert H. Meyerhoff; for the Association of Trial Lawyers of America by Jeffrey Robert White and Roxanne Barton Conlin; for Ronald Bayer et al. by Brian Stuart Koukoutchos, Priscilla Budeiri, Arthur Bryant, and George W. Conk; and for Daryl E. Chubin et al. by Ron Simon and Nicole Schultheis.

Briefs of amici curiae urging affirmance were filed for the United States by Acting Solicitor General Wallace, Assistant Attorney General Gerson, Miguel A. Estrada, Michael Jay Singer, and John P. Schnitker; for the American Insurance Association by William J. Kilberg, Paul Blankenstein, Bradford R. Clark, and Craig A. Berrington; for the American Medical Association et al. by Carter G. Phillips, Mark D. Hopson, and Jack R. Bierig; for the American Tort Reform Association by John G. Kester and John W. Vardaman, Jr.; for the Chamber of Commerce of the United States by Timothy B. Dyk, Stephen A. Bokat, and Robin S. Conrad; for the Pharmaceutical Manufacturers Association by Louis R. Cohen and Daniel Marcus; for the Product Liability Advisory Council, Inc., et al. by Victor E. Schwartz, Robert P. Charrow, and Paul F. Rothstein; for the Washington Legal Foundation by Scott G. Campbell, Daniel J. Popeo, and Richard A. Samp; and for Nicolaas Bloembergen et al. by Martin S. Kaufman.

Briefs of amici curiae were filed for the American Association for the Advancement of Science et al. by Richard A. Meserve and Bert Black; for the American College of Legal Medicine by Miles J. Zaremski; for the Carnegie Commission on Science, Technology, and Government by Steven G. Gallagher, Elizabeth H. Esty, and Margaret A. Berger; for the Defense Research Institute, Inc., by Joseph A.

Sherman, E. Wayne Taff, and Harvey L. Kaplan; for the New England Journal of Medicine et al. by Michael Malina and Jeffrey I. D. Lewis; for A Group of American Law Professors by Donald N. Bersoff; for Alvan R. Feinstein by Don M. Kennedy, Loretta M. Smith, and Richard A. Oetheimer; and for Kenneth Rothman et al. by Neil B. Cohen.

JUDGES: BLACKMUN, J., delivered the opinion for a unanimous Court with respect to Parts I and II-A, and the opinion of the Court with respect to Parts II-B, II-C, III, and IV, in which WHITE, O'CONNOR, SCALIA, KENNEDY, SOUTER, and THOMAS, JJ., joined. REHNQUIST, C. J., filed an opinion concurring in part and dissenting in part, in which STEVENS, J., joined, post, p. 598.

OPINIONBY: BLACKMUN

OPINION: [*582] [***476] [**2791] JUSTICE BLACKMUN delivered the opinion of the Court.

[***LEdHR1A] [1A]In this case we are called upon to determine the standard for admitting expert scientific testimony in a federal trial.

IPetitioners Jason Daubert and Eric Schuller are minor children born with serious birth defects. They and their parents sued respondent in California state court, alleging that the birth defects had been caused by the mothers' ingestion of Bendectin, a prescription antinausea drug marketed by respondent. Respondent removed the suits to federal court on diversity grounds.

After extensive discovery, respondent moved for summary judgment, contending that Bendectin does not cause birth defects in humans and that petitioners would be unable to come forward with any admissible evidence that it does. In support of its motion, respondent submitted an affidavit of Steven H. Lamm, physician and epidemiologist, who is a well-credentialed expert on the risks from exposure to various chemical substances. n1 Doctor Lamm stated that he had reviewed all the literature on Bendectin and human birth defects -- more than 30 published studies involving over 130,000 patients. No study had found Bendectin to be a human teratogen (*i.e.*, a substance capable of causing malformations in fetuses). On the basis of this review, Doctor Lamm concluded that maternal use of Bendectin during the first trimester of pregnancy has not been shown to be a risk factor for human birth defects.

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n1 Doctor Lamm received his master's and doctor of medicine degrees from the University of Southern California. He has served as a consultant in birth-defect epidemiology for the National Center for Health Statistics and has published numerous articles on the magnitude of risk from exposure to various chemical and biological substances. App. 34-44.

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[*583] Petitioners did not (and do not) contest this characterization of the published record regarding Bendectin. Instead, they responded to respondent's motion with the testimony of eight experts of their own, each of whom also possessed impressive credentials. n2 These experts had concluded that Bendectin can cause birth defects. Their conclusions were based upon "in vitro" (test tube) and "in vivo" (live) animal studies that [***477] found a link between Bendectin and malformations; pharmacological studies of the chemical structure of Bendectin that purported to show similarities between the structure of the drug and that of other substances known to cause birth defects; and the "reanalysis" of previously [**2792] published epidemiological (human statistical) studies.

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n2 For example, Shanna Helen Swan, who received a master's degree in biostatistics from Columbia University and a doctorate in statistics from the University of California at Berkeley, is chief of the section of the California Department of Health and Services that determines causes of birth defects and has served as a consultant to the World Health Organization, the Food and Drug Administration, and the National Institutes of Health. *Id.*, at 113-114, 131-132. Stuart A. Newman, who received his bachelor's degree in chemistry from Columbia University and his master's and doctorate in chemistry from the University of Chicago, is a professor at New York Medical College and has spent over a decade studying the effect of chemicals on limb development. *Id.*, at 54-56. The credentials of the others are similarly impressive. See *id.*, at 61-66, 73-80, 148-153, 187-192, and Attachments 12, 20, 21, 26, 31, and 32 to Petitioners' Opposition to Summary Judgment in No. 84-2013-G(I) (SD Cal.).

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The District Court granted respondent's motion for summary judgment. The court stated that scientific evidence is admissible only if the principle upon which it is based is "'sufficiently established to have general acceptance in the field to which it belongs.'" 727 F. Supp. 570, 572 (SD Cal. 1989), quoting *United States* v. *Kilgus*, 571 F.2d 508, 510 (CA9 1978). The court concluded that petitioners' evidence did not meet this standard. Given the vast body of epidemiological data concerning Bendectin, the court held, expert opinion which is not based on epidemiological evidence [*584] is not admissible to establish causation. 727 F. Supp. at 575. Thus, the animal-cell studies, live-animal studies, and chemical-structure analyses on which petitioners had relied could not raise by themselves a reasonably disputable jury issue regarding causation. *Ibid*. Petitioners' epidemiological analyses, based as they were on recalculations of data in previously published studies that had found no causal link between the drug and birth defects, were ruled to be inadmissible because they had not been published or subjected to peer review. *Ibid*.

The United States Court of Appeals for the Ninth Circuit affirmed. 951 F.2d 1128 (1991). Citing *Frye* v. *United States*, 54 App. D.C. 46, 47, 293 F. 1013, 1014 (1923), the court stated that expert opinion based on a scientific technique is inadmissible unless the technique is "generally accepted" as reliable in the relevant scientific community. 951 F.2d at 1129-1130. The court declared that expert opinion based on a methodology that diverges "significantly from the procedures accepted by recognized authorities in the field . . . cannot be shown to be 'generally accepted as a reliable technique.'" *Id.*, at 1130, quoting *United States* v. *Solomon*, 753 F.2d 1522, 1526 (CA9 1985).

The court emphasized that other Courts of Appeals considering the risks of Bendectin had refused to admit reanalyses of epidemiological studies that had been neither published nor subjected to peer review. 951 F.2d at 1130-1131. Those courts had found unpublished reanalyses "particularly problematic in light of the massive weight of the original published studies supporting [respondent's] position, all of which had undergone full scrutiny from the scientific community." *Id.*, at 1130. Contending that reanalysis is generally accepted by the scientific community only when it is subjected to verification and scrutiny by others in the field, the Court of Appeals rejected petitioners' reanalyses as "unpublished, not subjected to the normal peer review process and generated solely for use in litigation." *Id.*, at 1131. The [*585] court concluded that petitioners' evidence provided an insufficient foundation to allow admission of expert testimony that Bendectin caused their injuries and, accordingly, that petitioners could not satisfy their burden of proving causation at trial.

We granted certiorari, 506 U.S. 914 [***478] (1992), in light of sharp divisions among the courts regarding the proper standard for the admission of expert testimony. Compare, *e.g.*, *United States* v. *Shorter*, 257 U.S. App. D.C. 358, 363-364, 809 F.2d 54, 59-60 (applying the "general acceptance" standard), cert. denied, 484 U.S. 817, 98 L. Ed. 2d 35, 108 S. Ct. 71 (1987), with *DeLuca* v. *Merrell Dow Pharmaceuticals, Inc.*, 911 F.2d 941, 955 (CA3 1990) (rejecting the "general acceptance" standard).

II A

In the 70 years since its formulation in the *Frye* case, the "general acceptance" test has been the dominant standard for determining the admissibility of novel scientific evidence at trial. See E. Green & C. Nesson, Problems, Cases, and Materials on Evidence 649 (1983). Although under increasing attack of late, the rule continues to be followed by a [**2793] majority of courts, including the Ninth Circuit. n3

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n3 For a catalog of the many cases on either side of this controversy, see P. Giannelli & E. Imwinkelried, Scientific Evidence § 1-5, pp. 10-14 (1986 and Supp. 1991).

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The *Frye* test has its origin in a short and citation-free 1923 decision concerning the admissibility of evidence derived from a systolic blood pressure deception test, a crude precursor to the polygraph machine. In what has become a famous (perhaps infamous) passage, the then Court of Appeals for the District of Columbia described the device and its operation and declared:

> "Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages [*586] is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, *the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs*." 54 App. D.C. at 47, 293 F. at 1014 (emphasis added).

Because the deception test had "not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made," evidence of its results was ruled inadmissible. *Ibid*.

[***LEdHR1B] [1B]The merits of the *Frye* test have been much debated, and scholarship on its proper scope and application is legion. n4 [*587] Petitioners' primary [***479] attack, however, is not on the content but on the continuing authority of the rule. They contend that the *Frye* test was superseded by the adoption of the Federal Rules of Evidence. n5 We agree.

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n4 See, *e.g.*, Green, Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of *Agent Orange* and Bendectin Litigation, 86 Nw. U. L. Rev. 643 (1992) (hereinafter Green); Becker & Orenstein, The Federal Rules of Evidence After Sixteen Years -- The Effect of "Plain Meaning" Jurisprudence, the Need for an Advisory Committee on the Rules of Evidence, and Suggestions for Selective Revision of the Rules, 60 Geo. Wash. L. Rev. 857, 876-885 (1992); Hanson, James Alphonzo Frye is Sixty-Five Years Old; Should He Retire?, 16 West. St. U. L. Rev. 357 (1989); Black, A Unified Theory of Scientific Evidence, 56 Ford. L. Rev. 595 (1988); Imwinkelried, The "Bases" of Expert Testimony: The Syllogistic Structure of Scientific Testimony, 67 N. C. L. Rev. 1

(1988); Proposals for a Model Rule on the Admissibility of Scientific Evidence, 26 Jurimetrics J. 235 (1986); Giannelli, The Admissibility of Novel Scientific Evidence: *Frye* v. *United States*, a Half-Century Later, 80 Colum. L. Rev. 1197 (1980); The Supreme Court, 1986 Term, 101 Harv. L. Rev. 7, 119, 125-127 (1987).

Indeed, the debates over *Frye* are such a well-established part of the academic landscape that a distinct term -- "*Frye*-ologist" -- has been advanced to describe those who take part. See Behringer, Introduction, Proposals for a Model Rule on the Admissibility of Scientific Evidence, 26 Jurimetrics J. 237, 239 (1986), quoting Lacey, Scientific Evidence, 24 Jurimetrics J. 254, 264 (1984).

n5 Like the question of *Frye*'s merit, the dispute over its survival has divided courts and commentators. Compare, *e.g.*, *United States* v. *Williams*, 583 F.2d 1194 (CA2 1978) (*Frye* is superseded by the Rules of Evidence), cert. denied, 439 U.S. 1117, 59 L. Ed. 2d 77, 99 S. Ct. 1025 (1979), with *Christophersen* v. *Allied-Signal Corp.*, 939 F.2d 1106, 1111, 1115-1116 (CA5 1991) (en banc) (*Frye* and the Rules coexist), cert. denied, 503 U.S. 912, 117 L. Ed. 2d 506, 112 S. Ct. 1280 (1992), 3 J. Weinstein & M. Berger, Weinstein's Evidence P702[03], pp. 702-36 to 702-37 (1988) (hereinafter Weinstein & Berger) (*Frye* is dead), and M. Graham, Handbook of Federal Evidence § 703.2 (3d ed. 1991) (*Frye* lives). See generally P. Giannelli & E. Imwinkelried, Scientific Evidence § 1-5, at 28-29 (citing authorities).

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[***LEdHR2] [2]We interpret the legislatively enacted Federal Rules of Evidence as we would any statute. *Beech Aircraft Corp.* v. *Rainey*, 488 U.S. 153, 163, 102 L. Ed. 2d 445, 109 S. Ct. 439 (1988). Rule 402 provides the baseline:

> "All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, [**2794] by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible."

"Relevant evidence" is defined as that which has "any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Rule 401. The Rules' basic standard of relevance thus is a liberal one.

Frye, of course, predated the Rules by half a century. In *United States* v. *Abel*, 469 U.S. 45, 83 L. Ed. 2d 450, 105 S. Ct. 465 (1984), we considered the pertinence of background common law in interpreting the Rules of Evidence. We noted that the Rules occupy the field, *id.*, at 49, but, quoting Professor Cleary, the Reporter, [*588] explained that the common law nevertheless could serve as an aid to their application:

> "'In principle, under the Federal Rules no common law of evidence remains. "All relevant evidence is admissible, except as otherwise provided . . . ." In reality, of course, the body of common law knowledge continues to exist, though in the somewhat altered form of a source of guidance in the exercise of delegated powers.'" *Id.*, at 51-52.

We found the common-law precept at issue in the *Abel* case entirely consistent with Rule 402's general requirement of admissibility, and considered it unlikely that the drafters had intended to change the rule. *Id.*, at 50-51. In *Bourjaily* v. *United States*, 483 U.S. 171, 97 L. Ed. 2d 144, 107 S. [***480] Ct. 2775 (1987), on the other hand, the Court was unable to find a particular common-law doctrine in the Rules, and so held it superseded.

[***LEdHR1C] [1C] Here there is a specific Rule that speaks to the contested issue. Rule 702, governing expert testimony, provides:

> "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

Nothing in the text of this Rule establishes "general acceptance" as an absolute prerequisite to admissibility. Nor does respondent present any clear indication that Rule 702 or the Rules as a whole were intended to incorporate a "general acceptance" standard. The drafting history makes no mention of *Frye*, and a rigid "general acceptance" requirement would be at odds with the "liberal thrust" of the Federal Rules and their "general approach of relaxing the traditional barriers to 'opinion' testimony." *Beech Aircraft Corp.* v. *Rainey*, 488 U.S. at 169 (citing Rules 701 to 705). See also Weinstein, Rule 702 of the Federal Rules of Evidence is [*589] Sound; It Should Not Be Amended, 138 F.R.D. 631 (1991) ("The Rules were designed to depend primarily upon lawyer-adversaries and sensible triers of fact to evaluate conflicts"). Given the Rules' permissive backdrop and their inclusion of a specific rule on expert testimony that does not mention "general acceptance," the assertion that the Rules somehow assimilated *Frye* is unconvincing. *Frye* made "general acceptance" the exclusive test for admitting expert scientific testimony. That austere standard, absent from, and incompatible with, the Federal Rules of Evidence, should not be applied in federal trials. n6

[***LEdHR1D] [1D]

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n6 Because we hold that *Frye* has been superseded and base the discussion that follows on the content of the congressionally enacted Federal Rules of Evidence, we do not address petitioners' argument that application of the *Frye* rule in this diversity case, as the application of a judgemade rule affecting substantive rights, would violate the doctrine of *Erie R. Co.* v. *Tompkins*, 304 U.S. 64, 82 L. Ed. 1188, 58 S. Ct. 817 (1938).

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[***LEdHR3A] [3A]That the *Frye* test was displaced by the Rules of Evidence does not mean, [**2795] however, that the Rules themselves place no limits on the admissibility of purportedly scientific evidence. n7 Nor is the trial judge disabled from screening such evidence. To the contrary, under the Rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.

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n7 THE CHIEF JUSTICE "do[es] not doubt that Rule 702 confides to the judge some gatekeeping responsibility," *post*, at 600, but would neither say how it does so nor explain what that role entails. We believe the better course is to note the nature and source of the duty.

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The primary locus of this obligation is Rule 702, which clearly contemplates some degree of regulation of the subjects and theories about which an expert may testify. "*If scientific*, technical, or other specialized *knowledge will assist the trier of fact* to understand the evidence or to determine a fact in issue" an expert "may testify *thereto*." (Emphasis added.) The subject of an expert's testimony must [*590] be "scientific . . . [***481] knowledge." n8 The adjective "scientific" implies a grounding in the methods and procedures of science. Similarly, the word "knowledge" connotes more than subjective belief or unsupported speculation. The term "applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds." Webster's Third New International Dictionary 1252 (1986). Of course, it would be unreasonable to conclude that the subject of scientific testimony must be "known" to a certainty; arguably, there are no certainties in science. See, *e.g.*, Brief for Nicolaas Bloembergen et al. as *Amici Curiae* 9 ("Indeed, scientists do not assert that they know what is immutably 'true' -- they are committed to searching for new, temporary, theories to explain, as best they can, phenomena"); Brief for American Association for the Advancement of Science et al. as *Amici Curiae* 7-8 ("Science is not an encyclopedic body of knowledge about the universe. Instead, it represents a *process* for proposing and refining theoretical explanations about the world that are subject to further testing and refinement" (emphasis in original)). But, in order to qualify as "scientific knowledge," an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation -- *i.e.*, "good grounds," based on what is known. In short, the requirement that an expert's testimony pertain to "scientific knowledge" establishes a standard of evidentiary reliability. n9

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n8 Rule 702 also applies to "technical, or other specialized knowledge." Our discussion is limited to the scientific context because that is the nature of the expertise offered here.

[***LEdHR3B] [3B]

n9 We note that scientists typically distinguish between "validity" (does the principle support what it purports to show?) and "reliability" (does application of the principle produce consistent results?). See Black, 56 Ford. L. Rev., at 599. Although "the difference between accuracy, validity, and reliability may be such that each is distinct from the other by no more than a hen's kick," Starrs, *Frye v. United States* Restructured and Revitalized: A Proposal to Amend Federal Evidence Rule 702, 26 Jurimetrics J. 249, 256 (1986), our reference here is to *evidentiary* reliability -- that is, trustworthiness. Cf., *e.g.*, Advisory Committee's Notes on Fed. Rule Evid. 602, 28 U.S.C. App., p. 755 ("'The rule requiring that a witness who testifies to a fact which can be perceived by the senses must have had an opportunity to observe, and must have actually observed the fact' is a 'most pervasive manifestation' of the common law insistence upon 'the most reliable sources of information'" (citation omitted)); Advisory Committee's Notes on Art. VIII of Rules of Evidence, 28 U.S.C. App., p. 770 (hearsay exceptions will be recognized only "under circumstances supposed to furnish guarantees of trustworthiness"). In a case involving scientific evidence, *evidentiary reliability* will be based upon *scientific validity*.

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[*591]

[***LEdHR4A] [4A]Rule 702 further requires that the evidence or testimony "assist the trier of fact to understand the evidence or to determine a fact in issue." This condition goes primarily to relevance. "Expert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful." 3 Weinstein & Berger P702[02], p. 702-18. See also *United States* v. *Downing*, 753 F.2d 1224, 1242 (CA3 1985) ("An additional consideration [**2796] under Rule 702 -- and another aspect of relevancy -- is whether expert testimony proffered in the case is sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute"). The consideration has been aptly described by Judge Becker as one of "fit." *Ibid*. "Fit" is not always obvious, [***482] and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes. See Starrs, *Frye v. United States* Restructured and Revitalized: A Proposal to Amend Federal Evidence Rule 702, 26 Jurimetrics J. 249, 258 (1986). The study of the phases of the moon, for example, may provide valid scientific "knowledge" about whether a certain night was dark, and if darkness is a fact in issue, the knowledge will assist the trier of fact. However (absent creditable grounds supporting such a link), evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night. Rule 702's "helpfulness" [*592] standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.

[***LEdHR5] [5]That these requirements are embodied in Rule 702 is not surprising. Unlike an ordinary witness, see Rule 701, an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation. See Rules 702 and 703. Presumably, this relaxation of the usual requirement of firsthand knowledge -- a rule which represents "a 'most pervasive manifestation' of the common law insistence upon 'the most reliable sources of information,'" Advisory Committee's Notes on Fed. Rule Evid. 602, 28 U.S.C. App., p. 755 (citation omitted) -- is premised on an assumption that the expert's opinion will have a reliable basis in the knowledge and experience of his discipline.

C

[***LEdHR6] [6] [***LEdHR7A] [7A] [***LEdHR8A] [8A]Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to Rule 104(a), n10 whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. n11 This entails a preliminary assessment of whether the reasoning or methodology [*593] underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue. We are confident that federal judges possess the capacity to undertake this review. Many factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test. But some general observations are appropriate.

[***LEdHR7B] [7B]

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n10 Rule 104(a) provides:

"Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b) [pertaining to conditional admissions]. In making its determination it is not bound by the rules of evidence except those with respect to privileges." These matters should be established by a preponderance of proof. See *Bourjaily* v. *United States*, 483 U.S. 171, 175-176, 97 L. Ed. 2d 144, 107 S. Ct. 2775 (1987).

[***LEdHR8B] [8B]

n11 Although the *Frye* decision itself focused exclusively on "novel" scientific techniques, we do not read the requirements of Rule 702 to apply specially or exclusively to unconventional evidence. Of course, well-established propositions are less likely to be challenged than those that are novel, and they are more handily defended. Indeed, theories that are so firmly established as to have attained the status of scientific law, such as the laws of thermodynamics, properly are subject to judicial notice under Federal Rule of Evidence 201.

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[***LEdHR9] [9]Ordinarily, a key question to be answered in determining whether [***483] a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested. "Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry." Green 645. See also C. Hempel, Philosophy of Natural Science 49 (1966) [**2797] ("The statements constituting a scientific explanation must be capable of empirical test"); K. Popper, Conjectures and Refutations: The Growth of Scientific Knowledge 37 (5th ed. 1989) ("The criterion of the scientific status of a theory is its falsifiability, or refutability, or testability") (emphasis deleted).

Another pertinent consideration is whether the theory or technique has been subjected to peer review and publication. Publication (which is but one element of peer review) is not a *sine qua non* of admissibility; it does not necessarily correlate with reliability, see S. Jasanoff, The Fifth Branch: Science Advisors as Policymakers 61-76 (1990), and in some instances well-grounded but innovative theories will not have been published, see Horrobin, The Philosophical Basis of Peer Review and the Suppression of Innovation, 263 JAMA 1438 (1990). Some propositions, moreover, are too particular, too new, or of too limited interest to be published. But submission to the scrutiny of the scientific community is a component of "good science," in part because it increases the likelihood that substantive flaws in methodology will be detected. See J. Ziman, Reliable Knowledge: An Exploration [*594] of the Grounds for Belief in Science 130-133 (1978); Relman & Angell, How Good Is Peer Review?, 321 New Eng. J. Med. 827 (1989). The fact of publication (or lack thereof) in a peer reviewed journal thus will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised.

Additionally, in the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error, see, *e.g.*, *United States* v. *Smith*, 869 F.2d 348, 353-354 (CA7 1989) (surveying studies of the error rate of spectrographic voice identification technique), and the existence and maintenance of standards controlling the technique's operation, see *United States* v. *Williams*, 583 F.2d 1194, 1198 (CA2 1978) (noting professional organization's standard governing spectrographic analysis), cert. denied, 439 U.S. 1117, 59 L. Ed. 2d 77, 99 S. Ct. 1025 (1979).

Finally, "general acceptance" can yet have a bearing on the inquiry. A "reliability assessment does not require, although it does permit, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community." *United States* v. *Downing*, 753 F.2d at 1238. See also 3 Weinstein & Berger P702[03], pp. 702-41 to 702-42. Widespread acceptance can be an important factor in ruling particular evidence admissible, and "a known technique which has been able to attract only minimal support within the community," *Downing*, 753 F.2d at 1238, may properly be viewed with skepticism.

The inquiry envisioned by Rule [***484] 702 is, we emphasize, a flexible one. n12 Its overarching subject is the scientific validity [*595] -- and thus the evidentiary relevance and reliability -- of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.

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n12 A number of authorities have presented variations on the reliability approach, each with its own slightly different set of factors. See, *e.g.*, *Downing*, 753 F.2d at 1238-1239 (on which our discussion draws in part); 3 Weinstein & Berger P702[03], pp. 702-41 to 702-42 (on which the *Downing* court in turn partially relied); McCormick, Scientific Evidence: Defining a New Approach to Admissibility, 67 Iowa L. Rev. 879, 911-912 (1982); and Symposium on Science and the Rules of Evidence, 99 F.R.D. 187, 231 (1983) (statement by Margaret Berger). To the extent that they focus on the reliability of evidence as ensured by the scientific validity of its underlying principles, all these versions may well have merit, although we express no opinion regarding any of their particular details.

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[***LEdHR10] [10]Throughout, a judge assessing a proffer of expert scientific testimony under Rule 702 should also be mindful of other applicable rules. Rule 703 provides that expert opinions based on otherwise inadmissible [**2798] hearsay are to be admitted only if the facts or data are "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject." Rule 706 allows the court at its discretion to procure the assistance of an expert of its own choosing. Finally, Rule 403 permits the exclusion of relevant evidence "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury . . . ." Judge Weinstein has explained: "Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses." Weinstein, 138 F.R.D. at 632.

III

[***LEdHR11] [11] We conclude by briefly addressing what appear to be two underlying concerns of the parties and *amici* in this case. Respondent expresses apprehension that abandonment of "general acceptance" as the exclusive requirement for admission will result in a "free-for-all" in which befuddled juries are confounded by absurd and irrational pseudoscientific assertions. [*596] In this regard respondent seems to us to be overly pessimistic about the capabilities of the jury and of the adversary system generally. Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence. See *Rock* v. *Arkansas*, 483 U.S. 44, 61, 97 L. Ed. 2d 37, 107 S. Ct. 2704 (1987). Additionally, in the event the trial court concludes that the scintilla of evidence presented supporting a position is insufficient to allow a reasonable juror to conclude that the position more likely than not is true, the court remains free to direct a judgment, Fed. Rule Civ. Proc. 50(a), and likewise to grant summary judgment, Fed. Rule Civ. Proc. 56. Cf., *e.g.*, *Turpin* v. *Merrell Dow Pharmaceuticals, Inc.*, 959 F.2d 1349 (CA6) (holding that scientific evidence that provided foundation for expert testimony, viewed in the light most favorable to plaintiffs, was not sufficient to allow a jury to find it more probable than not that defendant [***485] caused plaintiff's injury), cert. denied, 506 U.S. 826, 121 L. Ed. 2d 47, 113 S. Ct. 84 (1992); *Brock* v. *Merrell Dow Pharmaceuticals, Inc.*, 874 F.2d 307 (CA5 1989) (reversing judgment entered on jury verdict for plaintiffs because evidence regarding causation was insufficient), modified, 884 F.2d 166 (CA5 1989), cert. denied, 494 U.S. 1046 (1990); Green 680-681. These conventional devices, rather than wholesale exclusion under an uncompromising "general acceptance" test, are the appropriate safeguards where the basis of scientific testimony meets the standards of Rule 702.

Petitioners and, to a greater extent, their *amici* exhibit a different concern. They suggest that recognition of a screening role for the judge that allows for the exclusion of "invalid" evidence will sanction a stifling and repressive scientific orthodoxy and will be inimical to the search for truth. See, *e.g.*, Brief for Ronald Bayer et al. as *Amici Curiae*. It is true that open debate is an essential part of both legal and scientific analyses. Yet there are important differences between the quest for truth in the courtroom and the quest [*597] for truth in the laboratory. Scientific conclusions are subject to perpetual revision. Law, on the other hand, must resolve disputes finally and quickly. The scientific project is advanced by broad and wide-ranging consideration of a multitude of hypotheses, for those that are incorrect will eventually be shown to be so, and that in itself is an advance. Conjectures that are probably wrong are of little use, however, in the project of reaching a quick, final, and binding legal judgment -- often of great consequence -- about a particular set of events in the past. We recognize that, in practice, a gatekeeping role for the judge, no matter how flexible, inevitably on occasion will prevent the jury from learning of authentic [**2799] insights and innovations. That, nevertheless, is the balance that is struck by Rules of Evidence designed not for the exhaustive search for cosmic understanding but for the particularized resolution of legal disputes. n13

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n13 This is not to say that judicial interpretation, as opposed to adjudicative factfinding, does not share basic characteristics of the scientific endeavor: "The work of a judge is in one sense enduring and in another ephemeral. . . . In the endless process of testing and retesting, there is a constant rejection of the dross and a constant retention of whatever is pure and sound and fine." B. Cardozo, The Nature of the Judicial Process 178-179 (1921).

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IV

[***LEdHR1E] [1E] [***LEdHR3C] [3C] [***LEdHR4B] [4B]To summarize: "General acceptance" is not a necessary precondition to the admissibility of scientific evidence under the Federal Rules of Evidence, but the Rules of Evidence -- especially Rule 702 -- do assign to the trial judge the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand. Pertinent evidence based on scientifically valid principles will satisfy those demands.

[***LEdHR12] [12]The inquiries of the District Court and the Court of Appeals focused almost exclusively on "general acceptance," as gauged by publication and the decisions of other courts. Accordingly, [*598] the judgment of the Court of Appeals is vacated, and the case is remanded for further proceedings consistent with this opinion.

It is so ordered.

CONCURBY: REHNQUIST (In Part)

DISSENTBY: REHNQUIST (In Part)

DISSENT: [***486] CHIEF JUSTICE REHNQUIST, with whom JUSTICE STEVENS joins, concurring in part and dissenting in part.

The petition for certiorari in this case presents two questions: first, whether the rule of *Frye* v. *United States*, 54 App. D.C. 46, 293 F. 1013 (1923), remains good law after the enactment of the Federal Rules of Evidence; and second, if *Frye* remains valid, whether it requires expert scientific testimony to have been subjected to a peer review process in order to be admissible. The Court concludes, correctly in my view, that the *Frye* rule did not survive the enactment of the Federal Rules of Evidence, and I therefore join Parts I and II-A of its opinion. The second question presented in the petition for certiorari necessarily is mooted by this holding, but the Court nonetheless proceeds to construe Rules 702 and 703 very much in the abstract, and then offers some "general observations." *Ante*, at 593.

"General observations" by this Court customarily carry great weight with lower federal courts, but the ones offered here suffer from the flaw common to most such observations -- they are not applied to deciding whether particular testimony was or was not admissible, and therefore they tend to be not only general, but vague and abstract. This is particularly unfortunate in a case such as this, where the ultimate legal question depends on an appreciation of one or more bodies of knowledge not judicially noticeable, and subject to different interpretations in the briefs of the parties and their *amici*. Twenty-two *amicus* briefs have been filed in the case, and indeed the Court's opinion contains no fewer than 37 citations to *amicus* briefs and other secondary sources.

[*599] The various briefs filed in this case are markedly different from typical briefs, in that large parts of them do not deal with decided cases or statutory language -- the sort of material we customarily interpret. Instead, they deal with definitions of scientific knowledge, scientific method, scientific validity, and peer review -- in short, matters far afield from the expertise of judges. This is not to say that such materials are not useful or even necessary in deciding how Rule 702 should be applied; but it is to say that the unusual subject matter should cause us to proceed with great caution in deciding more than we have to, because our reach can so easily exceed our grasp.

But even if it were desirable to make "general observations" not necessary to decide [**2800] the questions presented, I cannot subscribe to some of the observations made by the Court. In Part II-B, the Court concludes that reliability and relevancy are the touchstones of the admissibility of expert testimony.

Ante, at 590-592. Federal Rule of Evidence 402 provides, as the Court points out, that "evidence which is not relevant is not admissible." But there is no similar reference in the Rule to "reliability." The Court constructs its argument by parsing the language "if scientific, technical, or other specialized [***487] knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, . . . an expert . . . may testify thereto . . . ." Fed. Rule Evid. 702. It stresses that the subject of the expert's testimony must be "scientific . . . knowledge," and points out that "scientific" "implies a grounding in the methods and procedures of science" and that the word "knowledge" "connotes more than subjective belief or unsupported speculation." *Ante*, at 590. From this it concludes that "scientific knowledge" must be "derived by the scientific method." *Ibid.* Proposed testimony, we are told, must be supported by "appropriate validation." *Ibid.* Indeed, in footnote 9, the Court decides that "in a case involving scientific evidence, *evidentiary [*600] reliability* will be based upon *scientific validity." Ante*, at 591, n. 9 (emphasis in original).

Questions arise simply from reading this part of the Court's opinion, and countless more questions will surely arise when hundreds of district judges try to apply its teaching to particular offers of expert testimony. Does all of this *dicta* apply to an expert seeking to testify on the basis of "technical or other specialized knowledge" -- the other types of expert knowledge to which Rule 702 applies -- or are the "general observations" limited only to "scientific knowledge"? What is the difference between scientific knowledge and technical knowledge; does Rule 702 actually contemplate that the phrase "scientific, technical, or other specialized knowledge" be broken down into numerous subspecies of expertise, or did its authors simply pick general descriptive language covering the sort of expert testimony which courts have customarily received? The Court speaks of its confidence that federal judges can make a "preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Ante*, at 592-593. The Court then states that a "key question" to be answered in deciding whether something is "scientific knowledge" "will be whether it can be (and has been) tested." *Ante*, at 593. Following this sentence are three quotations from treatises, which not only speak of empirical testing, but one of which states that the "'criterion of the scientific status of a theory is its falsifiability, or refutability, or testability.'" *Ibid.*

I defer to no one in my confidence in federal judges; but I am at a loss to know what is meant when it is said that the scientific status of a theory depends on its "falsifiability," and I suspect some of them will be, too.

I do not doubt that Rule 702 confides to the judge some gatekeeping responsibility in deciding questions of the admissibility of proffered expert testimony. But I do not think [*601] it imposes on them either the obligation or the authority to become amateur scientists in order to perform that role. I think the Court would be far better advised in this case to decide only the questions presented, and to leave the further development of this important area of the law to future cases.

REFERENCES: Return To Full Text Opinion

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32B Am Jur 2d, Federal Rules of Evidence 435

12 Federal Procedure, L Ed, Evidence 33:131; 33 Federal Procedure, L Ed, Witnesses 80: 133

2 Am Jur Trials 585, Selecting and Preparing Expert Witness; 3 Am Jur Trials 427, Preparing and Using Experimental Evidence

28 USCS Appx, Federal Rules of Evidence, Rule 702

Am Law Prod Liab 3d 54:70, 54:71, 89:38

Ausman & Snyder's Medical Library, L Ed, Pediatrics 5:102

L Ed Digest, Evidence 641

L Ed Index, Experiments or Tests; Expert and Opinion Evidence; Rules of Evidence

ALR Index, Evidence Rules; Experiments and Tests; Expert and Opinion Evidence; Frye Test; Science and Scientific Matters

Annotation References:

Reliability of scientific technique and its acceptance within scientific community as affecting admissibility, at federal trial, of expert testimony as to result of test or study based on such technique--modern cases. 105 ALR Fed 299.

When will expert testimony "assist trier of fact" so as to be admissible at federal trial under Rule 702 of Federal Rules of Evidence. 75 ALR Fed 461.

KUMHO TIRE COMPANY, LTD., ET AL., PETITIONERS v. PATRICK CARMICHAEL, ETC., ET AL.

No. 97-1709

SUPREME COURT OF THE UNITED STATES

526 U.S. 137; 119 S. Ct. 1167; 143 L. Ed. 2d 238; 1999 U.S. LEXIS 2189; 67 U.S.L.W. 4179; 50 U.S.P.Q.2D (BNA) 1177; 50 Fed. R. Evid. Serv. (Callaghan) 1373; CCH Prod. Liab. Rep. P15,470; 99 Cal. Daily Op. Service 2059; 29 ELR 20638; 1999 Colo. J. C.A.R. 1518; 12 Fla. L. Weekly Fed. S 141

December 7, 1998, Argued
March 23, 1999, Decided

PRIOR HISTORY: ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE ELEVENTH CIRCUIT.

DISPOSITION: 131 F.3d 1433, reversed.

DECISION: Federal trial judge's gatekeeping obligation under Federal Rules of Evidence--to insure that expert witness' testimony rests on reliable foundation and is relevant to task at hand--held to apply to all expert testimony, not only scientific.

SUMMARY: In Daubert v Merrell Dow Pharmaceuticals, Inc. (1993) 509 US 579, 125 L Ed 2d 469, 113 S Ct 2786, a case involving the admissibility of scientific expert testimony, the United States Supreme Court held that (1) such testimony was admissible only if relevant and reliable; (2) the Federal Rules of Evidence (FRE) assigned to the trial judge the task of insuring that an expert's testimony rested on a reliable foundation and was relevant to the task at hand; and (3) some or all of certain specific factors--such as testing, peer review, error rates, and acceptability in the relevant scientific community--might possibly prove helpful in determining the reliability of a particular scientific theory or technique. In 1993, after a tire on a minivan blew out and the minivan overturned, one passenger died and the others were injured. The survivors and the decedent's representative, claiming that the failed tire had been defective, brought a diversity suit in the United States District Court for the Southern District of Alabama against the tire's maker and distributor. The plaintiffs rested their case in significant part upon the depositions of a mechanical engineer--an expert in tire failure analysis--who intended to testify that, in his expert opinion, a defect in the tire's manufacture or design caused the blowout. The expert's opinion was based upon (1) a visual and tactile inspection of the tire, and (2) the theory that in the absence of at least two of four specific physical symptoms indicating tire abuse, the tire failure of the sort that occurred in the case at hand was caused by a defect. The District Court--in granting a motion to exclude the expert's testimony as well as a motion for summary judgment against the plaintiffs--(1) agreed with the defendants that the District Court ought to act as a Daubert-type reliability "gatekeeper," even though the testimony at issue could be considered "technical" rather than "scientific"; (2) examined the expert's methodology in light of the reliability-related factors that Daubert had mentioned; and (3) concluded that all those factors argued against the reliability of the expert's methods (923 F Supp 1514, 1996 US Dist LEXIS 5706). On reconsideration, the District Court--although acknowledging that the Daubert factors ought to be applied flexibly and were simply illustrative--affirmed the earlier rulings on the ground that there were insufficient indications of the reliability of the expert's methodology of tire failure analysis. The United States Court of Appeals for the Eleventh Circuit, in reversing and remanding, expressed the view that the District Court had erred as a matter of law in applying the Daubert factors to the tire expert's testimony, as (1) Daubert was limited to the scientific context, and (2) the testimony in question relied on experience rather than the application of scientific principles (131 F3d 1433, 1997 US App LEXIS 35981).

On certiorari, the Supreme Court reversed. In an opinion by Breyer, J., joined by Rehnquist, Ch. J., and O'Connor, Scalia, Kennedy, Souter, Thomas, and Ginsburg, JJ., and joined (as to points 1 and 2 below) by Stevens, J., it was held that (1) a federal trial judge's gatekeeping obligation under the FRE--to insure that an expert witness' testimony rests on a reliable foundation and is relevant to the task at hand--applies not only to testimony based on scientific knowledge, but rather to all expert testimony, that is, testimony based on technical and other specialized knowledge; (2) in determining the admissibility of an expert's testimony--including the testimony of an engineering expert--a federal trial judge may properly consider one or more of the specific Daubert factors, where doing so will help determine that testimony's reliability; and (3) in the case at hand, the District Court's decision not to admit the expert testimony in question was within the District Court's discretion.

Scalia, J., joined by O'Connor and Thomas, JJ., concurring, expressed the view that (1) a trial court's discretion in choosing the manner of testing expert reliability is not discretion to abandon the gatekeeping function or to perform that function inadequately; and (2) in a particular case, the failure to apply one or another of the Daubert factors may possibly be unreasonable and hence an abuse of discretion.

Stevens, J., concurring in part and dissenting in part, (1) agreed that a federal trial judge may properly consider the Daubert factors in analyzing the admissibility of an engineering expert's testimony, and (2) expressed the view that the case ought to have been remanded to the Court of Appeals for a study of the record to determine whether the trial judge abused his discretion in excluding the expert testimony in question.

LAWYERS' EDITION HEADNOTES:

[***LEdHN1]
EVIDENCE §641
-- expert testimony -- judge's gatekeeping obligation
Headnote:[1A][1B][1C][1D]

A federal trial judge's gatekeeping obligation under the Federal Rules of Evidence (FRE)--to insure that an expert witness' testimony rests on a reliable foundation and is relevant to the task at hand--applies not only to testimony based on scientific knowledge, but rather to all expert testimony, that is, testimony based on technical and other specialized knowledge, for (1) the language of Rule 702 of the FRE, which allows expert witnesses to give opinion testimony as to scientific, technical, or other specialized knowledge under some circumstances, (a) makes no relevant distinction between "scientific" knowledge and "technical" or "other specialized" knowledge, and (b) makes clear that any such knowledge might become the subject of expert testimony; (2) the FRE grant to all experts--not just to "scientific" ones--testimonial latitude unavailable to other witnesses on the assumption that an expert's opinion will have a reliable basis in the knowledge and experience of the expert's discipline; (3) it would prove difficult, if not impossible, for judges to administer evidentiary rules under which a gatekeeping obligation depended upon a distinction between scientific knowledge and technical or other specialized knowledge, and (4) there is no convincing need to make such distinctions.

[***LEdHN2]
EVIDENCE §641
-- expert testimony -- reliability factors
Headnote:[2A][2B][2C][2D]

In determining the admissibility of an expert's testimony, including the testimony of an engineering expert, under Rule 702 of the Federal Rules of Evidence, a federal trial judge may properly consider one or more of some specific factors--whether the theory or technique (1) can be and has been tested, (2) has been subjected to peer review or publication, (3) has (a) a high known or potential rate of error, and (b) standards controlling the technique's operation, and (4) enjoys general acceptance within a relevant scientific community--where such factors are reasonable measures of the testimony's reliability; the trial judge may ask questions of this sort not only where an expert relies on the application of scientific principles, but also where an expert relies on skill- or experience-based observation.

[***LEdHN3]
EVIDENCE §643
-- expert testimony -- cause of tire failure
Headnote:[3A][3B][3C][3D][3E]

A Federal District Court's decision not to admit expert testimony as to the cause of an automobile tire's blowout is within the court's discretion, where (1) the testimony consists of the depositions of a witness who intends to testify that, in the witness' expert opinion, a defect in the tire's manufacture or design caused the tire to blow out; (2) the witness' opinion is based upon (a) a visual and tactile inspection of the tire, and (b) a theory that in the absence of at least two of four specific physical symptoms indicating tire abuse, the tire failure of the sort that occurred in the case at hand is caused by a defect; (3) the question before the court is not the reliability of the witness' methodology in general, but rather whether the witness can reliably determine the cause of failure of the particular tire at issue; (4) the witness concedes, among other matters, that this tire bore some of the very marks that were said to indicate abuse rather than a defect; (5) the witness' own testimony casts considerable doubt upon the reliability of (a) the witness' explicit theory, and (b) the implicit proposition about the significance of visual inspection in the case at hand; (6) there is no indication in the record that (a) other experts in the industry use the witness' particular approach, or (b) tire experts normally make the very fine distinctions necessary to support the witness' conclusions; (7) there are no references to articles or papers that validate the witness' approach; and (8) the court's decision is ultimately based upon the witness' failure to satisfy either (a) specific factors involving testing, peer review, error rates, and acceptability in the relevant scientific community, or (b) any other set of reasonable reliability criteria. (Stevens, J., dissented in part from this holding.)

[***LEdHN4]
EVIDENCE §641
-- expert testimony
Headnote:[4A][4B][4C]

For purposes of determining the admissibility, under Rule 702 of the Federal Rules of Evidence, of expert testimony that is based on a theory or technique, the test of the testimony's reliability is flexible; some specific factors that may possibly bear on the reliability determination--whether the theory or technique (1) can be and has been tested, (2) has been subjected to peer review or publication, (3) has (a) a high known or potential rate of error, and (b) standards controlling the technique's operation, and (4) enjoys general acceptance within a relevant scientific community--do not constitute a definitive checklist or test; depending on the nature of the issue, the expert's particular expertise, and the subject of the expert's testimony, such factors may or may not be pertinent in assessing the testimony's reliability; because too much depends upon the particular circumstances of the particular case at issue, the United States Supreme Court can neither rule out nor rule in the applicability of these factors (1) for all cases and for all time, or (2) for subsets of cases categorized by category of expert or by kind of evidence; these factors do not all necessarily apply in every instance in which the reliability of scientific testimony is challenged.

[***LEdHN5]
EVIDENCE §641
-- expert testimony
Headnote:[5A][5B]

In determining the admissibility of expert testimony under Rule 702 of the Federal Rules of Evidence, a trial court must have the same kind of latitude in deciding how to test an expert's reliability--and to decide whether or when special briefing or other proceedings are needed to investigate reliability--as the trial court enjoys in deciding whether that expert's relevant testimony is reliable; thus, in determining the admissibility under Rule 702 of expert testimony that is based on a theory or technique, the question whether some specific factors--whether the theory or technique (1) can be and has been tested, (2) has been subjected to peer review or publication, (3) has (a) a high known or potential rate of error, and (b) standards controlling the technique's operation, and (4) enjoys general acceptance within a relevant scientific community--are reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine.

[***LEdHN6]
APPEAL §1296
-- presumptions -- expert testimony
Headnote:[6]

On certiorari to review a Federal Court of Appeals' judgment in a suit against an automobile tire's maker and distributor--in which suit an expert witness, in concluding that a defect in the tire's manufacture or design caused the tire to blow out, rests this conclusion in part upon the premises that (1) a tire's carcass should stay bound to the inner side of the tread for a significant period of time after the tread depth has worn away, (2) the tread of the tire at issue separated from the tire's inner steel-belted carcass prior to the accident, and (3) this separation caused the blowout--the United States Supreme Court must assume that these premises are not in dispute, where the witness' conclusion also rests upon some other propositions, several of which the maker and distributor dispute.

[***LEdHN7]
EVIDENCE §641
-- expert testimony
Headnote:[7]

Rule 702 of the Federal Rules of Evidence, which allows expert witnesses to give opinion testimony as to scientific, technical, or other specialized knowledge under some circumstances, establishes a standard of evidentiary reliability and requires a valid connection to the pertinent inquiry as a precondition to admissibility; where such testimony's factual basis, data, principles, methods, or their application are called sufficiently into question, the trial judge must determine whether the testimony has a reliable basis in the knowledge and experience of the relevant discipline.

[***LEdHN8]
EVIDENCE §641
-- expert testimony
Headnote:[8]

For purposes of determining the admissibility, under Rule 702 of the Federal Rules of Evidence, of expert testimony that is based on a theory or technique, the fact that the theory or technique has general acceptance within a relevant expert community does not help to show that the expert's testimony is reliable where the discipline itself lacks reliability, as, for example, theories grounded in any so-called generally accepted principles of astrology or necromancy.

[***LEdHN9]
EVIDENCE §641
-- expert testimony
Headnote:[9]

For purposes of determining the admissibility, under Rule 702 of the Federal Rules of Evidence, of expert testimony that is based on the expert's experience, (1) it is appropriate in some cases for a trial judge to ask, for example, (a) how often an engineering expert's experience-based methodology has produced erroneous results, or (b) whether such a method is generally accepted in the relevant engineering community; and (2) it is useful at times to ask even of a witness whose expertise is based purely on experience--as, for example, a perfume tester able to distinguish among 140 odors at a sniff--whether the witness' preparation is of a kind that others in the field would recognize as acceptable.

[***LEdHN10]
EVIDENCE §641
-- expert testimony
Headnote:[10]

The objective of a trial judge's gatekeeping requirement--in determining the admissibility, under Rule 702 of the Federal Rules of Evidence, of expert testimony--is to insure the reliability and relevancy of expert testimony, that is, to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.

[***LEdHN11]
APPEAL §1391
-- discretion -- expert testimony
Headnote:[11A][11B]

A Federal Court of Appeals is to apply an abuse-of-discretion standard when reviewing a federal trial court's decision to admit or exclude expert testimony; this standard applies as much to the trial court's decisions about how to determine reliability as to the trial court's ultimate conclusion, for otherwise, the trial judge would lack the discretionary authority needed to (1) avoid unnecessary reliability proceedings in ordinary cases where the reliability of an expert's methods is properly taken for granted, and (2) require appropriate proceedings in the less usual or more complex cases where cause for questioning the expert's reliability arises.

[***LEdHN12]
EVIDENCE §641
-- expert testimony
Headnote:[12]

Nothing in a United States Supreme Court decision involving the admissibility of expert testimony or in the Federal Rules of Evidence requires a Federal District Court to admit opinion evidence that is connected to existing data by only the expert's own statement.

SYLLABUS: When a tire on the vehicle driven by Patrick Carmichael blew out and the vehicle overturned, one passenger died and the others were injured. The survivors and the decedent's representative, respondents here, brought this diversity suit against the tire's maker and its distributor (collectively Kumho Tire), claiming that the tire that failed was defective. They rested their case in significant part upon the depositions of a tire failure analyst, Dennis Carlson, Jr., who intended to testify that, in his expert opinion, a defect in the tire's manufacture or design caused the blow out. That opinion was based upon a visual and tactile inspection of the tire and upon the theory that in the absence of at least two of four specific, physical symptoms indicating tire abuse, the tire failure of the sort that occurred here was caused by a defect. Kumho Tire moved to exclude Carlson's testimony on the ground that his methodology failed to satisfy Federal Rule of Evidence 702, which says: "If scientific, technical, or other specialized knowledge will assist the trier of fact . . . , a witness qualified as an expert . . . may testify thereto in the form of an opinion." Granting the motion (and entering summary judgment for the defendants), the District Court acknowledged that it should act as a reliability "gatekeeper" under *Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589, 125 L. Ed. 2d 469, 113 S. Ct. 2786, in which this Court held that Rule 702 imposes a special obligation upon a trial judge to ensure that scientific testimony is not only relevant, but reliable. The court noted that *Daubert* discussed four factors -- testing, peer review, error rates, and "acceptability" in the relevant scientific community -- which might prove helpful in determining the reliability of a particular scientific theory or technique, 509 U.S. at 593-594, and found that those factors argued against the reliability of Carlson's methodology. On the plaintiffs' motion for reconsideration, the court agreed that *Daubert* should be applied flexibly, that its four factors were simply illustrative, and that other factors could argue in favor of admissibility. However, the court affirmed its earlier order because it found insufficient indications of the reliability of Carlson's methodology. In reversing, the Eleventh Circuit held that the District Court had erred as a matter of law in applying *Daubert.* Believing that *Daubert* was limited to the scientific context, the court held that the *Daubert* factors did not apply to Carlson's testimony, which it characterized as skill- or experience-based.

Held:

1. The Daubert factors may apply to the testimony of engineers and other experts who are not scientists. Pp. 7-13.

(a) The *Daubert* "gatekeeping" obligation applies not only to "scientific" testimony, but to all expert testimony. Rule 702 does not distinguish between "scientific" knowledge and "technical" or "other specialized" knowledge, but makes clear that any such knowledge might become the subject of expert testimony. It is the Rule's word "knowledge," not the words (like "scientific") that modify that word, that establishes a standard of evidentiary reliability. 509 U.S. at 589-590. *Daubert* referred only to "scientific" knowledge because that was the nature of the expertise there at issue. Id. at 590, n. 8. Neither is the evidentiary rationale underlying *Daubert*'s "gatekeeping" determination limited to "scientific" knowledge. Rules 702 and 703 grant all expert witnesses, not just "scientific" ones, testimonial latitude unavailable to other witnesses on the assumption that the expert's opinion will have a reliable basis in the knowledge and experience of his discipline. Id. at 592. Finally, it would prove difficult, if not impossible, for judges to administer evidentiary rules under which a "gatekeeping" obligation depended upon a distinction between "scientific" knowledge and "technical" or "other specialized" knowledge, since there is no clear line dividing the one from the others and no convincing need to make such distinctions. Pp. 7-9.

(b) A trial judge determining the admissibility of an engineering expert's testimony *may* consider one or more of the specific *Daubert* factors. The emphasis on the word "may" reflects *Daubert*'s description of the Rule 702 inquiry as "a flexible one." 509 U.S. at 594. The *Daubert* factors do *not* constitute a definitive checklist or test, id. at 593, and the gatekeeping inquiry must be tied to the particular facts, id. at 591. Those factors may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony. Some of those factors may be helpful in evaluating the reliability even of experience-based expert testimony, and the Court of Appeals erred insofar as it ruled those factors out in such cases. In determining whether particular expert testimony is reliable, the trial court should consider the specific *Daubert* factors where they are reasonable measures of reliability. Pp. 10-12.

(c) The court of appeals must apply an abuse-of-discretion standard when it reviews the trial court's decision to admit or exclude expert testimony. *General Electric Co.* v. *Joiner*, 522 U.S. 136, 138-139, 139 L. Ed. 2d 508, 118 S. Ct. 512. That standard applies as much to the trial court's decisions about how to determine reliability as to its ultimate conclusion. Thus, whether *Daubert*'s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine. See id. at 143. The Eleventh Circuit erred insofar as it held to the contrary. P. 13.

2. Application of the foregoing standards demonstrates that the District Court's decision not to admit Carlson's expert testimony was lawful. The District Court did not question Carlson's qualifications, but excluded his testimony because it initially doubted his methodology and then found it unreliable after examining the transcript in some detail and considering respondents' defense of it. The doubts that triggered the court's initial inquiry were reasonable, as was the court's ultimate conclusion that Carlson could not reliably determine the cause of the failure of the tire in question. The question was not the reliability of Carlson's methodology in general, but rather whether he could reliably determine the cause of failure of *the particular tire at issue.* That tire, Carlson conceded, had traveled far enough so that some of the tread had been worn bald, it should have been taken out of service, it had been repaired (inadequately) for punctures, and it bore some of the very marks that he said indicated, not a defect, but abuse. Moreover, Carlson's own testimony cast considerable doubt upon the reliability of both his theory about the need for at least two signs of abuse and his proposition about the significance of visual inspection in this case. Respondents stress that other tire failure experts, like Carlson, rely on visual and tactile examinations of tires. But there is no indication in the record that other experts in the industry use

Carlson's *particular* approach or that tire experts normally make the very fine distinctions necessary to support his conclusions, nor are there references to articles or papers that validate his approach. Respondents' argument that the District Court too rigidly applied *Daubert* might have had some validity with respect to the court's initial opinion, but fails because the court, on reconsideration, recognized that the relevant reliability inquiry should be "flexible," and ultimately based its decision upon Carlson's failure to satisfy either *Daubert*'s factors *or any other* set of reasonable reliability criteria. Pp. 13-19.

131 F.3d 1433, reversed.

COUNSEL: Joseph H. Babington argued the cause for petitioners.

Jeffrey P. Minear argued the cause for the United States, as amicus curiae, by special leave of court.

Sidney W. Jackson argued the cause for respondents.

JUDGES: BREYER, J., delivered the opinion of the Court, in which REHNQUIST, C. J., and O'CONNOR, SCALIA, KENNEDY, SOUTER, THOMAS, and GINSBURG, JJ., joined, and in which STEVENS, J., joined as to Parts I and II. SCALIA, J., filed a concurring opinion, in which O'CONNOR and THOMAS, JJ., joined. STEVENS, J., filed an opinion concurring in part and dissenting in part.

OPINIONBY: BREYER

OPINION: [*141] [**1171] [***246] JUSTICE BREYER delivered the opinion of the Court.

[***LEdHR1A] [1A] In *Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 125 L. Ed. 2d 469, 113 S. Ct. 2786 (1993), this Court focused upon the admissibility of scientific expert testimony. It pointed out that such testimony is admissible only if it is both relevant and reliable. And it held that the Federal Rules of Evidence "assign to the trial judge the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." Id. at 597. The Court also discussed certain more specific factors, such as testing, peer review, error rates, and "acceptability" in the relevant scientific community, some or all of which might prove helpful in determining the reliability of a particular scientific "theory or technique." 509 U.S. at 593-594.

[***LEdHR1B] [1B] [***LEdHR2A] [2A] [***LEdHR3A] [3A] [***LEdHR4A] [4A] [***LEdHR5A] [5A]This case requires us to decide how *Daubert* applies to the testimony of engineers and other experts who are not scientists. We conclude that *Daubert*'s general holding -- setting forth the trial judge's general "gatekeeping" obligation -- applies not only to testimony based on "scientific" knowledge, but also to testimony based on "technical" and "other specialized" knowledge. See Fed. Rule Evid. 702. We also conclude that a trial court *may* consider one or more of the more specific factors that *Daubert* mentioned when doing so will help determine that testimony's reliability. But, as the Court stated in *Daubert*, the test of reliability is "flexible," and *Daubert*'s list of specific factors neither necessarily nor exclusively applies to all experts or in every case. [*142] Rather, the law grants a district court the same broad latitude when it decides *how* to determine reliability as it enjoys in respect to its ultimate reliability determination. See *General Electric Co.* v. *Joiner*, 522 U.S. 136, 143, 139 L. Ed. 2d 508, 118 S. Ct. 512 (1997) (courts of [***247] appeals are to apply "abuse of discretion" standard when reviewing district court's reliability determination). Applying these standards, we determine that the District Court's decision in this case -- not to admit certain expert testimony -- was within its discretion and therefore lawful.

I

On July 6, 1993, the right rear tire of a minivan driven by Patrick Carmichael blew out. In the accident that followed, one of the passengers died, and others were severely injured. In October 1993, the Carmichaels brought this diversity suit against the tire's maker and its distributor, whom we refer to collectively as Kumho Tire, claiming that the tire was defective. The plaintiffs rested their case in significant part upon deposition testimony provided by an expert in tire failure analysis, Dennis Carlson, Jr., who intended to testify in support of their conclusion.

Carlson's depositions relied upon certain features of tire technology that are not in dispute. A steel-belted radial tire like the Carmichaels' is made up of a "carcass" containing many layers of flexible cords, called "plies," along which (between the cords and the outer tread) are laid steel strips called "belts." Steel wire loops, called "beads," hold the cords together at the plies' bottom edges. An outer layer, called the "tread," encases the carcass, and the entire tire is bound together in rubber, through the application of heat and various chemicals. See generally, *e.g.,* J. Dixon, Tires, Suspension and Handling 68-72 (2d ed. 1996). The bead of the tire sits upon a "bead seat," which is part of the wheel assembly. That assembly contains a "rim flange," which extends over the bead and rests against the side of the [*143] tire. See M. Mavrigian, Performance Wheels & Tires 81, 83 (1998) (illustrations).

[Graphic omitted; see printed opinion.]

A. Markovich, How To Buy and Care For Tires 4 (1994).

[**1172] Carlson's testimony also accepted certain background facts about the tire in question. He assumed that before the blowout the tire had traveled far. (The tire was made in 1988 and had been installed some time before the Carmichaels bought the used minivan in March 1993; the Carmichaels had driven the van approximately 7,000 additional miles in the two months they had owned it.) Carlson noted that the tire's tread depth, which was 11/32 of an inch when new, App. 242, had been worn down to depths that ranged from 3/32 of an inch along some parts of the tire, to nothing at all along others. Id. at 287. He conceded that the tire tread had at least two punctures which had been inadequately repaired. Id. at 258-261, 322.

[***LEdHR6] [6]Despite the tire's age and history, Carlson concluded that a defect in its manufacture or design caused the blow-out. He rested this conclusion in part upon three premises which, [*144] for present purposes, we must assume are not in dispute: First, a tire's carcass should stay [***248] bound to the inner side of the tread for a significant period of time after its tread depth has worn away. Id. at 208-209. Second, the tread of the tire at issue had separated from its inner steel-belted carcass prior to the accident. Id. at 336. Third, this "separation" caused the blowout. *Ibid.*

Carlson's conclusion that a defect caused the separation, however, rested upon certain other propositions, several of which the defendants strongly dispute. First, Carlson said that if a separation is *not* caused by a certain kind of tire misuse called "overdeflection" (which consists of underinflating the tire or causing it to carry too much weight, thereby generating heat that can undo the chemical tread/carcass bond), then, ordinarily, its cause is a tire defect. Id. at 193-195, 277-278. Second, he said that if a tire has been subject to sufficient overdeflection to cause a separation, it should reveal certain physical symptoms. These symptoms include (a) tread wear on the tire's shoulder that is greater than the tread wear along the tire's center, id. at 211; (b) signs of a "bead groove," where the beads have been pushed too hard against the bead seat on the inside of the tire's rim, id. at 196-197; (c) sidewalls of the tire with physical signs of deterioration, such as discoloration, id. at 212; and/or (d) marks on the tire's rim flange, id. at 219-220. Third, Carlson said that where he does not find *at least two* of the four physical signs just mentioned (and presumably where there is no reason to suspect a less common cause of separation), he concludes that a manufacturing or design defect caused the separation. Id. at 223-224.

Carlson added that he had inspected the tire in question. He conceded that the tire to a limited degree showed greater wear on [**1173] the shoulder than in the center, some signs of "bead groove," some discoloration, a few marks on the rim flange, and inadequately filled puncture holes (which can also cause heat that might lead to separation). Id. at 256-257, 258-261, [*145] 277, 303-304, 308. But, in each instance, he testified that the symptoms were not significant, and he explained why he believed that they did not reveal overdeflection. For example, the extra shoulder wear, he said, appeared primarily on one shoulder, whereas an overdeflected tire would reveal equally abnormal wear on both shoulders. Id. at 277. Carlson concluded that the tire did not bear at least two of the four overdeflection symptoms, nor was there any less obvious cause of separation; and since neither overdeflection nor the punctures caused the blowout, a defect must have done so.

Kumho Tire moved the District Court to exclude Carlson's testimony on the ground that his methodology failed Rule 702's reliability requirement. The court agreed with Kumho that it should act as a *Daubert*-type reliability "gatekeeper," even though one might consider Carlson's testimony as "technical," rather than "scientific." See *Carmichael* v. *Samyang Tires, Inc.*, 923 F. Supp. 1514, 1521-1522 (SD Ala. 1996). The court then examined Carlson's methodology in light of the reliability-related factors that *Daubert* mentioned, such as a theory's testability, whether it "has been a subject of peer review or publication," the "known or potential rate of error," and the "degree of acceptance . . . within the relevant scientific community." 923 F. Supp. at 1520 (citing *Daubert*, 509 U.S. 579 at 592-594). [***249] The District Court found that all those factors argued against the reliability of Carlson's methods, and it granted the motion to exclude the testimony (as well as the defendants' accompanying motion for summary judgment).

The plaintiffs, arguing that the court's application of the *Daubert* factors was too "inflexible," asked for reconsideration. And the Court granted that motion. *Carmichael* v. *Samyang Tires, Inc.*, 1996 U.S. Dist. LEXIS 22431, Civ. Action No. 93-0860-CB-S (June 5, 1996), App. to Pet. for Cert. 1c. After reconsidering the matter, the court agreed with the plaintiffs that *Daubert* should be applied flexibly, that its four factors were [*146] simply illustrative, and that other factors could argue in favor of admissibility. It conceded that there may be widespread acceptance of a "visual-inspection method" for some relevant purposes. But the court found insufficient indications of the reliability of

> "the component of Carlson's tire failure analysis which most concerned the Court, namely, the methodology employed by the expert in analyzing the data obtained in the visual inspection, and the scientific basis, if any, for such an analysis." Id. at 6c.

It consequently affirmed its earlier order declaring Carlson's testimony inadmissable and granting the defendants' motion for summary judgment.

The Eleventh Circuit reversed. See *Carmichael* v. *Samyang Tire, Inc.*, 131 F.3d 1433 (1997). It "reviewed . . . *de novo*" the "district court's legal decision to apply *Daubert*." 131 F.3d at 1435. It noted that "the Supreme Court in *Daubert* explicitly limited its holding to cover only the 'scientific context,'" adding that "a *Daubert* analysis" applies only where an expert relies "on the application of scientific principles," rather than "on skill- or experience-based observation." 131 F.3d at 1435-1436. It concluded that Carlson's testimony, which it viewed as relying on experience, "falls outside the scope of *Daubert*," that "the district court erred as a matter of law by applying *Daubert* in this case," and that the case must be remanded for further (non-*Daubert*-type) consideration under Rule 702. Id. at 1436.

Kumho Tire petitioned for certiorari, asking us to determine whether a trial court "may" consider *Daubert*'s specific "factors" when determining the "admissibility of an engineering expert's testimony."

Pet. for Cert. i. We granted certiorari in light of uncertainty among the lower courts about whether, or how, *Daubert* applies to expert testimony that might be characterized as based not upon "scientific" knowledge, but rather upon "technical" or "other specialized" [*147] knowledge. Fed. Rule Evid. 702; compare, *e.g., Watkins* v. *Telsmith, Inc.*, 121 F.3d 984, 990-991 (CA5 1997), with, *e.g., Compton* v. *Subaru of America, Inc.*, 82 F.3d 1513, 1518-1519 [**1174] (CA10), cert. denied, 519 U.S. 1042, 136 L. Ed. 2d 536, 117 S. Ct. 611 (1996).

II

A

[***LEdHR1C] [1C]In *Daubert*, this Court held that Federal Rule of Evidence 702 imposes a special obligation upon a trial judge to "ensure that any and all scientific testimony . . . is not only relevant, but reliable." 509 U.S. at 589. The initial question before us is whether this basic gatekeeping obligation applies only to "scientific" [***250] testimony or to all expert testimony. We, like the parties, believe that it applies to all expert testimony. See Brief for Petitioners 19; Brief for Respondents 17.

For one thing, Rule 702 itself says:

> "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

This language makes no relevant distinction between "scientific" knowledge and "technical" or "other specialized" knowledge. It makes clear that any such knowledge might become the subject of expert testimony. In *Daubert*, the Court specified that it is the Rule's word "knowledge," not the words (like "scientific") that modify that word, that "establishes a standard of evidentiary reliability." 509 U.S. at 589-590. Hence, as a matter of language, the Rule applies its reliability standard to all "scientific," "technical," or "other specialized" matters within its scope. We concede that the Court in *Daubert* referred only to "scientific" knowledge. But as the Court there said, it referred to "scientific" [*148] testimony "because that was the nature of the expertise" at issue. 509 U.S. at 590, n.8.

Neither is the evidentiary rationale that underlay the Court's basic *Daubert* "gatekeeping" determination limited to "scientific" knowledge. *Daubert* pointed out that Federal Rules 702 and 703 grant expert witnesses testimonial latitude unavailable to other witnesses on the "assumption that the expert's opinion will have a reliable basis in the knowledge and experience of his discipline." 509 U.S. at 592 (pointing out that experts may testify to opinions, including those that are not based on firsthand knowledge or observation). The Rules grant that latitude to all experts, not just to "scientific" ones.

Finally, it would prove difficult, if not impossible, for judges to administer evidentiary rules under which a gatekeeping obligation depended upon a distinction between "scientific" knowledge and "technical" or "other specialized" knowledge. There is no clear line that divides the one from the others. Disciplines such as engineering rest upon scientific knowledge. Pure scientific theory itself may depend for its development upon observation and properly engineered machinery. And conceptual efforts to distinguish the two are unlikely to produce clear legal lines capable of application in particular cases. Cf. Brief for National Academy of Engineering as *Amicus Curiae* 9 (scientist seeks to understand nature while the engineer seeks nature's modification); Brief for Rubber Manufacturers Association as *Amicus Curiae* 14-16 (engineering, as an "applied science," relies on "scientific reasoning and methodology"); Brief for John Allen et al. as *Amici Curiae* 6 (engineering relies upon "scientific knowledge and methods").

Neither is there a convincing need to make such distinctions. Experts of all kinds tie observations to conclusions through the use of what Judge Learned Hand called "general truths derived from . . . specialized experience." Hand, Historical and Practical Considerations Regarding Expert Testimony, [*149] 15 Harv. L. Rev. 40, 54 (1901). And whether the specific [***251] expert testimony focuses upon specialized observations, the specialized translation of those observations into theory, a specialized theory itself, or the application of such a theory in a particular case, the expert's testimony often will rest "upon an experience confessedly foreign in kind to [the jury's] own." *Ibid.* The trial judge's effort to assure that the specialized testimony is reliable and relevant can help the jury evaluate [**1175] that foreign experience, whether the testimony reflects scientific, technical, or other specialized knowledge.

[***LEdHR1D] [1D] [***LEdHR7] [7]We conclude that *Daubert*'s general principles apply to the expert matters described in Rule 702. The Rule, in respect to all such matters, "establishes a standard of evidentiary reliability." 509 U.S. at 590. It "requires a valid . . . connection to the pertinent inquiry as a precondition to admissibility." 509 U.S. at 592. And where such testimony's factual basis, data, principles, methods, or their application are called sufficiently into question, see Part III, *infra*, the trial judge must determine whether the testimony has "a reliable basis in the knowledge and experience of [the relevant] discipline." 509 U.S. at 592.

B

[***LEdHR2B] [2B]The petitioners ask more specifically whether a trial judge determining the "admissibility of an engineering expert's testimony" *may* consider several more specific factors that *Daubert* said might "bear on" a judge's gate-keeping determination. These factors include:

> -- Whether a "theory or technique . . . can be (and has been) tested";
>
> -- Whether it "has been subjected to peer review and publication";
>
> -- Whether, in respect to a particular technique, there is a high "known or potential rate of error" and whether there are "standards controlling the technique's operation"; and [*150]
>
> -- Whether the theory or technique enjoys "general acceptance" within a "relevant scientific community." 509 U.S. at 592-594.

Emphasizing the word "may" in the question, we answer that question yes.

[***LEdHR4B] [4B]Engineering testimony rests upon scientific foundations, the reliability of which will be at issue in some cases. See, *e.g.*, Brief for Stephen Bobo et al. as *Amici Curiae* 23 (stressing the scientific bases of engineering disciplines). In other cases, the relevant reliability concerns may focus upon personal knowledge or experience. As the Solicitor General points out, there are many different kinds of experts, and many different kinds of expertise. See Brief for United States as *Amicus Curiae* 18-19, and n. 5 (citing cases involving experts in drug terms, handwriting analysis, criminal *modus operandi*, land valuation, agricultural practices, railroad procedures, attorney's fee valuation, and others). Our emphasis on the word "may" thus reflects *Daubert*'s description of the Rule 702 inquiry as "a flexible one." 509 U.S. at 594. *Daubert* makes clear that the factors it mentions do *not* constitute a "definitive checklist or test." 509 U.S. at 593. And *Daubert* adds that the gatekeeping inquiry must be "'tied to the facts'" of a particular "case." 509 U.S. at 591 (quoting *United States* v. *Downing*, 753 F.2d 1224, 1242 (CA3 1985)). We agree with the Solicitor General that "the factors identified in *Daubert* may or may not be pertinent in assessing reliability, depending [***252] on the nature of the issue, the expert's particular expertise, and the subject of his testimony." Brief for United States as *Amicus Curiae* 19. The conclusion, in our view, is that we can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in *Daubert*, nor can we now do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends upon the particular circumstances of the particular case at issue. [*151] [***LEdHR4C] [4C] [***LEdHR8] [8]*Daubert* itself is not to the contrary. It made clear that its list of factors was meant to be helpful, not definitive. Indeed, those factors do not all necessarily apply even in every instance in which the reliability of scientific testimony is challenged. It might not be surprising in a particular case, for example, that a claim made by a scientific witness has never been the subject of peer review, for the particular application at issue may never previously have interested any scientist. Nor, on the other hand, does the presence of *Daubert*'s general acceptance factor help show that an expert's testimony is reliable where the discipline itself lacks reliability, as, for example, do theories grounded in any so-called generally accepted principles of astrology or necromancy.

[**1176]

[***LEdHR9] [9]At the same time, and contrary to the Court of Appeals' view, some of *Daubert*'s questions can help to evaluate the reliability even of experience-based testimony. In certain cases, it will be appropriate for the trial judge to ask, for example, how often an engineering expert's experience-based methodology has produced erroneous results, or whether such a method is generally accepted in the relevant engineering community. Likewise, it will at times be useful to ask even of a witness whose expertise is based purely on experience, say, a perfume tester able to distinguish among 140 odors at a sniff, whether his preparation is of a kind that others in the field would recognize as acceptable.

[***LEdHR2C] [2C]We must therefore disagree with the Eleventh Circuit's holding that a trial judge may ask questions of the sort *Daubert* mentioned only where an expert "relies on the application of scientific principles," but not where an expert relies "on skill- or experience-based observation." 131 F.3d at 1435. We do not believe that Rule 702 creates a schematism that segregates expertise by type while mapping certain kinds of questions to certain kinds of experts. Life and the legal cases that it generates are too complex to warrant so definitive a match.

[*152] [***LEdHR2D] [2D] [***LEdHR10] [10]To say this is not to deny the importance of *Daubert*'s gatekeeping requirement. The objective of that requirement is to ensure the reliability and relevancy of expert testimony. It is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field. Nor do we deny that, as stated in *Daubert*, the particular questions that it mentioned will often be appropriate for use in determining the reliability of challenged expert testimony. Rather, we conclude that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable. That is to say, a trial court should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony.

C

[***LEdHR5B] [5B] [***LEdHR11A] [11A]The trial court must have the same kind of latitude in deciding *how* to test an expert's reliability, and to decide whether or when special briefing or other proceedings are [***253] needed to investigate reliability, as it enjoys when it decides *whether* that expert's relevant testimony is reliable. Our opinion in *Joiner* makes clear that a court of appeals is to apply an abuse-of-discretion standard when it "reviews a trial court's decision to admit or exclude expert testimony." 522 U.S. at 138-139. That standard applies as much to the trial court's decisions about how to determine reliability as to its ultimate conclusion. Otherwise, the trial judge would lack the discretionary authority needed both to avoid unnecessary "reliability" proceedings in ordinary cases where the reliability of an expert's methods is properly taken for granted, and to require appropriate proceedings in the less usual or more complex cases where cause for questioning the expert's reliability arises. Indeed, the Rules seek to avoid "unjustifiable expense and delay" as part of their search for [*153] "truth" and the "just determination" of proceedings. Fed. Rule Evid. 102. Thus, whether *Daubert*'s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine. See *Joiner*, *supra*, at 143. And the Eleventh Circuit erred insofar as it held to the contrary.

III

[***LEdHR3B] [3B]We further explain the way in which a trial judge "may" consider *Daubert*'s factors by applying these considerations to the case at hand, a matter that has been briefed exhaustively by the parties and their 19 *amici*. The District Court did not doubt Carlson's qualifications, which included a masters degree in mechanical engineering, 10 years' work at Michelin America, Inc., and testimony as a tire failure consultant in other tort cases. Rather, it excluded the testimony because, despite those qualifications, it initially [**1177] doubted, and then found unreliable, "the methodology employed by the expert in analyzing the data obtained in the visual inspection, and the scientific basis, if any, for such an analysis." Civ. Action No. 93-0860-CB-S (SD Ala., June 5, 1996), App. to Pet. for Cert. 6c. After examining the transcript in "some detail," 923 F. Supp. at 1518-519, n. 4, and after considering respondents' defense of Carlson's methodology, the District Court determined that Carlson's testimony was not reliable. It fell outside the range where experts might reasonably differ, and where the jury must decide among the conflicting views of different experts, even though the evidence is "shaky." *Daubert*, 509 U.S. at 596. In our view, the doubts that triggered the District Court's initial inquiry here were reasonable, as was the court's ultimate conclusion.

For one thing, and contrary to respondents' suggestion, the specific issue before the court was not the reasonableness *in general* of a tire expert's use of a visual and tactile inspection to determine whether overdeflection had caused [*154] the tire's tread to separate from its steel-belted carcass. Rather, it was the reasonableness of using such an approach, along with Carlson's particular method of analyzing the data thereby obtained, to draw a conclusion regarding *the particular matter to which the expert testimony was directly relevant*. That matter concerned the likelihood that a defect in the tire at issue caused its tread to separate from its carcass. The tire in question, the expert conceded, had traveled far enough so that some of the tread had been worn bald; it should have been taken out of service; it had been repaired (inadequately) for punctures; and it bore some of the very marks that the [***254] expert said indicated, not a defect, but abuse through overdeflection. See *supra*, at 3-5; App. 293-294. The relevant issue was whether the expert could reliably determine the cause of *this* tire's separation. Nor was the basis for Carlson's conclusion simply the general theory that, in the absence of evidence of abuse, a defect will normally have caused a tire's separation. Rather, the expert employed a more specific theory to establish the existence (or absence) of such abuse. Carlson testified precisely that in the absence of *at least two* of four signs of abuse (proportionately greater tread wear on the shoulder; signs of grooves caused by the beads; discolored sidewalls; marks on the rim flange) he concludes that a defect caused the separation. And his analysis depended upon acceptance of a further implicit proposition, namely, that his visual and tactile inspection could determine that the tire before him had not been abused despite some evidence of the presence of the very signs for which he looked (and two punctures).

For another thing, the transcripts of Carlson's depositions support both the trial court's initial uncertainty and its final conclusion. Those transcripts cast considerable doubt upon the reliability of both the explicit theory (about the need for two signs of abuse) and the implicit proposition (about the significance of visual inspection in this case). Among other things, the expert could not say whether the tire had traveled [*155] more than 10, or 20, or 30, or 40, or 50 thousand miles, adding that 6,000 miles was "about how far" he could "say with any certainty." Id. at 265. The court could reasonably have wondered about the reliability of a method of visual and tactile inspection sufficiently precise to ascertain with some certainty the abuse-related significance of minute shoulder/center relative tread wear differences, but insufficiently precise to tell "with any certainty" from the tread wear whether a tire had traveled less than 10,000 or more than 50,000 miles. And these concerns might have been augmented by Carlson's repeated reliance on the "subjectiveness" of his mode of analysis in response to questions seeking specific information regarding how he could differentiate between a tire that actually had been overdeflected and a tire that merely looked as though it had been. Id. at 222, 224-225, 285-286. They would have been further augmented by the fact that Carlson said he had inspected the tire itself for the first time the morning of his first deposition, and then only for a few hours. (His initial conclusions were based on photographs.) Id. at 180.

[**1178] Moreover, prior to his first deposition, Carlson had issued a signed report in which he concluded that the tire had "not been . . . overloaded or underinflated," not because of the absence of "two of four" signs of abuse, but simply because "the rim flange impressions . . . were normal." Id. at 335-336. That report also said that the "tread depth remaining was 3/32 inch," id. at 336, though the opposing expert's (apparently undisputed) measurements indicate that the tread depth taken at various positions around the tire actually ranged from .5/32 of an inch to 4/32 of an inch, with the tire apparently showing greater wear along *both* shoulders than along the center, id. at 432-433.

Further, in respect to one sign of [***255] abuse, bead grooving, the expert seemed to deny the sufficiency of his own simple visual-inspection methodology. He testified that most tires have some bead groove pattern, that where there is reason [*156] to suspect an abnormal bead groove he would ideally "look at a lot of [similar] tires" to know the grooving's significance, and that he had not looked at many tires similar to the one at issue. Id. at 212-213, 214, 217.

Finally, the court, after looking for a defense of Carlson's methodology as applied in these circumstances, found no convincing defense. Rather, it found (1) that "none" of the *Daubert* factors, including that of "general acceptance" in the relevant expert community, indicated that Carlson's testimony was reliable, 923 F. Supp. at 1521; (2) that its own analysis "revealed no countervailing factors operating in favor of admissibility which could outweigh those identified in *Daubert*," App. to Pet. for Cert. 4c; and (3) that the "parties identified no such factors in their briefs," *ibid.* For these three reasons *taken together,* it concluded that Carlson's testimony was unreliable.

Respondents now argue to us, as they did to the District Court, that a method of tire failure analysis that employs a visual/tactile inspection is a reliable method, and they point both to its use by other experts and to Carlson's long experience working for Michelin as sufficient indication that that is so. But no one denies that an expert might draw a conclusion from a set of observations based on extensive and specialized experience. Nor does anyone deny that, as a general matter, tire abuse may often be identified by qualified experts through visual or tactile inspection of the tire. See Affidavit of H. R. Baumgardner 1-2, cited in Brief for National Academy of Forensic Engineers as *Amici Curiae* 16 (Tire engineers rely on visual examination and process of elimination to analyze experimental test tires). As we said before, *supra*, at 14, the question before the trial court was specific, not general. The trial court had to decide whether this particular expert had sufficient specialized knowledge to assist the jurors "in deciding the particular issues in the case." 4 J. McLaughlin, Weinstein's Federal Evidence P702.05[1], p. 702-33 (2d ed. 1998); see also Advisory [*157] Committee's Note on Proposed Fed. Rule Evid. 702, Preliminary Draft of Proposed Amendments to the Federal Rules of Civil Procedure and Evidence: Request for Comment 126 (1998) (stressing that district courts must "scrutinize" whether the "principles and methods" employed by an expert "have been properly applied to the facts of the case").

[***LEdHR3C] [3C] [***LEdHR12] [12]The particular issue in this case concerned the use of Carlson's two-factor test and his related use of visual/tactile inspection to draw conclusions on the basis of what seemed small observational differences. We have found no indication in the record that other experts in the industry use Carlson's two-factor test or that tire experts such as Carlson normally make the very fine distinctions about, say, the symmetry of comparatively greater shoulder tread wear that were necessary, on Carlson's own theory, to support his conclusions. Nor, despite the prevalence of tire testing, does anyone refer to any articles or papers that validate Carlson's approach. Compare Bobo, Tire Flaws and Separations, in Mechanics of Pneumatic Tires 636-637 (S. Clark ed. 1981); C. Schnuth et al., Compression Grooving and Rim Flange Abrasion [***256] as Indicators of Over-Deflected Operating Conditions in Tires, presented to Rubber Division of the American Chemical Society, Oct. 21-24, 1997; J. Walter & R. Kiminecz, Bead [**1179] Contact Pressure Measurements at the Tire-Rim Interface, presented to Society of Automotive Engineers, Feb. 24-28, 1975. Indeed, no one has argued that Carlson himself, were he still working for Michelin, would have concluded in a report to his employer that a similar tire was similarly defective on grounds identical to those upon which he rested his conclusion here. Of course, Carlson himself claimed that his method was accurate, but, as we pointed out in *Joiner*, "nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert." 522 U.S. at 146.

[*158] [***LEdHR3D] [3D]Respondents additionally argue that the District Court too rigidly applied *Daubert*'s criteria. They read its opinion to hold that a failure to satisfy any one of those criteria automatically renders expert testimony inadmissible. The District Court's initial opinion might have been vulnerable to a form of this argument. There, the court, after rejecting respondents' claim that Carlson's testimony was "exempted from *Daubert*-style scrutiny" because it was "technical analysis" rather than "scientific evidence," simply added that "none of the four admissibility criteria outlined by the *Daubert* court are satisfied." 923 F. Supp. at 1522. Subsequently, however, the court granted respondents' motion for reconsideration. It then explicitly recognized that the relevant reliability inquiry "should be 'flexible,'" that its "'overarching subject [should be] . . . validity' and reliability," and that "*Daubert* was intended neither to be exhaustive nor to apply in every case." App. to Pet. for Cert. 4c (quoting *Daubert*, 509 U.S. at 594-595). And the court ultimately based its decision upon Carlson's failure to satisfy either *Daubert*'s factors *or any other* set of reasonable reliability criteria. In light of the record as developed by the parties, that conclusion was within the District Court's lawful discretion.

[***LEdHR3E] [3E] [***LEdHR11B] [11B]In sum, Rule 702 grants the district judge the discretionary authority, reviewable for its abuse, to determine reliability in light of the particular facts and circumstances of the particular case. The District Court did not abuse its discretionary authority in this case. Hence, the judgment of the Court of Appeals is

Reversed.

CONCURBY: SCALIA

CONCUR: JUSTICE SCALIA, with whom JUSTICE O'CONNOR and JUSTICE THOMAS join, concurring.

I join the opinion of the Court, which makes clear that the discretion it endorses- trial-court discretion in choosing the manner of testing expert reliability- is not discretion to [*159] abandon the gatekeeping function. I think it worth adding that it is not discretion to perform the function inadequately. Rather, it is discretion to choose among *reasonable* means of excluding expertise that is *fausse* and science that is junky. Though, as the Court makes clear today, the *Daubert* factors are not holy writ, in a particular case the [***257] failure to apply one or another of them may be unreasonable, and hence an abuse of discretion.

DISSENTBY: STEVENS (In Part)

DISSENT: JUSTICE STEVENS, concurring in part and dissenting in part.

The only question that we granted certiorari to decide is whether a trial judge "may . . . consider the four factors set out by this Court in *Daubert* v. *Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 125 L. Ed. 2d 469, 113 S. Ct. 2786 (1993), in a Rule 702 analysis of admissibility of an engineering expert's testimony." Pet. for Cert. i. That question is fully and correctly answered in Parts I and II of the Court's opinion, which I join.

Part III answers the quite different question whether the trial judge abused his discretion when he excluded the testimony of Dennis Carlson. Because a proper answer to that question requires a study of the record that can be performed more efficiently by the Court of Appeals than by the nine Members of this Court, I would remand the case to the Eleventh Circuit to perform that task. There are, of course, exceptions to most rules, but I firmly believe that it is neither fair to litigants nor good practice for this Court to reach out to decide questions not raised by the certiorari petition. See *General Electric Co.* v. *Joiner*, 522 U.S. 136, 150-151, 139 L. Ed. 2d 508, 118 S. Ct. 512 (1997) [**1180] (STEVENS, J., concurring in part and dissenting in part).

Accordingly, while I do not feel qualified to disagree with the well-reasoned factual analysis in Part III of the Court's opinion, I do not join that Part, and I respectfully dissent from the Court's disposition of the case.

REFERENCES: Return To Full Text Opinion

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31A Am Jur 2d, Expert and Opinion Evidence 342; 63B Am Jur 2d, Products Liability 1852, 1871, 1873

USCS Court Rules, Federal Rules of Evidence, Rule 702

L Ed Digest, Evidence 641, 643

L Ed Index, Expert and Opinion Evidence; Products Liability; Rules of Evidence; Tires and Wheels

Annotation References:

Reliability of scientific technique and its acceptance within scientific community as affecting admissibility, at federal trial, of expert testimony as to result of test or study based on such technique--modern cases. 105 ALR Fed 299.

When will expert testimony "assist trier of fact" so as to be admissible at federal trial under Rule 702 of Federal Rules of Evidence. 75 ALR Fed 461.

Products liability: admissibility of expert or opinion evidence that product is or is not defective, dangerous, or unreasonably dangerous. 4 ALR4th 651.

APPENDIX II

IRS Pronouncements
FAS Statement Summaries

IRS PRONOUNCEMENTS

Section 5 Quotation of A.R.M. 34.

The Committee has considered the question of providing some practical formula for determining value as of March 1, 1913, or of any other date, which might be considered as applying to intangible assets, but finds itself unable to lay down any specific rule of guidance for determining the value of intangibles which would be applicable in all cases and under all circumstances. Where there is no established market to serve as a guide the question of value, even of tangible assets, is one largely of judgment and opinion, and the same thing is even more true of intangible assets such as good will, trade-marks, trade brands, etc. However, there are several methods of reaching a conclusion as to the value of intangibles which the Committee suggests may be utilized broadly in passing upon questions of valuation, not to be regarded as controlling, however, if better evidence is presented in any specific case.

Where deduction is claimed for obsolescence or loss of good will or trade-marks, the burden of proof is primarily upon the taxpayer to show the value of such good will or trade-marks on March 1, 1913. Of course, if good will or trademarks have been acquired for cash or other valuable considerations subsequent to March 1, 1913, the measure of loss will be determined by the amount of cash or value of other considerations paid therefor, and no deduction will be allowed for the value of good will or trade-marks built up by the taxpayer since March 1, 1913. The following suggestions are made, therefore, merely as suggestions for checks upon the soundness and validity of the taxpayers' claims. No obsolescence or loss with respect to good will should be allowed except in cases of actual disposition of the asset or abandonment of the business.

In the first place, it is recognized that in numerous instances it has been the practice of distillers and wholesale liquor dealers to put out under well-known and popular brands only so much goods as could be marketed without affecting the established market price therefor and to sell other goods of the same identical manufacture, age, and character under other brands, or under no brand at all, at figures very much below those which the well-known brands commanded. In such cases the difference between the price at which whisky was sold under a given brand name and also under another brand name, or under no brand, multiplied by the number of units sold during a given year gives an accurate determination of the amount of profit attributable to that brand during that year, and where this practice is continued for a long enough period to show that this amount was fairly constant and regular and might be expected to yield annually that average profit, by capitalizing this earning at the rate, say of 20 per cent, the value of the brand is fairly well established.

Another method is to compare the volume of business done under the trademark or brand under consideration and profits made, or by the business whose good will is under consideration, with the similar volume of business and profit made in other cases where good will or trade-marks have been actually sold for cash, recognizing as the value of the first the same proportion of the selling price of the second, as the profits of the first attributable to brands or good will, is of the similar profits of the second.

The third method and possibly the one which will most frequently have to be applied as a check in the absence of data necessary for the application of the preceding ones, is to allow out of average earnings over a period of years prior to March 1, 1913, preferably not less than five years, a return of 10 per cent upon the average tangible assets for the period. The surplus earnings will then be the average amount available for return upon the value of the intangible assets, and it is the opinion of the Committee that this return should be capitalized upon the basis of not more than five years' purchase - that is to say, five times the amount available as return from intangibles should be the value of the intangibles.

In view of the hazards of the business, the changes in popular tastes, and the difficulties in preventing imitation or counterfeiting of popular brands affecting the sales of the genuine goods, the Committee is of the opinion that the figure given of 20 percent return on intangibles is not unreasonable, and it recommends that no higher figure than that be attached in any case to intangibles without a very clear and adequate showing that the value of the intangibles was in fact greater than would be reached by applying this formula.

The foregoing is intended to apply particularly to businesses put out of existence by the prohibition law, but will be equally applicable so far as the third formula is concerned, to other businesses of a more or less hazardous nature. In the case, however, of valuation of good will of a business which consists of the manufacture or sale of standard articles of every-day necessity not subject to violent fluctuations and where the hazard is not so great, the Committee is of the opinion that the figure for determination of the return on tangible assets might be reduced from 10 to 8 or 9 percent, and that the percentage for capitalization of the return upon intangibles might be reduced from 20 to 15 percent.

In any or all of the cases the effort should be to determine what net earnings a purchaser of a business on March 1, 1913, might reasonably have expected to receive from it, and therefore a representative period should be used for averaging actual earnings, eliminating any year in which there were extraordinary factors affecting earnings either way. Also, in the case of the sale of good will of a going business the percentage rate of capitalization of earnings applicable to good will shown by the amount actually paid for the business should be used as a check against the determination of good will value as of March 1, 1913, and if the good will is sold upon the basis of capitalization of earnings less than the figures above indicated as the ones ordinarily to be adopted, the same percentage should be used in figuring value as of March 1, 1913.

REVENUE RULING 59-60
SECTION 2031 DEFINITION OF GROSS ESTATE

26 CFR 20.2031-2: Valuation of stocks and bonds.

(Also Section 2512.)
(Also Part II, Sections 811 (k), 1005, Regulations 105, Section 81.10.)

In valuing the stock of closely held corporations, or the stock of corporations where market quotations are not available, all other available financial data, as well as all relevant factors affecting the fair market value must be considered for estate tax and gift tax purposes. No general formula may be given that is applicable to the many different valuation situations arising in the valuation of such stock. However, the general approach, methods, and factors which must be considered in valuing such securities are outlined.

Revenue Ruling 54-77, 1954-1,187, superseded.

SECTION 1. PURPOSE.

The purpose of this Revenue Ruling is to outline and review in general the approach, methods and factors to be considered in valuing shares of the capital stock of closely held corporations for estate tax and gift tax purposes. The methods discussed herein will apply likewise to the valuation of corporate stocks on which market quotations are either unavailable or are of such scarcity that they do not reflect the fair market value.

SECTION 2. BACKGROUND AND DEFINITIONS.

.01 All valuations must be made in accordance with the applicable provisions of the Internal Revenue Code of 1954 and the Federal Estate Tax and Gift Tax Regulations. Sections 2031 (a). 2032 and 2512 (a) of the 1954 Code (sections 811 and 1005 of the 1939 Code) require that the property to be included in the gross estate, or made the subject of a gift, shall be taxed on the basis of the value of the property at the time of death of the decedent, the alternate date if so elected, or the date of gift.

.02 Section 20.2031-1(b) of the Estate Tax Regulations (section 81.10 of the Estate Tax Regulations 105) and section 25.2512-1 of the Gift Tax Regulations (section 86.19 of Gift Tax Regulations 108) define fair market value, in effect, as the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts. Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property.

.03 Closely held corporations are those corporations the shares of which are owned by a relatively limited number of stockholders. Often the entire stock issue is held by one family. The result of this situation is that little, if any, trading in the shares takes place. There is, therefore, no established market for the stock and such sales as occur at irregular intervals seldom reflect all of the elements of a representative transaction as defined by the term "fair market value."

SECTION 3. APPROACH TO VALUATION

.01 A determination of fair market value, being a question of fact, will depend upon the circumstances in each case. No formula can be devised that will be generally applicable to the multitude of different valuation issues arising in estate and gift tax cases. Often, an appraiser will find wide differences of opinion as to the fair market value of a particular stock. In resolving such differences, he should maintain a reasonable attitude in recognition of the fact that valuation is not an exact science. A sound valuation will be based upon all the relevant facts, but the elements of common sense, informed judgment and reasonableness must enter into the process of weighing those facts and determining their aggregate significance.

.02 The fair market value of specific shares of stock will vary as general economic conditions change from "normal" to "boom" or "depression," that is, according to the degree of optimism or pessimism with which the investing public regards the future at the required date of appraisal. Uncertainty as to the stability or continuity of the future income from a property decreases its value by increasing the risk of loss of earnings and value in the future. The value of shares of stock of a company with very uncertain future prospects is highly speculative. The appraiser must exercise his judgment as to the degree of risk attaching to the business of the corporation which issued the stock, but that judgment must be related to all of the other factors affecting value.

.03 Valuation of securities is, in essence, a prophesy as to the future and must be based on facts available at the required date of appraisal. As a generalization, the prices of stocks which are traded in volume in a free and active market by informed persons best reflect the consensus of the investing public as to what the future holds for the corporations and industries represented. When a stock is closely held, is traded infrequently, or is traded in an erratic market, some other measure of value must be used. In many instances, the next best measure may be found in the prices at which the stocks of companies engaged in the same or a similar line of business are selling in a free and open market.

SECTION 4. FACTORS TO CONSIDER

.01 It is advisable to emphasize that in the valuation of the stock of closely held corporations or the stock of corporations where market quotations are either lacking or too scarce to be recognized, all available financial data, as well as all relevant factors affecting the fair market value, should be considered. The following factors, although not all-inclusive are fundamental and require careful analysis in each case:

- (a) The nature of the business and the history of the enterprise from its inception.
- (b) The economic outlook in general and the condition and outlook of the specific industry in particular.
- (c) The book value of the stock and the financial condition of the business.
- (d) The earning capacity of the company.
- (e) The dividend-paying capacity.
- (f) Whether or not the enterprise has goodwill or other intangible value.
- (g) Sales of the stock and the size of the block of stock to be valued.
- (h) The market price of stocks of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over-the-counter.

.02 The following is a brief discussion of each of the foregoing factors:

(a) The history of a corporate enterprise will show its past stability or instability, its growth or lack of growth, the diversity or lack of diversity of its operations, and other facts needed to form an opinion of the degree of risk involved in the business. For an enterprise which changed its form of organization but carried on the same or closely similar operations of its predecessor, the history of the former enterprise should be considered. The detail to be considered should increase with approach to the required date of appraisal, since recent events are of greatest help in predicting the future; but a study of gross and net income, and of dividends covering a long prior period, is highly desirable. The history to be studied should include, but need not be limited to, the nature of the business, its products or services, its operating and investment assets, capital structure, plant facilities, sales records, and management, all of which should be considered as of the date of the appraisal, with due regard for recent significant changes. Events of the past that are unlikely to recur in the future should be discounted, since value has a close relation to future expectancy.

(b) A sound appraisal of a closely held stock must consider current and prospective economic conditions as of the date of appraisal, both in the national economy and in the industry or industries with which the corporation is allied. It is important to know that the company is more or less successful than its competitors in the same industry, or that it is maintaining a stable position with respect to competitors. Equal or even greater significance may attach to the ability of the industry with which the company is allied to compete with other industries. Prospective competition which has not been a factor in prior years should be given careful attention. For example, high profits due to the novelty of its product and the lack of competition often leads to increasing competition. The public's appraisal of the future prospects of competitive industries or of competitors within an industry may be indicated by price trends in the markets for commodities and for securities. The loss of the manager of a so-called "one-man" business may have a depressing effect upon the value of the stock of such business, particularly if there is a lack of trained personnel capable of succeeding to the management of the enterprise. In valuing the stock of this type of business, therefore, the effect of the loss of the manager on the future expectancy of the business, and the absence of management-succession potentialities are pertinent factors to be taken into consideration. On the other hand, there may be factors, which offset, in whole or in part, the loss of the manager's services. For instance, the nature of the business and of its assets may be such that they will not be impaired by the loss of the manager. Furthermore, the loss may be adequately covered by life insurance, or competent management might be employed on the basis of the consideration paid for the former manager's services. These, or other offsetting factors, if found to exist, should be carefully weighed against the loss of the manager's services in valuing the stock of the enterprise.

(c) Balance sheets should be obtained, preferably in the form of comparative annual statements for two or more years immediately preceding the date of appraisal, together with a balance sheet at the end of the month preceding that date, if corporate accounting will permit. Any balance sheet descriptions that are not self explanatory, and balance sheet items comprehending diverse assets or liabilities, should be clarified in essential detail by supporting supplemental schedules. These statements usually will disclose to the appraiser (1) liquid position (ratio of current assets to current liabilities); (2) gross and net book value of principal classes of fixed assets; (3) working capital; (4) long-term indebtedness; (5) capital structure; and (6) net worth. Consideration also should be given to any assets not essential to the operation of the business, such as investments in securities, real estate, etc. In general, such nonoperating assets will command a lower rate of return than do the operating assets, although in exceptional cases the reverse may be true. In computing the book value per share of stock, assets of the investment type should be revalued on the basis of their market price and the book value adjusted accordingly. Comparison of the company's balance sheets over several years may reveal, among other facts, such developments as the acquisition of additional production facilities or subsidiary companies, improvement in financial position, and details as to recapitalizations and other changes in the capital structure of the corporation. If the corporation has more than one class of stock outstanding, the charter or certificate of incorporation should be examined to ascertain the explicit rights and privileges of the various stock issues including: (1) voting powers; (2) preference as to dividends; and (3) preference as to assets in the event of liquidation.

(d) Detailed profit-and-loss statements should be obtained and considered for a representative period immediately prior to the required date of appraisal, preferably five or more years. Such statements should show (1) gross income by principal items; (2) principal deductions from gross income including major prior items of operating expenses, interest and other expense on each item of long-term debt, depreciation and depletion if such deductions are made, officers' salaries, in total if they appear to be reasonable or in detail if they seem to be excessive, contributions (whether or not deductible for tax purposes) that the nature of its business and its community position require the corporation to make, and taxes by principal items, including income and excess profits taxes; (3) net income available for dividends; (4) rates and amounts of dividends paid on each class of stock; (5) remaining amount carried to surplus; and (6) adjustments to, and reconciliation with, surplus as stated on the balance sheet. With profit and loss statements of this character available, the appraiser should be able to separate recurrent from non-recurrent items of income and expense, to distinguish between operating income and investment income, and to ascertain whether or not any line of business in which the company is engaged is operated consistently at a loss and might be abandoned with benefit to the company. The percentage of earnings retained for business expansion should be noted when dividend-paying capacity is considered. Potential future income is a major factor in many valuations of closely-held stocks, and all information concerning past income which will be helpful in predicting the future should be secured. Prior earnings records usually are the most reliable guide as to the future expectancy, but reporting arbitrary five-or-ten-year averages without regard to current trends or future prospects will not produce a realistic valuation. If, for instance, a record of progressively increasing or decreasing net income is found, then greater weight may be accorded the most recent years' profits in estimating earning power. It will be helpful, in judging risk and the extent to which a business is a marginal operator, to consider deductions from income and net income in terms of percentage of sales. Major categories of cost and expense to be so analyzed include the consumption of raw materials and supplies in the case of manufacturers, processors and fabricators: the cost of purchased merchandise in the case of merchants; utility services; insurance; taxes; depletion or depreciation; and interest.

(e) Primary consideration should be given to the dividend-paying capacity of the company rather than to dividends actually paid in the past. Recognition must be given to the necessity of retaining a reasonable portion of profits in a company to meet competition. Dividend-paying capacity is a factor that must be considered in an appraisal, but dividends actually paid in the past may not have any relation to dividend-paying capacity. Specifically, the dividends paid by a closely held family company may be measured by the income needs of the stockholders or by their desire to avoid taxes on dividend receipts, instead of by the ability of the company to pay dividends. Where an actual or effective controlling interest in a corporation is to be valued, the dividend factor is not a material element, since the payment of such dividends is discretionary with the controlling stockholders. The individual or group in control can substitute salaries and bonuses for dividends, thus reducing net income and understating the dividend-paying capacity of the company. It follows, therefore, that dividends are less reliable criteria of fair market value than other applicable factors.

(f) In the final analysis, goodwill is based upon earning capacity. The presence of goodwill and its value, therefore, rests upon the excess of net earnings over and above a fair return on the net tangible assets. While the element of goodwill may be based primarily on earnings, such factors as the prestige and renown of the business, the ownership of a trade or brand name, and a record of successful operation over a prolonged period in a particular locality, also may furnish support for the inclusion of intangible value. In some instances it may not be possible to make a separate appraisal of the tangible and intangible assets of the business. The enterprise has a value as an entity. Whatever intangible value there is, which is supportable by the facts may be measured by the amount by which the appraised value of the tangible assets exceeds the net book value of such assets.

(g) Sales of stock of a closely held corporation should be carefully investigated to determine whether they represent transactions at arm's length. Forced or distress sales do not ordinarily reflect fair market value nor do isolated sales in small amounts necessarily control as the measure of value. This is especially true in the valuation of a controlling interest in a corporation. Since, in the case of closely held stocks, no prevailing market prices are available, there is no basis for making an adjustment for blockage. It follows, therefore, that such stocks should be valued upon a consideration of all the evidence affecting the fair market value. The size of the block of stock itself is a relevant factor to be considered. Although it is true that a minority interest in an unlisted corporation's stock is more difficult to sell than a similar block of listed stock, it is equally true that control of a corporation, either actual or in effect, representing as it does an added element of value, may justify a higher value for a specific block of stock.

(h) Section 2031(b) of the Code states, in effect, that in valuing unlisted securities the value of stock or securities of corporations engaged in the same or a similar line of business - which are listed on an exchange - should be taken into consideration along with all other factors. An important consideration is that the corporations to be used for comparisons have capital stocks which are actively traded by the public. In accordance with section 2031(b) of the Code, stocks listed on an exchange are to be considered first. However, if sufficient comparable companies whose stocks are listed on an exchange cannot be found, other comparable companies which have stocks actively traded in on the over-the-counter market also may be used. The essential factor is that whether the stocks are sold on an exchange or over-the-counter there is evidence of an active, free public market for the stock as of the valuation date. In selecting corporations for comparative purposes, care should be taken to use only comparable companies. Although the only restrictive requirement as to comparable corporations specified in the statute is that their lines of business be the same or similar, yet it is obvious that consideration must be given to other relevant factors in order that the most valid comparison possible will be obtained. For illustration, a corporation having one or more issues of preferred stock, bonds or debentures in addition to its common stock should not be considered to be directly comparable to one having only common stock outstanding. In like manner, a company with a declining business and decreasing markets is not comparable to one with a record of current progress and market expansion.

SECTION 5. WEIGHT TO BE ACCORDED VARIOUS FACTORS

The valuation of closely held corporate stock entails the consideration of all relevant factors as stated in section 4. Depending upon the circumstances in each case, certain factors may carry more weight than others because of the nature of the company's business. To illustrate:

(a) Earnings may be the most important criterion of value in some cases whereas asset value will receive primary consideration in others. In general, the appraiser will accord primary consideration to earnings when valuing stocks of companies which sell products or services to the public; conversely, in the investment or holding type of company, the appraiser may accord the greatest weight to the assets underlying the security to be valued.

(b) The value of the stock of a closely held investment or real estate holding company, whether or not family owned, is closely related to the value of the assets underlying the stock. For companies of this type the appraiser should determine the fair market values of the assets of the company. Operating expenses of such a company and the cost of liquidating it, if any, merit consideration when appraising the relative values of the stock and the underlying assets. The market values of the underlying assets give due weight to potential earnings and dividends of the particular items of property underlying the stock, capitalized at rates deemed proper by the investing public at the date of appraisal. A current appraisal by the investing public should be superior to the retrospective opinion of an individual. For these reasons, adjusted net worth should be accorded greater weight in valuing the stock of a closely held investment or real estate holding company, whether or not family owned, than any of the other customary yardsticks of appraisal, such as earnings and dividend paying capacity.

SECTION 6. CAPITALIZATION RATES

In the application of certain fundamental valuation factors, such as earnings and dividends, it is necessary to capitalize the average or current results at some appropriate rate. A determination of the proper capitalization rate presents one of the most difficult problems in valuation. That there is no ready or simple solution will become apparent by a cursory check of the rates of return and dividend yields in terms of the selling prices of corporate shares listed on the major exchanges of the country. Wide variations will be found even for companies in the same industry. Moreover, the ratio will fluctuate from year to year depending upon economic conditions. Thus, no standard tables of capitalization rates applicable to closely held corporations can be formulated. Among the more important factors to be taken into consideration in deciding upon a capitalization rate in a particular case are; (1) the nature of the business; (2) the risk involved; and (3) the stability or irregularity of earnings.

SECTION 7. AVERAGE OF FACTORS

Because valuations cannot be made on the basis of a prescribed formula, there is no means whereby the various applicable factors in a particular case can be assigned mathematical weights in deriving the fair market value. For this reason, no useful purpose is served by taking an average of several factors (for example, book value, capitalized earnings and capitalized dividends) and basing the valuation on the result. Such a process excludes active consideration of other pertinent factors, and the end result cannot be supported by a realistic application of the significant fact in the case except by mere chance.

SECTION 8. RESTRICTIVE AGREEMENTS

Frequently, in the valuation of closely held stock for estate and gift tax purposes, it will be found that the stock is subject to an agreement restricting its sale or transfer. Where shares of stock were acquired by a decedent subject to an option reserved by the issuing corporation to repurchase at a certain price, the option price is usually accepted as the fair market value for estate tax purposes. See Rev. Rul. 54-76,C.B. 1954-1, 194. However, in such case the option price is not determinative of fair market value for gift tax purposes. Where the option, or buy and sell agreement, is the result of voluntary action by the stockholders and is binding during the life as well as at the death of the stockholders, such agreement may or may not, depending upon the circumstances of each case, fix the value for estate tax purposes. However, such agreement is a factor to be considered, with other relevant factors, in determining fair market value. Where the stockholder is free to dispose of his shares during life and the option is to become effective only upon his death, the fair market value is not limited to the option price. It is always necessary to consider the relationship of the parties, the relative number of shares held by the decedent, and other material facts, to determine whether the agreement represents a bona fide business arrangement or is a device to pass the decedent's shares to the natural objects of his bounty for less than an adequate and full consideration in money or money's worth. In this connection see Rev. Rul. 157 C.B. 1953-2, 255, and Rev. Rul 189, C.B. 1953-2,294.

SECTION 9. EFFECT ON OTHER DOCUMENTS

Revenue Ruling 54-77,C.B. 1954-1,187, is hereby superseded.

REVENUE RULING 65-193

Revenue Ruling 59-60 C.B. 1959-1, 237, is hereby modified to delete the statements contained therein at section 4.02(f), that "in some instances it may not be possible to make a separate appraisal of the tangible and intangible assets of the business. The enterprise has a value as an entity. Whatever intangible value there is, which is supportable by the facts, may be measured by the amount by which the appraised value of the tangible assets exceeds the net book value of such assets."

The instances where it is not possible to make a separate appraisal of the tangible assets of a business are rare and each case varies from the other. No rule can be devised which will be generally applicable to such cases.

Other than this modification, Revenue Ruling 59-60 continues in full force and effect.

REVENUE RULING 68-609

SUBCHAPTER O. GAIN OR LOSS ON DISPOSITION OF PROPERTY

DETERMINATION OF AMOUNT OF AND RECOGNITION OF GAIN OR LOSS

The "formula" approach may be used in determining the fair market value of intangible assets of a business only if there is no better basis available for making the determination; A.R.M. 34, A.R.M. 68, O.D. 937, and Revenue Ruling 65-192 superseded.

SECTION 1001. DETERMINATION OF AMOUNT OF AND RECOGNITION OF GAIN OR LOSS

26 CFR 1.1001-1: Computation of gain or loss. Rev. Rul. 68-6091
(Also Section 167; 1.167(a)-3.)

The purpose of this Revenue Ruling is to update and restate, under the current statute and regulations, the currently outstanding portions of A.R.M. 34, C.B. 2, 31 (1920), A.R.M. 68, C.B. 3,43 (1920), and O.D. 937, C.B. 4,43 (1921).

The question presented is whether the "formula" approach, the capitalization of earnings in excess of a fair rate of return on net tangible assets, may be used to determine the fair market value of the intangible assets of a business.

The "formula" approach may be stated as follows:

> A percentage return on the average annual value of the tangible assets used in a business is determined, using a period of years (preferably not less than five) immediately prior to the valuation date. The amount of the percentage return on tangible assets, thus determined, is deducted from the average earnings of the business for such period and the remainder, if any, is considered to be the amount of the average annual earnings from the intangible assets of the business for the period. This amount (considered as the average annual earnings from intangibles), capitalized at a percentage of, say 15 to 20 percent, is the value of the intangible assets of the business determined under the "formula" approach.
>
> The percentage of return on the average annual value of the tangible assets used should be the percentage prevailing in the industry involved at the date of valuation, or (when the industry percentage is not available) a percentage of 8 to 10 percent may be used.
>
> The 8 percent rate of return and the 15 percent rate of capitalization are applied to tangibles and intangibles, respectively, of businesses with a small risk factor and stable and regular earnings, the 10 percent rate of return and 20 percent rate of capitalization are applied to businesses in which the hazards of business are relatively high.

The above rates are used as examples and are not appropriate in all cases. In applying the "formula" approach, the average earnings period and the capitalization rates are dependent upon the facts pertinent thereto in each case.

The past earnings to which the formula is applied should fairly reflect the probable future earnings. Ordinarily, the period should not be less than five years, and abnormal years, whether above or below the average, should be eliminated. If the business is a sole proprietorship or partnership, there should be deducted from the earnings of the business a reasonable amount for services performed by the owner or partners engaged in the business. See Lloyd B. Sanderson Estate v. Commissioner, 42 F. 2d 160 (1930). Further, only the tangible assets entering into net worth, including accounts and bills receivable in excess of accounts and bills payable, are used for determining earnings on the tangible assets. Factors that influence the capitalization rate include (1) the nature of the business, (2) the risk involved, and (3) the stability or irregularity of earnings.

The "formula" approach should not be used if there is better evidence available from which the value of intangibles can be determined. If the assets of a going business are sold upon the basis of a rate of capitalization that can be substantiated as being realistic, though it is not within the range of figures indicated here as the one ordinarily to be adopted, the same rate of capitalization should be used in determining the value of intangibles.

Accordingly, the "formula" approach may be used for determining the fair market value of intangible assets of a business only if there is no better basis therefore available.

See also Revenue Ruling 59-60, C.B. 1959-1, 237, as modified by Revenue Ruling 65-193, C.B. 1965-2, 370, which sets forth the proper approach to use in the valuation of closely-held corporate stocks for estate and gift tax purposes. The general approach, methods, and factors, outlined in Revenue Ruling 59-60, as modified, are equally applicable to valuations of corporate stocks for income and other tax purposes as well as for estate and gift tax purposes. They apply also to problems involving the determination of the fair market value of business interests of any type, including partnerships and proprietorships, and of intangible assets for all tax purposes.

A.R.M. 34, A.R.M. 68, and O.D. 937 are superseded, since the positions set forth therein are restated to the extent applicable under current law in this Revenue Ruling. Revenue Ruling 65-192, C.B. 1965-2, 259, which contained restatements of A.R.M. 34 and A.R.M.68, is also superseded.

REVENUE RULING 77-287

Valuation of securities restricted from immediate resale. Guidelines are set forth for the valuation for Federal tax purposes of securities that cannot be immediately resold because they are restricted from resale pursuant to Federal securities laws: Rev. Rul. 59-60 amplified. (1977-2 C.B. 319).

SECTION 1. PURPOSE

The purpose of this Revenue ruling is to amplify Rev. Rul. 59-60, 1959-1 C.B. 237, as modified by Rev. Rul. 65-193, 1965-2 C.B. 370, and to provide information and guidance to taxpayers. Internal Revenue Service personnel, and others concerned with the valuation, for Federal tax purposes, of securities that cannot be immediately resold because they are restricted from resale pursuant to Federal securities laws. This guidance is applicable only in cases where it is not inconsistent with valuation requirements of the Internal Revenue Code of 1954 or the regulations thereunder. Further, this ruling does not establish the time at which property shall be valued.

SECTION 2. NATURE OF THE PROBLEM

It frequently becomes necessary to establish the fair market value of stock that has not been registered for public trading when the issuing company has stock of the same class that is actively traded in one or more securities markets. The problem is to determine the difference in fair market value between the registered shares that are actively traded and the unregistered shares. This problem is often encountered in estate and gift tax cases. However, it is sometimes encountered when unregistered shares are issued in exchange for assets or the stock of an acquired company.

SECTION 3. BACKGROUND AND DEFINITIONS

.01 The Service outlined and reviewed in general the approach, methods, and factors to be considered in valuing shares of closely-held corporate stock for estate and gift tax purposes in Rev. Rul. 59-60, as modified by Rev. Rul. 65-193. The provisions of Rev. Rul. 59-60, as modified, were extended to the valuation of corporate securities for income and other tax purposes by Rev. Rul. 68-609, 1968-2 C.B. 327.

.02 There are several terms currently in use in the securities industry that denote restrictions imposed on the resale and transfer of certain securities. The term frequently used to describe these securities is "restricted securities," but they are sometimes referred to as "unregistered securities," "investment letter stock" "control stock" or "private placement stock". Frequently these terms are used interchangeably. They all indicate that these particular securities cannot lawfully be distributed to the general public until a registration statement relating to the corporation underlying the securities has been filed, and has also become effective under the rules promulgated and enforced by the United States Securities & Exchange Commission (SEC) pursuant to the Federal securities laws. The following represents a more refined definition of each of the following terms along with two other terms - "exempted securities and "exempted transactions."

(a) The term "restricted securities" is defined in Rule 144 adopted by the SEC as "securities acquired directly or indirectly from the issuer thereof, or from an affiliate of such issuer, in a transaction or chain of transactions not involving any public offering."

(b) The term "unregistered securities" refers to those securities with respect to which a registration statement, providing full disclosure by the issuing corporation, has not been filed with the SEC pursuant to the Securities Act of 1933. The registration statement is a condition precedent to a public distribution of securities in interstate commerce and is aimed at providing the prospective investor with a factual basis for sound judgment in making investment decisions.

(c) The terms "investment letter stock" and "letter stock" denote shares of stock that have been issued by a corporation without the benefit of filing a registration statement with the SEC. Such stock is subject to resale and transfer restrictions set forth in a letter agreement requested by the issuer and signed by the buyer of the stock when the stock is delivered. Such stock may be found in the hands of either individual investors or institutional investors.

(d) The term "control stock" indicates that the shares of stock have been held or are being held by an officer, director, or other person close to the management of the corporation. These persons are subject to certain requirements pursuant to SEC rules upon resale of shares they own in such corporations.

(e) The term "private placement stock" indicates that the stock has been placed with an institution or other investor who will presumably hold it for a long period and ultimately arrange to have the stock registered if it is to be offered to the general public. Such stock may or may not be subject to a letter agreement. Private placements of stock are exempted from the registration and prospectus provisions of the Securities Act of 1933.

(f) The term "exempted securities" refers to those classes of securities that are expressly excluded from the registration provisions of the Securities Act of 1933 and the distribution provisions of the Securities Exchange Act of 1934.

(g) The term "exempted transactions" refers to certain sales or distributions of securities that do not involve a public offering and are excluded from the registration and prospectus provisions of the Securities Act of 1933 and distribution provisions of the Securities Exchange Act of

1934. The exempted status makes it unnecessary for issuers of securities to go through the registration process.

SECTION 4: SECURITIES INDUSTRY PRACTICE IN VALUING RESTRICTED SECURITIES

.01 Investment Company Valuation Practices. The Investment Company Act of 1940 requires open-end investment companies to publish the valuation of their portfolio securities daily. Some of these companies have portfolios containing restricted securities, but also have restricted securities of the same class traded on a securities exchange. In recent years the number of restricted securities in such portfolios has increased. The following methods have been used by investment companies in the valuation of such restricted securities:

(a) Current market price of the unrestricted stock less a constant percentage discount based on purchase discount
(b) Current market price of unrestricted stock less a constant percentage discount different from purchase discount
(c) Current market price of the unrestricted stock less a discount amortized over a fixed period
(d) Current market price of the unrestricted stock
(e) Cost of the restricted stock until it is registered

The SEC ruled in its Investment Company Act Release No. 5847, dated October 21, 1969, that there can be no automatic formula by which an investment company can value the restricted securities in its portfolios. Rather, the SEC has determined that it is the responsibility of the board of directors of the particular investment company to determine the "fair value" of each issue of restricted securities in good faith.

.02 Institutional Investors Study. Pursuant to Congressional direction, the SEC undertook an analysis of the purchases, sales, and holding of securities by financial institutions, in order to determine the effect of institutional activity upon the securities market. The study report was published in eight volumes in March 1971. The fifth volume provides an analysis of restricted securities and deals with such items as the characteristics of the restricted securities purchasers and issuers, the size of transactions (dollars and shares), the marketability discounts on different trading markets, and the resale provisions. This research project provides some guidance for measuring the discount in that it contains information, based on the actual experience of the marketplace, showing that during the period surveyed (January 1, 1966, through June 30, 1969), the amount of discount allowed for restricted securities from the trading price of the unrestricted securities was generally related to the following four factors:

(a) Earnings. Earnings and sales consistently have a significant influence on the size of restricted securities discounts according to the study. Earnings played the major part in establishing the ultimate discounts at which these stocks were sold from the current market price. Apparently earnings patterns, rather than sales patterns, determine the risk of an investment.
(b) Sales. The dollar amount of sales of issuers' securities also has a major influence on the amount of discount at which restricted securities sell from the current market price. The results of the study generally indicate that the companies with the lowest dollar amount of sales during the test period accounted for most of the transactions involving the highest discount rates, while they accounted for only a small portion of all transactions involving the lowest discount rates.
(c) Trading market. The market in which publicly-held securities are traded also reflects variances in the amount of discount that is applied to restricted securities purchases. According to the study, discount rates were greatest on restricted stocks with unrestricted

counterparts traded over-the-counter, followed by those with unrestricted counterparts listed on the American Stock Exchange, while the discount rates for those stocks with unrestricted counterparts listed on the New York Stock Exchange were the smallest.

(d) Resale Agreement Provisions. Resale agreement provisions often affect the size of the discount. The discount from the market price provides the main incentive for a potential buyer to acquire restricted securities. In judging the opportunity cost of freezing funds, the purchase is analyzing two separate factors. The first factor is the risk that underlying value of the stock will change in a way that, absent the restrictive provisions, would have prompted a decision to set. The second factor is the risk that the contemplated means of legally disposing of the stock may not materialize. From the seller's point of view, a discount is justified where the seller is relieved of the expenses of registration and public distribution, as well as of the risk that the market will adversely change before the offering is completed. The ultimate agreement between buyer and seller is a reflection of these and other considerations. Relative bargaining strengths of the parties to the agreement are major considerations that influence the resale terms and consequently the size of discounts in restricted securities transactions. Certain provisions are often found in agreements between buyers and sellers that affect the size of discounts at which restricted stocks are sold. Several such provisions follow, all of which, other than number (3), would tend to reduce the size of the discount:

(1) A provision giving the buyer an option to "piggyback," that is, to register restricted stock with the next registration statement, if any, filed by the issuer with the SEC
(2) A provision giving the buyer an option to require registration at the seller's expense
(3) A provision giving the buyer an option to require registration, but only at the buyer's own expense
(4) A provision giving the buyer a right to receive continuous disclosure of information about the issuer from the seller
(5) A provision giving the buyer an right to select one or more directors of the issuer
(6) A provision giving the buyer an option to purchase additional shares of the issuer's stock
(7) A provision giving the buyer the right to have a greater voice in operations of the issuer, if the issuer does not meet previously agreed upon operating standards

Institutional buyers can and often do obtain many of these rights and options from the sellers of restricted securities, and naturally, the more rights the buyer can acquire, the lower the buyer's risk is going to be, thereby reducing the buyer's discount as well. Smaller buyers may not be able to negotiate the large discounts or the rights and options that volume buyers are able to negotiate.

.03 Summary. A variety of methods have been used by the securities industry to value restricted securities. The SEC rejects all automatic or mechanical solutions to the valuation of restricted securities, and prefers, in the case of the valuation of investment company portfolio stocks, to rely upon good faith valuations by the board of directors of each company. The study made by the SEC found that restricted securities generally are issued at a discount from the market value of freely tradable securities.

SECTION 5. FACTS AND CIRCUMSTANCES MATERIAL TO VALUATION OF RESTRICTED SECURITIES

.01 Frequently, a company has a class of stock that cannot be traded publicly. The reason such stock cannot be traded may arise from the securities statutes, as in the case of an "investment letter" restriction; it may arise from a corporate charter restriction or perhaps from a trust agreement restriction. In such cases, certain documents and facts should be obtained for analysis.

.02 The following documents and facts, when used in conjunction with those discussed in Section 4 of Rev. Rul. 59-60, will be useful in the valuation of restricted securities:

(a) A copy of any declaration of trust, trust agreement, and any other agreements relating to the shares of restricted stock
(b) A copy of any document showing any offers to buy or sell or indications of interest in buying or selling the restricted shares
(c) The latest prospectus of the company
(d) Annual reports of the company for 3 to 5 years preceding the valuation date
(e) The trading prices and trading volume of the related class of traded securities 1 month preceding the valuation date, if they are traded on a stock exchange (if traded over-the-counter, prices may be obtained from the National Quotations Bureau, the National Association of Securities Dealers Automated Quotations (NASDAQ), or sometimes from broker-dealers making markets in the shares)
(f) The relationship of the parties to the agreements concerning the restricted stock, such as whether they are members of the immediate family or perhaps whether they are officers or directors of the company
(g) Whether the interest being valued represents a majority or minority ownership

SECTION 6. WEIGHING FACTS AND CIRCUMSTANCES MATERIAL TO RESTRICTED STOCK VALUATION

All relevant facts and circumstances that bear upon the worth of restricted stock, including those set forth above in the preceding Sections 4 and 5, and those set forth in Section 4 of Rev. Rul. 59-60, must be taken into account in arriving at the fair market value of such securities. Depending on the circumstances of each case, certain factors may carry more weight than others. To illustrate:

.01 Earnings, net assets, and net sales must be given primary consideration in arriving at an appropriate discount for restricted securities from the freely traded shares. These are the elements of value that are always used by investors in making investment decisions. In some cases, one element may be more important than in other cases. In the case of manufacturing, producing, or distributing companies, primary weight must be accorded earnings and net sales; but in the case of investment or holding companies, primary weight must be given to the net assets of the company underlying the stock. In the former type of companies, value is more closely linked to past, present, and future earnings while in the latter type of companies, value is more closely linked to the existing net assets of the company. See the discussion in Section 5 of Rev. Rul. 59-60.

.02 Resale provisions found in the restriction agreements must be scrutinized and weighed to determine the amount of discount to apply to the preliminary fair market value of the company. The two elements of time and expense bear upon this discount: the longer the buyer of the shares must wait to liquidate the shares, the greater the discount. Moreover, if the provisions make it necessary for the buyer to bear the expense of registration, the greater the discount. However, if the provisions of the restricted stock agreement make it possible for the buyer to "piggyback" shares at the next offering, the discount would be smaller.

.03 The relative negotiation strengths of the buyer and seller of restricted stock may have a profound effect on the amount of discount. For example, a tight money situation may cause the buyer to have the greater balance of negotiation strength in a transaction. However, in some cases the relative strengths may tend to cancel each other out.

.04 The market experience of freely tradable securities of the same class as the restricted securities is also significant in determining the amount of discount. Whether the shares are privately held or publicly traded affects the worth of the shares to the holders. Securities traded on a public market generally are worth more to investors than those that are not traded on a public market. Moreover, the type of public market in which the unrestricted securities are traded is to be given consideration.

SECTION 7. EFFECT ON OTHER DOCUMENTS.

(Rev. Rul. 59-60, as modified by Rev. Rul. 65-193 is amplified.)

REVENUE RULING 81-253

ISSUE

Whether minority discounts should be allowed in valuing for federal gift tax purposes three simultaneous transfers of all of all of the stock in a closely held family corporation to the donor's three children

FACTS

The donor, A, owned all of the 90 outstanding shares of stock in corporation X, the sole asset of which is a parcel of real estate. On December 30, 1978, A made simultaneous gifts of one-third (30 shares) of the stock in X to each of A's three children. On that date, the established fair market value of each share of X stock, if all the stock were sold together, was 10,000x per share.

At the time the gifts were made, there were no corporate bylaws or other instruments restricting the voting or disposition of corporate shares by any shareholder, and there were no negotiations underway for the disposition of the corporation's assets or the disposition of the shares in question before or subsequent to the date of the gifts. In addition there is no evidence of the kind of family discord or other factor that would indicate that the family would not act as a unit in controlling the corporation. The corporation still owns the parcel of real estate and A's children still own the corporate shares.

SECTION 2512 LAW AND ANALYSIS

Section 2501 (a)(1) of the Internal Revenue Code provides that a tax is imposed for each calendar quarter on the transfer of property by gift during such calendar quarter. Section 2512(a) provides that the value of the property at the date of the gift shall be considered the amount of the gift.

Section 25.2512-1 of the Gift Tax Regulations defines the value of property as the price at which such property would change hands between a willing buyer and willing seller, neither being under compulsion to buy or sell, and both having reasonable knowledge of relevant facts. The regulations provide that the value of a particular kind of property is not the price that a forced sale of the property would produce, and that all relevant facts and elements of value as of the time of the gift shall be considered.

Section 25.2512-2(a) of the regulations provides that the value of stocks and bonds is the fair market value per share or bond on the date of the gift. Section 25.2512-2(f) provides that the degree of control of the business represented by the block of stock to be valued is among the factors to be considered in valuing stock where there are not sales prices or bona fide bid and asked prices. See also Rev. Rul. 59-60, sections 4.01(g), 4.02(g). 1959-1 C.B. 237.

The fair market value of a piece of property depends on the facts and circumstances, Section 3.01. Rev. Rul 59-60, 1959-1 C.B. 237, Messing v. Commissioner, 48 T.C. 505, 512 (1967), acq. 1968-1 C.B. 2. Thus questions of valuation cannot be resolved by mechanical application of formulae and cases involving valuation can often be distinguished. Nonetheless, certain overriding legal principles to which each set of facts is applied govern valuation. Powers v. Commissioner, 312 U.S. 259 (1941); Maytag v. Commissioner, 187 F. 2d 962 (10th Cir. 1951).

Judicial authority is inconsistent regarding the correct legal principle governing the availability of a minority discount in the instant case. Therefore, this ruling is intended to state the Service's position.

Several cases have held or implied that no minority discount is available when the transferred stock is part of a family controlling interest. Driver v. United States. No. 73C 260 (W.D. Wis., Sept 13, 1976); Blanchard v. United States, 291 F. Supp. 248 (S.D. Iowa, 1968); Richardson v. Commissioner, No. 95770 (T.C.M. 1943), aff'd 151 F. 2d 102 (2d Cir. 1945). cert. denied. 326 U.S. 796 (1946); Hamm v. Commissioner, T.C.M. 1961-347, aff'd 325 F. 2d 934 (8th Cir.1963). cert. denied, 377 U.S. 993 (1964). The Service will follow these decisions. Other cases have allowed a minority discount on similar facts. Whittemore v. Fitzpatrick, 127 F. Supp.710 (D. Conn., 1954); Obermer v. United States, 238 F. Supp. 29,34 (D. Hawaii, 1964); Estate of Piper v. Commissioner, 72 T.C. 1062 (1979); Clark v. United States, Civil Nos. 1308, 1309 (E.D.N.C., May 16, 1975); Bartram v. Graham, 157 F. Supp. 757 (D. Conn. 1957); Estate of Lee v. Commissioner, 69 T.C. 860 (1978), nonacq. 1980-2 C.B. 2; Estate of Bright v. United States. No. 78-2221 (5th Cir., Oct. 1, 1981). The Service will not follow these and similar cases.

It is the position of the Service that ordinarily no minority discount will be allowed with respect to transfers of shares of stock among family members where, at the time of the transfer, control (either majority voting control or de facto control) of the corporation exists in the family, Dattel v. United States, No. D.C. 73-107-S (N.D. Miss., Oct. 29, 1975), Cutbirth v. United States, Civil No. CA-6-75-1 (N.D. Tex., June 16, 1976). However, when there is evidence of family discord or other factors indicating that the family would not act as a unit in controlling the corporation, a minority discount may be allowed. Although courts have recognized that where a shareholder is unrelated to other shareholders a minority discount may be available because of absence of control. Estate of Schroeder v. Commissioner, 13 T.C. 259 (1949), acq. 1949-2 C.B. 3, where a controlling interest in stock is owned by family members, there is a unity of ownership and interest, and the shares owned by family members should be valued as part of that controlling interest. This conclusion is based on an evaluation of the facts and circumstances that would affect the price received for the shares in a hypothetical sale. It is unlikely that under circumstances such as exist in the instant case, shares that are part of a controlling interest would be sold other than as a unit except to a family member in whose hands the shares would retain their control value because of the family relationship. Thus, where a controlling interest in stock is owned by a family, the value per share of stock owned by one family member is the same as stock owned by any other family member and is the same value that would exist if all the stock were held by one person.

HOLDING

No minority discount is allowable and the value of each share of stock for federal gift tax purposes is 10,000x.

REVENUE RULING 83-120

SECTION 1. PURPOSE

The purpose of this Revenue Ruling is to amplify Rev. Rul. 59-60, 1959-1, C.B. 237, by specifying additional factors to be considered in valuing common and preferred stock of a closely held corporation for gift tax and other purposes in a recapitalization of closely held businesses. This type of valuation problem frequently arises with respect to estate planning transactions wherein an individual receives preferred stock with a stated par value equal to all or a large portion of the fair market value of the individual's former stock interest in a corporation. The individual also receives common stock which is then transferred, usually as a gift, to a relative.

SECTION 2. BACKGROUND

.01 One of the frequent objectives of the type of transaction mentioned above is the transfer of the potential appreciation of an individual's stock interest in a corporation to relatives at a nominal or small gift tax cost. Achievement of this objective requires preferred stock having a fair market value equal to a large part of the fair market value of the individual's former stock interest and common stock having a nominal or small fair market value. The approach and factors described in this Revenue Ruling are directed toward ascertaining the true fair market value of the common and preferred stock and will usually result in the determination of a substantial fair market value for the common stock and a fair market value for the preferred stock which is substantially less than its par value.

.02 The type of transaction referred to above can arise in many different contexts. Some examples are:

(a) A owns 100% of the common stock (the only outstanding stock) of Z Corporation which has fair market value of 10,500x. In a recapitalization described in Section 368 (a)(1)(E), A receives preferred stock with a par value of 10,000x and new common stock, which A then transfers to A's son B.

(b) A owns some of the common stock of Z Corporation (or the stock of several corporations) the fair market value of which stock is 10,500x. A transfers this stock to a new corporation X in exchange for preferred stock of X corporation with a par value of 10,000x and common stock of corporation, which A then transfers to A's son B.

(c) A owns 80 shares and his son B owns 20 shares of the common stock (the only stock outstanding) of Z Corporation in a recapitalization described in section 368(a)(1)(E). A exchanges his 80 shares of common stock for 80 shares of new preferred stock of Z Corporation with a par value of 10,000x. A's common stock had a fair market value of 10,000x.

SECTION 3. GENERAL APPROACH TO VALUATION

Under section 25.2512-2(f)(2) of the Gift Tax Regulations, the fair market value of stock in a closely held corporation depends upon numerous factors, including the corporation's net worth, its prospective earning power, and its capacity to pay dividends. In addition, other relevant factors must be taken into account. See Rev. Rul. 59-60. The weight to be accorded any evidentiary factor depends on the circumstances of each case. See section 25.2512-2(f) of the Gift Tax Regulations.

SECTION 4. APPROACH TO VALUATION-PREFERRED STOCK

.01 in general the most important factors to be considered in determining the value of preferred stock are its yield, dividend coverage and protection of its liquidation preference.

.02. Whether the yield of the preferred stock supports a valuation of the stock at par value depends in part on the adequacy of the divided rate. The adequacy of the dividend rate should be determined by comparing its dividend rate with the dividend rate of high-grade publicly traded preferred stock. A lower yield than that of high-grade preferred stock indicates a preferred stock value of less than par. If the rate of interest charged by independent creditors to the corporation on loans is higher than the rate such independent creditors charge their most credit worthy borrowers, then the yield on the preferred stock should be correspondingly higher than the yield on high quality preferred stock. A yield which is not correspondingly higher reduces the value of the preferred stock. In addition, whether the preferred stock has a fixed dividend rate and is nonparticipating, influences the value of the preferred stock. A publicly traded preferred stock for a company having a similar business and similar assets with similar liquidation preferences, voting rights and other similar terms would be the ideal comparable for determining yield required in arms length transactions for closely held stock. Such ideal comparables will frequently not exist. In such circumstances, the most comparable publicly traded issues should be selected for comparison and appropriate adjustments made for differing factors.

.03. The actual dividend rate on a preferred stock can be assumed to be its stated rate if the issuing corporation will be able to pay its stated dividends in a timely manner and will, in fact, pay such dividends. The risk that the corporation may be unable to timely pay the stated dividends on the preferred stock can be measured by the coverage of such stated dividends by the corporation's earnings. Coverage of the dividend is measured by the ratio of the sum of pre-tax and pre-interest earnings to the sum of the total interest to be paid and the pre-tax earnings needed to pay the after-tax dividends. Standard & Poor's Ratings Guide, 58(1979). Inadequate coverage exists where a decline in corporate profits would be likely to jeopardize the corporation's ability to pay dividends on the preferred stock. The ratio for the preferred stock in question should be compared with the ratios for high quality preferred stock to determine whether the preferred stock has adequate coverage. Prior earnings history is important in this determination. Inadequate coverage indicates that the value of preferred stock is lower than its par value. Moreover, the absence of a provision that preferred dividends are cumulative raises substantial questions concerning whether the stated dividend rate will, in fact, be paid. Accordingly preferred stock with noncumulative dividend features will normally have a value substantially lower than a cumulative preferred stock with the same yield, liquidation preference and dividend coverage.

.04 Whether the issuing corporation will be able to pay the full liquidation preference at liquidation must by taken into account in determining fair market value. This risk can be measured by the protection afforded by the corporation's net assets. Such protection can be measured by the ratio of the excess of the current market value of the corporation's assets over its liabilities to the aggregate liquidation preference. The protection ratio should be compared with the ratios for high quality preferred stock to determine adequacy of coverage. Inadequate asset/protection exists where any unforeseen business reverses would be likely to jeopardize the corporation's ability to pay the full liquidation preference to the holders of the preferred stock.

.05 Another factor to be considered in valuing the preferred stock is whether it has voting rights and, if so, whether the preferred stock has voting control. See, however, Section 5.02 below.

.06 Peculiar covenants or provisions of the preferred stock of a type not ordinarily found in publicly traded preferred stock should be carefully evaluated to determine the effects of such covenants on the value of the preferred stock in general, if covenants would inhibit the marketability of the stock or the power of the holder to enforce dividend or liquidation rights, such provisions will reduce the value of the preferred stock by comparison to the value of preferred stock not containing such covenants or provisions.

.07 Whether the preferred stock contains a redemption privilege is another factor to be considered in determining the value of the preferred stock. The value of a redemption privilege triggered by death of the preferred shareholder will not exceed the present value of the redemption premium payable at the preferred shareholder's death (i.e. the present value of the excess of the redemption price over the fair market value of the preferred stock upon its issuance). The value of the redemption privilege should be reduced to reflect any risk that the corporation may not possess sufficient assets to redeem its preferred stock at the stated redemption price. See .03 above.

SECTION 5. APPROACH TO VALUATION-COMMON STOCK

.01 If the preferred stock has a fixed rate of dividend and is nonparticipating, the common stock has the exclusive right to the benefits of future appreciation of the value of the corporation. This right is valuable and usually warrants a determination that the common stock has substantial value. The actual value of this right depends upon the corporation's past growth experience, the economic condition of the industry in which the corporation operates, and general economic conditions. The factor to be used in capitalizing the corporation's perspective earnings must be determined after an analysis of numerous factors concerning the corporation and the economy as a whole. See Rev. Rul. 59-60. In addition, after-tax earnings of the corporation at the time the preferred stock is issued in excess of the stated dividends on the preferred stock will increase the value of the common stock. Furthermore, a corporate policy of reinvesting earnings will also increase the value of the common stock.

.02 A factor to be considered in determining the value of the common stock is whether the preferred stock also has voting rights. Voting rights of the preferred stock, especially if the preferred stock has voting control, could under certain circumstances increase the value of the preferred stock and reduce the value of the common stock. This factor may be reduced in significance where the rights of common stockholders as a class are protected under state law from actions by another class of shareholders, see Singer v. Magnavox Co., 380 A2d 969 (Del. 1977), particularly where the common shareholders, as a class, are given the power to disapprove a proposal to allow preferred stock to be converted into common stock. See ABA-ALI Model Bus. Corp. Act, Section 60 (1969).

SECTION 6. EFFECT ON OTHER REVENUE RULINGS

Rev. Rul. 59-60, as modified by Rev. Rul. 65-193, 1965-2 C.B. 370 and as amplified by Rev. Rul. 77-287, 1977-2 C.B. 319, and Rev. Rul. 80-213, 1980-2 C.B. 101, is further amplified.

REVENUE RULING 93-12

SECTION 1. ISSUE

If a donor transfers shares in a corporation to each of the donor's children, is the factor of corporate control in the family to be considered in valuing each transferred interest, for purposes of section 2512 of the Internal Revenue Code?

SECTION 2. FACTS

P owned all of the single outstanding class of stock of X corporation. P transferred all of P's shares by making simultaneous gifts of 20 percent of the shares to each of P's five children, A, B, C, D, and E.

SECTION 3. LAW AND ANALYSIS

Section 2512(a) of the Code provides that the value of the property at the date of the gift shall be considered the amount of the gift.

Section 25.2512-1 of the Gift Tax Regulations provides that, if a gift is made in property, its value at the date of the gift shall be considered the amount of the gift. The value of the property is the price at which the [*2] property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell, and both having reasonable knowledge of relevant facts.

Section 25,2512-2 (a) of the regulations provides that the value of stocks and bonds is the fair market value per share or bond on the date of the gift. Section 25.2512-2 (f) provides that the degree of control of the business represented by the block of stock to be valued is among the factors to be considered in valuing stock where there are no sales prices or bona fide bid or asked prices.

Rev. Rul. 81-253, 1981-1 C.B. 187, holds that, ordinarily, no minority shareholder discount is allowed with respect to transfers to shares of stock between family members if, based upon a composite of the family members' interests at the time of the transfer, control (either majority voting control or de facto control through family relationships) of the corporation exists in the family unit. The ruling also states that the Service will not follow the decision of the Fifth Circuit in Estate of Bright v. United States, 658 F.2d 999 (5th Cir. 1981).

In Bright, the decedent's undivided community property [*3] interest in shares of stock, together with the corresponding undivided community property interest of the decedent's surviving spouse, constituted a control block of 55 percent of the shares of a corporation. The court held that, because the community-held shares were subject to a right of partition, the decedent's own interest was equivalent to 27.5 percent of the outstanding shares and, therefore, should be valued as a minority interest, even though the shares were to be held by the decedent's surviving spouse as trustee of a testamentary trust. See also, Propstra v. United States, 680 F.2d 1248 (9th Cir. 1982). In addition, Estate of Andrews v. Commissioner, 79 T.C. 938 (1982), and Estate of Lee v. Commissioner, 69 T.C. 860 (1978), nonacq., 1980-2 C.B. 2, held that the corporation shares owned by other family members cannot be attributed to an individual family member for determining whether the individual family member's shares should be valued as the controlling interest of the corporation.

After further consideration of the position taken in Rev. Rul. 81-253, and in light of the cases noted above, the Service has concluded that, in the case of a corporation [*4] with a single class of stock, notwithstanding the family relationship of the donor, the donee, and other shareholders, the shares of other family members will not be aggregated with the transferred shares to determine whether the transferred shares should be valued as part of a controlling interest.

In the present case, the minority interests transferred to A, B, C, D, and E should be valued for gift tax purposes without regard to the family relationship of the parties.

SECTION 4. HOLDING

If a donor transfers shares in a corporation to each of the donor's children, the factor of corporate control in the family is not considered in valuing each transferred interest for purposes of section 2512 of the Code. For estate and gift tax valuation purposes, the Service will follow Bright, Propstra, Andrews, and Lee in not assuming that all voting power held by family members may be aggregated for purposes of determining whether the transferred shares should be valued as part of a controlling interest. Consequently, a minority discount will not be disallowed solely because a transferred interest, when aggregated with interests held by family members, would [*5] be a part of a controlling interest. This would be the case whether the donor held 100 percent or some lesser percentage of the stock immediately before the gift.

SECTION 5. EFFECT ON OTHER DOCUMENTS

Rev. Rul. 81-253 is revoked. Acquiescence is substituted for the non-acquiescence in issue one of Lee, 1980-2 C.B. 2.

REV-PROC, FINH &30,054, Estate, gift and generation-skipping transfer taxes; Valuation: compensatory stock options: Methodology and factors to be considered. Revenue Procedure 98-34, IRB 1998-18, 15 (May 04, 1998)
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Revenue Procedure 98-34, I.R.B. 1998-18, 15, May 4, 1998.

[*Code Secs. 2031, 2512 and 2624*]

Estate, gift and generation-skipping transfer taxes; Valuation; Compensatory stock options; Methodology and factors to be considered. Procedures setting forth the methodology for valuing certain compensatory stock options for estate, gift, and generation-skipping transfer tax purposes have been issued by the IRS. The procedure applies only to the valuation on non-publicly traded compensatory stock options on stock that is publicly traded on an established securities market on the valuation date. In valuing such options, a taxpayer may use an option pricing model that takes into account, on the valuation date, specific factors that are similar to those established by the Financial Accounting Standards Board in Accounting for Stock-Based Compensation, Statement of Financial Accounting Standards No. 123 (Fin. Accounting Standards Bd. 1995). Provided the requirements of the procedure are met, the IRS will treat the value of a compensatory stock option as properly determined for transfer tax purposes. BACK REFERENCES: &3125.01, &3220.08, &10,663.05 AND &12,565.01.

SECTION 1. PURPOSE

This revenue procedure sets fort a methodology to value for gift, estate, and generation-skipping transfer tax ("transfer tax") purposes certain compensatory stock options described in Section 3 of this revenue procedure. Taxpayers relying on this revenue procedure may use an option pricing model that takes into account on the valuation date specific factors that are similar to those established by the Financial Accounting Standards Board in Accounting for Stock-Based Compensation, Statement of Financial Accounting Standards No. 123, (Fin. Accounting Standards Bd. 1995), (FAS 123). The Internal Revenue Service will treat the value of a compensatory stock option as properly determined for transfer tax purposes, provided that the requirements of this revenue procedure are met.

SECTION 2. BACKGROUND

Section 2512(a) of the Internal Revenue Code provides that, if a gift is made in property, the value of the property at the date of the gift is the amount of the gift.

Section 25.2512-1 of the Gift Tax Regulations provides that for gift tax purposes the value of property is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.

Section 2031)a) provides that the value of the gross estate is determined by including the value at the time of the decedent's death of all property, real or personal, tangible or intangible, wherever situated.

Section 20.2031-1(b) of the Estate Tax Regulations provides that the value of every item of property includible in a decedent's gross estate is its fair market value at the time of the decedent's death.

Section 2032(a) provides that the executor may elect to use an alternative valuation date. Under this election, the value of all property included in the gross estate generally is determined as of 6 months after the decedent's death. However, property distributed, sold, exchanged, or otherwise disposed of within 6 months after death must be valued as of the date of sale, exchange, or other disposition.

Section 2642(1) provides that, except as otherwise provided in Chapter 13, property is valued at the time of the generation-skipping transfer.

FAS 123 establishes financial accounting and reporting standards for stock-based employee compensation plans. Under FAS 123, the fair value of a stock option granted by a public entity is estimated using an option pricing model (for example, the Black-Scholes model or a binomial model) that takes into account as of the option grant date; (1) the exercise price of the option; (2) the expected life of the option; (3) the current price of the underlying stock; (4) the expected volatility of the underlying stock; (5) the expected dividends on the underlying stock; and (6) the risk-free interest rate for the expected term of the option.

FAS 123 generally requires a public entity to disclose in its financial statements for each year beginning after December 15, 1994, a description of the method and significant assumptions used during the year to estimate the fair value of stock options granted during the year, including the following weighted-average information: (1) expected life of the options; (2) expected volatility; (3) expected dividends; and (4) risk-free interest rate. (The foregoing is not a complete list of the disclosures required by FAS 123. For example, FAS 123 also requires financial statement disclosure of the weighted-average exercise prices of options granted during the year.)

SECTION 3. SCOPE

This revenue procedure applies only to the valuation for transfer tax purposes of non-publicly traded compensatory stock options (that is, stock options that are granted in connection with the performance of services, including stock options that are subject to the provisions of э421), on stock that, on the valuation date, is publicly traded on an established securities market. The options to which this revenue procedure applies are referred to herein as "Compensatory Stock Options."

SECTION 4. APPLICATION

.01 Taxpayers may determine the value of Compensatory Stock Options for transfer tax purposes by using a generally recognized option pricing model (for example, the Black-Scholes model or an accepted version of the binomial model) that takes into account as of the valuation date the following factors: (1) the exercise price of the option; (2) the expected life of the option; (3) the current trading price of the underlying stock; (4) the expected volatility of the underlying stock; (5) the expected dividends on the underlying stock; and (6) the risk-free interest rate over the remaining option term.

.02 In order to rely on this revenue procedure: (1) the taxpayer must use the factors determined in section 4.03 through 4.07 of this revenue procedure; (2) each of the factors used in applying the option pricing model must be reasonable (for this purpose, the use of the factors in section 4.03 through 4.07 of this revenue procedure will be deemed reasonable); (3) the option pricing model must be properly applied; (4) the company that granted the option must be subject to FAS 123 in preparing its financial statements for the fiscal year of the company that includes the valuation date; (5) the underlying stock must be common stock and must be the same stock for which the expected volatility and expected dividends were estimated by the company for purposes of FAS 123; and (6) no discount can be applied to the valuation produced by the option pricing model (for example, no discount can be taken due to lack of transferability or due to the termination of the option within a specified number of days following termination of employment).

.03 Except as provided in section 4.04 of this revenue procedure, in determining the factor for the expected life of the option, taxpayers must use either (1) the maximum remaining term of the option on the valuation date (Maximum Remaining Term), or (2) the expected life of the option on the valuation date computed in accordance with this section (Computed Expected Life). The Maximum Remaining Term is the number of years rounded down to the nearest 1/10th of a year from the valuation date until the option's expiration date (assuming no condition or event occurs that would shorten the life of the option).

The Computed Expected Life is determined in the following manner:

Step one: Obtain the weighted-average expected life of options granted by the publicly traded company that, for purposes of complying with FAS 123, is disclosed in its financial statements for the fiscal year that includes the valuation date. (If, instead of disclosing a weighted-average expected life for options granted during the fiscal year, the company disclosed a method for computing the expected life of the options granted during the fiscal year, the taxpayer must compute the weighted-average expected life for the taxpayer's option using the method disclosed by the company.)

Step two: Divide the weighted-average expected life determined in step one by the number of years, rounded up to the nearest 1/10th of a year, from the date the option was granted (without regard to the application of ∍424(h)(1)) until the option's expiration date (assuming no condition or event occurs that would shorten the life of the option).

Step three: Multiply the quotient obtained in step two by the Maximum Remaining Term. The resulting number rounded down to the nearest 1/10th is the Computed Expected Life expressed in years.

This calculation can be demonstrated by the following example: Assume that on September 1, 1998, A is granted a stock option from company that will terminate on the earlier of the date 10 years from the date of grant or the date 90 days after the termination of A's employment with Company. The option becomes fully exercisable 3 years from the date of grant. For the fiscal year that includes September 1, 2001, Company discloses in a footnote to its financial statements, in accordance with FAS 123, that the weighted-average expected life of stock options granted by the Company during the fiscal year is 6 years. On September 1, 2001, when A's option becomes fully exercisable, A makes a gift of a portion of the option. On September 1, 2001, A's option qualifies as a Compensatory Stock Option. For purposes of step one, the weighted-average expected life is 6 years, as disclosed by Company for purposes of complying with FAS 123 for the fiscal year that includes the valuation date. For purposes of step two, the weighted-average expected life of 6 years is divided by 10 years, the maximum term of A's option on the date the option was granted by Company. The resulting quotient is 0.6 (6 years divided by 10 years equals 0.6). For purposes of step three, the quotient in step two is multiplied by the Maximum Remaining Term to determine the Computed Expected Life. The result is 4.2 years (0.6 times 7 years equals 4.2 years).

.04 Taxpayers must used the Maximum Remaining Term (and may not use the Computed Expected Life) as the expected life of the option on the valuation date if one (or more) of the following conditions is present:

(1) the transferor of the option (or the decedent, in the case of a transfer at death) is not the person to whom the option being valued was granted by the company

(2) except in the case of a transfer at death, the transferor is not an employee or director of the company on the valuation date

(3) except in the case of the death or disability (within the meaning of э22(e)(3)) of the transferor, the option being valued does not terminate within 6 months of termination of employment (or service as a director) of the transferor with the company

(4) the terms of the option being valued permit the option to be transferred to, or for the benefit of, one or more persons other than either persons who are the natural objects of the transferor's bounty or a charitable organization

(5) except in the case of the death of the transferor, the option being valued has an exercise price that is not fixed on the valuation date. The option does not have a fixed exercise price if, for example, the exercise price is determined by a formula the results of which might change after the valuation date. In addition, an option will be deemed not to have a fixed exercise price if the company issuing the option has repriced options (that is directly or indirectly lowered the exercise price of outstanding compensatory stock options) within the 3-year period ending on the valuation date

(6) except in the case of the death of the transferor, the option being valued has terms and conditions such that if all the options granted in the fiscal year of the company that includes the valuation date had the same terms and conditions, the weighted-average expected life for the year would have been more than 120% of the weighted-average expected life actually reported for the year

(7) the company is not required by FAS 123 to disclose an expected life of the options granted in the fiscal year of the company that includes the valuation date

0.5 In determining the factor for the expected volatility of the underlying stock, taxpayers must use the expected volatility of the underlying stock that, for purposes of complying with FAS 123, is disclosed in the financial statements of the publicly traded company for the fiscal year of the company that includes the valuation date.

.06 In determining the factor for the expected dividends on the underlying stock, taxpayers must use the expected dividends on the underlying stock that, for purposes of complying with FAS 123, is disclosed in the financial statements of the publicly traded company for the fiscal year of he company that includes the valuation date.

.07 In determining the factor for the risk-free interest rate, taxpayers must use the yield to maturity on the valuation date of zero-coupon U.S. Treasury Bonds with a remaining term (as of the valuation date) nearest to the expected life of the option on the valuation dates as determined in section 4.03 of this revenue procedure.

.08 Taxpayers utilizing this revenue procedure to value a Compensatory Stock Option for transfer tax purposes should indicate on the applicable gift, estate, or generation-skipping transfer tax return: “FILED PURSUANT TO REV. PROC. 98-34.”

DRAFTING INFORMATION

The principals author of this revenue procedure is Robert B. Hanson of the Office of Assistant Chief Counsel (Passthroughs and Special Industries). For further information regarding this revenue procedure, contact Mr. Hanson on (202) 622-3050 or Melissa C. Liquerman on (202) 622-3120 (not toll-free calls).

Sec. 338. Certain stock purchases treated as asset acquisitions

STATUTE

(a) General rule

For purposes of this subtitle, if a purchasing corporation makes an election under this section (or is treated under subsection (e) as having made such an election), then, in the case of any qualified stock purchase, the target corporation –

(1) shall be treated as having sold all of its assets at the close of the acquisition date at fair market value in a single transaction, and
(2) shall be treated as a new corporation which purchased all of the assets referred to in paragraph (1) as of the beginning of the day after the acquisition date.

(b) Basis of assets after deemed purchase

(b) (1) In general

For purposes of subsection (a), the assets of the target corporation shall be treated as purchased for an amount equal to the sum of –

(A) the grossed-up basis of the purchasing corporation’s recently purchased stock, and
(B) the basis of the purchasing corporation’s nonrecently purchased stock.

(b) (2) Adjustment for liabilities and other relevant items

The amount described in paragraph (1) shall be adjusted under regulations prescribed by the Secretary for liabilities of the target corporation and other relevant items.

(b) (3) Election to step-up the basis of certain target stock

(b)(3)(A) in General

Under regulations prescribed by the Secretary, the basis of the purchasing corporation's non-recently purchased stock shall be the basis amount determined under subparagraph (B) of the paragraph if the purchasing corporation makes an election to recognize gain as if such stock were sold on the acquisition date for an amount equal to the basis amount determined under subparagraph (B).

(b)(3)(B) Determination of basis amount

For purposes of subparagraph (A), the basis amount determined under this subparagraph shall be an amount equal to the grossed-up basis determined under subparagraph (A) of paragraph (1) multiplied by a fraction –

> (i) the numerator of which is the percentage of stock (by value) in the target corporation attributable to the purchasing corporation's non-recently purchased stock, and
> (ii) the denominator of which is 100 percent minus the percentage referred to in clause (i).

(b)(4) Grossed-up basis

For purposes of paragraph (1), the grossed-up basis shall be an amount equal to the basis of the corporation's recently purchased stock, multiplied by a fraction –

> (A) the numerator of which is 100 percent, minus the percentage of stock (by value) in the target corporation attributable to the purchasing corporation's nonrecently purchased stock, and
> (B) the denominator of which is the percentage of stock (by value) in the target corporation attributable to the purchasing corporation's recently purchased stock.

(b)(5) Allocation among assets

The amount determined under paragraphs (1) and (2) shall be allocated among the assets of the target corporation under regulations prescribed by the Secretary.

(b)(6) Definitions of recently purchased stock and nonrecently purchased stock

For purposes of this subsection –

(b)(6)(A) Recently purchased stock

The term 'recently purchased stock' means any stock in the target corporation which is held by the purchasing corporation on the acquisition date and which was purchased by such corporation during the 12-month acquisition period.

(b)(6)(B) Non-recently purchased stock

The term ‘non-recently purchased stock’ means any stock in the target corporation which is held by the purchasing corporation on the acquisition date and which is not recently purchased stock.

(c)((c) Repealed. Pub.L.99-514, title VI, Sec. 631(b)(2), Oct. 22, 1986, 100 Stat. 2272)

(d) Purchasing corporation; target corporation; qualified stock purchase

For purposes of this section –

(d)(1) Purchasing corporation

The term ‘purchasing corporation’ means any corporation which makes a qualified stock purchase of stock of another corporation.

(**d)(2) Target corporation**

The term ‘target corporation’ means any corporation the stock of which is acquired by another corporation in a qualified stock purchase.

(d)(3) Qualified stock purchase

The term ‘qualified stock purchase’ means any transaction or series of transactions in which stock (meeting the requirements of section 1504(a)(2)) of 1 corporation is acquired by another corporation by purchase during the 12-month acquisition period.

(e) Deemed election where purchasing corporation acquires asset of target corporation

(e)(1) In general

A purchasing corporation shall be treated as having made an election under this section with respect to any target corporation if, at any time during the consistency period, it acquires any asset of the target corporation (or a target affiliate).

(e)(2) Exceptions

Paragraph (1) shall not apply with respect to any acquisition by the purchasing corporation if –

(A) such acquisition is pursuant to a sale by the target corporation (or the target affiliate) in the ordinary course of its trade or business,

(B) the basis of the property acquired is determined wholly by reference to the adjusted basis of such property in the hands of the person from who acquired,

(C) such acquisition was before September 1, 1982, or

(D) such acquisition is described in regulations prescribed by the Secretary and meets such conditions as such regulations may provide.

(e)(3) Anti-avoidance rule

Whenever necessary to carry out the purpose of this subsection and subsection (f), the Secretary may treat stock acquisitions which are pursuant to a plan and which meet the requirements of section 1504(a)(2) as qualified stock purchases.

(f) Consistency required for all stock acquisitions from same affiliate group

If a purchasing corporation makes qualified stock purchases with respect to the target corporation and 1 or more target affiliates during any consistency period, then (except as otherwise provided in subsection (e)),

(1) any election under this section with respect to the first such purchase shall apply to each other such purchase, and
(2) no election may be made under this section with respect to the second or subsequent such purchase if such an election was not made with respect to the first such purchase.

(g) Election

(g)(1) When made

Except as otherwise provided in regulations, an election under this section shall be made not later than the 15^{th} day of the 9^{th} month beginning after the month in which the acquisition date occurs.

(g)(2) Manner

An election by the purchasing corporation under this section shall be made in such manner as the Secretary shall by regulations prescribe.

(g)(3) Election irrevocable

An election by a purchasing corporation under this section, once made, shall be irrevocable.

(h) Definitions and special rules

For purposes of this section –

(h)(1) 12-month acquisition period

The term '12-month acquisition period' means the 12-month period beginning with the date of the first acquisition by purchase of stock included in a qualified stock purchase (or, if any of such stock was acquired in an acquisition which is a purchase by reason of subparagraph (C) of paragraph (3), the date on which the acquiring corporation is first considered under section 318(a) (other than paragraph (4) thereof) as owning stock owned by the corporation from which such acquisition was made).

(h)(2) Acquisition date

The term 'acquisition date' means, with respect to any corporation, the first day on which there is a qualified stock purchase with respect to the stock of such corporation.

(h)(3) Purchase

(h)(3)(A) In general

The term 'purchase' means any acquisition of stock, but only if –

(i) the basis of the stock in the hands of the purchasing corporation is not determined (I) in whole or in part by reference to the adjusted basis of such stock in the hands of the person from whom acquired, or (II) under section 1014(a) (relating to property acquired from a decedent).
(ii) the stock is not acquired in an exchange to which section 351, 254, 355, or 356 applies and is not acquired in any other transaction described in regulations in which the transferor does not recognize the entire amount of the gain or loss realized on the transaction, and
(iii) the stock is not acquired from a person the ownership of whose stock would, under section 318(a) (other than paragraph (FOOTNOTE 1) (4) thereof), be attributed to the person acquiring such stock.
(FOOTNOTE 1) So in original.

(h)(3)(B) Deemed purchase under section (a)

The term 'purchase' includes any deemed purchase under subsection (a)(2). The acquisition date for a corporation which is deemed purchased under regulations prescribed by the Secretary.

(h)(3)(C) Certain stock acquisitions from related corporations

(h)(3)(C)(i) In general

Clause (iii) of subparagraph (A) shall not apply to an acquisition of stock from a related corporation if at least 50 percent in value of the stock of such related corporation was acquired by purchase (within the meaning of subparagraphs (A) and (B)).

(h)(3)(C)(ii) Certain distributions

Clause (i) of subparagraph (A) shall not apply to an acquisition of stock described in Clause (i) of this subparagraph if the corporation acquiring such stock –

(I) made a qualified stock purchase of stock of the related corporation, and
(II) made an election under this section (or is treated under subsection (e) as having made such an election) with respect to such qualified stock purchase.

(h)(3)(C)(iii) Related corporation defined

For purposes of this subparagraph, a corporation is a related corporation if stock owned by such corporation is treated (under section 318(a) other than paragraph (4) thereof) as owned by the corporation acquiring the stock.

(h)(4) Consistency period

(h)(4)(A) In general

Except as provided in subparagraph (B), the term 'consistency period' means the period consisting of –

(i) the 1-year period before the beginning of the 12-month acquisition period for the target corporation,
(ii) such acquisition period (up to and including the acquisition date), and
(iii) the 1-year period beginning on the day after the acquisition date.

(h)(4)(B) Extension where there is plan

The period referred to in subparagraph (A) shall also include any period during which the Secretary determines that there was in effect a plan to make a qualified stock purchase plus 1 or more other qualified stock purchases (or asset acquisitions described in subsection (e)) with respect to the target corporation or any target affiliate.

(h)(5) Affiliated group

The term 'affiliated group' has the meaning given to such term by section 1054(a) (determined without regard to the exceptions contained in section 1504(b)).

(**h)(6) Target affiliate**

(h)(6)(A) In general

A corporation shall be treated as a target affiliate of the target corporation if each of such corporations was, at any time during so much of the consistency period as ends on the acquisition date of the target corporation, a member of an affiliated group which had the same common parent.

(h)(6)(B) Certain foreign corporations, etc.

Except as otherwise provided in regulations (and subject to such conditions as may be provided in regulations) –

(i) the term 'target affiliate' does not include a foreign corporation, a DISC, or a corporation to which an election under section 936 applies, and
(ii) stock held by a target affiliate in a foreign corporation or a domestic corporation which is a DISC or described in section 1248(e) shall be excluded from the operation of this section.

(h)(7)((7) Repealed. Pub. L. 100-647, title I, Sec. 1006(e)(20), Nov. 10, 1988, 102 Stat. 3403)

(h)(8) Acquisitions by affiliated group treated as made by 1 corporation

Except as provided in regulations prescribed by the Secretary, stock and asset acquisitions made by members of the same affiliated group shall be treated as made by 1 corporation.

(h)(9) Target not treated as member of affiliated group

Except as otherwise provided in paragraph (10) or in regulations prescribed under this paragraph, the target corporation shall not be treated as a member of an affiliated group with respect to the sale described in subsection (a)(1).

(h)(10)Elective recognition of gain or loss by target corporation, together with nonrecognition of gain or loss on stock sold by selling consolidated group

(h)(10)(A) In general

Under regulations prescribed by the Secretary, an election may be made under which if –

(i) the target corporation was, before the transaction, a member of the selling consolidated group, and

(ii) the target corporation recognizes gain or loss with respect to the transaction as if it sold all of its assets in a single transaction.

then the target corporation shall be treated as a member of the selling consolidated group with respect to such sale, and (to the extent provided in regulations) no gain or loss will be recognized on stock sold or exchanged in the transaction by members of the selling consolidate group.

(h)(10)(B) Selling consolidate group

For purposes of subparagraph (A), the term 'selling consolidated group' means any group of corporations which (for the taxable period which includes the transaction) –

(i) includes the target corporation, and
(ii) files a consolidate return.

To the extent provided in regulations, such term also includes any affiliated group of corporations which includes the target corporation (whether or not such group files a consolidated return).

(h)(10)(C) Information required to be furnished to the Secretary

Under regulations, where an election is made under subparagraph (A), the purchasing corporation and the common parent of the selling consolidated group shall, at such times and in such manner as may be provided in regulations, furnish to the Secretary the following information:

(i) The amount allocated under subsection (b)(5) to goodwill or going concern value.
(ii) Any modification of the amount described in clause (i).
(iii) Any other information as the Secretary deems necessary to carry out the provisions of this paragraph.

(h)(11) Elective formula for determining fair market value

For purposes of subsection (a)(1), fair market value may be determined on the basis of a formula provided in regulations prescribed by the Secretary which takes into account liabilities and other relevant items.

(h)(12)((12) Repealed. Pub. L, 99-514, title VI, Sec. 631(e)(5), Oct. 22, 1986, 100 Stat. 2273)

(h)(13) Tax on deemed sale not taken into account for estimated tax purposes

For purposes of section 6655, tax attributable to the sale described in subsection (a)(1) shall not be taken into account.

(h)(14) Coordination with section 341

For purposes of determining whether section 341 applies to a disposition within 1 year after the acquisition date of stock by a shareholder (other than the acquiring corporation) who held stock in the target corporation on the acquisition date, section 341 shall be applied without regard to this section.

(h)(15) Combined deemed sale return

Under regulations prescribed by the Secretary, a combined deemed sale return may be filed by all target corporations acquired by a purchasing corporation on the same acquisition date if such target corporations were members of the same selling consolidated group (as defined in subparagraph (B) of paragraph (10)).

(h)(16) Coordination with foreign tax credit provisions

Except as provided in regulations, this section shall not apply for purposes of determining the source or character of any item for purposes of subpart A of part III of subchapter N of this chapter (relating to foreign tax credit). The preceding sentence shall not apply to any gain to the extent such gain in includible in gross income as a dividend under section 1248 (determined without regard to any deemed sale under this section by a foreign corporation).

(i) Regulations

The Secretary shall prescribe such regulations as may be necessary or appropriate to carry out the purposes of this section, including –

(1) regulations to ensure that the purpose of this section to require consistency of treatment of stock and asset sales and purchases may not be circumvented through the use of any provision of law or regulations (including the consolidated return regulations) and

(2) regulations providing for the coordination of the provisions of this section with the provision of this title relating to foreign corporations and their shareholders.

SOURCE

(Added Pub. L. 97-248, title II, Sec. 224(a), Sept. 3, 1982, 96 Stat. 485, and amended Publ. L. 97-448, title III, Sec. 306(a)(8)(A)(i), Jan. 12, 1983, 96 Stat. 2402; Pub. L. 98-369, div. A, title VII, Sec. 712(k)(1)-(5)(D), (6), (7), July 18, 1984, 98 Stat. 948-952; Pub. L. 99-514, title VI, Sec. 631(b), (e)(5), title XII, Sec. 1275(c)(6), title XVIII, Sec. 1804(e)(8)(A), 1899A(7), Oct. 22, 1986, 100 Stat. 2272, 2273, 2599, 2804, 2958; Pub. L. 100-647, title I, Sec. 1006(e)(20), 1012(bb)(5)(A), 1018(d)(9), Nov. 10, 1988, 102 Stat. 3403, 3535, 3581,; Pub. L. 101-508, title XI, Sec. 11323(c)(1), Nov. 5, 1990, 104 Stat. 1288-465).

MISC1

A prior section 338, act Aug. 16, 1954, ch. 736, 68A Stat. 107, which made reference to a special rule relating to the effect on earnings and profits of certain distributions in partial liquidation in section 312(e), was repealed by Pub. L. 97-248, title II, Sec. 222(e)(4), Sept. 3, 1982, 96 Stat. 480.

Amendments

1990 – Subsec. (h)(10)(C). Pub. L. 101-508 added subpar. (C).

1988 – Subsec. (e)(3). Pub. L. 100-647, Sec. 1018(d)(9), substituted ‘which meet the requirements of section 1504(a)(2)’ for ‘which meet the 80 percent requirements of subparagraphs (A) and (B) of subsection (d)(3)’

Subsec. (h)(7). Pub. L. 100-647, Sec. 1006(e)(20), struck out par. (7) which read as follows: ‘Additional percentage must be attributable to purchase, etc. – For purposes of subsection (c)(1), any increase in the maximum percentage of stock taken into account over the percentage of stock (by value) of the target corporation held by the purchasing corporation on the acquisition date shall be taken into account only to the extent such increase is attributable to –

‘(A) purchase, or

‘(B) a redemption of stock of the target corporation –

‘(i) to which section 302(a) applies, or

‘(ii) in the case of a shareholder who is not a corporation, to which section 301 applies.’

Subsec. (h)(16). Pub. L. 100-647, Sec. 1012(bb)(5)(A), added par. 16.

1986 – Subsec. (a)(1). Pub. L. 99-514, Sec. 631(b)(1), struck out ‘to which section 337 applies’ after ‘in a single transaction’.

Subsec. (c). Pub. L. 99-514, Sec. 631(b)(2), struck out subsec. (c) relating to special rules for coordination with section 337 where purchasing corporation holds less than 100 percent of stock, and in case of certain redemptions where an election is made under this section.

Subsec. (d)(3). Pub. L. 99-514, Sec. 1804(e)(8)(A), amended par. (3) generally. Prior to amendment, par. (3) read as follows: 'The term 'qualified stock purchase' means any transaction or series of transactions in which stock of 1 corporation possessing –

'(A) at least 80 percent of the total combined voting power of all classes of stock entitled to vote, and

'(B) at least 80 percent of the total number of shares of all other classes of stock (except nonvoting stock which is limited and preferred as to dividends),

is acquired by another corporation by purchase during the 12-month acquisition period.'

Subsec. (h)(3)(C)(i). Pub. L. 99-514, Sec. 1899A(7), substituted 'subparagraphs' for 'subparagraph'.

Subsec. (h)(5)(B)(i). Pub. L. 99-514, Sec. 1275(c)(6), struck out 'a corporation described in section 934(b),' after 'DISC'.

Subsec. (h)(10)(B). Pub. L. 99-514, Sec. 631(b)(3), inserted provision that to the extent provided in regulations, term 'selling consolidated group' also includes an affiliated group of corporations which includes the target corporation (whether or not such group files a consolidated return).

Subsec. (h)(12). Pub. L. 99-514, Sec. 631(e)(5), struck out par. (12) relating to applicability of section 337 where target had adopted plan for complete liquidation.

1984 – Subsec. (a)(1). Pub. L. 98-369, Sect. 712(k)(1)(A), inserted 'at fair market value' after 'acquisition date'.

Subsec. (b). Pub. L. 98-369, Sec. 712(k)(1)(B), substituted 'Basis of assets after deemed purchase' for 'Price at which deemed sale made' in heading.

Subsec. (b)(1). Pub. L. 98-369, Sec. 712(k)(1)(B), amended par. (1) generally, substituting 'as purchased for an amount equal to the sum of' for 'as sold (and purchased) at an amount equal to' in introductory text, 'purchasing corporation's recently purchase stock, and' for 'purchasing corporation's stock in the target corporation on the acquisition date' in subpar. (A), and 'the basis of the purchasing corporation's non-recently purchased stock' in subpar. (3) in lieu of provision relating to adjustment for liabilities and other relevant items, now covered in par. (2).

Subsec. (b)(2). Pub. L. 98-369, Sec. 712(k)(1)(B), amended par. (2) generally, incorporating former par. (1)(B), provision, inserting heading "Adjustment for liabilities and other relevant items' and substituting 'adjusted under regulations' for 'properly adjusted under regulations'. Former par. (2) redesignated (4).

Subsec. (b)(3). Pub. L. 98-369, Sec. 712(k)(1)(B), added par. (3). Former par. (3) redesignated (5).

Subsec. (b)(4). Publ L. 98-369, Sec. 712(k)(1)(B), redesignated for par. (2) as (4), substituted in introductory text 'corporation's recently purchased stock,' for 'purchasing corporation's stock in the target corporation on the acquisition date', inserted in subpar. (A) 'minus the percentage of stock (by value) in the target corporation attributable to the purchasing corporation's non-recently purchased stock', and substituted in subpar. (B) 'in the target corporation attributable to the purchasing corporation's recently purchased stock' for 'of the tare corporation held by the purchasing corporation on the acquisition date'.

Subsec. (b)(5). Pub. L. 98-369, Sec. 712(k)(1)(B), redesignated former par. (3) as (5) and inserted reference to par. (2).

Subsec. (b)(6). Pub. L. 98-369, Sec. 712(k)(1)(3), added par. (6).

Subsec. (c)(1). Pub. L. 98-369, Sec. 712(k)(2), inserted in last sentence 'and section 333 does not apply to such liquidation'.

Subsec. (e)(2). Pub. L. 98-369, Sec. 712(K)(3), substituted 'wholly' for '(in whole or in part)' in subpar. (B), struck out acquisition by the purchasing corporation if, to the extent provided in regulations, the property acquired is located outside the United States, designated subpar. (E) as (D), and in subpar. (D) as redesignated, inserted 'and meets such conditions as such regulations may provide'.

Subsec. (g)(1). Pub. L. 98-369, Sec. 712(k)(4), substituted 'the 15th day of the 0th month beginning after the month in which the acquisition date occurs' for '75 days after the acquisition date'.

Subsec. (h)(1). Pub. L. 98-369, Sec. 712(k)(5)(C), included within 12-month acquisition period the period beginning with the date on which the acquiring corporation is first considered as owning stock owned by corporation from which acquisition was made.

Subsec. (h)(3)(A)(ii). Pub. L. 98-369, Sec. 712(k)5(D), included references to sections 354, 355, and 356 and in defining 'purchase' provided that the stock not be acquired in any other transaction described in regulations in which the transferor does not recognize the entire amount of the gain or loss realized on the transaction.

Subsec. (h)(3)(B). Pub. L. 98-369, Sec. 712(k)(5)(A), substituted in heading 'under subsection (a)' for 'of stock of subsidiaries' and in text 'The term 'purchase' includes and deemed purchase under subsection (a)(2). The acquisition date for a corporation which is deemed purchased under subsection (a)(2) shall be determined under regulations prescribed by the Secretary' for 'If stock in a corporation is acquired by purchase (within the meaning of subparagraph (A)) and, as a result of such acquisition, the corporation making such purchase is treated (by reason of section 318 (a)) as owning stock in a 3rd corporation, the corporation making such purchase shall be treated as having purchased such stock in such 3rd corporation. The corporation making such purchase shall be treated as purchasing stock in the 3rd corporation by reason of the preceding sentence on the first day on which the purchasing corporation is considered under section 318(a) as owning such stock'.

Subsec. (h)(3)(C). Pub. L. 98-369, Sec. 712(k)(5)(B), added subpar. (C).

Subsec. (h)(7). Pub. L. 98-369, Sec. 712(k)(6)(A), added par. (7) and struck out former par. (7) which had provided that acquisitions by purchasing corporation include acquisitions by corporations affiliated with purchasing corporation. See subsec. (h)(8).

Subsec. (h)(8). Pub. L. 98-369, Sec. 712(k)(6)(A), added par. (8) incorporating former par. (7) provision stating that 'Except as otherwise provided in regulations, an acquisition of stock or assets by any member of an affiliated group which includes a purchasing corporation shall be treated as made by the purchasing corporation.' Former par. (8) redesignated (9).

Subsec. (h)(9). Pub. L. 98-369, Sec. 712(k)(6)(A), (B) redesignated former par. (8) as (9) and substituted therein 'paragraph (10)' for 'paragraph (9)'. Former par. (9) redesignated former par. (9) as (10).

Subsec. (h)(11) to (15). Pub. L. 98-369, Sec. 712(k)(6)(C), added pars. (11) to (15).

Subsec. Sussec. (i). Pub. L. 98-369, Sec. 712(k)(7), provided in introductory text that the regulations be appropriate to carry out the purposes of this section; designated existing provisions as par. (1) and substituted therein 'treatment of stock and asset sales and purchases' for 'treatment of stock and asset purchases with respect to a target corporation and its target affiliates (whether by treating all of them as stock purchases or as asset purchases' before 'may not be circumvented', and added par. (2).

1983 – Subsec. (h)(8), (9). Pub. L. 97-448 added pars. (8) and (9).

Effective Date of 1990 Amendment

Section 11323(d) of Pub. L. 101-508 provided that:

'(1) In general. – Except as provided in paragraph (2), the amendments made by this section (amending this section and sections 1060 and 6724 of this title) shall apply to acquisitions after October 9, 199.

'(2) Binding contract exception. – The amendments made by this section shall not apply to any acquisition pursuant to a written binding contract in effect October 9, 1990, and at all times thereafter before such acquisition.'

Effective Date of 1988 Amendment

Section 1012(bb)(5)(B) of Pub. L. 100-647 provided that: 'The amendment made by subparagraph (A) (amending this section) shall apply to qualified stock purchases (as defined in section 338(d)(3) of the 1986 Code) after March 31, 1988, except that, in the case of an election under section 338(h)(10) of the 1986 Code, such amendment shall apply to qualified stock purchases (as so defined) after June 10, 1987.'

Amendment by sections 1006(e)(20) and 1018(d)(9) of Pub. L. 100-647 effective, except as otherwise provided, as if included in the provision of the Tax Reform Act of 1986, Pub. L. 99-514, to which such amendment relates, see section 1019(a) of Pub. L. 100-647, set out as a not under section 1 of this title.

Effective Date of 1986 Amendment

Amendment by section 631(b), (e)(5) of Pub. L 99-514 applicable to any distribution in complete liquidation, and any sale or exchange, made by a corporation after July 31, 1986, unless such corporation is completely liquidated before Jan. 1, 1987, any transaction described in section 338 of this title for which the acquisition date occurs after Dec. 31, 1986, and any distribution, not in complete liquidation, made after Dec. 31, 1986, with exceptions and special and transitional rules, see section 633 of Pub. L. 99-514, set out as an Effective Date note under section 336 of this title.

Amendment by section 1275(c)(6) of Pub. L. 99-514 applicable to taxable years beginning after Dec. 31, 1986, with certain exceptions and qualifications, see section 1277 of Pub. L. 99-514, set out as a note under section 931 of this title.

Section 1804(e)(8)(B) of Pub. L. 99-514 provided that: ‘The amendment made by subparagraph (A) (amending this section) shall apply in cases where the 12-month acquisition period (as defined in section 338(h)(1) of the Internal Revenue Code of 1954 (now 1986) begins after December 31, 1985.’

Effective Date of 1984 Amendment

Section 712(k)(9) of Pub. L. 98-369, as amended by Pub. L. 99-514, Sec. 2, Oct. 22, 1986, 100 Stat. 2095, provided that:

‘(A) In general – The amendments made by this subsection (amending this section and sections 269 and 318 of this title) shall not apply to any qualified stock purchase (as defined in section 338(d)(3) of the Internal Revenue Code of 1986 (formerly I.R.C. 1954)) where the acquisition date (as defined in section 338(h)(2) of such Code) is before September 1, 1982.

‘(B) Extension of time for making election. – In the case of any qualified stock purchase described in subparagraph (A), the time for making an election under section 338 of such Code shall not expire before the close of the 60th day after the date of the enactment of this Act (July 18, 1984).’

Amendment by section 712(k) of Pub. L. 98=369 effective as if included in the provision of the Tax Equity and Fiscal Responsibility Act of 1982, Pub. L. 97-248, to which such amendment relates, see section 715 of Pub. L. 98-369, setout as a note under section 31 of this title.

Effective Date of 1983 Amendment

Amendment by Pub. L. 97-448 effective as if included in the provisions of the Tax Equity and Fiscal Responsibility Act of 1982, Pub. L. 97-248, to which such amendment relates, see section 311(d) of Pub. L. 97-448m set out as a note under section 31 of this title.

Effective Date

Section 224(d) of Pub. L. 97-248, as amended by Pub. L. 97-448, title III, Sec. 306(a)(8)(B), Jan. 12, 1983, 96 Stat. 2403; Pub. L. 99-514, Sec. 2. Oct. 22, 1986, 100 Stat. 2095, provided that:

> ‘(1) In general. – The amendments made by this section (enacting this section and amending sections 168, 318, 334, 335, 337, 381, and 617 of this title, shall apply to any target corporation within the meaning of section 338 of the Internal Revenue Code of 1986 (formerly I.R.C. 1954) as added by this section) with respect to which the acquisition date (within the meaning of such section) occurs after August 31, 1982.

'(2) Certain acquisitions before September 1, 1983. – If –

'(A) an acquisition date (within the meaning of section 338 of such Code without regard to paragraph (5) of this subsection) occurred after August 31, 1980, and before September 1, 1982,

'(B) the target corporation (within the meaning of section 338 of such Code) is not liquidated before September 1, 1982, and

'(C) the purchasing corporation (within the meaning of section 338 of such Code makes, not later than November 15, 1982, an election under section 338 of such Code,

then the amendments made by this section shall apply to the acquisition of such target corporation.

'(3) Certain acquisitions of financial institutions. – In any case, in which –

'(A) there is, on July 22, 1982, a binding contract to acquire control (within the meaning of section 368(c) of such Code of any financial institution,

'(B) the approval of one or more regulatory authorizes is required in order to complete such acquisitions, and,

'(C) within 90 days after the date of the final approval of the last such regulatory authority granting final approval, a plan of complete liquidation of such financial institution is adopted, then the purchasing corporation may elect not to have the amendments made by this section apply to the acquisition pursuant to such contract.

'(4) Extension of time for making elections; revocation of elections. –

'(A) Extension. – The time for making an election under section 338 of such Code shall not expire before the close of February 28, 1983.

'(B) Revocation. – Any election made under section 338 of such Code may be revoked by the purchasing corporation if revoked before March 1, 1983.

'(5) Rules for acquisitions described in paragraph (2). –

'(A) In general. – For purposes of applying section 338 of such Code with respect to any acquisition described in paragraph (2) –

'(i) the date selected under subparagraph (3) of this paragraph shall be treated as the acquisition date,

'(ii) a rule similar to the last sentence of section 334(b)(2) of such Code (as in effect on August 31, 1983) shall apply, and

'(iii) subsections (e), (f), and (i) of such section 338, and paragraphs (4), (6), (8), and (9) of subsection (h) of such section 338, shall not apply.

'(B) Selection of acquisition date by purchasing corporation. – The purchasing corporation may select any date for purposes of subparagraph (A) (i) if such date –

'(i) is after the later of June 30, 1982, or the acquisition date (within the meaning of section 338 of such Code without regard to this paragraph), and

'(ii) is on or before the date on which the election described in paragraph (2)(C) is made.'

Treatment of Certain Corporation Organized on February 22, 1983

Section 1804 (e)(9) of Pub. L. 99-514 provided that" 'In the case of a Rhode Island corporation which was organized on February 22, 1983, and which on February 25, 1983 –

'(A) purchased the stock of another corporation,

'(B) filed an election under section 338(g) of the Internal Revenue Code of 1986 with respect to such purchase, and

'(C) merged into the acquired corporation,

such purchase of stock shall be considered as made by the acquiring corporation, such election shall be valid, and the acquiring corporation shall be considered a purchasing corporation for purposes of section 338 of such Code without regard to the duration of the existence of the acquiring corporation.'

Special Rules For Deemed Purchases Under Prior Law

Section 712(k)(10) of Pub. L. 98-369, as amended by Pub. L. 99-514, Sec. 2, Oct. 22, 1986, 100 Stat. 2095, provided that: 'If, before October 20, 1983, a corporation was treated as making a qualified stock purchase (as defined in section 338(d)(3) of the Internal Revenue Code of 1986 (formerly I.R.C. 1954)), but would not be so treated under the amendments made by paragraphs (5) and (6) (amending subsec. (h) and section 318(b)(4) of this title) of this subsection, the amendments made by such paragraphs shall not apply to such purchase unless such corporation elects (at such time and in such manner as the Secretary of the Treasury or his delegate may by regulations prescribe) to have the amendments made by such paragraphs apply.

Exception for Stock Purchases in Contemplation of Target Corporation as Member of Affiliated Group

Section 306(a)(8)(A)(ii) of Pub. L. 97-448, as amended by Pub. L. 98-369, div. A., title VII, Sec. 722(a)(3), July 18, 1984, 98 Stat. 973; Pub. L. 99-514, Sec. 2, Oct. 22, 1986, 100 Stat. 2095, provided that: 'If –

'(I) any portion of a qualified stock purchase is pursuant to a binding contract entered into on or after September 1, 1982, and on or before the date of the enactment of this Act (Jan. 12, 1983), and

'(II) the purchasing corporation establishes by clear and convincing evidence that such contract was negotiated on the contemplation that, with respect to the deemed sale under section 338 of the Internal Revenue Code of 1986 (formerly I.R.C. 1954), the target corporation would be treated as a member of the affiliated group which includes the selling corporation,

then the amendment made by clause (i) (amending subsec. (h)) shall not apply to such qualified stock purchase.'

SECREF

Section Referred to in Other Sections

This section is referred to in section 172, 269, 318, 1060, 1362, 6724 of this title; title 45 section 1347.

SEC. 2702. SPECIAL VALUATION RULES IN CASE OF TRANSFERS OF INTERESTS IN TRUSTS

TITLE 26, *Subtitle B*, *CHAPTER 14*, Sec. 2702

(a) Valuation rules

(1) In general

Solely for purposes of determining whether a transfer of an interest in trust to (or for the benefit of) a member of the transferor's family is a gift (and the value of such transfer), the value of any interest in such trust retained by the transferor or any applicable family member (as defined in section 2701(e)(2)) shall be determined as provided in paragraph (2).

(2) Valuation of retained interests

(A) In general

The value of any retained interest which is not a qualified interest shall be treated as being zero.

(B) Valuation of qualified interest

The value of any retained interest which is a qualified interest shall be determined under section 7520.

(3) Exceptions

(A) In general

This subsection shall not apply to any transfer -

(i) to the extent such transfer is an incomplete transfer, or

(ii) if such transfer involves the transfer of an interest in trust all the property in which consists of a residence to be used as a personal residence by persons holding term interests in such trust.

(B) Incomplete transfer

For purposes of subparagraph (A), the term "incomplete transfer" means any transfer which would not be treated as a gift whether or not consideration was received for such transfer.

(b) Qualified interest

For purposes of this section, the term "qualified interest" means -

(1) any interest which consists of the right to receive fixed amounts payable not less frequently than annually,

(2) any interest which consists of the right to receive amounts which are payable not less frequently than annually and are a fixed percentage of the fair market value of the property in the trust (determined annually), and

(3) any non-contingent remainder interest if all of the other interests in the trust consist of interests described in paragraph (1) or (2).

(c) Certain property treated as held in trust

For purposes of this section -

(1) In general

The transfer of an interest in property with respect to which there is 1 or more term interests shall be treated as a transfer of an interest in a trust.

(2) Joint purchases

If 2 or more members of the same family acquire interests in any property described in paragraph (1) in the same transaction (or a series of related transactions), the person (or persons) acquiring the term interests in such property shall be treated as having acquired the entire property and then transferred to the other persons the interests acquired by such other persons in the transaction (or series of transactions). Such transfer shall be treated as made in exchange for the consideration (if any) provided by such other persons for the acquisition of their interests in such property.

(3) Term interest

The term "term interest" means -

(A) a life interest in property, or

(B) an interest in property for a term of years.

(4) Valuation rule for certain term interests

If the non-exercise of rights under a term interest in tangible property would not have a substantial effect on the valuation of the remainder interest in such property -

(A) subparagraph (A) of subsection (a)(2) shall not apply to such term interest, and

(B) the value of such term interest for purposes of applying subsection (a)(1) shall be the amount which the holder of the term interest establishes as the amount for which such interest could be sold to an unrelated third party.

(d) Treatment of transfers of interests in portion of trust

In the case of a transfer of an income or remainder interest with respect to a specified portion of the property in a trust, only such portion shall be taken into account in applying this section to such transfer.

(e) Member of the family

For purposes of this section, the term "member of the family" shall have the meaning given such term by section 2704(c)(2).

SEC. 2703. CERTAIN RIGHTS AND RESTRICTIONS DISREGARDED

TITLE 26, Subtitle B, CHAPTER 14, Sec. 2703

(a) General rule

For purposes of this subtitle, the value of any property shall be determined without regard to -

(1) any option, agreement, or other right to acquire or use the property at a price less than the fair market value of the property (without regard to such option, agreement, or right), or

(2) any restriction on the right to sell or use such property.

(b) Exceptions

Subsection (a) shall not apply to any option, agreement, right, or restriction which meets each of the following requirements:

(1) It is a bona fide business arrangement.

(2) It is not a device to transfer such property to members of the decedent's family for less than full and adequate consideration in money or money's worth.

(3) Its terms are comparable to similar arrangements entered into by persons in an arms' length transaction.

SEC. 2704. TREATMENT OF CERTAIN LAPSING RIGHTS AND RESTRICTIONS

TITLE 26, Subtitle B, CHAPTER 14, Sec. 2704

(a) Treatment of lapsed voting or liquidation rights

(1) In general

For purposes of this subtitle, if -

(A) there is a lapse of any voting or liquidation right in a corporation or partnership, and

(B) the individual holding such right immediately before the lapse and members of such individual's family hold, both before and after the lapse, control of the entity, such lapse shall be treated as a transfer by such individual by gift, or a transfer which is includible in the gross estate of the decedent, whichever is applicable, in the amount determined under paragraph (2).

(2) Amount of transfer

For purposes of paragraph (1), the amount determined under this paragraph is the excess (if any) of

(A) the value of all interests in the entity held by the individual described in paragraph (1) immediately before the lapse (determined as if the voting and liquidation rights were nonlapsing), over

(B) the value of such interests immediately after the lapse.

(3) Similar rights

The Secretary may by regulations apply this subsection to rights similar to voting and liquidation rights.

(b) Certain restrictions on liquidation disregarded

(1) In general

For purposes of this subtitle, if -

(A) there is a transfer of an interest in a corporation or partnership to (or for the benefit of) a member of the transferor's family, and

(B) the transferor and members of the transferor's family hold, immediately before the transfer, control of the entity, any applicable restriction shall be disregarded in determining the value of the transferred interest.

(2) Applicable restriction

For purposes of this subsection, the term "applicable restriction" means any restriction -

(A) which effectively limits the ability of the corporation or partnership to liquidate, and

(B) with respect to which either of the following applies:

(i) The restriction lapses, in whole or in part, after the transfer referred to in paragraph (1).

(ii) The transferor or any member of the transferor's family, either alone or collectively, has the right after such transfer to remove, in whole or in part, the restriction.

(3) Exceptions

The term "applicable restriction" shall not include -

(A) any commercially reasonable restriction which arises as part of any financing by the corporation or partnership with a person who is not related to the transferor or transferee, or a member of the family of either, or

(B) any restriction imposed, or required to be imposed, by any Federal or State law.

(4) Other restrictions

The Secretary may by regulations provide that other restrictions shall be disregarded in determining the value of the transfer of any interest in a corporation or partnership to a member of the transferor's family if such restriction has the effect of reducing the value of the transferred interest for purposes of this subtitle but does not ultimately reduce the value of such interest to the transferee.

(c) Definitions and special rules

For purposes of this section -

(1) Control

The term "control" has the meaning given such term by section 2701(b)(2).

(2) Member of the family

The term "member of the family" means, with respect to any individual -

(A) such individual's spouse,

(B) any ancestor or lineal descendant of such individual or such individual's spouse,

(C) any brother or sister of the individual, and

(D) any spouse of any individual described in subparagraph (B) or (C).

(3) Attribution

The rule of section 2701(e)(3)(A) shall apply for purposes of determining the interests held by any individual.

1966-1 C.B. 36

Sec. 162
Sec. 451
Sec. 461

Amplified by Rev. Rul. 72-366

IRS Headnote

The additional premium prepayments which an insured savings and loan institution is required to pay to the Federal Savings and Loan Insurance Corporation under the provision of section 404 of the National Housing Act, as amended, are not deductible when paid and may be deducted only when any possibility of their return is precluded. With respect to an accrual basis institution, earnings on such premiums are includible in the gross income of that institution until such time as the earnings are no longer available for losses of the FSLIC. With respect to a cash basis institution, earnings on such premiums are includible in the gross income of the institution credited therewith only when such earnings are used to pay its obligations or become available to that institution without substantial restriction or limitation.

Full Text

Rev. Proc. 66-49

SECTION 1. PURPOSE.
The purpose of this procedure is to provide information and guidelines for taxpayers, individual appraisers, and valuation groups relative to appraisals of contributed property for Federal income tax purposes. The procedures outlined are applicable to all types of noncash property for which an appraisal is required such as real property, tangible or intangible personal property, and securities. These procedures are also appropriate for unique properties such as art objects, literary manuscripts, antiques, etc., with respect to which the determination of value often is more difficult.

SECTION. 2. LAW AND REGULATIONS.
.01 Numerous sections of the Internal Revenue Code of 1954, as amended, give rise to a determination of value for Federal tax purposes; however, the significant section for purposes of this Revenue Procedure is section 170, Charitable, Etc., Contributions and Gifts.

.02 Value is defined in section 1.170-1(c) of the Income Tax Regulations as follows:
* * *. The fair market value is the price at which the property would [*2] change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of relevant facts. * * *

.03 This section further provides that:
* * *. If the contribution is made in property of a type which the taxpayer sells in the course of his business, the fair market value is the price which the taxpayer would have received if he had sold the contributed property in the lowest usual market in which he customarily sells, at the time and place of contribution (and in the case of a contribution of goods in quantity, in the quantity contributed). * * *

.04 As to the measure of proof in determining the fair market value, all factors bearing on value are relevant including, where pertinent, the cost, or selling price of the item, sales of comparable properties, cost of reproduction, opinion evidence and appraisals. Fair market value depends upon value in the market and not on intrinsic worth.

.05 The cost or actual selling price of an item within a reasonable time before or after the valuation date may be the best evidence of its fair market value. Before such information is taken into account, it must be [*3] ascertained that the transaction was at arm's length and that the parties were fully informed as to all relevant facts. Absent 1258 such evidence, even the sales price of the item in question will not be persuasive.

.06 Sales of similar properties are often given probative weight by the courts in establishing fair market value. The weight to be given such evidence will be affected by the degree of similarity to the property under appraisal and the proximity of the date of sale to the valuation date.

.07 With respect to reproductive cost as a measure of fair market value, it must be shown that there is a probative correlation between the cost of reproduction and fair market value. Frequently, reproductive cost will be in excess of the fair market value.

.08 Generally, the weight to be given to opinion evidence depends on its origin and the thoroughness with which it is supported by experience and facts. It is only where expert opinion is supported by facts having strong probative value, that the opinion testimony will in itself be given appropriate weight. The underlying facts must corroborate the opinion; otherwise such opinion will be discounted or disregarded.

.09 [*4] The weight to be accorded any appraisal made either at or after the valuation date will depend largely upon the competence and knowledge of the appraiser with respect to the property and the market for such property.

SECTION. 3. APPRAISAL FORMAT.

.01 When it becomes necessary to secure an appraisal in order to determine the values of items for Federal income tax purposes, such appraisals should be obtained from qualified and reputable sources, and the appraisal report should accompany the return when it is filed. The more complete the information filed with a tax return the more unlikely it will be that the Internal Revenue Service will find it necessary to question items on it. Thus, when reporting a deduction for charitable contributions on an income tax return, it will facilitate the review and the acceptance of the returned values if any appraisals which have been secured are furnished. The above-mentioned regulations prescribe that support of values claimed should be submitted and a properly prepared appraisal by a person qualified to make such an appraisal may well constitute the necessary substantiation. In this respect, it is not intended that all value determinations [*5] be supported by formal written appraisals as outlined m detail below. This is particularly applicable to minor items of property or where the value of the property is easily ascertainable by methods other than appraisal.

.02 In general, an appraisal report should contain at least the following:

(1) A summary of the appraiser's qualifications.
(2) A statement of the value and the appraiser's definition of the value he has obtained.
(3) The bases upon which the appraisal was made, including any restrictions, understandings, or covenants limiting the use or disposition of the property.
(4) The date as of which the property was valued.
(5) The signature of the appraiser and the date the appraisal was made. 1259

.03 An example of the kind of data which should be contained in a typical appraisal is included below. This relates to the valuation of art objects, but a similar detailed breakdown can be outlined for any type of property. Appraisals of art objects, paintings in particular, should include:

(1) A complete description of the object, indicating the size, the subject matter, the medium, the name of the artist, approximate date created, the interest transferred, [*6] etc.
(2) The cost, date, and manner of acquisition.
(3) A history of the item including proof of authenticity such as a certificate of authentication if such exists.
(4) A photograph of a size and quality fully identifying the subject matter, preferably a 10" x 12" or larger print.
(5) A statement of the factors upon which the appraisal was based, such as:
(a) Sales of other works by the same artist particularly on or around the valuation date.
(b) Quoted prices in dealers' catalogs of the artist's works or of other artists of comparable stature.
(c) The economic state of the art market at or around the time of valuation, particularly with respect to the specific property.
(d) A record of any exhibitions at which the particular art object had been displayed.
(e) A statement as to the standing of the artist in his profession and in the particular school or time period.

.04 Although an appraisal report meets these requirements, the Internal Revenue Service is not relieved of the responsibility of reviewing appraisals to the extent deemed necessary.

SECTION. 4. REVIEW OF VALUATION APPRAISALS.
.01 While the Service is responsible for reviewing appraisals, it [*7] is not responsible for making appraisals; the burden of supporting the fair market value listed on a return is the taxpayer's. The Internal Revenue Service cannot accord recognition to any appraiser or group of appraisers from the standpoint of unquestioned acceptance of their appraisals. Furthermore, the Service cannot approve valuations or appraisals prior to the actual filing " of the tax return to which the appraisal pertains and cannot issue advance rulings ~: approving or disapproving such appraisals."

.02 In determining the acceptability of the claimed value of the donated property, the Service may either accept the value claimed based on information or appraisals submitted with the return or make its own determination as to the fair market value. In either instance, the Service may find it necessary to:
(1) contact the taxpayer and ask for additional information,
(2) refer the valuation pro blem to a Service appraiser or valuation specialist,
(3) recommend that an independent appraiser be employed by the Service to appraise the asset in question. (This latter course is frequently used by the Service when objects requiring appraisers of highly specialized experience and [*8] knowledge are involved.)

FINANCIAL ACCOUNTING STATEMENT SUMMARIES

Not all 159 statements issued by the Financial Accounting Statements Board are listed here. Those summarized herein are often considered applicable to valuations, but may not be the only ones applicable. Please see their website for more information: http://www.fasb.org/st/index.shtml#fas1

Statement No. 2 *Accounting for Research and Development Costs*
(Issued 10/74)

This Statement establishes standards of financial accounting and reporting for research and development (R&D) costs. This Statement requires that R&D costs be charged to expense when incurred. It also requires a company to disclose in its financial statements the amount of R&D that it charges to expense.

Statement No. 5 ***Accounting for Contingencies***
(Issued 3/75)

This Statement establishes standards of financial accounting and reporting for loss contingencies. It requires accrual by a charge to income (and disclosure) for an estimated loss from a loss contingency if two conditions are met: (a) information available prior to issuance of the financial statements indicates that it is probable that an asset had been impaired or a liability had been incurred at the date of the financial statements, and (b) the amount of loss can be reasonably estimated. Accruals for general or unspecified business risks ("reserves for general contingencies") are no longer permitted. Accounting for gain contingencies under Accounting Research Bulletin No. 50, Contingencies, remains unchanged; they are recognized when realized.

Statement No. 13* ***Accounting for Leases***
(Issue Date 11/76)

This Statement establishes standards of financial accounting and reporting for leases by lessees and lessors. For lessees, a lease is a financing transaction called a capital lease if it meets any one of four specified criteria; if not, it is an operating lease. Capital leases are treated as the acquisition of assets and the incurrence of obligations by the lessee. Operating leases are treated as current operating expenses. For lessors, a financing transaction lease is classified as a sales-type, direct financing, or leveraged lease. To be a sales-type, direct financing, or leveraged lease, the lease must meet one of the same criteria used for lessees to classify a lease as a capital lease, in addition to two criteria dealing with future uncertainties. Leveraged leases also have to meet further criteria. These types of leases are recorded as investments under different specifications for each type of lease. Leases not meeting the criteria are considered operating leases and are accounted for like rental property.

Statement No. 15* ***Accounting by Debtors and Creditors for Troubled Debt Restructurings***
(Issued 6/77)

This Statement establishes standards of financial accounting and reporting by the debtor and by the creditor for a troubled debt restructuring. This Statement requires adjustments in payment terms from a troubled debt restructuring generally to be considered adjustments of the yield (effective interest rate) of the loan. So long as the aggregate payments (both principal and interest) to be received by the creditor are not les s than the creditor's carrying amount of the loan, the creditor recognizes no loss, only a lower yield over the term of the restructured debt. Similarly, the debtor recognizes no gain unless the aggregate future payments (including amounts contingently payable) are less than the debtor's recorded liability.

Statement No. 17 ***Accounting for Leases: Initial Direct Costs--an amendment of FASB Statement No. 13*** (Statement Issued 11/77)

This Statement changes the definition of initial direct costs found in paragraph 5(m) of FASB Statement No. 13, *Accounting for Leases*, to be costs incurred by the lessor directly associated with negotiating and consummating a completed lease transaction. Examples of these costs include commissions, legal fees, and processing costs.

Statement No. 24 ***Reporting Segment Information in Financial Statements That Are Presented in Another Enterprise's Financial Report—an amendment of FASB Statement No. 14***
(Issue Date 12/78)

If consolidated or combined financial statements are accompanied by a complete set of separate parent company or investee company (or group of investee companies) financial statements, this Statement eliminates the requirement to disclose segment information in the separate financial statements of:

- The parent company or affiliated companies that have been consolidated or combined in that financial report
- Certain foreign investee companies
- Investee companies accounted for by the cost or equity method if that segment information is not significant in relation to the consolidated or combined financial statements

Statement No. 58 ***Capitalization of Interest Cost in Financial Statements That Include Investments Accounted for by the Equity Method—an Amendment of FASB Statement No. 34***
(Issued 4/82)

This Statement amends FASB Statement No. 34, *Capitalization of Interest Cost,* (1) to limit capitalization of consolidated interest cost to qualifying assets of the parent company and consolidated subsidiaries and (2) to include investments (equity, loans, and advances) accounted for by the equity method as qualifying assets of the investor while the investee has activities in progress necessary to commence its planned principal operations provided that the investee's activities include the use of funds to acquire qualifying assets for its operations. This Statement does not affect the accounting for and reporting of capitalized interest cost in the separate financial statements of investees.

Statement No. 43 ***Accounting for Compensated Absences***
(Issued 11/80)

This Statement requires an employer to accrue a liability for employees' rights to receive compensation for future absences when certain conditions are met. For example, this Statement requires a liability to be accrued for vacation benefits that employees have earned but have not yet taken; however, it generally does not require a liability to be accrued for future sick pay benefits, holidays, and similar compensated absences until employees are actually absent.

Statement No. 48 ***Revenue Recognition When Right of Return Exists***
(Issued 6/81)

This Statement specifies how an enterprise should account for sales of its product in which the buyer has a right to return the product. Revenue from those sales transactions shall be recognized at time of sale only if *all* of the conditions specified by the Statement are met. If those conditions are not met, revenue recognition is postponed; if they are met, sales revenue and cost of sales reported in the income statement shall be reduced to reflect estimated returns and expected costs or losses shall be accrued.

Statement No. 49 ***Accounting for Product Financing Arrangements***
(Issued 6/81)

This Statement specifies criteria for determining when an arrangement involving the sale of inventory is in substance a financing arrangement. A product financing arrangement is a transaction in which an enterprise sells and agrees to repurchase inventory with the repurchase price equal to the original sale price plus carrying and financing costs, or other similar transactions. This Statement requires that a product financing arrangement be accounted for as a borrowing rather than as a sale.

Statement No. 123 ***Share-Based Payment***
(Revised 2004)

This Statement establishes financial accounting and reporting standards for stock-based employee compensation plans. Those plans include all arrangements by which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of the employer's stock. Examples are stock purchase plans, stock options, restricted stock, and stock appreciation rights.

This Statement also applies to transactions in which an entity issues its equity instruments to acquire goods or services from nonemployees. Those transactions must be accounted for based on the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable.

Accounting for Awards of Stock-Based Compensation to Employees
This Statement defines a fair value based method of accounting for an employee stock option or similar equity instrument and encourages all entities to adopt that method of accounting for all of their employee stock compensation plans. However, it also allows an entity to continue to measure compensation cost for those plans using the intrinsic value based method of accounting prescribed by APB Opinion No. 25, Accounting for Stock Issued to Employees. The fair value based method is preferable to the Opinion 25 method for purposes of justifying a change in accounting principle under APB Opinion No. 20, Accounting Changes. Entities electing to remain with the accounting in Opinion 25 must make pro forma disclosures of net income and, if presented, earnings per share, as if the fair value based method of accounting defined in this Statement had been applied.

Under the fair value based method, compensation cost is measured at the grant date based on the value of the award and is recognized over the service period, which is usually the vesting period. Under the intrinsic value based method, compensation cost is the excess, if any, of the quoted market price of the stock at grant date or other measurement date over the amount an employee must pay to acquire the stock. Most fixed stock option plans-the most common type of stock compensation plan-have no intrinsic value at grant date, and under Opinion 25 no compensation cost is recognized for them. Compensation cost is recognized for other types of stock-based compensation plans under Opinion 25, including plans with variable, usually performance-based, features.

Stock Compensation Awards Required to Be Settled by Issuing Equity Instruments

Stock Options
For stock options, fair value is determined using an option-pricing model that takes into account the stock price at the grant date, the exercise price, the expected life of the option, the volatility of the underlying stock and the expected dividends on it, and the risk-free interest rate over the expected life of the option. Nonpublic entities are permitted to exclude the volatility factor in estimating the value of their stock options, which results in measurement at minimum value. The fair value of an option estimated at the

grant date is not subsequently adjusted for changes in the price of the underlying stock or its volatility, the life of the option, dividends on the stock, or the risk-free interest rate.

Nonvested Stock
The fair value of a share of nonvested stock (usually referred to as restricted stock) awarded to an employee is measured at the market price of a share of a nonrestricted stock on the grant date unless a restriction will be imposed after the employee has a vested right to it, in which case fair value is estimated taking that restriction into account.

Employee Stock Purchase Plans
An employee stock purchase plan that allows employees to purchase stock at a discount from market price is not compensatory if it satisfies three conditions: (a) the discount is relatively small (5 percent or less satisfies this condition automatically, though in some cases a greater discount also might be justified as noncompensatory), (b) substantially all full-time employees may participate on an equitable basis, and (c) the plan incorporates no option features such as allowing the employee to purchase the stock at a fixed discount from the lesser of the market price at grant date or date of purchase.

Stock Compensation Awards Required to Be Settled by Paying Cash
Some stock-based compensation plans require an employer to pay an employee, either on demand or at a specified date, a cash amount determined by the increase in the employer's stock price from a specified level. The entity must measure compensation cost for that award in the amount of the changes in the stock price in the periods in which the changes occur.

Disclosures
This Statement requires that an employer's financial statements include certain disclosures about stock-based employee compensation arrangements regardless of the method used to account for them.

The pro forma amounts required to be disclosed by an employer that continues to apply the accounting provisions of Opinion 25 will reflect the difference between compensation cost, if any, included in net income and the related cost measured by the fair value based method defined in this Statement, including tax effects, if any, that would have been recognized in the income statement if the fair value based method had been used. The required pro forma amounts will not reflect any other adjustments to reported net income or, if presented, earnings per share.

Statement No. 141* ***Business Combinations***
(Issue Date 6/01)

This Statement addresses financial accounting and reporting for business combinations and supersedes APB Opinion No. 16, *Business Combinations*, and FASB Statement No. 38, *Accounting for Pre-acquisition Contingencies of Purchased Enterprises*. All business combinations in the scope of this Statement are to be accounted for using one method, the purchase method.

Statement No. 142* ***Goodwill and Other Intangible Assets***
(Issue Date 6/01)

This Statement addresses financial accounting and reporting for acquired goodwill and other intangible assets and supersedes APB Opinion No. 17, *Intangible Assets.* It addresses how intangible assets that are acquired individually or with a group of other assets (but not those acquired in a business combination) should be accounted for in financial statements upon their acquisition. This Statement also addresses how goodwill and other intangible assets should be accounted for after they have been initially recognized in the financial statements.

Statement No. 145 ***Rescission of FASB Statements No. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections***
(Issue Date 4/02)

This Statement rescinds FASB Statement No. 4, *Reporting Gains and Losses from Extinguishment of Debt*, and an amendment of that Statement, FASB Statement No. 64, *and Extinguishments of Debt Made to Satisfy Sinking-Fund Requirements.* This Statement also rescinds FASB Statement No. 44, *Accounting for Intangible Assets of Motor Carriers.* This Statement amends FASB Statement No. 13, *Accounting for Leases,* to eliminate an inconsistency between the required accounting for sale-leaseback transactions and the required accounting for certain lease modifications that have economic effects that are similar to sale-leaseback transactions. This Statement also amends other existing authoritative pronouncements to make various technical corrections, clarify meanings, or describe their applicability under changed conditions.

Statement No. 157 ***Fair Value Measurements***
(Issue Date 09/06)

This Statement is effective for financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years. Earlier application is encouraged.

This Statement defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles (GAAP), and expands disclosures about fair value measurements. This Statement applies under other accounting pronouncements that require or permit fair value measurements, the Board having previously concluded in those accounting pronouncements that fair value is the relevant measurement attribute. Accordingly, this Statement does not require any new fair value measurements. However, for some entities, the application of this Statement will change current practice.

Statement No. 158 ***Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans—an amendment of FASB Statements No. 87, 88, 106, and 132(R)***
(Issue Date 09/06)

This Statement improves financial reporting by requiring an employer to recognize the overfunded or underfunded status of a defined benefit postretirement plan (other than a multiemployer plan) as an asset or liability in its statement of financial position and to recognize changes in that funded status in the year in which the changes occur through comprehensive income of a business entity or changes in unrestricted net assets of a not-for-profit organization. This Statement also improves financial reporting by requiring an employer to measure the funded status of a plan as of the date of its year-end statement of financial position, with limited exceptions.

This Statement requires an employer that is a business entity and sponsors one or more single-employer defined benefit plans to:

Recognize the funded status of a benefit plan—measured as the difference between plan assets at fair value (with limited exceptions) and the benefit obligation—in its statement of financial position. For a pension plan, the benefit obligation is the projected benefit obligation; for any other postretirement benefit plan, such as a retiree health care plan, the benefit obligation is the accumulated postretirement benefit obligation.

Recognize as a component of other comprehensive income, net of tax, the gains or losses and prior service costs or credits that arise during the period but are not recognized as components of net periodic benefit cost pursuant to FASB Statement No. 87, Employers' Accounting for Pensions, or No. 106, Employers' Accounting for Postretirement Benefits Other Than Pensions. Amounts recognized in accumulated other comprehensive income, including the gains or losses, prior service costs or credits, and the transition asset or obligation remaining from the initial application of Statements 87 and 106, are adjusted as they are subsequently recognized as components of net periodic benefit cost pursuant to the recognition and amortization provisions of those Statements.

Measure defined benefit plan assets and obligations as of the date of the employer's fiscal year-end statement of financial position (with limited exceptions).

Disclose in the notes to financial statements additional information about certain effects on net periodic benefit cost for the next fiscal year that arise from delayed recognition of the gains or losses, prior service costs or credits, and transition asset or obligation.

This Statement also applies to a not-for-profit organization or other entity that does not report other comprehensive income. This Statement's reporting requirements are tailored for those entities.

This Statement amends Statement 87, FASB Statement No. 88, Employers' Accounting for Settlements and Curtailments of Defined Benefit Pension Plans and for Termination Benefits, Statement 106, and FASB Statement No. 132 (revised 2003), Employers' Disclosures about Pensions and Other Postretirement Benefits, and other related accounting literature. Upon initial application of this Statement and subsequently, an employer should continue to apply the provisions in Statements 87, 88, and 106 in measuring plan assets and benefit obligations as of the date of its statement of financial position and in determining the amount of net periodic benefit cost.

Statement No. 159 *The Fair Value Option for Financial Assets and Financial Liabilities—Including an amendment of FASB Statement No. 115 (Issue Date 02/07)*

This Statement is effective as of the beginning of an entity's first fiscal year that begins after November 15, 2007. Early adoption is permitted as of the beginning of a fiscal year that begins on or before November 15, 2007, provided the entity also elects to apply the provisions of FASB Statement No. 157, Fair Value Measurements.

This Statement defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles (GAAP), and expands disclosures about fair value measurements. This Statement applies under other accounting pronouncements that require or permit fair value measurements, the Board having previously concluded in those accounting pronouncements that fair value is the relevant measurement attribute. Accordingly, this Statement does not require any new fair value measurements. However, for some entities, the application of this Statement will change current practice.

*FASB pronouncements existing at the date of FASB 157 that refer to fair value. Certain sections of these statements are amended for FASB 157. Refer to Appendix E of the full FASB 157 pronouncement.

APPENDIX III

IRS Business Valuation Guidelines Approved 2006

NOTE:

1. **The IRS prepared these guidelines for their internal valuation analyses and reports; these are not meant for valuation analysts to use in providing reports to the IRS. Do note that the Service is using the International Glossary of Business Valuation Terms, a project in which NACVA was an active participant.**

2. **These guidelines are the sole responsibility of the IRS and have not been altered or edited for grammar, text, format or spelling by NACVA.**

Internal Revenue Service Business Valuation Guidelines

Table of Contents

4.48.4.1
(07-01-2006)
Introduction

(1) The purpose of this document is to provide guidelines applicable to all IRS personnel engaged in valuation practice (herein referred to as "valuators") relating to the development, resolution and reporting of issues involving business valuations and similar valuation issues. Valuators must be able to reasonably justify any departure from these guidelines.

(2) This document incorporates by reference, the ethical and conduct provisions, contained in the Office of Government Ethics (OGE) Standards of Ethical Conduct, applicable to all IRS employees.

(3) Valuations of assets owned and/or transferred by or between controlled taxpayers (within the meaning of Treasury Regulation section 1.482-1(i)(5)) may present substantive issues that are not addressed in these guidelines.

4.48.4.2
(07-01-2006)
Development Guidelines

(1) Successful completion of a valuation assignment includes planning, identifying critical factors, documenting specific information, and analyzing the relevant information. All relevant activities will be documented in the workpapers.

(2) A review appraisal may be the best approach to the assignment.

4.48.4.2.1
(07-01-2006)
Planning

(1) Valuators will adequately plan the valuation assignment. Their managers will supervise the staff involved in the valuation process.

(2) Quality planning is a continual process throughout the valuation assignment.

4.48.4.2.2
(07-01-2006)
Identifying

(1) In developing a valuation conclusion, valuators should define the assignment and determine the scope of work necessary by identifying the following:

a. Property to be valued
b. Interest to be valued
c. Effective valuation date
d. Purpose of valuation
e. Use of valuation
f. Statement of value
g. Standard and definition of value
h. Assumptions
i. Limiting conditions
j. Scope limitations
k. Restrictions, agreements and other factors that may influence value
l. Sources of information

4.48.4.2.3
(07-01-2006)
Analyzing

(1) In developing a valuation conclusion, valuators should analyze the relevant information necessary to accomplish the assignment including:

- The nature of the business and the history of the enterprise from its inception
- The economic outlook in general and the condition and outlook of the specific industry in particular
- The book value of the stock or interest and the financial condition of the business
- The earning capacity of the company
- The dividend-paying capacity
- Existence or non existence of goodwill or other intangible value
- Sales of the stock or interest and the size of the block of stock to be valued

- The market price of stocks or interests of corporations or entities engaged in the same or a similar line of business having their stocks or interests actively traded in a free and open market, either on an exchange or over the counter
- Other relevant information

(2) The three generally accepted valuation approaches are the asset-based approach, the market approach and the income approach. Consideration should be given to all three approaches. Professional judgment should be used to select the approach(es) ultimately used and the method(s) within such approach(es) that best indicate the value of the business interest.

(3) Historical financial statements should be analyzed and, if necessary, adjusted to reflect the appropriate asset value, income, cash flows and/or benefit stream, as applicable, to be consistent with the valuation methodologies selected by the valuator.

(4) The valuator should select the appropriate benefit stream, such as pre-tax or after-tax income and/or cash flows, and select appropriate discount rates, capitalization rates or multiples consistent with the benefit stream selected within the relevant valuation methodology.

(5) The valuator will determine an appropriate discount and/or capitalization rate after taking into consideration all relevant factors such as:

- The nature of the business
- The risk involved
- The stability or irregularity of earnings
- Other relevant factors

(6) As appropriate for the assignment, and if not considered in the process of determining and weighing the indications of value provided by other procedures, the valuator should separately consider the following factors in reaching a final conclusion of value:

a. Marketability, or lack thereof, considering the nature of the business, business ownership interest or security, the effect of relevant contractual and legal restrictions, and the condition of the markets.
b. Ability of the appraised interest to control the operation, sale, or liquidation of the relevant business.
c. Other levels of value considerations (consistent with the standard of value in Section 4.48.4.2.2 (1) list item g) such as the impact of strategic or synergistic contributions to value.
d. Such other factors which, in the opinion of the valuator, that are appropriate for consideration.

4.48.4.2.4
(07-01-2006)
Workpapers

(1) Workpapers should document the steps taken, techniques used, and provide the evidence to support the facts and conclusions in the final report.

(2) Valuators will maintain a detailed case activity record (Form 9984, Examining Officer's Activity Record) which:

- Identifies actions taken and indicates time charged
- Identifies contacts including name, phone number, subject, commitments, etc.
- Documents delays in the examination

(3) The case activity record, along with the supporting workpapers, should justify that the time spent is commensurate with work performed.

4.48.4.2.5
(07-01-2006)
Reviewing

(1) In reviewing a business valuation and reporting the results of that review, a valuator should form an opinion as to the adequacy and appropriateness of the report being reviewed and should clearly disclose the scope of work of the review process undertaken.

(2) In reviewing a business valuation, a valuator should:

a. Identify the taxpayer and intended use of the opinions and conclusions, and the purpose of the review assignment.
b. Identify the report under review, the property interest being valued, the effective date of the valuation, and the date of the review.
c. Identify the scope of the review process conducted.
d. Determine the completeness of the report under review.
e. Determine the apparent adequacy and relevance of the data and the propriety of any adjustments to the data.
f. Determine the appropriateness of the valuation methods and techniques used and develop the reasons for any disagreement.
g. Determine whether the analyses, opinions, and conclusions in the report under review are appropriate and reasonable, and develop the reasons for any disagreement.

(3) In the event of a disagreement with the report's factual representations, underlying assumptions, methodology, or conclusions, a valuator should conduct additional fact-finding, research, and/or analyses necessary to arrive at an appropriate value for the property.

4.48.4.3
(07-01-2006)
Resolution Guidelines

(1) Valuators will make efforts to obtain a resolution of the case after fully considering all relevant facts.

4.48.4.3.1
(07-01-2006)
Objective

(1) The objective is to resolve the issue as early in the examination as possible. Credible and compelling work by the valuator will facilitate resolution of issues without litigation.

(2) The valuator will work in concert with the internal customer and taxpayer to attempt to resolve all outstanding issues.

4.48.4.3.2
(07-01-2006)
Arriving at Conclusions

(1) Once the valuator has all the information to be considered in resolving the issue, the valuator will use his/her professional judgment in considering this information to arrive at a conclusion.

(2) Valuators may not have all of the information they would like to have to definitively resolve an issue. Valuators, therefore, should decide when they have substantially enough information to make a proper determination.

(3) Valuators will employ independent and objective judgment in reaching conclusions and will decide all matters on their merits, free from bias, advocacy, and conflicts of interest.

4.48.4.4
(07-01-2006)
Reporting Guidelines

(1) Valuators should prepare reports of their findings.

(2) This section requires specific information to be included or addressed in each report.

4.48.4.4.1
(07-01-2006)
Overview

(1) The primary objective of a valuation report is to provide convincing and compelling support for the conclusions reached.

(2) Valuation reports should contain all the information necessary to allow a clear understanding of the valuation analyses and demonstrate how the conclusions were reached.

4.48.4.4.2
(07-01-2006)
Report Contents

(1) The extent and content of the report prepared depends on the needs of each case.

(2) Valuation reports should clearly communicate the results and identify the information relied upon in the valuation process. The valuation report should effectively communicate the methodology and reasoning, as well as identify the supporting documentation.

(3) Subject to the type of report being written, valuation reports should generally contain sufficient information relating to the items in Identifying and Analyzing to ensure consistency and quality.

(4) Reports written with respect to Reviewing shall contain, at a minimum, information relating to those items in Identifying and Analyzing necessary to support the revised assumptions, analyses, and/or conclusions of the valuator

4.48.4.4.3
(07-01-2006)
Statement

(1) Each written valuation report should contain a signed statement that is similar in content to the following: To the best of my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions.
- I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest with respect to the parties involved.
- I have no bias with respect to the subject of this report or to the parties involved with this assignment.
- My compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in, or the use of, this report.
- My analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the applicable Internal Revenue

INTERNATIONAL GLOSSARY OF BUSINESS VALUATION TERMS
Exhibit BVG-1

To enhance and sustain the quality of business valuations for the benefit of the profession and its clientele, the below identified societies and organizations have adopted the definitions for the terms included in this glossary.

The performance of business valuation services requires a high degree of skill and imposes upon the valuation professional a duty to communicate the valuation process and conclusion, in a manner that is clear and not misleading. This duty is advanced through the use of terms whose meanings are clearly established and consistently applied throughout the profession.

If, in the opinion of the business valuation professional, one or more of these terms needs to be used in a manner that materially departs from the enclosed definitions, it is recommended that the term be defined as used within that valuation engagement.

This glossary has been developed to provide guidance to business valuation practitioners by further memorializing the body of knowledge that constitutes the competent and careful determination of value and, more particularly, the communication of how that value was determined.

Departure from this glossary is not intended to provide a basis for civil liability and should not be presumed to create evidence that any duty has been breached.

American Institute of Certified Public Accountants
American Society of Appraisers
Canadian Institute of Chartered Business Valuators
National Association of Certified Valuators and Analysts
The Institute of Business Appraisers

Adjusted Book Value Method—A method within the asset approach whereby all assets and liabilities (including off-balance sheet, intangible, and contingent) are adjusted to their fair market values (NOTE: In Canada on a going concern basis).

Adjusted Net Asset Method—See Adjusted Book Value Method.

Appraisal—See Valuation.

Appraisal Approach—See Valuation Approach.

Appraisal Date—See Valuation Date.

Appraisal Method—See Valuation Method.

Appraisal Procedure—See Valuation Procedure.

Arbitrage Pricing Theory—A multivariate model for estimating the cost of equity capital, which incorporates several systematic risk factors.

Asset (Asset-Based) Approach—A general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities.

Beta—A measure of systematic risk of a stock; the tendency of a stock's price to correlate with changes in a specific index.

Blockage Discount—An amount or percentage deducted from the current market price of a publicly traded stock to reflect the decrease in the per share value of a block of stock that is of a size that could not be sold in a reasonable period of time given normal trading volume.

Book Value—See Net Book Value.

Business—See Business Enterprise.

Business Enterprise—A commercial, industrial, service, or investment entity (or a combination thereof) pursuing an economic activity.

Business Risk—The degree of uncertainty of realizing expected future returns of the business resulting from factors other than financial leverage. See Financial Risk.

Business Valuation—The act or process of determining the value of a business enterprise or ownership interest therein.

Capital Asset Pricing Model (CAPM) —A model in which the cost of capital for any stock or portfolio of stocks equals a risk-free rate plus a risk premium that is proportionate to the systematic risk of the stock or portfolio.

Capitalization—A conversion of a single period of economic benefits into value.

Capitalization Factor—Any multiple or divisor used to convert anticipated economic benefits of a single period into value.

Capitalization of Earnings Method—A method within the income approach whereby economic benefits for a representative single period are converted to value through division by a capitalization rate.

Capitalization Rate—Any divisor (usually expressed as a percentage) used to convert anticipated economic benefits of a single period into value.

Capital Structure—The composition of the invested capital of a business enterprise, the mix of debt and equity financing.

Cash Flow—Cash that is generated over a period of time by an asset, group of assets, or business enterprise. It may be used in a general sense to encompass various levels of specifically defined cash flows. When the term is used, it should be supplemented by a qualifier (for example, "discretionary" or "operating") and a specific definition in the given valuation context.

Common Size Statements—Financial statements in which each line is expressed as a percentage of the total. On the balance sheet, each line item is shown as a percentage of total assets, and on the income statement, each item is expressed as a percentage of sales.

Control—The power to direct the management and policies of a business enterprise.

Control Premium—An amount or a percentage by which the pro rata value of a controlling interest exceeds the pro rata value of a non-controlling interest in a business enterprise, to reflect the power of control.

Cost Approach—A general way of determining a value indication of an individual asset by quantifying the amount of money required to replace the future service capability of that asset.

Cost of Capital—The expected rate of return that the market requires in order to attract funds to a particular investment.

Debt-Free—We discourage the use of this term. See Invested Capital.

Discount for Lack of Control—An amount or percentage deducted from the pro rata share of value of 100% of an equity interest in a business to reflect the absence of some or all of the powers of control.

Discount for Lack of Marketability—An amount or percentage deducted from the value of an ownership interest to reflect the relative absence of marketability.

Discount for Lack of Voting Rights—An amount or percentage deducted from the per share value of a minority interest voting share to reflect the absence of voting rights.

Discount Rate—A rate of return used to convert a future monetary sum into present value.

Discounted Cash Flow Method—A method within the income approach whereby the present value of future expected net cash flows is calculated using a discount rate.

Discounted Future Earnings Method—A method within the income approach whereby the present value of future expected economic benefits is calculated using a discount rate.

Economic Benefits—Inflows such as revenues, net income, net cash flows, etc.

Economic Life—The period of time over which property may generate economic benefits.

Effective Date—See Valuation Date.

Enterprise—See Business Enterprise.

Equity—The owner's interest in property after deduction of all liabilities.

Equity Net Cash Flows—Those cash flows available to pay out to equity holders (in the form of dividends) after funding operations of the business enterprise, making necessary capital investments, and increasing or decreasing debt financing.

Equity Risk Premium—A rate of return added to a risk-free rate to reflect the additional risk of equity instruments over risk free instruments (a component of the cost of equity capital or equity discount rate).

Excess Earnings—That amount of anticipated economic benefits that exceeds an appropriate rate of return on the value of a selected asset base (often net tangible assets) used to generate those anticipated economic benefits.

Excess Earnings Method—A specific way of determining a value indication of a business, business ownership interest, or security determined as the sum of a) the value of the assets derived by capitalizing excess earnings and b) the value of the selected asset base. Also frequently used to value intangible assets. See Excess Earnings.

Fair Market Value—The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts. (NOTE: In Canada, the term "price" should be replaced with the term "highest price")

Fairness Opinion—An opinion as to whether or not the consideration in a transaction is fair from a financial point of view.

Financial Risk—The degree of uncertainty of realizing expected future returns of the business resulting from financial leverage. See Business Risk.

Forced Liquidation Value—Liquidation value, at which the asset or assets are sold as quickly as possible, such as at an auction.

Free Cash Flow—We discourage the use of this term. See Net Cash Flow.

Going Concern—An ongoing operating business enterprise.

Going Concern Value—The value of a business enterprise that is expected to continue to operate into the future. The intangible elements of Going Concern Value result from factors such as having a trained work force, an operational plant, and the necessary licenses, systems, and procedures in place.

Goodwill—That intangible asset arising as a result of name, reputation, customer loyalty, location, products, and similar factors not separately identified.
Goodwill Value—The value attributable to goodwill.

Guideline Public Company Method—A method within the market approach whereby market multiples are derived from market prices of stocks of companies that are engaged in the same or similar lines of business, and that are actively traded on a free and open market.

Income (Income-Based) Approach—A general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more methods that convert anticipated economic benefits into a present single amount.

Intangible Assets—Non-physical assets such as franchises, trademarks, patents, copyrights, goodwill, equities, mineral rights, securities and contracts (as distinguished from physical assets) that grant rights and privileges, and have value for the owner.

Internal Rate of Return—A discount rate at which the present value of the future cash flows of the investment equals the cost of the investment.

Intrinsic Value—The value that an investor considers, on the basis of an evaluation or available facts, to be the "true" or "real" value that will become the market value when other investors reach the same conclusion. When the term applies to options, it is the difference between the exercise price or strike price of an option and the market value of the underlying security.

Invested Capital—The sum of equity and debt in a business enterprise. Debt is typically a) all interest bearing debt or b) long-term interest-bearing debt. When the term is used, it should be supplemented by a specific definition in the given valuation context.

Invested Capital Net Cash Flows—Those cash flows available to pay out to equity holders (in the form of dividends) and debt investors (in the form of principal and interest) after funding operations of the business enterprise and making necessary capital investments.

Investment Risk - the degree of uncertainty as to the realization of expected returns.

Investment Value—The value to a particular investor based on individual investment requirements and expectations. (NOTE: in Canada, the term used is "Value to the Owner").

Key Person Discount—An amount or percentage deducted from the value of an ownership interest to reflect the reduction in value resulting from the actual or potential loss of a key person in a business enterprise.

Levered Beta—The beta reflecting a capital structure that includes debt.

Limited Appraisal—The act or process of determining the value of a business, business ownership interest, security, or intangible asset with limitations in analyses, procedures, or scope.

Liquidity—The ability to quickly convert property to cash or pay a liability.

Liquidation Value—The net amount that would be realized if the business is terminated and the assets are sold piecemeal. Liquidation can be either "orderly" or "forced."

Majority Control—The degree of control provided by a majority position.

Majority Interest—An ownership interest greater than 50% of the voting interest in a business enterprise.

Market (Market-Based) Approach—A general way of determining a value indication of a business, business ownership interest, security, or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities, or intangible assets that have been sold.

Market Capitalization of Equity—The share price of a publicly traded stock multiplied by the number of shares outstanding.

Market Capitalization of Invested Capital—The market capitalization of equity plus the market value of the debt component of invested capital.

Market Multiple—The market value of a company's stock or invested capital divided by a company measure (such as economic benefits, number of customers).

Marketability—The ability to quickly convert property to cash at minimal cost.
Marketability Discount - see Discount for Lack of Marketability.

Merger and Acquisition Method—A method within the market approach whereby pricing multiples are derived from transactions of significant interests in companies engaged in the same or similar lines of business.

Mid-Year Discounting—A convention used in the Discounted Future Earnings Method that reflects economic benefits being generated at midyear, approximating the effect of economic benefits being generated evenly throughout the year.

Minority Discount—A discount for lack of control applicable to a minority interest.

Minority Interest—An ownership interest less than 50% of the voting interest in a business enterprise.

Multiple—The inverse of the capitalization rate.

Net Book Value—With respect to a business enterprise, the difference between total assets (net of accumulated depreciation, depletion, and amortization) and total liabilities as they appear on the balance sheet (synonymous with Shareholder's Equity). With respect to a specific asset, the capitalized cost less accumulated amortization or depreciation as it appears on the books of account of the business enterprise.

Net Cash Flows—When the term is used, it should be supplemented by a qualifier. See Equity Net Cash Flows and Invested Capital Net Cash Flows.

Net Present Value—The value, as of a specified date, of future cash inflows less all cash outflows (including the cost of investment) calculated using an appropriate discount rate.

Net Tangible Asset Value—The value of the business enterprise's tangible assets (excluding excess assets and non-operating assets) minus the value of its liabilities.

Non-Operating Assets—Assets not necessary to ongoing operations of the business enterprise. (NOTE: In Canada, the term used is "Redundant Assets").

Normalized Earnings—Economic benefits adjusted for nonrecurring, non-economic, or other unusual items to eliminate anomalies and/or facilitate comparisons.

Normalized Financial Statements—Financial statements adjusted for nonoperating assets and liabilities and/or for nonrecurring, non-economic, or other unusual items to eliminate anomalies and/or facilitate comparisons.

Orderly Liquidation Value—Liquidation value at which the asset or assets are sold over a reasonable period of time to maximize proceeds received.

Premise of Value—An assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation; e.g. going concern, liquidation.

Present Value—The value, as of a specified date, of future economic benefits and/or proceeds from sale, calculated using an appropriate discount rate.

Portfolio Discount—An amount or percentage deducted from the value of a business enterprise to reflect the fact that it owns dissimilar operations or assets that do not fit well together.

Price/Earnings Multiple—The price of a share of stock divided by its earnings per share.

Rate of Return—An amount of income (loss) and/or change in value realized or anticipated on an investment, expressed as a percentage of that investment.

Redundant Assets—See Non-Operating Assets.

Report Date—The date conclusions are transmitted to the client.

Replacement Cost New—The current cost of a similar new property having the nearest equivalent utility to the property being valued.

Reproduction Cost New—The current cost of an identical new property.

Required Rate of Return—The minimum rate of return acceptable by investors before they will commit money to an investment at a given level of risk.

Residual Value—The value as of the end of the discrete projection period in a discounted future earnings model.

Return on Equity—The amount, expressed as a percentage, earned on a company's common equity for a given period.

Return on Investment—See Return on Invested Capital and Return on Equity.

Return on Invested Capital—The amount, expressed as a percentage, earned on a company's total capital for a given period.

Risk-Free Rate—The rate of return available in the market on an investment free of default risk.

Risk Premium—A rate of return added to a risk-free rate to reflect risk.

Rule of Thumb—A mathematical formula developed from the relationship between price and certain variables based on experience, observation, hearsay, or a combination of these; usually industry specific.

Special Interest Purchasers—Acquirers who believe they can enjoy post-acquisition economies of scale, synergies, or strategic advantages by combining the acquired business interest with their own.

Standard of Value—The identification of the type of value being used in a specific engagement; e.g. fair market value, fair value, investment value.

Sustaining Capital Reinvestment—The periodic capital outlay required to maintain operations at existing levels, net of the tax shield available from such outlays.

Systematic Risk—The risk that is common to all risky securities and cannot be eliminated through diversification. The measure of systematic risk in stocks is the beta coefficient.

Tangible Assets—Physical assets (such as cash, accounts receivable, inventory, property, plant and equipment, etc.).

Terminal Value—See Residual Value.

Transaction Method—See Merger and Acquisition Method.

Unlevered Beta—The beta reflecting a capital structure without debt.

Unsystematic Risk—The risk specific to an individual security that can be avoided through diversification.

Valuation—The act or process of determining the value of a business, business ownership interest, security, or intangible asset.

Valuation Approach—A general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more valuation methods.

Valuation Date—The specific point in time as of which the valuator's conclusion of value applies (also referred to as "Effective Date" or "Appraisal Date").

Valuation Method—Within approaches, a specific way to determine value.

Valuation Procedure—The act, manner, and technique of performing the steps of an appraisal method.

Valuation Ratio—A fraction in which a value or price serves as the numerator and financial, operating, or physical data serves as the denominator.

Value to the Owner—See Investment Value.

Voting Control—De jure control of a business enterprise.

Weighted Average Cost of Capital (WACC) —The cost of capital (discount rate) determined by the weighted average, at market value, of the cost of all financing sources in the business enterprise's capital structure.

PARTICIPANT NOTES

APPENDIX IV

Comprehensive Business Valuation Development Checklist

"An investment in knowledge always pays the best interest."
— Benjamin Franklin

Publication Date: January 31, 2009

Comprehensive Business Valuation Development Checklist

Use of this document in obtaining the necessary information and addressing the specific areas of development to conduct your analysis in the performance of a business valuation in a valuation engagement, and will help in complying with the Development Standards promulgated by the National Association of Certified Valuators and Analysts (NACVA) and the American Institute of Certified Public Accountants (AICPA) in their Statement on Standards for Valuation Services No. 1 (SSVS). Both standards have an effective implementation date of January 1, 2009.

Disclaimers:

1) **Though this document is quite comprehensive, one should not construe it to suggest that every item noted herein is required to be obtained or addressed in the development of a business valuation. Each engagement and each business is different. Thus, some or many items noted herein may not be necessary for consideration in the given circumstances.**

2) By no means is the use of this document intended to replace the User's responsibility for having read and being fully conversant with both NACVA's and the AICPA's standards. The authors of this document are fallible and it is very possible that items have been overlooked. Thereby, we disclaim any and all liability for one's use of this document should it turn out that the valuation report produced while using this Checklist is not in compliance with the aforementioned standards.

3) Provisions under SSVS #46 pertaining to "Calculation of Value" have been omitted.

4) This comprehensive checklist is designed for use in engagement to determine a "Conclusion of Value" to be communicated in either a "Detailed" or Summary" Report. Thus, depending on which type of report the engagement calls for will determine which items on this checklist are applicable or not applicable.

5) SSVS #24 states that the sequence of implementation of the Developmental Standards is at the option of the Valuation Analyst.

6) SSVS #45 provides that the Valuation Analyst should retain the documentation for a period of time sufficient to meet the needs of applicable legal, regulatory, or other professional requirements for records retention.

7) All SSVS references herein, are to paragraph numbers in the SSVS.

8) This document is a work in process and will be updated and improved on an ongoing basis. We appreciate any suggestions you may have. Please e-mail them to nacva1@nacva.com.

Comprehensive Business Valuation Development Checklist

—— Table of Contents ——

—— Table of Contents ——

(continued)

I. ANALYSIS OF THE SUBJECT INTEREST OWNERSHIP INFORMATION

Workpapers Page Reference

Company Information

Name: ____________ Company: ____________ ______
Street address: ____________ ______
City: ____________ State: ______ ZIP: ______ ______
Tel: ______ Fax: ______ Email: ______ ______
DBA (if applicable): ____________ ______

Organizational Information

- Corporation type: ____________ ______
- Date incorporated: ____________ ______
- State of incorporation: ____________ ______
- S election: ____________ ______
- Merger date: ____________ ______
- Recapitalization ____________ ______
- Agreement: ____________ ______

Common Shares

- # of shares authorized: ____________ ______
- # of shares issued and outstanding: ______ ______
- Restrictions, if any: ____________ ______
- Voting or non-voting: ____________ ______

Treasury Shares

- # of shares held: ____________ ______
- Date of purchase: ____________ ______
- Purchase price: ____________ ______
- Date of cancellation: ____________ ______

Preferred Shares

- # of shares authorized: ____________ ______
- # of shares issued and outstanding: ______ ______
- Description of preference: ______ ______
- Dividend %: ____________ ______

Shareholder Information

	Common		Preferred		
Name	# of Shares	%	# of Shares	%	
Totals:					

This page and above addresses: SSVS 13b, 13c

Ownership

- Determine the type of ownership interest being valued and ascertain whether that interest exhibits control characteristics: ____________ ______

____________ ______
____________ ______
____________ ______

Workpapers Page Reference

- Analyze the different ownership interests of other owners and assess the potential effect on the value of the subject interest: ______

- Understand the classes of equity ownership interests and rights attached thereto: ______

- Understand the rights included in, or excluded from, each intangible asset: ______

Understand other matters that may affect the value of the subject interest, such as:

- For a business, business ownership interest, or security: shareholder agreements, partnership agreements, operating agreements, voting trust agreements, buy-sell agreements, loan covenants, restrictions, and other contractual obligations or restrictions affecting the owners and the subject interest. ______

- For an intangible asset: legal rights, licensing agreements, sublicense agreements, non-disclosure agreements, development rights, commercialization or exploitation rights, and other contractual obligations:

- To the extent any of these agreements are applicable, request for our file: ______

Participation

Name	**Title**	**% of Time Devoted to Business**	**Duties**	

This page and above addresses: SSVS 23, 27, 28

Workpapers Page Reference

Related Party Information

Name	Relationship	Involvement Described	

Recent Stock Sale Information

- Type of stock sold: ______
- Sold to: ______
- # of shares sold: ______
- Price of shares sold: ______
- Date of sale: ______
- % sold: ______
- Restrictions, if any: ______
- Reason for sale: ______
- How valued: ______
- Stock options: ______
- Terms: ______
- Type: ______

- Type of stock sold: ______
- Sold to: ______
- # of shares sold: ______
- Price of shares sold: ______
- Date of sale: ______
- % sold: ______
- Restrictions, if any: ______
- Reason for sale:______
- How valued: ______
- Stock options: ______
- Terms: ______
- Type: ______

This page and above addresses: SSVS 13c, 29

II. VALUATION ESSENTIALS

Purpose of Valuation

- Purpose of valuation: ______
- Valuation date: ______
- # of shares to be valued: ______
- % of interest to be valued: ______

Assumptions and limiting conditions: *use Exhibit I*

- Type of report to be issued: ______
- Use of specialists: ______
- Competency issue: ______

Standard / Premise of Valuation

- Define standard of value: ______

- Define premise of value: ______

Workpapers Page Reference

- Are we valuing equity, invested capital or intangible assets? ______________________ ________
- Is there a jurisdictional exception: ______________________ ________
- Are there governmental regulations: ______________________ ________
- AICPA professional standards: ______________________ ________

Check those that apply:

θ AICPA Code of Professional Conduct: ______________________ ________

θ Statement on Standards for Consulting Services: ______________________ ________

θ Consulting services: definitions & standards AICPA professional standards, Vol. 2, CS Sec 100: ______ ________

θ Rule 201-A professional competence of AICPA Code of Professional Conduct: ______________ ________

- Is this an attest client? If so, the firm is not able to perform the engagement unless the analyst meets all requirements of Interpretation 101-3: ______________________ ________

This page and above addresses: SSVS 3, 12d (iii, iv), 12e, 13c, 14, 15, 20, 25

Requesting Party

Name: ______________ Title: ______________ ________

Street address: ______________________ ________

City: ______________ State: ________ ZIP: ________ ________

Tel: ____________ Fax: ____________ Email: ____________ ________

Relationship: ______________________ ________

Describe understanding with client:

- Scope limitations: ______________________ ________
- Restrictions: ______________________ ________
- Hypothetical conditions: ______________________ ________
- Obligation to update: ______________________ ________
- Conflicts of interest: ______________________ ________
- Independence issues: ______________________ ________
- Due date: ______________________ ________
- Client's responsibilities: ______________________ ________
- Analyst's responsibilities: ______________________ ________
- Assumptions: ______________________ ________
- Report type: ______________________ ________
- Nature, purpose and objective of valuation: ______________________ ________

  ______________________ ________

- Document terms of valuation engagement, procedural requirements, objectivity, and independence:

  ______________________ ________

  ______________________ ________

  ______________________ ________

This page and above addresses: SSVS 13a, 14, 16, 17

Workpapers Page Reference

Contact Person

Name: ______________________ Title: ______________________

Street address: ______________________

City: ______________________ State: __________ ZIP: ______________

Tel: ______________ Fax: ______________ Email: ______________________

Relationship: ______________________

III. NON-FINANCIAL INFORMATION

- History / background: ______________________
- Major historical events: ______________________
- Annual gross revenues: ______________ • Average # of employees: ______________

Location Information

Location	Date Occupied	Leased/ Owned	Function

- SIC code: ______________ • NAICS code: ______________
- Principle activity: ______________________

Employee Turnover

- Describe management turnover: ______________________
- Describe non-management turnover: ______________________

This page and above addresses: SSVS 27

Workpapers Page Reference

Family Involvement

- Does the company have family members working for the company? ________________
- How many family members work for the company? ________________
- What is the amount and basis for each family member's compensation? ________________
- Do family members have proper education and experience for position held? ________________
- Is there absentee management? ________________
- Provide owners and family fringe benefits: ________________
- Describe related party transactions: ________________

This page and above addresses: SSVS 27

IV. MANAGEMENT

Key Management

Name	Title	Duties	Age / Health	

- Describe key management background, education, longevity, and experience: ________________
- Are employment contracts in place? ________ • Are key man policies in place? ________

Describe: ________________

Workpapers Page Reference

Identify Basis of Officer / Owner Compensation

Name	Title	Basis of Compensation	

Identify Officer / Owner Prerequisites

Name	Title	Type of Benefit	Annual Cost	

Board of Directors and Level of Involvement

Name	Title	Basis of Compensation	

Staffing

	Total	Full-Time	Part-Time	
• Number of employees:				
• Number of managers:				
• Number of sales staff:				
• Number of service staff:				
• Number of clerical staff:				

This page and above addresses: SSVS 27, 29

V. PRODUCTS / SERVICES AND MARKETS

- Describe products / services *(indicate proprietary nature, if any)*: ______
- Describe customers: ______

Workpapers Page Reference

- Describe market area: ______________________________
  - Estimated total market: ______________________________
  - Estimated market share: ______________________________
- Describe cyclical or seasonal: ______________________________
- Describe distribution channels: ______________________________
- Summary of barriers to market entry: ______________________________

Description of Barriers to Entry

- Describe the economies of scale: ______________________________
- Describe the product differentiation: ______________________________
- Describe the capital requirements: ______________________________
- Describe the access to distribution channels: ______________________________

This page and above addresses: SSVS 27

Workpapers Page Reference

- Describe the cost disadvantages independent of scale: ______
- Describe the proprietary product technology: patents / trademarks: ______
- Describe the favorable access to raw materials: ______
- Describe the favorable locations: ______
- Describe the government subsidies: ______
- Describe the learning or experience curve: ______
- Describe the government policies applicable to the company: ______
- Describe the bargaining power of your suppliers: ______
- Describe the bargaining power of your customers: ______
- Describe the threat of substitute products: ______
- Describe the rivalry between incumbent companies in the industry: ______
- Describe the stability of earnings: ______

This page and above addresses: SSVS 27

Workpapers Page Reference

VI. COMPETITION AND PRODUCT DIFFERENTIATION

Identify Major Competitors

Name	Location	Estimated Market Share	

- Describe product differentiation from competition:
- List competitive strengths:
- List competitive weaknesses:
- List product lines:
- Describe the method of pricing competition:
- Describe any proprietary content:
- Describe any patents:
- Describe any copyrights:

This page and above addresses: SSVS 27

Workpapers Page Reference

- Describe the product mix:

Environmental Issues

Describe any environmental issues related to the following:

- Asbestos:
- Polychlorinated biphenyl's (PCB's):
- Fuel/chemical tanks, drums, and pipelines:
- Water discharges:
- Air emissions:
- Waste disposal:
- Soil contamination:
- Agricultural property / pesticides, herbicides, or other agricultural chemicals:

Market Size and Share

- Describe customer's status in the industry and their estimated market share:
- Describe the market area that the company serves:

This page and above addresses: SSVS 27

Workpapers Page Reference

VII. FINANCIAL INFORMATION

- Describe financial statement generation (in-house, CPA, etc.): ____________
- If CPA involvement, indicate type—GAAP, tax basis or other: ____________
- What is the fiscal year-end of company: ____________
- How often are financial statements generated: ____________
- Describe significant accounting policies: ____________
- Describe extent of GAAP compliance: ____________
- Identify recent changes in accounting policies: ____________
- Describe book to tax adjustments: ____________
- Are budgets or forecasts prepared: ____________
  - If so, how often: ____________
- How has company performed relative to budget: ____________
- Describe future planned capital expenditures: ____________
- Describe short-term financing arrangements: ____________
- Describe long-term financing arrangements: ____________

This page and above addresses: SSVS 29

Workpapers Page Reference

- Describe retirement plan: ______
- Identify pending or threatened litigation: ______
- Identify major customers: ______
- Identify major vendors: ______
- Identify primary discretionary expenses: ______
- Identify major non-recurring and extraordinary expenses: ______
- Identify non-operating assets & liabilities: ______
- Are current appraisals of tangible assets available? Describe: ______
- Has company been denied credit? Describe: ______
- Are there contracts of advantage or disadvantage to company? Describe: ______
- Is company carrying assets not in use? Describe: ______
- Are there any subsidiaries owned by the company? Describe: ______

This page and above addresses: SSVS 27, 29

Workpapers Page Reference

- If yes, describe the subsidiaries (name, date acquired, ownership interest, etc.): ____________

- Describe leasing activities: ____________
- Describe government and/or environmental regulations: ____________
- Is company capital intensive? Describe: ____________
- Is company labor intensive? Describe: ____________
- Discuss condition of facilities and equipment: ____________
- Describe merger authority: ____________
- Describe any tax issues: ____________
- Describe recent merger activity: ____________
- Contingent off balance sheet financing: ____________
- Describe the regulatory issues that impact the company: ____________
- Describe other significant matters: ____________

This page and above addresses: SSVS 27, 29

Workpapers Page Reference

The valuation analyst should obtain, where applicable and available, financial information on the subject entity such as:

- Historical financial information (including annual and interim financial statements and key financial statement ratios and statistics) for an appropriate number of years: ____________ ____

- Prospective financial information (for example, budgets, forecasts, and projections): ____________ ____

- Comparative summaries of financial statements or information covering a relevant time period: ____________ ____

- Comparative common size financial statements for the subject entity for an appropriate number of years: ____

- Comparative common size industry financial information for a relevant time period: ____________ ____

- Income tax returns for an appropriate number of years: ____________ ____

- Describe recent merger activity: ____________ ____

This page and above addresses: SSVS 27, 29

VIII. NATIONAL AND LOCAL ECONOMIC INFORMATION

National

- Valuation date short-term bond yield: ________ Source: ________ ____
- Valuation date intermediate bond yield: ________ Source: ________ ____
- Valuation date long-term bond yield: ________ Source: ________ ____
- Expected inflation rate: ________ Source: ________ ____
- Expected GNP growth: ________ Source: ________ ____
- Current unemployment rate: ________ Source: ________ ____

This section above addresses: SSVS 27

Workpapers Page Reference

- Describe current and/or expected major changes in tax law: ____________________

  ____

  ____

  ____

  ____

  Source: ____________________

- General description of the economy: ____________________

  ____

  ____

  ____

  ____

  Source: ____________________

Local and Regional

- Describe local and regional market: ____________________

  ____

  ____

  ____

  ____

  Source: ____________________

- Describe personal income growth: ____________________

  ____

  ____

  ____

  ____

  Source: ____________________

IX. NATIONAL AND LOCAL INDUSTRY INFORMATION

National

- Total market: ____________________ Source: ____________________
- Short-term industry growth: ____________________ Source: ____________________
- Long-term industry growth: ____________________ Source: ____________________

- Growth industry stability: ____________________

  ____

  ____

  ____

  ____

  Source: ____________________

This page and above addresses: SSVS 27

Workpapers Page Reference

- Describe market trends: ____

  Source: ____

- Describe technology advancements: ____

  Source: ____

- Describe effects of government regulation: ____

  Source: ____

- Describe industry outlook: ____

  Source: ____

- Describe industry financial data: ____

  Source: ____

- Describe industry long-term prospects: ____

  Source: ____

- Source of industry financial data: ____

  - Period covered: ____

This page and above addresses: SSVS 27

Workpapers Page Reference

Local and Regional

- Total market: __________ Source: __________ ______
- Short-term industry growth: __________ Source: __________ ______
- Long-term industry growth: __________ Source: __________ ______
- Describe: __________ ______
- Growth industry stability: __________ ______

  Source: __________ ______

  Describe: __________ ______
- Describe local market trends: __________ ______

  Source: __________ ______
- Describe effects of local government regulation: __________ ______

  Source: __________ ______

  Describe: __________ ______
- Describe local industry outlook: __________ ______

  Source: __________ ______
- Describe local industry long-term prospects: __________ ______

  Source: __________ ______
- Source of local industry financial data: __________ ______
  - Period covered: __________ ______

This page and above addresses: SSVS 27

Workpapers Page Reference

X. VALUATION APPROACHES AND METHODS—CONSIDERATIONS

Income Approach:

- ❑ Capitalization of earnings / cash flow: ____________ ______
- ❑ Normalization adjustments: ____________ ______
- ❑ Non-recurring revenue and expense items: ____________ ______
- ❑ Taxes: ____________ ______
- ❑ Capital structure and financing costs: ____________ ______
- ❑ Appropriate capital investments: ____________ ______
- ❑ Non-cash items: ____________ ______
- ❑ Qualitative judgments for risks used to compute discount and capitalization rates: ____________ ______
  ____________ ______
- ❑ Expected changes (growth or decline) in future benefits (for example, earnings, or cash flows): ____________ ______
  ____________ ______

Discounted future benefits method (for example, earnings, or cash flows). In addition to the items above, the valuation analyst should consider:

- ❑ Forecast/projection assumptions: ____________ ______
- ❑ Forecast/projected earnings or cash flows: ____________ ______
- ❑ Terminal value: ____________ ______

For an intangible asset, the valuation analyst should consider:

- ❑ Remaining useful life: ____________ ______
- ❑ Current and anticipated future use of the intangible asset: ____________ ______
- ❑ Rights attributable to the intangible asset: ____________ ______
- ❑ Position of intangible asset in its life cycle: ____________ ______
- ❑ Appropriate discount rate for the intangible asset: ____________ ______
- ❑ Appropriate capital or contributory asset charge, if any: ____________ ______
- ❑ Research and development or marketing expense needed to support the intangible asset in its existing state: ____________ ______
  ____________ ______
- ❑ Allocation of income (for example, incremental income, residual income, or profit split income) to intangible asset: ____________ ______
- ❑ Whether any tax amortization benefit would be included in the analysis: ____________ ______
- ❑ Discounted multi-year excess earnings: ____________ ______
- ❑ Market royalties: ____________ ______
- ❑ Relief from royalty method: ____________ ______

This page and above addresses: SSVS 33a, 33b, 33c

Workpapers Page Reference

Asset Approach and Cost Approach:

When using the adjusted net asset method in valuing a business, business ownership interest, or security, the valuation analyst should consider, as appropriate, the following information related to the premise of value:

- ❑ Identification of the assets and liabilities: ________ ________
- ❑ Value of the assets and liabilities (individually or in the aggregate): ________ ________
- ❑ Liquidation costs (if applicable): ________ ________

When using methods under the cost approach to value intangible assets, the valuation analyst should consider the type of cost to be used (for example, reproduction cost or replacement cost), and, where applicable, the appropriate forms of depreciation and obsolescence and the remaining useful life of the intangible asset.

- ❑ Describe: ________ ________

Market Approach:

Three frequently used market approach valuation methods for intangible assets are:

- ❑ Comparable uncontrolled transactions method (which is based on arm's-length sales or licenses of guideline intangible assets) ________
- ❑ Comparable profit margin method (which is based on comparison of the profit margin earned by the subject entity that owns or operates the intangible asset to profit margins earned guideline companies) ________
- ❑ Relief from royalty method (which is based on the royalty rate, often expressed as a percentage of revenue that the subject entity that owns or operates the intangible asset would be obligated to pay to a hypothetical third-party licensor for the use of that intangible asset) ________

For the methods involving guideline intangible assets (for example, the comparable profit margin method), the valuation analyst should consider the subject intangible asset's remaining useful life relative to the remaining useful life of the guideline intangible assets, if available.

In applying the methods listed above or other methods to determine valuation pricing multiples or metrics, the valuation analyst should consider:

- ❑ Qualitative and quantitative comparisons ________
- ❑ Arm's-length transactions and prices ________
- ❑ The dates and, consequently, the relevance of the market data ________

Rules of thumb. Although technically not a valuation method, some valuation analysts use rules of thumb or industry benchmark indicators (hereinafter, collectively referred to as rules of thumb) in a valuation engagement. A rule of thumb is typically a reasonableness check against other methods used and should generally not be used as the only method to estimate the value of the subject interest.

- ❑ Describe: ________ ________

This page and above addresses: SSVS 34, 35, 36, 37, 39

XI. GUIDELINE PUBLIC COMPANY AND MARKET APPROACH

Guideline Company Search

Name	Customer IP #	Exchanges	Historical Beta	Total Equity	Total Assets	Mil $ Net Sales	5-Year Earnings Growth	5-Year ROE	SIC
1.									
2.									
3.									
4.									
5.									

- Workpapers page reference: ____________________
- Source: ____________________
- Comments: ____________________

____

Sales Transaction Search

SIC	Description	Ask Price	Annual Gross	SDE	Sales Date	Sales Price
1.						
2.						
3.						
4.						
5.						

SDE—Seller's discretionary earnings

% Down	Terms	Sales/Gross	Sales/Net	FF&E	Area
1.					
2.					
3.					
4.					
5.					

FF&E—Furniture, fixtures & equipment

- Workpapers page reference: ____________________
- Source: ____________________
- Comments: ____________________

____

____

  - Are they comparable? Describe: ____________________

This page and above addresses: SSVS 36

Workpapers Page Reference

XII. VALUATION ADJUSTMENTS

Examples of valuation adjustments for valuation of a business, business ownership interest, or security include a discount for lack of marketability or liquidity and a discount for lack of control. An example of a valuation adjustment for valuation of an intangible asset is obsolescence.

- ❑ Lack of control: ______
- ❑ Voting / non-voting: ______
- ❑ Lack of marketability or liquidity: ______

XIII. NON-OPERATING/EXCESS ASSETS

When valuing a controlling ownership interest under the income approach, the value of any non-operating assets, non-operating liabilities, or excess or deficient operating assets should be excluded from the computation of the value based on the operating assets and should be added to or deleted from the value of the operating entity. When valuing a non-controlling ownership interest under the income approach, the value of any non-operating assets, non-operating liabilities, or excess or deficient operating assets may or may not be used to adjust the value of the operating entity depending on the valuation analyst's assessment of the influence exercisable by the non-controlling interest. In the asset-based or cost approach, it may not be necessary to separately consider non-operating assets, non-operating liabilities, or excess or deficient operating assets.

- ❑ Comments: ______

This page and above addresses: SSVS 40, 41

XIV. SUBSEQUENT EVENTS

The valuation date is the specific date at which the valuation analyst estimates the value of the subject interest and concludes on his or her estimation of value. Generally, the valuation analyst should consider only circum-stances existing at the valuation date and events occurring up to the valuation date. An event that could affect the value may occur subsequent to the valuation date; such an occurrence is referred to as a *subsequent event.* Subsequent events are indicative of conditions that were not known or knowable at the valuation date, including conditions that arose subsequent to the valuation date. The valuation would not be updated to reflect those events or conditions. Moreover, the valuation report would typically not include a discussion of those events or conditions because a valuation is performed as of a point in time-the valuation date-and the events described in this subparagraph, occurring subsequent to that date, are not relevant to the value determined as of that date.

- ❑ Comments: ______

Workpapers Page Reference

XV. DOCUMENTATION

Documentation is the principal record of information obtained and analyzed, procedures performed, valuation approaches and methods considered and used, and the conclusion of value. The quantity, type, and content of documentation are matters of the valuation analyst's professional judgment. Documentation may include:

- ❑ Document understanding with client ________
- ❑ Information gathered and analyzed to obtain an understanding of matters that may affect the value of the subject interest ________
- ❑ Assumptions and limiting conditions ________
- ❑ Any restriction or limitation on the scope of the valuation analyst's work or the data available for analysis ________
- ❑ Basis for using any valuation assumption during the valuation engagement ________
- ❑ Valuation approaches and methods considered ________
- ❑ Valuation approaches and methods used including the rationale and support for their use ________
- ❑ If applicable, information relating to subsequent events considered by the valuation analyst ________
- ❑ For any rule of thumb used in the valuation, source(s) of data used, and how the rule of thumb was applied to the engagement by the valuation analyst ________
- ❑ Other documentation considered relevant to the engagement by the valuation analyst ________
- ❑ The analyst should read and evaluate information to determine that it is reasonable for the purposes of the engagement ________

This page and above addresses: SSVS 16, 17, 43, 44

XVI. OTHER

- ❑ Management representation letter: ________________________________ ________

Copyright Clearance

- ❑ RMA: ________________________________ ________
  ________________________________ ________
  ________________________________ ________

- ❑ Other: ________________________________ ________
  ________________________________ ________
  ________________________________ ________

This page and above addresses: SSVS 44

Workpapers Page Reference

XVII. DOCUMENT AND DATA REQUEST CONTROL FORM

Request from: ______________________________ Title: ______________________________ __________

Requested by: ______________________________ Title: ______________________________ __________

Subject Company Financial Data

Description	Date Requested	Date Received	Comments	Workpapers Page Reference
Engagement letter:				
Financial statements for 5 years:				
Federal & state income tax returns for 5 years:				
Historical budget vs. actual report for ____ years:				
Prospective budget report for year:				
Accounts receivable aging report:				
Inventory summary reports and costing method summaries:				
Detailed schedule of fixed assets:				
Schedule of investments:				
Accounts payable aging report:				
Schedule of accrued liabilities:				
Schedule of notes payable, equipment, or real property leases & other term debt:				
Appraisal reports: • Real Estate				
• Equipment				
• Other (trademarks & patents)				
Key-man life policies:				
Other:				

This page and above addresses: SSVS 16, 44

Operational and Legal Documentation

Description	Date Requested	Date Received	Comments	Workpapers Page Reference
Organizational chart:				
Buy / Sell agreements:				
Stockholders agreements:				
Stock subscription agreements:				
Public or private offering memoranda:				
Employment contracts:				
Pension / profits sharing plans:				
Other Benefit Plans:				
Schedule of pension / profit sharing funding for ____ Years:				
Significant contracts:				
Property tax returns for ____ years:				
Client representation letter:				
Legal representation letter:				
Other: • a) ____				
• b) ____				
• c) ____				
• d) ____				
• e) ____				
• f) ____				
• g) ____				
• h) ____				
• i) ____				
• j) ____				
• k) ____				

This page and above addresses: SSVS 13d, 13e, 18 (Appendix A), 25

Workpapers Page Reference

EXHIBIT I

List of Assumptions and Limiting Conditions

- Comments: ____________________

	Initials	Date
Prepared By		
Approved By		

APPENDIX V

Comprehensive Business Valuation Reporting Checklist for Valuation Engagements

"The principal goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done."
— Jean Piaget

Publication Date: January 31, 2009

Comprehensive Business Valuation
—— Reporting Checklist for Valuation Engagements ——

This document is intended to provide guidance for the communication of information to be included in a valuation report to effectively communicate the results of your analysis. The purpose is to help assure you are in compliance with the Reporting Standards of the National Association of Certified Valuators and Analysts (NACVA) and the American Institute of Certified Public Accountants (AICPA) in their Statement on Standards for Valuation Services No. 1 (SSVS). Both standards have an effective date of January 1, 2009.

Disclaimers:

1) **Though this document is quite comprehensive, one should not construe it to suggest that every item noted herein is required to be reported in a business valuation report. Each engagement and each business is different. Thus, some or many items noted herein may not be necessary for consideration in the given circumstances.**

2) This document is not intended to replace a User's responsibility for having read and being fully conversant with both NACVA's and the AICPA's standards. The authors are fallible and items may have been overlooked. Thereby, we disclaim any and all liability for one's use of this document should it turn out that a valuation report produced while using this Checklist is not in compliance with the aforementioned standards.

3) This comprehensive checklist is designed for use in a valuation engagement to prepare either a Detailed or Summary Report determining a "Conclusion of Value." Thus, depending on which type of report the engagement calls for, will determine which items in this checklist are applicable or not applicable.

4) SSVS #22 states that: Hypothetical conditions affecting the subject interest may be required in some circumstances. When a valuation analyst uses hypothetical conditions during a valuation or calculation engagement, he or she should indicate the purpose for including the hypothetical conditions and disclose these conditions in the valuation or calculation report (paragraphs 52(n), 71(o), and 74).

5) SSVS #49 states all reports should indicate any restrictions on its use, which is elaborated on in SSVS #65(d).

6) SSVS #67 states reports should contain information on the analyst's qualifications.

7) SSVS #71 states a Summary Report is an abridged version of a Detailed Report, and lists its minimum requirements.

8) SSVS #73 through SSVS #76 refer to Calculation Reports and lists their minimum requirements.

9) SSVS #78 provides for Detailed or Summary Oral Reports in a valuation engagement as follows: An oral report may be used in a valuation engagement or a calculation engagement. An oral report should include all information the valuation analyst believes necessary to relate the scope, assumptions, limitations, and the results of the engagement so as to limit any misunderstandings between the analyst and the recipient of the oral report. The member should document in the working papers the substance of the oral report communicated to the client.

10) This document is a work in process and will be updated and improved on an ongoing basis. We appreciate any suggestions you may have. Please e-mail them to nacva1@nacva.com.

—— Table of Contents ——

—— Table of Contents ——

Continued

—— Critical Elements Summary ——

1. SUMMARY AND DATES:

- ❑ The effective date of the valuation (and alternative valuation date if appropriate)
- ❑ The date and type of report
- ❑ The business, business ownership interest, security, or intangible assets
- ❑ Identity of the subject entity
- ❑ Description of the subject interest
- ❑ An overview of the Company and its Management
- ❑ Analyses of historical operating performance and financial position
- ❑ A conclusion of value stated in total and per share/unit or in ownership interest as appropriate

Comments: ____

____

The above addresses: SSVS 51, 52

2. LIMITING CONDITIONS AND ASSUMPTIONS:

- ❑ A statement of disinterestedness in the Company and the report
- ❑ A statement that the report complies with various organizations applicable standards
- ❑ A statement of the specific purpose for which the report is prepared and that it applies only as at the stated valuation date
- ❑ Any restrictions or limitations in the scope of work or data available for analysis
- ❑ If the work of a specialist was used, a description of how the specialist's work was relied upon
- ❑ Any application of the jurisdictional exception
- ❑ A statement that the data received has been relied on with/without independent verification
- ❑ Limiting conditions (including hypothetical assumptions)
- ❑ Qualifications of the valuation analyst

Comments: ____

____

The above addresses: SSVS 51, 52, 65

3. PURPOSE AND FUNCTION OF THE VALUATION:

- ❑ Statement as to why the asset, liability or security is being valued
- ❑ Purpose of the valuation
- ❑ Intended users of the Valuation Report
- ❑ The type (financial reporting, estate tax, gifting, ESOP, divorce, etc.) of the valuation
- ❑ The premises of value (going concern, in-use, liquidation, etc.)

Comments: ____

____

The above addresses: SSVS 51, 52

4. STANDARD OF VALUE:

- ❑ A definition of the standard of value selected
- ❑ The rationale (e.g., the statute or buy/sell agreement or other reason which may dictate its use) as to why this standard of value is appropriate

Comments: ____

____

The above addresses: SSVS 51, 52

—— Critical Elements Summary ——

Continued

5. METHODS OF VALUATION:

- ❑ Application of the three valuation approaches (asset, market, income) must be considered
- ❑ Reason why one or more were rejected
- ❑ Methods selected and why (for example a capitalization rather than a discounting technique)
- ❑ Analysis of subject entity and related non-financial information
- ❑ Financial statements/projections analysis
- ❑ Financial statement valuation adjustments

Comments: ______________________________

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____

The above addresses: SSVS 59, 60, 67

6. WORKPAPERS:

- ❑ All workpapers must be included but only in final form. (Developmental Standards)

Comments: ______________________________

____

7. REPORT WRITING:

- ❑ Letter of transmittal
- ❑ Table of contents
- ❑ Introduction
- ❑ Sources of information, including whether and to what extent the subject entity's facilities were visited
- ❑ Appendices and exhibits
- ❑ Identity of client
- ❑ Restrictions or limitations
- ❑ Subsequent events
- ❑ Jurisdiction exception
- ❑ Non-operating assets, non-operating liabilities, and excess or deficient operating assets (if any)
- ❑ Representation of the valuation analyst
- ❑ Reconciliation of estimates and Conclusion of Value
- ❑ Industry and economic data
- ❑ Identification of financial statements used

Comments: ______________________________

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The above addresses: SSVS 51, 52

REPORT ELEMENTS IN DETAIL

Insert Page Ref. in Report, N/A, or 3

SECTION I—REPORT FUNDAMENTALS

1. Introduction and Sources of Information

________ a. List all of the sources of information used to value the company.

________ b. Where information is received from management, provide a list of documents supplied and reviewed.

________ c. Where information is utilized from other resources, provide the proper footnote or endnotes indication source, date etc.

________ d. Describe who engaged you and any restrictions in Letter of Engagement.

________ e. Transmittal letter—addressed to person who engaged valuator, purpose of valuation, description of subject, total and per unit values.

________ f. Is the report understandable to the anticipated reader?

________ g. Is there appropriate detail in the table of contents?

________ h. Has the report been reviewed for any obvious errors?

________ i. Has the report been reviewed for any obvious omissions?

________ j. Does the report lead to a logical conclusion?

________ k. Is the report signed by the valuation analyst or persons responsible for issuing it?

________ l. Have all calculations been checked for mathematical errors?

________ m. Has the report been read, rather than computer checked, for spelling errors?

________ n. Is the Company and its operating units properly identified?

________ o. Is the purpose and intended user of the report properly identified?

________ p. Is the subject, asset, liability, security, technology, or entity properly identified?

________ q. Are the valuation and report dates clearly set out?

________ r. Identify premise and define standard of value.

________ s. State sources and nature (audited, reviewed, compiled, tax, etc.) of financial information.

________ t. Ensure descriptions of item being valued are correct.

________ u. Discuss control characteristics and degree of marketability.

________ v. Identify type of report issued.

Comments: ____

The above addresses: SSVS 51, 52, 53

Insert Page Ref. in Report, N/A, or 3

SECTION II—QUALITATIVE FOUNDATIONS

2. Analysis of Subject Entity and Non-Financial Information

___________ a. Provide an overview of the industry in which the Company operates.

___________ b. Description of asset, liability, security or technology to be valued. If security, add number of shares/units and percentage of ownership interest.

___________ c. Discuss the dividend and voting characteristics of the shares/units being valued. If there is more than one class of stock/units issued—discuss the characteristics of each.

___________ d. Discuss all related parties and any identified transactions.

___________ e. Site visits—discuss the circumstances and observations of the site visit, including date(s) and names of persons interviewed.

___________ f. History and background of the entity or company (include such items as legal name, form of organization, tax status, the state of incorporation, etc.).

___________ g. Previous transactions of company assets or stock.

___________ h. Restrictions on the sale or transfer of company stock, and details of any buy/sell agreements in place. Discuss impact of any restrictions on the value of the subject shares/units.

___________ i. Dividend payments, historical and current.

___________ j. Subsidiaries and affiliates.

___________ k. Management and staffing—list number of employees by function. Discuss the succession to existing management.

___________ l. Products and services—discuss the various product and services provided indicating the revenue and gross profit by major function.

___________ m. Sales and marketing—discuss how the entity generates sales and markets its products or services.

___________ n. Discuss issues affecting the industry and geographical area served.

___________ o. Customer concentration—analyze transactions with the largest customers for the past five years.

___________ p. Size and competition—discuss how the absolute and relative size of the entity affects its value, how the company determines pricing, who the competitors are and how they compete.

___________ q. Physical facilities—discuss the adequacy and condition of the property, plant, and equipment, if applicable.

___________ r. Employee benefits—discuss the various employee benefits and the related costs.

___________ s. Proprietary content and technology—discuss any proprietary content, patents, copyrights, trade secrets etc.

___________ t. Discuss favorable access to raw materials, locations, government subsidies, or experience curve.

___________ u. Discuss long-term lease arrangements (including real estate) and their impact on value.

___________ v. Product/Service differentiation—discuss how the company's products and/or services differ from its competitors.

___________ w. Relative product/service quality—discuss the quality of the products and/or services provided by the company.

___________ x. Covenant not to compete—discuss the terms of any covenants not to compete.

___________ y. Contracts—discuss how the company handles its relationships and contracts with customers.

___________ z. Family involvement—discuss the family members and related parties working in the entity, their job functions, compensation, etc.

___________ aa. Quality of books and records—discuss the internal controls that are in place and how their compliance may affect the value of the company.

___________ bb. Employee turnover—discuss the turnover and address how the turnover affects the risk associated with the company.

Insert Page Ref. in Report, N/A, or 3

SECTION II—QUALITATIVE FOUNDATIONS

— Continued —

2. Analysis of Subject Entity and Non-Financial Information—*Continued*

______ cc. Environmental issues—discuss any known environmental issues and how they affect the value of the company.

______ dd. Future prospects—discuss the future prospects of the company.

______ ee. Summary of positive and negative company-specific factors and how they impact the risk associated with the company.

Comments: ____

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The above addresses: SSVS 57

3. Economic Condition

______ a. National economy—discuss consumer spending, services, manufacturing, capital spending, real estate and construction, agriculture, natural resource industries, financial services and credit, employment and wages, etc., of the national economy and how they affect the company.

______ b. State/provincial economy—discuss consumer spending, services, manufacturing, capital spending, real estate and construction, agriculture, natural resource industries, financial services and credit, employment and wages, etc., of the state economy and how they affect the company.

______ c. Regional/Local economy—discuss how the company is affected by the regional or local economy.

______ d. Summary and conclusion of economic outlook—provide a recap of how the entity is affected by the national, state, and local economic conditions.

Comments: ____

____

The above addresses: SSVS 53h

SECTION III—ANALYTICAL FOUNDATIONS

4. Information Analysis

______ a. List the various NAICS or SIC codes for the industry and a brief description of the businesses covered.

______ b. Provide an adequate overview of the industry, explaining trends, current status, and the future prospects in the industry. Also, discuss any regulatory agency that has a voice in the industry the company operates in and how the regulations affect the company.

______ c. Market share—discuss the company's positioning relative to the industry and competition.

______ d. Ease of market entry, threat of market entry, barriers to market entry—discuss the ease, barriers, and obstacles of entering the market. Provide a summary of the barriers to entry and how they affect the company.

______ e. Economies of scale—discuss the economies of scale including product differentiation, capital requirements, switching costs, access to distribution channels, cost disadvantages independent of scale.

SECTION III—ANALYTICAL FOUNDATIONS

— Continued —

Insert Page Ref. in Report, N/A, or 3

4. Information Analysis—*Continued*

___________ f. Threat of new entrants—discuss the bargaining power of suppliers, the bargaining power of customers, the threat of substitute products, and the rivalry between incumbents. Provide a summary of how the threats of new entrants affect the value of the company.

5. Financial Statement Analysis—Entity/Company

___________ a. Financial information provided—discuss how the financial information was prepared, audited, reviewed, compiled, internally prepared, tax returns, who prepared the financial information, etc.

___________ b. results of operations and comparison to the industry—provide a summary description of the financial performance of the company over the years of the analysis.

___________ c. Balance sheet review—provide the company's historical balance sheets in the report or as exhibits with adequate detail to review for possible normalizing entries. Provide adequate support for all balance sheet adjustments.

___________ d. Income statement review—provide the company's income statements in the report or as exhibits with adequate detail to review for possible normalizing entries.

___________ e. Statement of cash flows—provide the company's historical statement of cash flows in the report or as exhibits with adequate detail to review for possible normalizing entries.

___________ f. Years analyzed—provide a discussion of the years used for the valuation analysis. Justify why the beginning years were used and why the number of years of analysis was selected.

___________ g. Inventory—discuss the method of costing the inventory, FIFO, LIFO, etc., and provide analysis and calculations for LIFO adjustment if appropriate.

Comments: ____

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____

The above addresses: SSVS 54, 55, 56, 58b, 58c

6. Financial Statement Analysis—Industry Comparison

___________ a. Comparative ratio analysis—provides the company's comparative ratio analysis in the report or as exhibits with adequate detail.

___________ b. Liquidity ratios—provide a discussion and trend comparison of the liquidity ratios. Consider discussing the current ratio, the quick ratio, and the working capital turnover.

___________ c. Turnover ratios—provide a discussion and trend comparison of the turnover ratios. Consider discuss the receivables, inventory, and payables turnover ratios, and the operating cycle.

___________ d. Leverage ratios—provide a discussion and trend comparison. Consider discussing net fixed assets, current and total liabilities to tangible net worth, total assets to equity, total debt to total assets, and long-term debt to equity.

___________ e. Solvency ratios—provide a discussion and trend comparison of the company's ability to meet its debts. Consider discussing the interest coverage ratio, Z-Score, among other measures of solvency.

SECTION III—ANALYTICAL FOUNDATIONS

— Continued —

Insert Page Ref. in Report, N/A, or 3

6. Financial Statement Analysis—Industry Comparison—*Continued*

________ f. Income statement review—provide a discussion and trend comparison of the turnover ratios. At a minimum, consider discussing the revenues and net operating profit; provide a discussion and comparison of the revenues and operating profit ratios. Consider discussing the sales growth rate, the gross profit, the operating profit, the net income before tax, return on equity, the return on assets, the net sales to net worth, the operating earnings growth rate, the earnings standard deviation, and the Z-score.

________ g. Peer comparison. Have the Company financial statements been compared to industry data? Was the proper year of industry data used? Are the selected industry ratios the most appropriate for the comparison?

Comments: ____

____

____

____

The above addresses: SSVS 58c

7. Financial Statement Analysis—Ratios

________ a. Summary of Financial and Industry Comparison Analysis—discuss how the ratios listed above affect the value of the company.

Comments: ____

____

The above addresses: SSVS 58c

8. Financial Statement Analysis—Ratios—Normalizing Adjustments

________ a. Have the historical earnings been normalized? Have all balance sheet and income statement items been properly adjusted to reflect the standard of value and the entity's earnings capacity?

________ b. Are the normalizing entries appropriate and reasonable relative to the level of value? (Control vs. lack of control interest.)

________ c. Leasehold interest—discuss the leasehold arrangements. Consider the net present value of any favorable leases.

________ d. Officers compensation—discuss and justify adjustment to officer's compensation. Show calculations for tax affecting (payroll) the officer's compensation adjustment.

________ e. Depreciation—discuss how the future depreciation expense was calculated. Discussion should include section 179, economic useful life of existing assets and projected capital expenditures.

________ f. Were non-operating or excess assets identified and adjustments made when appropriate?

Comments: ____

____

The above addresses: SSVS 64

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—ASSET

9. Asset Approach

______ a. Are all of the tangible assets and liabilities adjusted that should be adjusted?
______ b. Are intangible assets properly adjusted?
______ c. Are there any off balance sheet items not recorded on the balance sheets?
______ d. Is there adequate support for any built-in capital gains tax?
______ e. If approach is not used, did valuation report address why?
______ f. Rationale and support for valuation methods used.

Comments: ____
____
____

The above addresses: SSVS 61b

10. Excess Earnings Method

______ a. Is the earnings capacity supportable? Discuss and provide calculations for ongoing earnings capacity. Specifically discuss the use of the un-weighted average method, the weighted average method, the trend line–static method, the trend line–projected method and the projected growth rate in earnings. Explain each method and discuss how the ongoing earnings capacity was selected.
______ b. Have the net tangible assets been properly determined?
______ c. Have non-operating assets and/or liabilities been excluded? Was the income/expense from the non-operating assets removed from the company's adjusted earnings?
______ d. Is the rate of return on net tangible assets adequately discussed and supported?
______ e. Is the rate of return on intangible assets adequately discussed and supported?
______ f. Is there some type of sanity check performed for reasonableness of the method used?
______ g. Have any non-operating assets been added back and/or non-operating liabilities reduced from total value?

Comments: ____
____
____

The above addresses: SSVS 59

METHODS OF VALUATION—MARKET APPROACH

11. Market Data Analysis—Public Companies

______ a. Does the analyst document a reasonable attempt to search for public companies—describing search criteria, number of companies identified, and specific reasons these companies were not considered?
______ b. Is the population from which the comparable companies selected adequately disclosed?
______ c. Is it clear that all qualified companies from the population have been considered?
______ d. Are the public company transactions close enough to the valuation date to be relevant? If the public companies data is somewhat removed from the valuation date: discuss the reason for its use.

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

— Continued —

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—MARKET APPROACH—*Continued*

11. Market Data Analysis—Public Companies—*Continued*

__________ e. Specify the sources of the earnings growth rates for the public companies.

__________ f. Are the criteria for selection of public companies adequately discussed? Indicate how the public company transactions were selected for comparability. Specifically address the size, sales, employees, management and business form, geographic location, growth, one year sales growth percentage, three year sales growth percentage, current ratio, quick ratio, average collection period, profitability, return on total assets, return on equity, gross profit, operating profit, net profit, EBITDA percentage, accounts receivable turnover, inventory turnover, fixed asset turn-over, total asset turnover, working capital turnover, total debt to total assets, long-term debt to equity. Provide all sources of information used.

__________ g. Does the report clearly discuss which market multiples were used and why they are or are not appropriate? Are the market prices for the public companies appropriate as of the valuation date?

__________ h. If adjustments were made to the public companies, were they adequately disclosed and discussed?

Comments: ____

____

____

The above addresses: SSVS 60, 61c

12. Direct Market Data Method—Mid Market

__________ a. Is the population from which the comparable companies selected adequately disclosed?

__________ b. Is it clear that all qualified companies from the population have been considered?

__________ c. Are the criteria for selection of mid-market companies adequately discussed? Indicate how the mid-market company transactions were selected for comparability. Specifically address the size, sale, employees, management and business form, geographic location, growth, one-year sales growth percentage, three-year sales growth percentage, current ratio, quick ratio, average collection period, profitability, return on total assets, return on equity, gross profit, operating profit, net profit, EBITDA percentage, accounts receivable turnover, inventory turnover, fixed asset turnover, total asset turnover, working capital turnover, total debt to total assets, long-term debt to equity. Provide all sources of information used.

__________ d. Does the report clearly discuss which market multiples were used and why they are or are not appropriate?

__________ e. Are the market prices for the public companies appropriate as of the valuation date?

__________ f. Are the public company transactions close enough to the valuation date to be relevant?

__________ g. If the public companies data is somewhat removed from the valuation date: discuss the reason for its use.

Comments: ____

____

____

The above addresses: SSVS 61c

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

— Continued —

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—MARKET APPROACH—*Continued*

13. Direct Market Data Method—Transaction Databases (BIZCOMPS®, IBA, Pratt's Stats™, etc.)

a. Are the criteria for selection of transactions adequately discussed?

__________ b. Is the population from which the transactions selected adequately disclosed?

__________ c. Is it clear that all qualified companies from the population have been considered?

__________ d. Does the report clearly discuss which market multiples were used and why they are or are not appropriate?

__________ e. Are the transactions appropriate as of the valuation date?

__________ f. Are the transactions close enough to the valuation date to be relevant?

__________ g. If the transaction data is somewhat removed from the valuation date: discuss the reason for its use.

__________ h. Is there an adequate discussion of what type of assets are included in a typical sale, what a typical sale is, how to rank the transactions, and dealing with outliers? (Provide appropriate footnotes.)

__________ i. Is there an adequate discussion of when and how to use the mean multiple?

__________ j. Is there adequate analysis of the sales price to earnings and the sales price to gross sales ratios?

__________ k. Is there an adequate explanation as to why a multiple was or was not selected?

__________ l. Is there a discussion of when to use or not use premium or discounts when using the direct market data method?

Comments: ____

The above addresses: SSVS 61c

14. Industry-Specific Multiples

__________ a. Does the report clearly discuss the criteria for selection, which industry-specific multiples were used, and why they are or are not appropriate?

__________ b. Are the transactions appropriate as of the valuation date? If the transaction data is somewhat removed from the valuation date: discuss the reason for its use.

__________ c. Is there an adequate discussion of which multiple was used and why it was used?

__________ d. Is there a discussion of when to use or not use premium or discounts when using the industry-specific multiples?

Comments: ____

The above addresses: SSVS 61c

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

— Continued —

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—INCOME APPROACH

15. Income Approach

_____ a. Is the type of income clearly defined? (Net income, operating income, net cash flow to equity, net cash flow to invested capital, etc.)

_____ b. Is there adequate support for determining the earnings capacity of the company?

_____ c. Is the discount rate adequately supported?

_____ d. Discuss and provide calculations for ongoing earnings capacity. Specifically, discuss the use of the un-weighted average method, the weighted average method, the trend line—static method, the trend line—projected method and the projected growth rate in earnings. Explain each method and discuss how the ongoing earnings capacity was selected.

_____ e. Is there an adequate discussion of the principles of cost of capital components?

_____ f. Is the selection of a safe rate explained and justified?

_____ g. Is there an adequate discussion of the relationship of discount rate to capitalization rate?

_____ h. If approach was not used, does the report address reasons why?

Comments: ____

____

____

The above addresses: SSVS 60, 61a

16. Capitalization of Earnings Method

_____ a. Is the capitalization rate reasonable for the company?

_____ b. Is the earnings capacity reasonable for the company?

_____ c. Is the final value reasonable for the company?

_____ d. Were the non-operating assets included in the final value?

_____ e. Was the income/expense from the non-operating assets removed from the company's adjusted earnings?

Comments: ____

____

____

The above addresses: SSVS 61a

17. Discounted Cash Flow Method

_____ a. Does the report adequately address the "type" of cash flow used and why?

_____ b. Is there adequate disclosure of who made the cash flow projections? (Who made them, when, what for, what adjustments were made to the projections, etc.)

_____ c. Is there adequate analysis and discussion of the projected depreciation expense?

_____ d. Depreciation—discuss how the future depreciation expense was calculated. Discussion should include section 179, economic useful life of existing assets and estimated capital expenditures.

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

— Continued —

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—INCOME APPROACH—*Continued*

17. Discounted Cash Flow Method—*Continued*

___________ e. Is there adequate analysis and discussion of the projected capital expenditures, changes in working capital, projected minimum cash balances, and projected changes in long-term debt?

___________ f. Has the report properly addressed the impact of non-operating assets and liabilities in the cash flow projections and the impact on the final value?

___________ g. Was the income/expense from the non-operating assets removed from the company's adjusted earnings?

Comments: ____

____

The above addresses: SSVS 61a

18. Weighted Average Cost of Capital (WACC)

___________ a. Is there adequate discussion of the WACC and when it is used?

___________ b. Is there adequate disclosure of the sources of equity and debt? (Cite publications, online, etc.)

___________ c. Is there adequate support for weighting the debt and equity? Is the basis for the weighting discussed?

___________ d. Is there an adequate discussion of the iterative process?

Comments: ____

____

The above addresses: SSVS 61a

19. Build-Up Methods

___________ a. Is the risk free rate of return effective as of the valuation date?

___________ b. Is the common stock equity risk premium as of the year of the valuation?

___________ c. Is the small capitalization equity risk premium as of the year of the valuation?

___________ d. If the industry risk premium was used, did the report adequately identify the source?

___________ e. Was the proper size premium used?

___________ f. Describe in detail how the company specific risk was determined.

___________ g. Is there an adequate discussion of the expected long-term earnings growth rate and the justification for the long-term growth rate selected?

Comments: ____

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The above addresses: SSVS 61a

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

— Continued —

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—INCOME APPROACH—*Continued*

20. Capital Asset Pricing Model—CAPM

___ a. Is the risk free rate of return effective as of the valuation date? Are the other components of the rate effective either as of the valuation date or the year of the valuation date?

___ b. Is the equity risk premium adequate?

___ c. Is the size premium adequate?

___ d. Is there adequate support for the beta?

___ e. Is there a discussion as to the assumptions of the Capital Asset Pricing Model?

___ f. Is the discount/capitalization rate appropriate for the valuation?

Comments: ___

The above addresses: SSVS 61a

21. Risk Rate Component Model—RRCM

___ a. Does the report demonstrate an understanding of how to use the Risk Rate Component Model?

Comments: ___

The above addresses: SSVS 61a

22. Use of Projections

___ a. Income Statements

___ i. Are the projected income statements presented with adequate detail? (Nominal, common-sized, trends.)

___ ii. Are the projected income statements presented in a form comparable to the historical financial statements?

___ iii. Are the assumptions for the projected income statements adequately disclosed and are they reasonable?

___ b. Balance Sheet

___ i. Are the projected balance sheets presented with adequate detail? (Nominal, common-sized, trends.)

___ ii. Are the projected balance sheets presented in a form comparable to the historical financial statements?

___ iii. Are the assumptions for the projected balance sheets adequately disclosed and are they reasonable?

___ c. Statement of Cash Flows

___ i. Are the projected statements of cash flows presented with adequate detail? (Nominal, common-sized, trends.)

___ ii. Are the projected statements of cash flows presented in a form comparable to the historical financial statements?

SECTION IV—VALUATION APPROACHES AND METHODS CONSIDERED AND USED

— Continued —

Insert Page Ref. in Report, N/A, or 3

METHODS OF VALUATION—INCOME APPROACH—*Continued*

22. Use of Projections—*Continued*

___________ iii. Are the assumptions for the projected statement of cash flows adequately disclosed and are they reasonable?

___________ d. Ratios

___________ i. Are the projected ratios presented with adequate detail? (Nominal, common-sized, trends.)

___________ ii. Are the projected ratios presented in a form comparable to the historical financial statements?

___________ iii. Are the assumptions for the projected ratios adequately disclosed and are they reasonable?

Comments: ____

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The above addresses: SSVS 61a

23. Intangible Asset Valuation

Were the following considered and explained in the valuation?

___________ a. Remaining useful life.

___________ b. Current and anticipated future use of the intangible asset.

___________ c. Rights attributable to the intangible asset.

___________ d. Position of intangible asset in its life cycle.

___________ e. Appropriate discount rate for the intangible asset.

___________ f. Appropriate capital or contributory asset charge, if any.

___________ g. Research and development or marketing expense needed to support the intangible asset in its existing state.

___________ h. Allocation of income (for example, incremental income, residual income, or profit split income) to intangible asset.

___________ i. Whether any tax amortization benefit would be included in the analysis.

___________ j. Discounted multi-year excess earnings.

___________ k. Market royalties.

___________ l. Relief from royalty.

Comments: ____

____

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____

____

Insert Page Ref. in Report, N/A, or 3

SECTION V—VALUATION ADJUSTMENTS

24. Discounts and Premiums

________ a. Discuss the adequacy of including a control premium to the final value.

________ b. Discuss the adequacy of including a minority interest discount to the final value.

________ c. Discuss the adequacy of including a marketability discount to the final value. Demonstrate an understanding and the ability to apply the following marketability studies. (Institutional Investors study, Public Offering studies, Security Exchange Commission study, the Gelman study, Trout study, the Moroney study, the Maher study, Standard Research Consultants, Pittock/Stryker) study, Silber study, FMV Opinions, Inc. (Hall/Polleck) study, IPO studies, Emory study.)

________ d. If a model was used to support a marketability discount, has the report demonstrated adequate understanding and use of that model?

________ e. Summarize the various marketability discount studies.

________ f. Discuss the adequacy of including other premiums and/or discounts (e.g., key man, stock restrictions, one-time loss, built-in gains, etc.) to the final value if appropriate.

________ g. Discuss the application of all discounts or premiums as applied to both a control and minority shareholder.

________ h. Is there adequate support for the premiums and or discounts applied?

________ i. Discuss the degree of control or lack of control characteristics.

________ j. Discuss and provide rationale and calculations for control premium or lack of control discounts.

________ k. Has the report adequately addressed the impact and applicability of court decisions in arriving at the final discount or premium?

Comments: ____

____

____

____

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The above addresses: SSVS 63

SECTION VI—REPRESENTATIONS OF THE VALUATION ANALYST

25. Are the Following Attributes Present? (Check those that apply)

________ a. The analyses, opinions, and conclusion of value included in the valuation report are subject to the specified assumptions and limiting conditions, and they are the personal analyses, opinions, and conclusion of value of the valuation analyst.

________ b. The economic and industry data included in the valuation report have been obtained from various printed or electronic reference sources that the valuation analyst believes to be reliable (any exceptions should be noted). The valuation analyst has not performed any corroborating procedures to substantiate that data.

________ c. The valuation engagement was performed in accordance with NACVA's Professional Standards and if applicable, the American Institute of Certified Public Accountants Statement on Standards for Valuation Services No. 1 (SSVS).

________ d. The parties for which the information and use of the valuation report is restricted are identified; the valuation report is not intended to be and should not be used by anyone other than such parties.

________ e. The analyst's compensation is fee-based or is contingent on the outcome of the valuation.

SECTION VI—REPRESENTATIONS OF THE VALUATION ANALYST

Insert Page Ref. in Report, N/A, or 3

— Continued —

25. Are the Following Attributes Present? (Check those that apply)—*Continued*

___________ f. The valuation analyst used the work of one or more outside specialists to assist during the valuation engagement. (An outside specialist is a specialist other than those employed in the valuation analyst's firm.) If the work of such a specialist was used, the specialist should be identified. The valuation report should include a statement identifying the level of responsibility, if any, the valuation analyst is assuming for the specialist's work.

___________ g. The valuation analyst has no obligation to update the report or the conclusion of value for information that comes to his or her attention after the date of the report.

___________ h. The valuation analyst and the person(s) assuming responsibility for the valuation should sign the representation in their own name(s). The names of those providing significant professional assistance should be identified.

___________ i. Disclose any conflicts of interest.

___________ j. Disclose any hypothetical conditions.

___________ k. Disclose if did the audit, review or compilation, or prepare the tax returns, or that we assume no responsibility.

Comments: ____

____

____

The above addresses: SSVS 54, 55, 56, 64, 65, 66

SECTION VII—CONCLUSION OF VALUE

26. Conclusion of Value

___________ a. Is there an adequate synthesis and reconciliation of the values?

___________ b. If necessary, does the report address mathematical versus subjective weighting?

___________ c. Is there replicability of all calculations in the report?

___________ d. Is there an adequate justification of the methods of valuation selected?

___________ e. Is the final determination of value consistent with the analysis performed?

The following information should be included:

___________ a. A valuation engagement was performed, including the subject interest and the valuation date.

___________ b. The analysis was performed solely for the purpose described in this report, and the resulting conclusion of value should not be used for any other purpose.

___________ c. The valuation engagement was conducted in accordance with NACVA's Professional Standards, and if applicable, the American Institute of Certified Public Accountants Statement on Standards for Valuation Services No. 1 (SSVS).

___________ d. A statement that the determination of value resulting from a valuation engagement is expressed as a conclusion of value.

___________ e. The scope of work or data available for analysis is explained, including any restrictions or limitations (paragraph 19).

___________ f. A statement describing the conclusion of value, either a single amount or a range.

___________ g. The conclusion of value is subject to the assumptions and limiting conditions (paragraph 18) and to the valuation analysts' representation (paragraph 65).

____

SECTION VII—CONCLUSION OF VALUE

— Continued —

Insert Page Ref. in Report, N/A, or 3

26. Conclusion of Value—*Continued*

_________ h. The report is signed in the name of the valuation analyst or the valuation analyst's firm.

_________ i. The date of the valuation report is included.

_________ j. The valuation analyst has no obligation to update the report or the conclusion of value for information that comes to his or her attention after the date of the report.

Comments: ______________________________

The above addresses: SSVS 62, 68

Final Comments that refer to any additional details in your valuation report: ______________________________

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APPENDIX VI

Organization Comparisons

Business Valuation (BV) and Litigation

CERTIFICATION ORGANIZATION	National Association of Certified Valuation Analysts (NACVA)[1]			American Institute of Certified Public Accountants (AICPA)
Credential Name	Certified Valuation Analyst	Accredited Valuation Analyst	Certified Forensic Financial Analyst	Accredited in Business Valuation
Credential Acronym	**CVA**	**AVA**	**CFFA**	**ABV**
Year Credential Instituted	1991	1999	2000	1997
PREREQUISITE REQUIREMENTS FOR CERTIFICATION:				
Education	College degree[2]	College degree[3]	College degree[3]	College degree[5]
Experience in BV	None	2 yrs or 10 BVs	None	Six completed engagements
Other Credentials Required	CPA	None	Yes	CPA
Work Experience Other Than BV	2 yrs for licensed CPA	None	Yes[4]	None
References Required	Yes	Yes	Yes	No
Training Requirement	Optional 45 hrs	Optional 45 hrs	Yes: 40 hrs[5]	Yes: 45 hrs[1]
Case Study	Yes (experience requirement)	Yes (experience requirement)	No	None
Submission of Client Report	In lieu of Case Study[6]	In lieu of Case Study[6]	In lieu of 2 hour proctored exam[7]	None
TESTING REQUIREMENTS:				
Proctored Exam	Yes	Yes	Yes	Yes
Length of Proctored Exam	5 hrs	5 hrs	8 hrs	8 hrs[2]
RECERTIFICATION REQUIREMENTS:				
Continuing Professional Education in BV & Related Areas	Yes	Yes	Yes	Yes
Hours of CPE/ Reporting Term	36 hrs every 3 years[8]	36 hrs every 3 years	36 hrs every 3 years	60 hrs every 3 yrs[3]
Recommended: Specific Course in Ethics, Standards and/or Reporting	8 hrs training every 3 years; no test required unless self-study	8 hrs training every 3 years; no test required unless self-study	None	None
Recommended: Specific Process for Quality Enhancement, Quality or Peer Review	Yes: quality enhancement	Yes: quality enhancement	None	None
Continuing Experience	None[9]	None[9]	Yes[10]	None
OTHER CREDENTIAL FEATURES:				
Inactive Status Available	Yes	Yes	Yes	Yes
Times/Places Proctored Exam Offered	Anytime, nationwide, thousands of locations	Anytime, nationwide, thousands of locations	Anytime, nationwide, thousands of locations	Bi-Annually, nationwide, at designated locations
Approximate:				
Number of Designees	5100	700	300	2600
Designees in Process	600	200	200	200
Total Association Membership	7100			330000
Number of Members Enrolled in BV	6600			2800
Requirement to Adhere to BV Standards	Yes	Yes	Yes	Yes
Basic Annual Dues	**$460**	**$460**	**$460**	**$745**[4]

ORGANIZATION FOOTNOTES:

NACVA Footnotes

1 Information herein can be found in "the Association" brochure published by NACVA and updated annually

2 Implied due to CPA requirement; most states require a five-year college degree to become a CPA

3 Degree must be in field of business

4 Experience is required, see the Association brochure (http://www.nacva.com/PDF/association_brochure.pdf) for more detail

5 Amount of required training varies depending on the candiate's choosen area of specialty in the CFFA Program. Can exempt out of part [and in some instances all] of the training showing proof of substantial experience.

6 Applicants may apply to submit a client BV report in lieu of the Case Study if they have experience in business valuation.

7 A report prepared under Federal Rule 26 within the last 3 years can be submitted in lieu of taking 2 hours of the 8 hour proctored exam

8 CPAs are required to obtain 40 hours of CPE each year to maintain their CPA license in most states

9 Designees who meet certain experience requirements may receive credit towards fulfilling recertification and other requirements

10 Active in 6 engagements as it applies to one's CFFA specialty area every 3 years; members who do not have the 6 engagements requirement may fulfill this by reporting 3 engagements plus 16 additional CPE hours taken through the Consultants' Training Institute (CTI). See the Association brochure (http://www.nacva.com/PDF/association_brochure.pdf) for more detail

AICPA Footnotes

1 The required training can be obtained from what is termed lifelong learning, which can come from CPE courses, college credit, authoring, presenting, lecturing, etc.

2 Over a period of 1.5 years CVAs, CBAs and CFAs were exempt from taking the exam. Normally, they are required to only have to take a 4 hour exam instead of the 8. ASAs are exempt from taking the exam entirely.

3 CPAs are required to obtain 40 hrs of CPE each year to maintain their CPA license in most states

4 AICPA required dues of $395 plus $350 annual ABV credential-holder fee

5 Implied due to CPA requirement; most states require a five-year college degree to become a CPA

CHART ACRONYM KEY:

CPE=Continuing Professional Education
CPA=Certified Public Accountant

Author's Note: The information contained herein was extracted from applicable association literature. In some instances minor inconsistencies were found along with some ambiguities. Our best effort was made to present a complete, accurate and objective picture for comparing the various BV organizations' credentials. We welcome your comments and are open to input for integration into future updates of this chart.

Publication Date: 3rd Quarter 2010

National Association of Certified Valuation Analysts • 1111 Brickyard Road, Suite 200, Salt Lake City, Utah 84106 • Tel: (801) 486-0600 •

Credential Comparison Chart

Institute of Business Appraisers (IBA)[1, 10]			American Society of Appraisers (ASA)	
Certified Business Appraiser	Business Valuator Accredited for Litigation	Accredited in Business Appraisal Review	Accredited Senior Appraiser	Accredited Member
CBA	**BVAL**	**ABAR**	**ASA**	**AM**
1978	1998	2006	1981[1]	1981[1]
College degree/Equivalent[3]	College degree/Equivalent[3]	College degree/Equivalent[3]	College degree/Equivalent	College degree/Equivalent
Yes[2]	Yes[3]	Yes	5 yrs	2 yrs
None[2]	CBA, AIBA, CFA, CVA, AVA, ASA, or ABV	Same as BVAL	None	None
None[4]	Yes[8]	None	None	None
Yes	Yes	Yes	No	No
Yes[5]	Yes	Yes: 40 hrs[9]	Yes–15 hrs USPAP[2]	Yes–15 hrs USPAP[2]
Yes	Yes	Yes	None	None
Yes (2 reports)	None	None	Yes (1 report)	Yes (1 report)
Yes	Yes	Yes	Yes[3, 5]	Yes[3, 5]
6 hrs[6]	4 hrs	4 hrs	8–12 hrs[3, 5]	8–12 hrs[3, 5]
Yes	Yes	Yes	Yes	Yes
24 hrs every 2 years	24 hrs every 2 years	24 hrs every 2 years	40 hrs every 5 yrs[7]	40 hrs every 5 yrs[7]
Yes	Yes	Yes	Complete 7 hrs of USPAP course work every 5 years	Complete 7 hrs of USPAP course work every 5 years
Yes	Yes	Yes	None	None
Yes[7]	Yes[7]	Yes[7]	None	None
Yes	Yes	Yes	None	None
Anytime, proctors available nationwide	Anytime, proctors available nationwide	Anytime, proctors available nationwide	Periodically at designated locations	Periodically at designated locations
400	80	70	1200	100
N/A	N/A	N/A	1000	
1300			5800	
1300			2300	
Yes	Yes	Yes	Yes	Yes
$495			$560/yr for all credentialed members[8]	

IBA Footnotes

1 The IBA holds out a fourth credential, Accredited by IBA, and a fifth and sixth credential—Master Certified Business Appraiser—and Fellow of the Institute of Business Appraisers—which are awarded to members of great distinction, experience, and contribution to the profession

2 Hold a qualified designation in BV or successfully complete 80 hours of BV education with IBA

3 Possess a BV credential or a waiver for equivalent experience

4 In lieu of appraisal experience an applicant may possess 2 yrs of auditing experience or a CPA license

5 All applicants will receive one-on-one mentoring and peer review coaching through IBA's demonstration report writing process

6 Experienced appraisers can request CBA exam exemptions if they hold a BV credential from the AICPA, ASA, NACVA, and the CFA institute, or the AIBA from IBA

7 Designee may participate on a National Business Appraisal Review taskforce or IBA's Qualification Review Committee

8 Two references from attorneys regarding appraiser's expert witness testimony or alternatively take 16 additional hrs of CLE in the area of law related to the expert's subject

9 Distance learning options are also available

10 The Institute of Business Appraisers will award the last new AIBA designation on December 31, 2011. Following this date appraiser applicants will no longer be able to apply for the AIBA designation

ASA Footnotes

1 Refers to BV discipline only; the ASA supports practitioners in real estate, personal property and/or other appraisal services since 1952

2 Must have passed ethics and USPAP exams and 4 Prinicples of Valuation courses

3 Applicants to take 96 hours of classroom training (4 courses) with a 3-hour test given at the end of each course

4 Course is on Uniform Standards of Professional Appraisal Practice

5 Must pass a one-hour ethics exam before sitting for BV exam, and pass a one-hour USPAP exam

6 Holders of the ABV and CBA do not have to take the proctored exam to certify with the ASA. If holders of the ABV credential were grandfathered (see AICPA footnote #2) and never took the ABV proctored exam, they are required to take the ASA 8-hour proctored exam

7 Must also provide evidence of 60 hrs work in professional development, ie., speaking, writing, authoring, course work, etc. on BV topics, or holding an appointed or elected position in the ASA

8 Accredited Senior Appraiser dues are $560 a year, plus there are required local chapter dues and assessments which vary by geographical location

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PARTICIPANT NOTES

APPENDIX VII

Economic Studies:
Furniture Industry

Research provided by
KeyValueData
(dba www.keyvaluedata.com)

I. THE FURNITURE/BEDDING INDUSTRY 2000

Research supplied by KeyValueData

A. HOME FURNISHINGS AND FURNITURE INDUSTRY

Analysts agree that the boom that has been felt by the nation's furniture dealers may indeed be slowing and that both sales and shipments of furniture could be lower for the year 2001. Factors leading to the softening of the market are slowdowns in the number of housing starts and home sales and a general slowdown of the national economy. Spending on furniture and home furnishings is also expected to decline from years past. Sales in 2000 were $64.2 billion and in 2001 they are forecast to be $67.4 billion, and $69.5 billion in 2002. The yearly average growth rate is expected to be around three percent, which is the smallest year-on-year increase since 1991.

Sales of furniture and home furnishings, according to the Census Bureau, have increased faster than have retail sales for the 1998 to 1999 time period. For the time period from 1992 to 1999 sales of furniture and household products have grown faster than have retail sales for the time period.

Sales at retail establishments should hold steady, but manufacturer's shipments will lag and inventories will begin to pile up. The 2001 shipments will be about one percent behind shipments in 2000 and shipments in 2002 should be about two percent behind what they were in 2000. This phenomenon is mainly due to a trend of continued growth in imports that has occurred over the last few years. Manufacturer shipments, in the first quarter of 2001 have slowed, and inventories have begun to build up, according to Furniture Today.

New home sales, which play a large role in furniture and home furnishings sales, are expected to slow over the next few years. New home sales in 2000 were about 1.59 million; they were expected to decline to 1.51 million in 2001 and decline further in 2002 to about 1.47 million. Not only are new home sales expected to **decline** in the coming years, but so too are single-family resales. There were about 4.94 single-family resales in 2000 and they are expected to **decline** to 4.86 million units in 2001 and 4.59 million units in 2002, according to *Furniture Today*.

Growth in the Gross Domestic Product will also be slowing down, but still increasing, over the next couple of years, according to analysts. GDP grew about 4.8 percent in 2000 and is expected to grow by about 3.5 percent in 2001 and by 3.3 percent in 2002.

1. Furniture Markets By Region

The decline of the equity markets in the **Northeast** will act to slow the growth of the region's economy, due to the importance of the region's huge financial service industry. The service industry has already begun to contract and consolidate and layoffs loom in the near future. The furniture and home furnishings industry could feel a chill in the near future because individuals in the area tend to be high earners.

Furniture and home furnishings retailers in the **Southern United States** should also feel the contraction in the market, as downturns in other industries ultimately affect the furniture and home furnishings industry. Rapid growth in technology jobs in states such as

Virginia, North Carolina, Maryland and Texas has fueled growth in the region for many years, but high technology jobs are beginning to slow. The region also employs many individuals in the automotive industry, which has been slowing recently. Based on these factors, furniture and home furnishings sales gains in the region should be modest for the period from 2000-2002.

The **Western United States** could feel very little economic slowdown for the time period depending on the fate of the technology sector, which has been a major catalyst in the region in recent years. Other factors that could benefit furniture and home furnishings dealers in the area are strong gains in global trade in aircraft, shipping and agricultural industries.

The **Midwestern United States** has also benefited from global trade and China's entry into the World Trade Organization. The large agricultural sector in the region has benefited global trade. However, the tight labor markets that are prevalent in the region have stopped growth dead in its tracks in many industries. The region is beginning to respond with an influx of capital investment in productivity–enhancing equipment that is a key growth factor for the region.

2. Geographic Trends in the Furniture/Home Furnishings Market

Furniture and bedding sales are expected to increase over all regions of the country through 2005, according to Furniture Today's 2001 Retail Planning Guide. However, growth will not be occurring as fast as it has in years past, mainly due to a general slowing of the economy as a whole. Sales are forecast to increase by at least 10 percent in every region in the U.S. for the 2000 to 2005 time period. Sales for the domestic market, as a whole, are expected to increase by about 15 percent for the time period.

The largest furniture and bedding market in the country is the Chicago Metro market. Sales in the region have topped all other markets since 1997. New York, Los Angeles and many other well-established cities top the charts as the largest furniture and bedding markets in the country. Sales growth within each of the 20 largest markets is expected to increase for the time period from 2000 to 2005 by at least nine percent, with some areas growing more than 25 percent.

The fastest growing furniture and bedding markets are in less traditionally well-established cities, where growth is taking place due to a rapid population influx for reasons that are characteristic to the region. Austin/San Marcos, Texas is the fastest growing region in the country, with over $337 million in sales in 2000 and sales projected at over $464 million in 2005, an increase of almost 40 percent. Furniture and bedding retailers and wholesalers that are serving these "hot markets" will be less likely to feel the chill of a cooling economy than firms that are serving alternative markets within the country. While the 25 fastest growing regions of the country are still growing faster than all other regions of the country, they are not growing as fast as the previous years top 25 fastest growing markets. In the 1999 Retail Planning Guide the percent change in sales volume ranged from 69 percent to about 145 percent, compared to the range of 24 to 38 percent in the current Retail Planning Guide.

3. Imports Within the Furniture Industry

Imports have a dramatic effect on manufacturers of furniture and bedding products. As stated earlier, manufacturers are facing stiff competition from overseas markets that have access to inexpensive means of production, and labor. Imports in the furniture industry have increased over 66 percent since 1997. Looking only at the 1998 to 1999 time period, imports have increased over 20 percent.

Imports from China alone have increased over 46 percent for the 1998 to 1999 time period. Over the past few years, Chinese furniture factories have seen large capacity increases that have allowed them to pick up the production slack that has been felt in the factories in the United States. The product with the highest demand in the United States that is imported from China is a metal outdoor chair with textile-covered seats. Imports of this product alone have increased over 90 percent during the 1998 to 1999 time period.

The United States exported about $1.6 billion of furniture products in 1999, which was a drop of about two percent from the previous year. Exports also dropped to the following countries.

a) Japan – 10 percent decline
b) Saudi Arabia – 17 percent decline
c) Kuwait – 7 percent decline
d) Brazil – 40 percent decline
e) Netherlands – 6 percent decline

4. Top Manufacturers

Collectively the top 25 furniture manufacturers in the United States have had increased sales of over 19 percent for the 1998 to 1999 time period, as compared to sales increases of only seven percent for the top 25 firms analyzed for the 1996 to 1997 time period. When polled, the top manufacturers stated that they expect the large companies within the industry to get larger through strategic processes such as mergers, acquisitions and partnerships.

B. OUTLOOK

The merchant wholesale industry is forecast to achieve annual sales increases averaging five percent from 1998 to decade's end and at a declining pace through 2003, according to the U.S. Department of Commerce's Bureau of Economic Analysts. The primary brakes on sales should be competition from alternative distribution sources and the price-sensitivity of customers toward value-added services. Those alternative channels have increased, luring business that traditionally identified with Wholesale. Among these channels are wholesale clubs, super centers, catalog sales, discount centers and electronic commerce/direct mail. Beginning in the early 1980s, wholesale clubs and super centers provided competition mainly for the durable goods wholesaler. In the mid-1990s growth for the former slowed, as they reached the mature stage of the industry life cycle, while super centers still have significant room for expansion. A 1997 report by Degen & Co. cited by the U.S. Department of Commerce identified super centers as reaching an estimated $34 billion in sales in 1996, and forecast those sales to surpass $80 billion by 2000. By comparison, wholesale club sales should grow at a slower pace, as 1996 levels reached $44 billion, forecast to approach $57 billion by 2000. These two challenging channels pressure distributors in two ways: they directly compete for Wholesale customers, and—when the distributor channel cannot be avoided due to contractual arrangements of certain manufacturers—they all but dictate the terms of sale to the distributor. This is the greatest threat to already tight gross margins.

The outlook for certain segments of the furniture industry also looks strong. Looking ahead to 2001, the infant and juvenile products are in for a year of strong sales, according to Furniture Today's Retail Planning Guide. Sales have been up in this market every year since 1998, partly due to the increased number of births, which increased by over two percent from 1997. The birth rate (number of births per 1,000 of population) is also slightly increased in 1998. Births of twins increased about six percent in 1998 according to the National Center for Health Statistics. Sales within this market in 1999 were $5.39 billion, up from $4.86 billion in 1998.

The upholstery industry has been unsettled for the last couple of years, but executives of upholstery firms are using tactics such as brand power or personalization to stave off the expected slowdown. *Furniture Today* polled several industry executives about how they felt business would be in the upcoming year. Many felt that business would be better, even if consumer spending decreases. They felt that if money were tight consumers would spend their dollars at businesses that they have had good experiences within the past. Other firms are opting to use improved textile designs to "up the game" and appeal to the upper-end of the market.

Fabric makers are looking to 2001 with three issues on their mind: flammability of fabrics, imports, and the general economy. Flammability is an issue because consumers demand fabrics that are extremely soft, but in order to be fireproof fabrics usually feel firm and stiff. Imports, mainly from China, will also be on the mind of many fabric manufacturers in the coming year. Chinese imports are mainly facing only the lower markets now, but in the future, they will have fabrics in all price levels.

Furniture Today reports that five years after China joined the WTO quotas will be a thing of the past and the United States market will be wide open. This will diminish the number of American manufacturing jobs. Manufacturing jobs pay more than service jobs, so the disposable income of all of the former employees will be diminished considerably, ultimately affecting the furniture industry.

Most fabric manufacturers reported that 2000 was a fair to good year, and that the softened retail climate hurt their sales. The retail sector was softened, in part, by gasoline prices, interest rates, and the jumpy stock market. Most firms see business picking up in 2001 because of new product lines; others see business picking up because of new national accounts that they have landed in the past few months.

The bedding market has never been an industry characterized by tremendous growth, but rather it has been characterized by slow steady growth year after year. The International Sleep Products Association estimates that sales increases for the year 2001 will be about four percent. Several factors are to blame for the dismal outlook for the upcoming year. Those being the shifty stock market, sluggish corporate earnings that consistently have failed to meet analysts' earnings, high–energy prices and interest rates.

While analysts are predicting that 2001 will be a roller-coaster year for the bedding industry, some individual producers are expecting their gains to be in double digits. Companies such as

Simmons, saw 20 percent gains in 2000 due to new product introductions that have kept orders rolling in.

The furniture and bedding industry, as well as each of the specialty markets contained within the industry will be in for a mixed year of growth, depending on what the general economy does. Things could pan out very differently if the stock market stabilizes and energy prices lower, rather than if the stock market continues to be jittery and energy prices continue to soar.

February 2001

C. BIBLIOGRAPHY FOR WHOLESALE DISTRIBUTOR STUDY

- Survey of Current Business; U.S. Department of Commerce/Economics & Statistics Administration, Bureau of Economic Analysis; November 1998.
- Survey of Current Business; U.S. Department of Commerce/Economics & Statistics Administration, Bureau of Economic Analysis; June 1996.
- U.S. Industry & Trade Outlook 2000; U.S. Department of Commerce/International Trade Administration and DRI/McGraw–Hill/Standard & Poors; 1999.
- "Furniture Information Market Reports"; Aktrin Furniture Information Center; http://www.aktrin.com.
- "Consumer Market Survey"; *Furniture/Today*; April 28, 1997.
- "Consumer Buying Trends"; *Furniture/Today*; February 16, 1998.
- "Survey of Top 25 U.S. Furniture Manufacturers"; *Furniture/Today*; May 11, 1998.
- "Distributor Survey"; *Furniture/Today*; May 25, 1998.
- "Retail Planning Guide"; *Furniture/Today*; December 28, 1998.
- "Retail Planning Guide"; *Furniture/Today*; December 25, 2000.
- "Import/Export Report"; *Furniture/Today*; June 12, 2000.
- "Overreaching for mass retailers"; The McKinsey Quarterly; 1997 Number 4.
- "Channel Conflict: When is it dangerous?"; The McKinsey Quarterly; 1997 Number 3.
- Mergerstat Review; Houlihan, Lokey, Howard & Zukin; 1997, 1998, 1999.
- "CIT's Furniture Outlook Forecasts Long-Term Growth"; CIT Group; October 9, 2000.

NATIONAL RETAIL SALES/FURNITURE & HOME FURNISHINGS TRENDS 1992-2000
(Dollars in Billions)

	RETAIL SALES	DURABLE GOODS SALES	FURNITURE & HOME FURNISHINGS
1992	$ 1,951.6	$ 703.6	$ 96.9
1993	2,072.8	776.1	105.4
1994	2,227.3	873.4	118.6
1995	2,324.0	925.0	127.3
1996	2,506.1	1,020.9	135.1
1997	2,615.7	1,066.1	140.8
1998	2,746.0	1,138.3	152.0
1999 (f)	2,912.1	1,207.1	163.6
2000 (e)	3,044.0	1,262.0	168.8
%CHANGE '96–97	4.4	4.4	4.2
%CHANGE '97–98	5.0	6.8	8
%CHANGE '98–99	6.0	6.0	7.6
%CHANGE '99–00	4.5	4.5	3.2

(e)=estimate, (f)=forecast

Source: U.S. Department of Commerce/Bureau of the Census

TOP 25 U.S. FURNITURE MANUFACTURERS 1998–99
(Dollars in Millions)

COMPANY NAME	1998 Sales	1999 Sales	Rank 1 Yr Ago	%ch 98–99
Furniture Brands International	$1,960.2	$2,088.1	1	6.5%
La–Z–Boy	1,244.0	2,063.8	3	65.9%
Lifestyle Furnishings International	1,745.0	1,830.0	2	4.9%
Klaussner	725.0	935.0	4	29.0%
Ashley	651.0	816.0	5	25.3%
Ethan Allen	610.8	688.2	6	12.7%
Sauder Woodworking	530.0	550.0	8	3.8%
Bush Furniture	384.3	411.7	10	7.1%
O'Sullivan Industries	362.2	407.2	11	12.4%
Bassett	397.6	394.4	9	–0.8%
Bernhardt (e)	240.0	302.0	13	25.8%
L&P Consumer Products Unit	278.6	299.4	12	7.5%
The Rowe Companies	191.5	265.2	17	38.5%
Stanley Furniture	247.4	264.7	14	7.0%
Cromcraft Revington	236.7	245.4	15	3.7%
Hooker	205.3	227.9	16	10.9%
Heath Home Furnishings	N/A	225.0	NR	
Pulaski	172.4	198.2	19	15.0%
Vaughan–Bassett	142.0	183.8	NR	29.4%
Flexsteel	168.0	182.0	20	8.3%
Century	175.0	178.0	18	1.7%
Standard Furniture	108.9	174.0	NR	59.8%
The Jackson Companies	160.0	165.0	21	3.1%
Sherrill	153.0	164.0	24	7.2%
WinsLowe	141.4	62.0	NR	14.7%
Group Total	$11,230.3	$13,421.0		19.5%

(e)=estimate NR=Not Ranked

Non-furniture revenues have been excluded; shipments may include exports outside the United States.
Source: *Furniture/Today*

2001 FURNITURE/TODAY ECONOMIC FORECAST **(% change year–on–year)**

	Consumer Spending on Furniture & Bedding		Furniture Store Sales		Furniture Factory Shipments	
	Current $	**Constant $**	**Current $**	**Constant $**	**Current $**	**Constant $**
2000	8.1%	8.1%	8.0%	8.0%	3.3%	2.1%
2001	3.5%	3.4%	3.4%	3.3%	0.8%	0.5%
2002	3.2%	2.5%	3.2%	2.5%	2.0%	1.4%
1999 by Quarter:						
First	4.0%	4.3%	4.2%	4.6%	2.3%	2.2%
Second	2.9%	2.8%	4.1%	4.0%	2.6%	2.2%
Third	3.5%	3.4%	3.1%	3.0%	0.1%	–0.1%
Fourth	2.9%	2.8%	2.4%	2.3%	0.7%	0.4%

Source: *Furniture/Today*

LARGEST FURNITURE & BEDDING MARKETS RANKED BY 2005 SALES

MARKET	ACT. 2000 SALES	PROJ. 2005 SALES	% CHANGE
Chicago	$2,336.6	$2,650.6	13.4%
New York	2,342.9	2,575.4	9.9%
L.A./Long Beach	2,204.5	2,412.4	9.4%
Washington	1,598.1	1,838.8	1.5%
Philadelphia	1,390.7	1,532.1	10.2%
Atlanta	1,133.1	1,464.5	25.6%
Houston	1,113.4	1,361.0	22.2%
Detroit	1,213.4	1,621.9	8.9%
Dallas	993.7	1,259.2	26.7%
Boston	1,060.1	1,186.2	11.9%
Minn./St. Paul	877.7	1,033.5	17.8%
Phoenix/Mesa	792.8	988.0	24.6%
Seattle/Bellevue/Everett	804.6	973.2	20.9%
Nassau/Suffolk	870.0	936.4	7.6%
Orange County	801.7	889.6	11.0%
Oakland	744.5	581.4	14.0%
San Diego, CA	707.7	810.2	14.5%
Denver, CO	644.3	801.6	24.4%
Baltimore, MD	699.8	780.3	11.5%
St. Louis, MO–IL	685.8	778.1	13.5%

(Dollars in Millions)

Source: *Furniture/Today*

LEADING SOURCES OF IMPORTED FURNITURE & PRINCIPAL PRODUCTS

SOURCE/PRODUCT	1998 Sales	1999 Sales	% CHANGE
China	**$1,839.4**	**$2,682.0**	**46.0%**
Misc. Wood Furniture	489.7	656.5	34.0%
Metal Household Furniture	232.3	333.5	44.0%
Metal Outdoor Seats with Cushions	151.2	289.9	91.0%
Metal Outdoor Seats w/o Cushions	148.4	160.6	8.0%
Wood Chairs	94.8	118.9	25.0%
Canada	**1,765.2**	**2,091.5**	**18.0%**
Misc. Wood Furniture	428.3	495.9	16.0%
Wood Bedroom Furniture	253.5	308.6	22.0%
Wood Furniture Parts	118.4	203.6	72.0%
Misc. Furniture Parts	150.8	160.5	6.0%
Upholstered Seats, Metal Frame	140.1	141.3	1.0%
Italy	**847.9**	**1,022.7**	**21.0%**
Upholstered Seats, Wood Frame	276.2	332.8	17.0%
Misc. Wood Furniture	115.7	130.2	13.0%
Wood Bedroom Furniture	74.4	124.6	67.0%
Upholstered Chairs Wood Frame	94.4	95.9	2.0%
Metal Household Furniture	28.5	51.6	81.0%
Mexico	**741.8**	**869.2**	**17.0%**
Misc. Wood Furniture	132.2	138.6	5.0%
Wood Bedroom Furniture	122.2	132	8.0%
Upholstered Seats, Metal Frame	97.6	127.1	30.0%
Metal Household Furniture	112.8	112.9	0.0%
Upholstered Seats, Metal Frame	35.1	57.2	63.0%
Taiwan	**793.1**	**820.1**	**3.0%**
Misc. Wood Furniture	181.9	185.1	2.0%
Metal Household Furniture	130.9	133.8	2.0%
Wood Chairs	71.5	69.4	–3.0%
Upholstered Seats, Metal Frame	43.8	49.1	12.0%
Wood Furniture Parts	37.1	45.7	23.0%
Malaysia	**398.6**	**459.8**	**15.0%**
Wood chairs	117.1	133.1	14.0%
Misc. Wood Furniture	92.2	95.4	3.0%
Wood Dining Tables	59.6	77.2	29.0%
Wood Kitchen Dining Tables	10.3	20.7	100.0%
Upholstered Chairs, Wood Frame	24.2	19.2	–21.0%

SOURCE/PRODUCT	1998 Sales	1999 Sales	% CHANGE
Indonesia	**340.1**	**428.4**	**26.0%**
Misc. Wood Furniture	124.1	153.3	24.0%
Wood Beds	37.5	54.9	46.0%
Wood Bedroom Furniture	30.2	40.7	35.0%
Wood Chairs	17.6	24.9	42.0%
Rattan Seats	14.1	23.2	65.0%
Philippines	**219.7**	**246.7**	**12.0%**
Misc. Wood Furniture	57.6	68.4	19.0%
Metal Household Furniture	35.7	35.9	1.0%
Rattan Furniture	22.6	28.8	27.0%
Furniture, Other Materials	25.7	27.3	6.0%
Rattan Seats	19.6	20.9	6.0%
Thailand	**189.8**	**240.9**	**27.0%**
Misc. Wood Furniture	83.8	102.4	22.0%
Wood Chairs	23.0	33.6	46.0%
Wood Dining Tables	11.2	14.2	27.0%
Other Seat Parts	10.7	12.8	19.0%
Wood Kitchen Furniture	14.2	10.1	–29.0%
United Kingdom	**139.0**	**150.5**	**8.0%**
Misc. Wood Furniture	60.0	59.7	–1.0%
Other Seat Parts	11.8	17.9	52.0%
Misc. Furniture Parts	17.5	15.2	–13.0%
Wood Bedroom Furniture	10.8	10.8	0.0%
Metal Furniture & Parts.	8.7	10.4	20.0%
Total U.S. Imports from the World	**$10,277.6**	**$8,331.5**	**23.0%**

(Dollars in Millions)
Source: *Furniture/Today*

FASTEST GROWING FURNITURE & BEDDING MARKETS RANKED BY INCREASE

MARKET	ACTUAL 2000 SALES	PROJECTED 2005 SALES	% CHANGE
Austin/San Marcos, TX	$337.1	$464.9	37.9%
Las Vegas, NV	384.7	518.5	34.8%
Provo/Orem, UT	67.8	89.2	31.6%
Myrtle Beach, SC	46.1	60.5	31.1%
Fort Collins/Loveland, CO	67.5	88.6	31.1%
Boise, ID	106.4	138.9	30.6%
Panama City, FL	34.5	45.0	30.5%
Naples, FL	68.6	88.6	29.2%
Boulder/Longmont, CO	3.8	119.6	27.5%
Dallas, TX	993.7	1,259.2	26.7%
Raleigh/Durham/Chapel Hill, NC	330.1	415.7	25.9%
Fayetteville, NC	63.7	80.2	25.9%
Atlanta, GA	1,166.1	1,464.5	25.6%
Laredo, TX	27.3	34.3	25.3%
Reno, NV	94.4	118.8	25.2%
Fort Walton Beach, FL	43.5	54.4	25.0%
Portland/Vancouver, OR–WA	545.8	682.3	25.0%
Salt Lake City/Ogden, UT	320.1	399.2	24.7%
Phoenix/Mesa, AZ	792.8	988.0	24.6%
Denver, CO	644.3	801.6	24.4%

(Dollars in Millions)
Source: *Furniture/Today*

FURNITURE SALES BY REGION 2000 – 2005

	(Furniture & Bedding Sales in $millions)		
Regional Market	**2000 Sales**	**2005 Projected**	**Projected % Change**
Northeast	$12,880.3	$14,136.0	9.7%
South	18,687.1	22,056.3	18.0%
Midwest	12,613.7	14,350.1	13.8%
West	13,979.5	16,246.6	16.2%
Total Domestic Markets	**$ 58,160.6**	**$ 66,789.1**	**14.8%**

Source: *Furniture/Today*

HOUSEHOLD FURNITURE MANUFACTURING TRENDS & FORECAST

(Millions of Dollars)

INDICATORS	1992	1993	1994	1995	1996	1997(e)	1998(e)	1999(e)	2000(f)	%ch 97-98	%ch 98-99	%ch 99-00	%ch 96-00
Value of Shipments	20,507	21,906	23,603	24,458	25,426	26,702	28,528	30,495	31,424	6.8	6.9	3.0	5.4
Value of Shipments ($1992)	20,507	21,373	22,363	22,563	23,010	23,863	25,126	26,560	27,017	5.3	5.7	1.7	4.1
Total Employment (thousands)	253	255	267	271	273								
Capital Expenditures	346	393	436	528	481								
Value of Imports	2,995	3,397	3,965	4,448	4,988	5,882	7,009	8,408	9,837	19.2	20.0	17.0	18.5
Value of Exports	1,113	1,183	1,307	1,320	1,326	1,530	1,641	1,594	1,651	7.3	-2.9	3.6	5.6

*compound annual rate

(e) = estimate, (f) = forecast

Source: U.S. Department of Commerce/Bureau of the Census

RETAIL TRADE TRENDS & FORECASTS
(Millions of Dollars)

	1992	1993	1994	1995	1996	1997	1998	1999(f)	2000(f)
Durable Goods	703,604	776,126	873,408	925,017	1,020,861	1,066,087	1,328,286	1,207,117	1,261,984
Bldg Matls & Garden	100,838	109,444	122,342	125,831	141,935	150,482	165,331	185,557	192,051
Automotive Dealers	406,935	456,332	518,492	551,330	608,781	632,885	668,658	732,047	752,269
Furn & Home Furnish	96,947	102,399	118,649	127,270	135,149	140,776	152,044	163,598	168,839
Non-Durables	1,247,985	1,296,662	1,353,917	1,399,021	1,485,280	1,549,582	1,607,725	1,704,944	1,782,439
General Merch Stores	246,420	264,613	283,203	299,169	313,342	330,216	351,436	381,510	389,742
Food Stores	377,099	384,978	398,845	409,617	415,170	425,170	438,212	460,277	485,236
Gasoline Stations	136,950	138,172	141,671	146,080	168,320	171,527	162,095	167,932	172,970
Apparel & Accessory	104,212	107,176	109,862	110,429	116,101	120,575	126,939	135,787	140,513
Eating & Drinking Places	200,164	213,461	223,485	232,060	238,474	253,551	266,544	285,263	295,234
Total Retail Sales	**1,951,589**	**2,072,788**	**2,227,325**	**2,324,038**	**2,506,141**	**2,615,669**	**2,746,011**	**2,912,061**	**3,044,422**

	%ch 96-97	%ch 97-98	%ch 98-99	%ch 99-00
Durable Goods	4.4	6.8	6.0	4.5
Bldg Matls & Garden	6.0	9.9	12.2	3.5
Automotive Dealers	4.0	5.7	9.5	2.8
Furn & Home Furnish	4.2	8.0	7.6	3.2
Non-Durables	4.3	3.8	6.0	4.5
General Merch Stores	5.4	6.4	8.6	2.2
Food Stores	2.4	3.1	5.0	5.4
Gasoline Stations	1.9	-5.5	3.6	3.0
Apparel & Accessory	3.9	5.3	7.0	3.5
Eating & Drinking Places	6.3	5.1	7.0	3.5
Total Retail Sales	**4.4**	**5.0**	**6.0**	**4.5**

f = forecast

Source: U.S. Department of Commerce/Bureau of the Census

MERCHANDISE WHOLESALE SALES TRENDS by Category

(Billions of Dollars)

CONSUMER DURABLES	1990	1991	1992	1993	1994	1995	1996	1997	1998	Annual %ch 90-94	Annual %ch 94-98
Motor Vehicles & Parts	174	167	171	175	188	189	193	195	203	2.0%	2.0%
Furniture & Home Furnishings	34	32	33	35	37	41	43	46	48	2.2%	7.4%
Lumber & Other Construction Materials	64	58	64	72	79	79	86	90	92	5.9%	4.1%
Professional & Commercial Equip & Supplies	114	124	140	161	171	203	224	240	256	12.5%	12.4%
Metals & Minerals except Petroleum	78	76	77	79	89	95	94	100	96	3.5%	2.0%
Electrical Goods	116	113	115	138	164	193	195	205	212	10.3%	7.3%
Hardware, Plumbing & Heating Equip	53	50	53	55	63	67	70	74	77	4.7%	5.6%
Machinery & Industrial Equip	157	146	149	163	175	191	206	223	241	2.9%	9.4%
Miscellaneous Durables	91	93	107	112	125	138	135	139	135	9.3%	2.0%
Total Wholesale Durables Sales	**881**	**860**	**909**	**990**	**1,091**	**1,196**	**1,246**	**1,312**	**1,360**	**6.0%**	**6.2%**

Source: U.S. Department of Commerce/Bureau of the Census

MERCHANDISE WHOLESALE SALES TRENDS by Category

(Billions of Dollars)

NON-DURABLE GOODS	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**%ch 90-94**	**%ch 94-98**
Paper & Paper Products	52	52	55	59	66	80	80	84	90	6.7%	9.1%
Drugs & Proprietaries	52	60	67	69	76	84	94	107	124	11.5%	15.8%
Apparel, Piece Goods, Notions	65	64	68	70	72	70	75	85	86	2.7%	4.9%
Groceries & Related Products	273	277	279	288	293	312	320	332	347	1.8%	4.6%
Farm-product Raw Materials	108	105	106	98	99	120	138	125	108	-2.1%	2.3%
Chemicals & Allied products	36	37	39	40	43	50	53	55	55	4.9%	7.0%
Petroleum & Petrol products	149	140	143	132	130	131	149	145	121	-3.2%	-1.7%
Beer, Wine & Distilled Beverage	49	52	50	51	52	53	59	58	62	1.5%	4.8%
Miscellaneous Non-Durables	131	133	133	138	143	160	173	175	183	2.3%	7.0%
Total Wholesale Non-Durables Sales	**913**	**920**	**941**	**944**	**975**	**1,058**	**1,138**	**1,168**	**1,175**	**1.7%**	**5.1%**

Source: U.S. Department of Commerce/Bureau of the Census

Metropolitan Area Study
Atlanta, Georgia

II. METROPOLITAN STATISTICAL AREA (MSA)

Research supplied by KeyValueData

A. INTRODUCTION

A metropolitan/economic study is a straightforward matter-of-fact look at the economy in a specific geographic area. Data from a wide variety of reliable sources is used to ensure a realistic view of the economy. The studies look at the key economic factors of an area, including; population, total personal income, per capita personal income, earnings and employment for the major industries, and unemployment rates. The numerous tables and graphs that accompany this report show how the major industries are doing relative to the overall economy and their respective share of the economy. The graphs provide a good snapshot of the recent trends and offer a well-delineated representation of what is discussed in this report, such as how one industry compares to the other industries, as well as the changes in population, income, earnings and employment. Any economic trends that are taking place can be seen with a quick glance at the graphs and reviewed more closely with the specific data on the tables. The direction and rate of change from year-to-year for each major economic factor is clearly indicated.

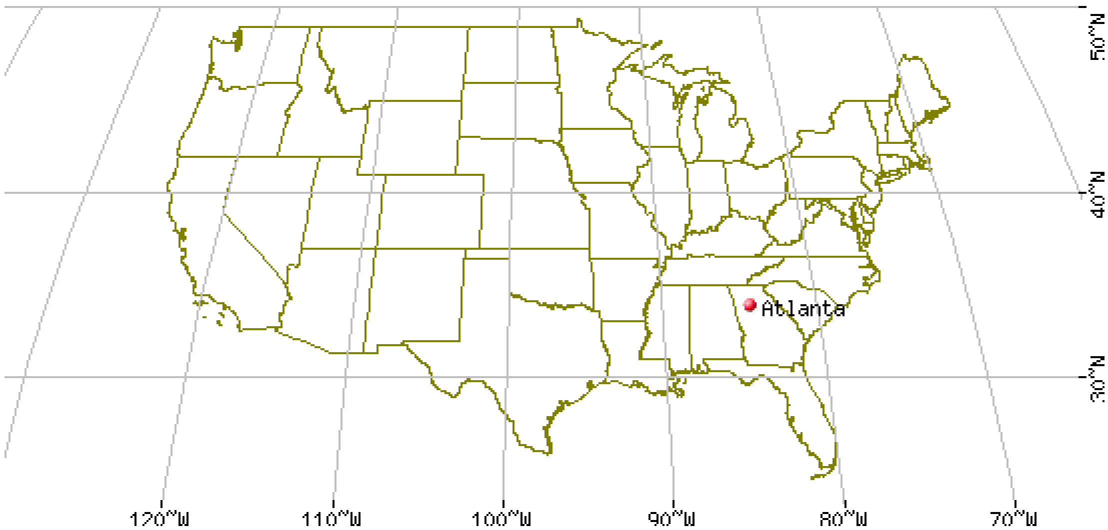
Having good economic information for a geographic area can be useful in a variety of ways. Whether a business has done well or not, a metropolitan/economic study can be used when making a correlation between the performance of the business and the overall state of the economy. A metropolitan study can help to show what type of trend or the amount of growth a business in a particular industry might be expected to have during certain years. Other purposes include being used by local Chambers of Commerce, developers, companies deciding whether to expand or relocate and anyone needing comprehensive economic information on an area.

1. Atlanta, GA MSA

The Atlanta, GA, Metropolitan Statistical Area (MSA) includes the counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, De Kalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Pickens, Rockdale, Spalding and Walton. There are enough economic and social attachments between the city for which the economic area is named and the geographic area covered by the 20 counties for them to be grouped together as one economic unit.

Atlanta is the state capital of Georgia. A mayor and a 15-member city council, which is managed by a council, govern the city of Atlanta. Located in northwestern Georgia, the area is well-served by abundance of major roadways, including interstates and state and national highways. This allows for good access to other areas of the state and nation, making it easy to get raw materials and finished goods in and out of the area. The Atlanta area is a major east-west and north-south crossroads for the state, as well as that region of the United States. Atlanta has the world's largest inter-modal passenger terminal complex and 80 percent of the population of the United States lives within a two-hour flight of Atlanta. Figure 1 shows Atlanta's location in comparison to the rest of the country.

Figure 1–Location of Atlanta, GA



Atlanta is the home to many national and international firms. It is the headquarters of soft drink manufacturer Coca-Cola, home improvement retailer Home Depot, shipping giant UPS and media suppliers such as HBO, CNN and TNT. Atlanta is also home to many professional sports teams, such as Baseball's Braves, Football's Falcons, Basketball's Hawks, and Hockey's Thrashers. The city also hosted the 1996 Olympic Summer Games. Atlanta is home to three symphonies, Atlanta Community Orchestra, Atlanta Pops Orchestra and Atlanta Symphony Orchestra, as well as the Atlanta Opera, and Atlanta Ballet Company.

B. POPULATION

The population of the Atlanta, GA MSA totaled 4,112,198 in 2000, according to the U.S. Department of Commerce/U.S. Census Bureau. Table 1 shows the age breakdown of the Atlanta, GA MSA in 2000.

Table 1–Age Breakdown of the Atlanta, GA MSA (2000)		
Age	Number	Percentage
Under 5 years	308,723	7.5
5 to 9 years	314,712	7.7
10 to 14 years	302,816	7.4
15 to 19 years	279,509	6.8
20 to 24 years	280,979	6.8
25 to 34 years	725,452	17.6
35 to 44 years	732,661	17.8
45 to 54 years	553,932	13.5
55 to 59 years	178,431	4.3
60 to 64 years	124,280	3.0
65 to 74 years	174,590	4.2
75 to 84 years	101,754	2.5
85 years and over	34,359	0.8

Source: U.S. Department of Commerce/U.S. Census Bureau

The U.S. Census Bureau reported the median age of the Atlanta, GA MSA was 32.9 years old in 2000, younger than the state median age of 33.4 years old. The bureau also reported 26.6 percent of the total population of the MSA was under the age of 18 in 2000, while only 7.6 percent of the population was over the age of 65.

The state of Georgia had one of the best rates of growth for population of any state east of the Rocky Mountains during the 1990s. The Atlanta MSA grew at an even better rate than the already strong growth rate of the 1980s. The population growth in Georgia has been centered mostly in the Atlanta area. By 1998, almost 50 percent of the state's total population resided in the 20-county MSA. More than half of the remarkable population growth of the 1990s is due to people moving to the Atlanta area from other areas of the United States. Natural increase (births minus deaths) accounted for about 40 percent of the population gain, while about eight percent was due to immigration from abroad. The state is projected to grow by 32.7 percent between 1995 and 2020.

The U.S. Census Bureau reported academic institutional enrollment in the Atlanta, GA MSA totaled 1,112,254 in 2000, including enrollees in nursery school, preschool and college and graduate school. High school enrollment totaled 226,370 in 2000, while college and graduate school enrollment totaled 221,819. Of the population 25 and over, 5.4 percent had less than a ninth grade education, 10.6 percent had attended ninth to 12th grade and received no diploma, and 24.4 percent had a high school diploma or high school equivalency. Of the population 25 and over, 21.6 percent had a bachelor's degree and 10.4 percent had a graduate or professional degree.

1. Total Personal Income

The U.S. Department of Commerce's Bureau of Economic Analysis reported the Total Personal Income of the Atlanta, GA MSA reached $136.8 billion in 2000, an increase of 52.4 percent from $89.8 billion in 1995. Total Personal Income consists of Net Earnings, Transfer Payments, and Dividends, Interest and Rent. In 2000, Net Earnings accounted for 77 percent of Total Personal Income in the Atlanta, GA MSA, as compared to 68.8 percent nationally.

As of June 30, 2000, FDIC insured bank deposits totaled $54.6 billion in 115 bank institutions. Deposits in commercial banks totaled $51.73 billion, while deposits in savings institutions totaled $2.88 billion.

2. Per Capita Personal Income

Per Capita Personal Income increased 29.1 percent from $25,571 in 1995 to $33,013 in 2000. Table 2 shows median hourly and mean annual wages of select occupations in the Atlanta, GA MSA in 2000.

Table 2–Wages of Select Occupations in the Atlanta, GA MSA (2000)		
Occupation	Median Hourly	Mean Annual
Farm Workers, Farm and Ranch Animals	$8.73	$ 20,560
Earth Drillers, Except Oil and Gas	$14.21	$ 29,460
Construction Laborers	$10.15	$ 21,800
Molders, Shapers, and Casters, Except Metal and Plastic	$11.11	$ 23,730
Bus Drivers, School	$6.35	$ 14,550
First-Line Supervisors/Managers of Non-Retail Sales Workers	$24.50	$ 53,970
Retail Salespersons	$8.29	$ 21,090
Securities, Commodities and Financial Services Sales Agents	$20.32	$ 56,270
Pediatricians, General	$63.64	$121,520
Fire Fighters	$17.04	$ 33,890

Source: U.S. Department of Labor/Bureau of Labor Statistics

The cost of living in the Atlanta metropolitan area was more expensive than the national average according to the American Chamber of Commerce Researchers Association (ACCRA) during 2000. ACCRA examines the cost of living in specific areas based upon several factors that determine the composite cost of living. The areas are given a score based on the cost of living in the area compared with the national average, which equals 100. Table 3 shows the cost of living of several metropolitan areas for the third quarter 2000.

Table 3–ACCRA Cost of Living Comparison (3rd Quarter 2000)							
	Composite	Groceries	Housing	Utilities	Transport	Health Care	Misc.
New York, NY	241.0	143.9	485.3	199.3	121.2	176.3	137.0
San Diego, CA	120.8	119.9	142.6	122.0	117.5	123.6	103.0
Denver, CO	110.0	113.1	123.4	82.9	107.0	128.5	101.7
Cleveland, OH	109.8	104.4	108.0	140.5	108.8	115.0	106.1
Minneapolis, MN	109.2	101.9	108.5	111.2	112.2	127.6	109.1
Tampa, FL	102.6	107.1	99.2	96.6	102.2	102.9	104.9
Atlanta, GA	102.0	102.2	103.8	90.4	108.3	104.0	101.0
Dallas, TX	99.9	97.0	98.8	95.0	105.6	101.4	101.4
Provo/Orem, UT	99.2	110.3	94.7	82.6	100.8	90.9	102.4
Houston, TX	94.3	93.5	84.0	95.9	108.8	109.1	96.4

Source: Utah Department of Workforce Services

The most expensive aspect of the cost of living in the Atlanta, GA MSA during the third quarter 2000 was transportation. In June 2000, the Metropolitan Atlanta Rapid Transit Authority (MARTA) approved a 25-cent increase in fares to help offset an expected deficit in the 2001 fiscal year. The increase will raise the rate to ride MARTA to $1.75.

3. Earnings

The U.S. Department of Commerce's Bureau of Economic Analysis reported the construction sector had the largest percentage increase in earnings among major sectors between 1995 and 2000. Table 4 shows the percentage change in earnings of key non-farm sectors between 1995 and 2000. The table also shows the percentage of earnings each sector contributes to the non-farm total earnings in 2000.

Table 4–Earnings by Key Non–Farm Sector 1995 – 2000		
	Total % Change 1995–2000	% of 2000 Non–farm Total
Construction	74.5%	6.2%
Manufacturing	32.1%	10.7%
Transportation, Public Utilities	63.2%	12.5%
Wholesale Trade	60.9%	11.1%
Retail Trade	50.7%	8.5%
Finance, Insurance, Real Estate	66.1%	9.3%
Services	70.8%	30.6%
Government	31.6%	10.6%

Source: U.S. Department of Commerce/Bureau of Economic Analysis

A rapid growth in disposable income and population in the Southeastern United States in the 1990s has led to an increased demand for retail shopping centers and restaurants. However, higher fuel costs, weakened consumer confidence and lower stock returns have curtailed consumer spending. Many consumers have become more price conscious, leading to higher market share of discount retailers. The Federal Reserve Board reported that 2000 holiday spending in the Atlanta Federal Reserve District was low as compared to the 1999 holiday season. Discount retail stores fared better than did the department stores and mall retailers. The strongest sellers throughout the district were toys and apparel; while jewelry and home related products sales were sluggish.

Atlanta's hotel occupancy rates posted little growth in 2000 due to a decline in the number of large conventions being held in the city. The Federal Reserve Bank of Atlanta reported 26 Atlanta citywide conventions were planned for 2001 based on bookings at the end of 2000, rivaling 1999's figure, which was the biggest year for conventions in two decades.

Lackluster demand for the Ford Taurus and Mercury Sable helped to bring the Ford Motor Co. plant in Hapeville to a standstill during the fourth quarter 2000. The General Motors plant in Doraville was also idle due to slackened demand for the minivans produced at the plant.

High-tech and communication equipment production are expected to play a strong role in Atlanta's economy in the near future, as Lucent Technologies and Motorola Corp. are planning to make significant investments in plants just north of Atlanta. Lucent plans to invest $150 million in its Norcross, GA optical fiber plant, and Motorola plans to build a new corporate campus in Suwannee, GA. Scientific Atlanta, the second largest manufacturer of television set-top boxes for cable, has had strong sales due to healthy demand of the product. The company continues to increase production as they expect strong demand in the future. Atlanta accounts for nearly two-thirds of Georgia's single-family construction activity. During the first half of 2000, single-family permits were nearly equal to year earlier levels, but in the third quarter 2000, building permits declined seven percent year-on-year for single-family homes. Private housing permits totaled 4,475 in the Atlanta, GA MSA in December 2000, a decrease of 6.4 percent from December 1999 permits of 4,780. Year-to-date housing permits totaled 64,007 in December 2000, an increase of 5.8 percent from the year to date housing permits issued the previous year.

4. Employment

The Atlanta, GA MSA civilian labor force increased 1.6 percent from 2,268,589 in December 1999 to 2,305,445. The number of unemployed fell 9.4 percent to 60,248 in December 2000 from 66,514 in December 1999, leading to an unemployment rate of 2.6 percent in December 2000 from 2.9 percent in December 1999. Table 5 shows the percentage change in employment by key non-farm sector. The table also shows the percentage of workers each sector contributed to the non-farm total work force in 2000.

Table 5–Employment by Key Non–farm Sector (# of jobs, f/t & p/t) 1995 – 2000		
	Total % Change 1995–2000	% of 2000 Non–Farm Total
Construction	35.9%	6.5%
Manufacturing	3.6%	8.4%
Transportation, Public Utilities	30.2%	7.9%
Wholesale Trade	19.3%	7.5%
Retail Trade	17.6%	16.6%
Finance, Insurance, Real Estate	31.5%	8.6%
Services	31.6%	33.0%
Government	7.2%	10.4%

Source: U.S. Department of Commerce/Bureau of Economic Analysis

Table 5 shows the services sector accounted for nearly one-third of total non-farm employment in 2000. The largest sub-sector in the services sector was the business services sub-sector, totaling 230,950 workers in 2000, according to the U.S. Department of Labor/Bureau of Labor Statistics. Business services establishments totaled 11,737 in 2000. The health services sub-sector employment totaled 124,392 in 2000, an increase of 11.2 percent from 1997 employment of 111,874. The engineering services sub-sector increased employment 21.6 percent from 54,773 in 1997 to 66,600 in 2000.

The retail sector was the second largest non-farm sector in 2000, according to the U.S. Department of Commerce/Bureau of Economic Analysis. The eating and drinking places sub-sector totaled 141,430 workers, an increase of 9.2 percent from 129,500 in 1997, according to the U.S. Department of Labor/Bureau of Labor Statistics. The automotive dealers and service stations sub-sector saw a 6.6 percentage increase from 34.234 in 1997 to 36,483, while food stores increased employment 3.1 percent to 55,464 in 2000 from 53,815 in 1997. The total number of retail establishments increased 1.3 percent from 19,127 in 1997 to 19,374 in 2000, according to the Bureau of Labor Statistics.

The Federal Reserve Bank of Atlanta reported that several businesses in the Atlanta, GA MSA announced job cuts as the year ended. Some of the companies looking to eliminate jobs include AT&T Broadband, CNN, Amazon.com, Sony and Cypress Express, an Atlanta-based telecommunications company. Lockheed Martin Corp. plans to outsource some parts production from its Marietta plant, which will cost 675 jobs. The plant assembles F–22 fighter planes and C–130J cargo planes.

5. Projections

Woods and Poole Economics, a national economic research firm, project the population of Atlanta will increase 28.9 percent between 1995 and 2005. The 55 to 59 age group is projected to have the greatest percentage increase, increasing 89.9 percent between 1995 and 2005. However, the 50 to 54 and the 60 to 64 age groups are each projected to increase over 60 percent.

Total employment is projected to increase 31 percent between 1995 and 2005, with the greatest percentage increase in the agricultural services sector, which is projected to increase 42.3 percent. The construction sector is projected to increase 40.3 percent between 1995 and 2005.

Total earnings are projected to increase 57.3 percent between 1995 and 2005, according to Woods and Poole. The agricultural services sector is projected to increase 81.9 percent between 1995 and 2005, exhibiting the largest projected percentage increases in earnings.

In the short term, economic growth in the Southeast should match the slower rate found in the second half of 2000, due to higher oil prices, slowing stock market, and the move of interest rates to historical norms. The outlook for Georgia's factory sector is mixed as the slowing housing market will adversely affect companies tied to the construction industry, such as lumber and carpets. Also, companies working in the apparel industry will have to cut employment as international competition drives down the cost of apparel.

C. BIBLIOGRAPHY AND SOURCES

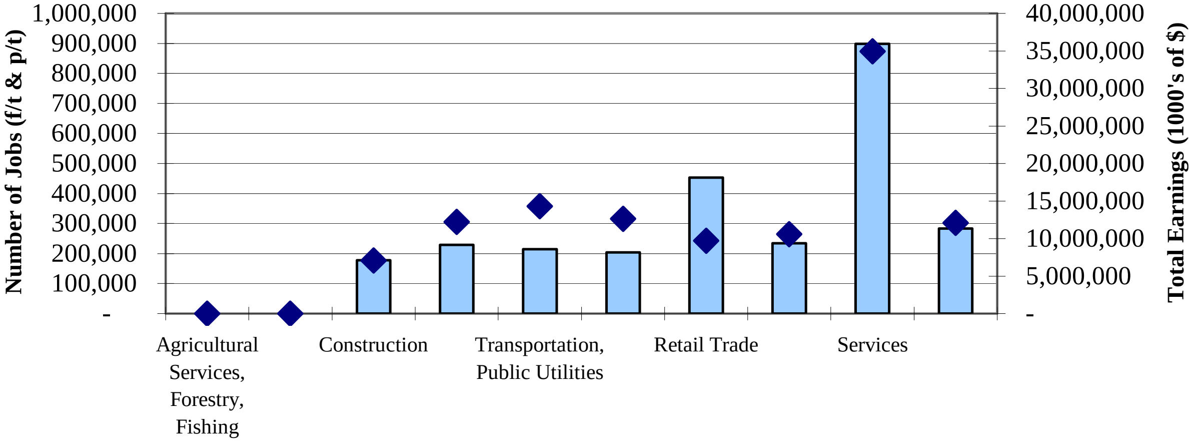
Atlanta, Georgia, MSA

- Metro Atlanta Chamber of Commerce; Atlanta Chamber of Commerce; www.metroatlantachamber.com.
- Regional Economic Information System (REIS); U.S. Department of Commerce/Bureau of Economic Analysis; http://fisher.lib.virginia.edu.
- Geographic Names Information System (GNIS); U.S. Geological Survey/U.S. Department of the Interior; http://geonames.usgs.gov.
- 2000 Metropolitan Area Occupational Employment and Wage Estimates; U.S. Department of Labor/Bureau of Labor Statistics; http://www.bls.gov/oes/2000/oes_0520.htm.
- State and County Employment and Wages from Covered Employment and Wages, 1997–2000; U.S. Department of Labor/Bureau of Labor Statistics; http://data.bls.gov/labjava/outside.jsp?survey=ew.
- ACCRA Cost of Living Comparisons, Third Quarter 2000; Utah Department of Workforce Services; http://jobs.utah.gov/wi/pubs/CostofLiving/accra300.pdf.
- FDIC/OTS Summary of Deposits as of June 30, 2000; Federal Deposits Insurance Corporation; http://www3.fdic.gov/sod/sodSumReport.asp?barItem=3&sInfoAsOf=2000.
- Summary of Commentary on Current Economic Conditions by Federal Reserve District; Federal Reserve Board; http://www.federalreserve.gov/FOMC/BeigeBook/2001/20010117/6.htm.

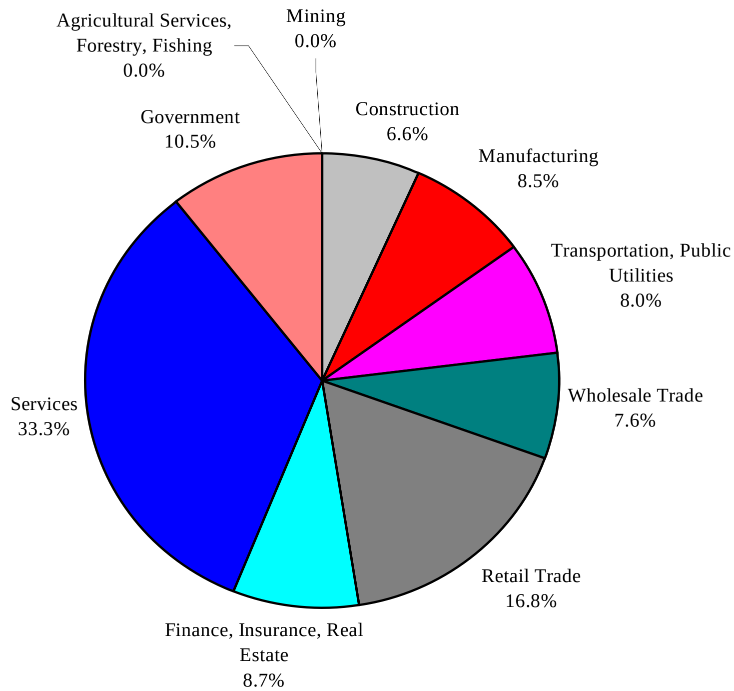
- New Privately Owned Housing Units Authorized–Unadjusted Units by Metropolitan Area; U.S. Department of Commerce/U.S. Census Bureau; http://www.census.gov/const/C40/Table3/tb3u0012.txt.
- "Southeast Stays on Course for 2001: Slower but Steady"; EconSouth; Federal Reserve Bank of Atlanta; Fourth Quarter 2000.
- "MARTA Approves 25–Cent Fare Hike"; Atlanta Business Chronicle; http://atlanta.bizjournals.com/atlanta/stories/2000/06/26/daily12.html.

2000 Employment & Earnings by Industry
Atlanta, GA MSA

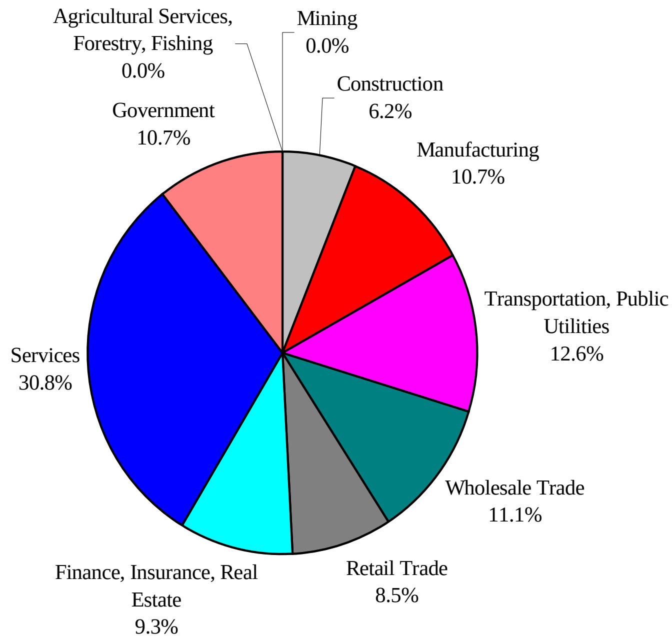
NOTE: Differences between bars or points do not indicate growth or decline. This graph shows relative size of employment & earnings for each industry compared to other industries.

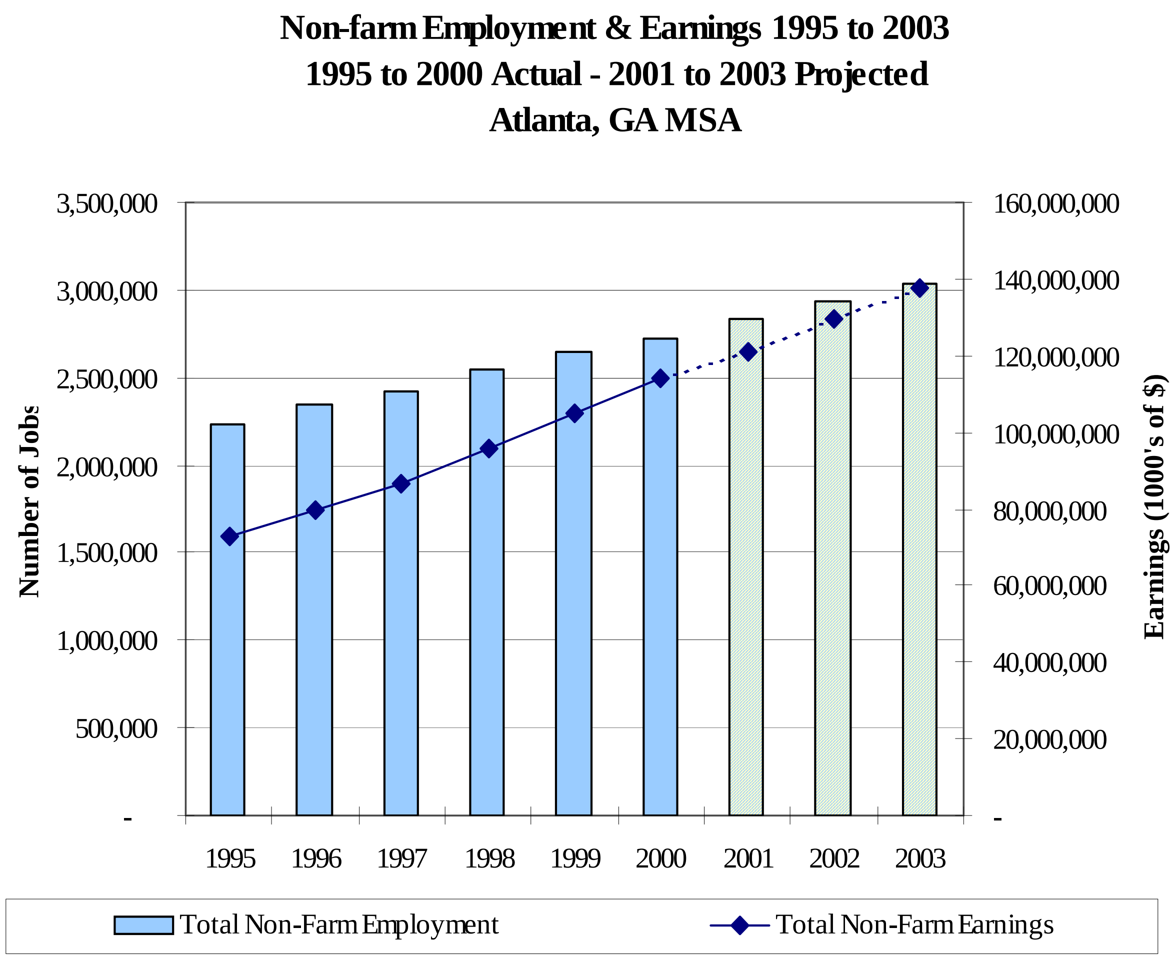


2000 Employment by Industry
(share of non-farm total)
Atlanta, GA MSA

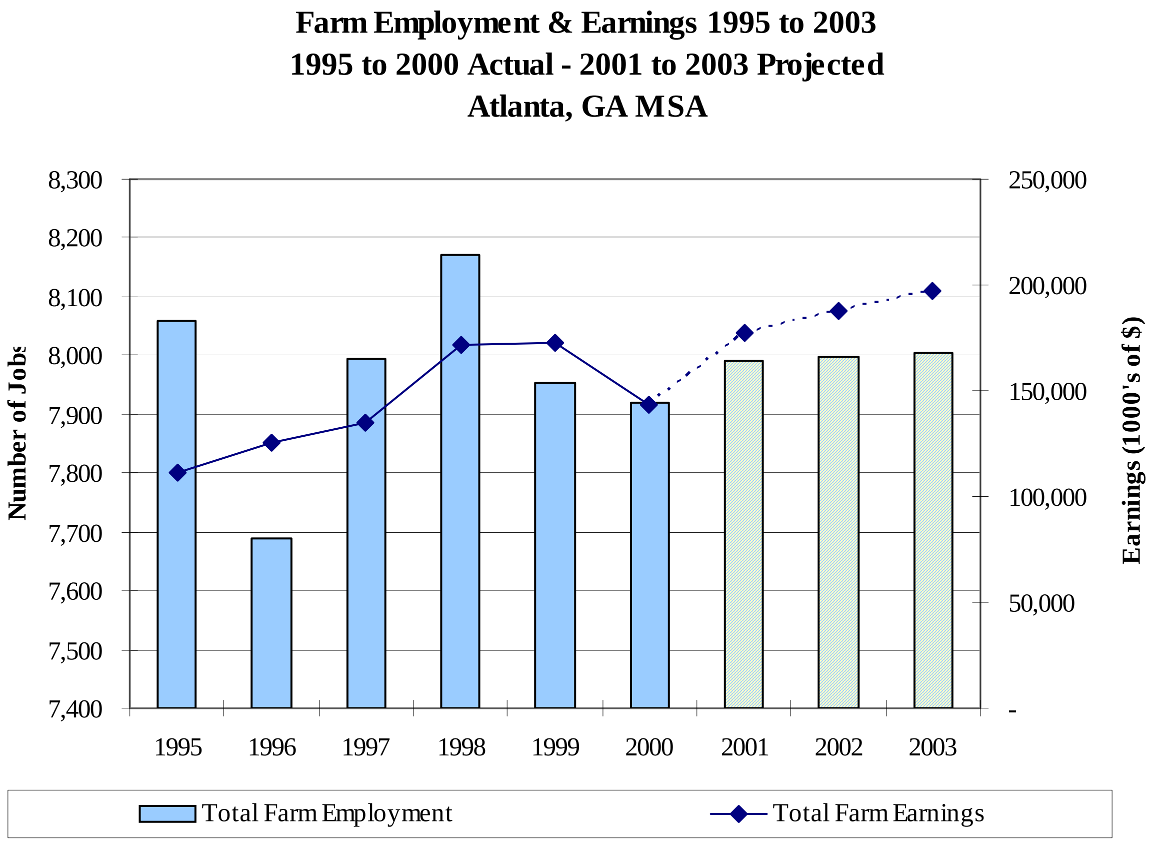


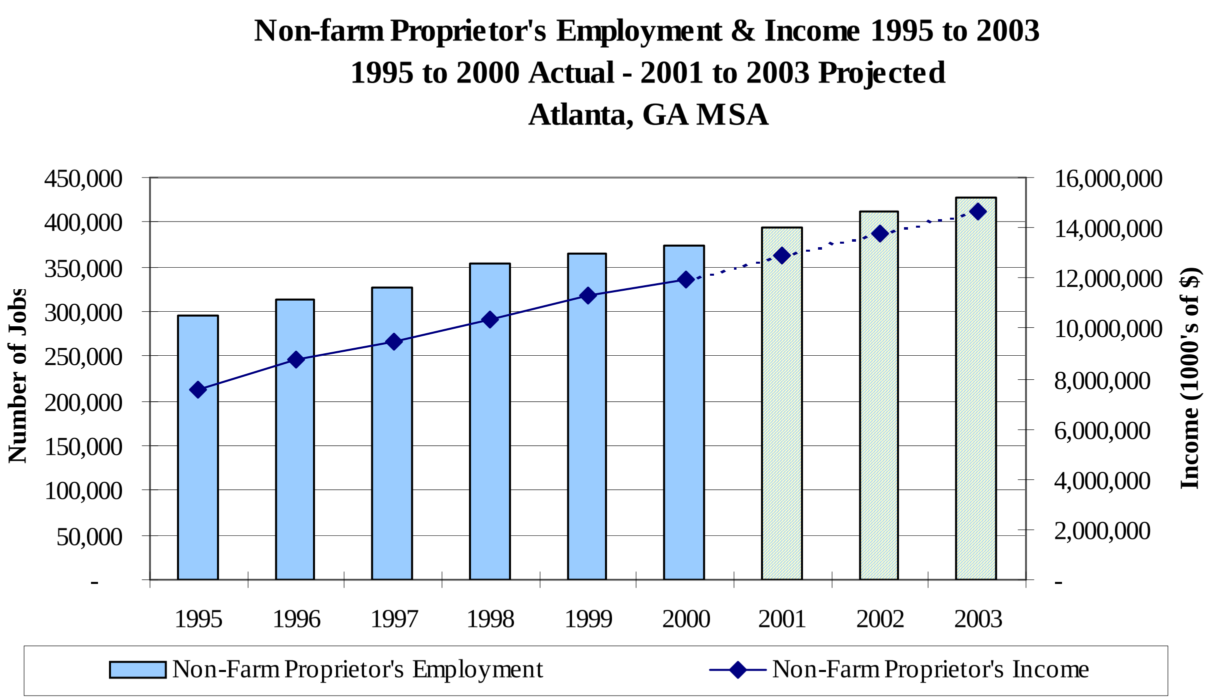
2000 Earnings by Industry
(share of non-farm total)
Atlanta, GA MSA



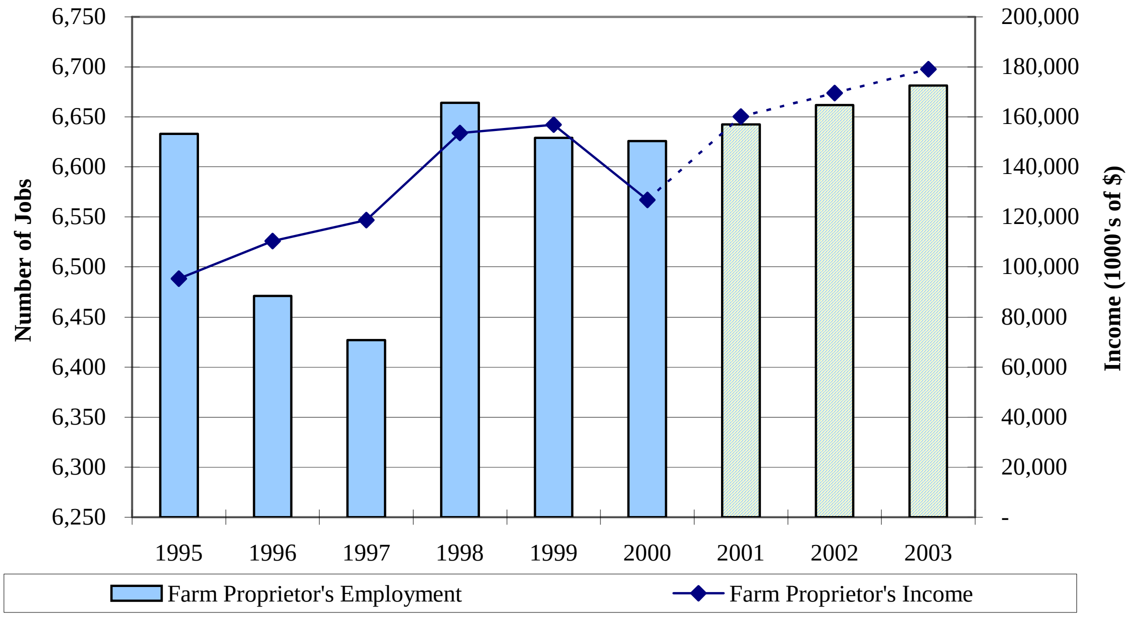


Non-farm Employment & Earnings 1995 to 2003
1995 to 2000 Actual - 2001 to 2003 Projected
Atlanta, GA MSA
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
Number of Jobs
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
-
Earnings (1000's of $)
1995
1996
1997
1998
1999
2000
2001
2002
2003
Total Non-Farm Employment
Total Non-Farm Earnings

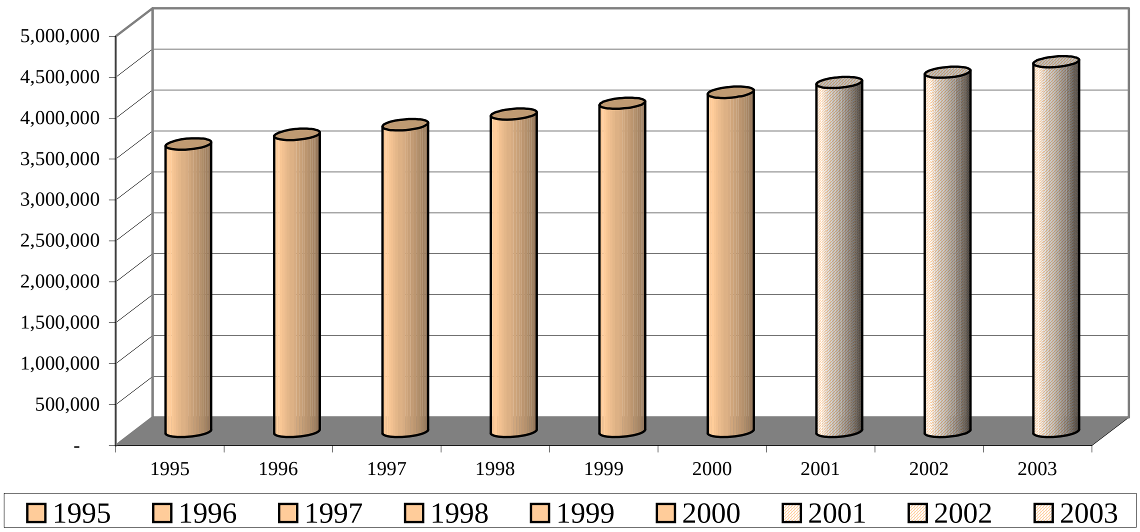

Farm Employment & Earnings 1995 to 2003
1995 to 2000 Actual - 2001 to 2003 Projected
Atlanta, GA MSA
Number of Jobs
Earnings (1000's of $)
8,300
8,200
8,100
8,000
7,900
7,800
7,700
7,600
7,500
7,400
250,000
200,000
150,000
100,000
50,000
-
1995
1996
1997
1998
1999
2000
2001
2002
2003
Total Farm Employment
Total Farm Earnings


Non-farm Proprietor's Employment & Income 1995 to 2003
1995 to 2000 Actual - 2001 to 2003 Projected
Atlanta, GA MSA
Number of Jobs
Income (1000's of $)
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
1995
1996
1997
1998
1999
2000
2001
2002
2003
Non-Farm Proprietor's Employment
Non-Farm Proprietor's Income

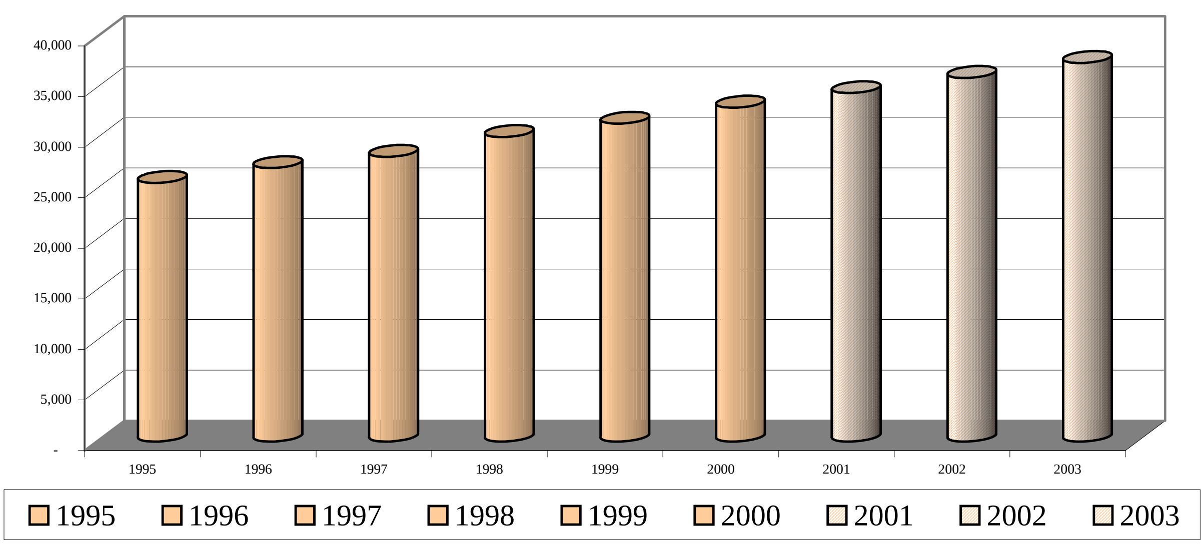
Farm Proprietor's Employment & Income 1995 to 2003
1995 to 2000 Actual - 2001 to 2003 Projected
Atlanta, GA MSA

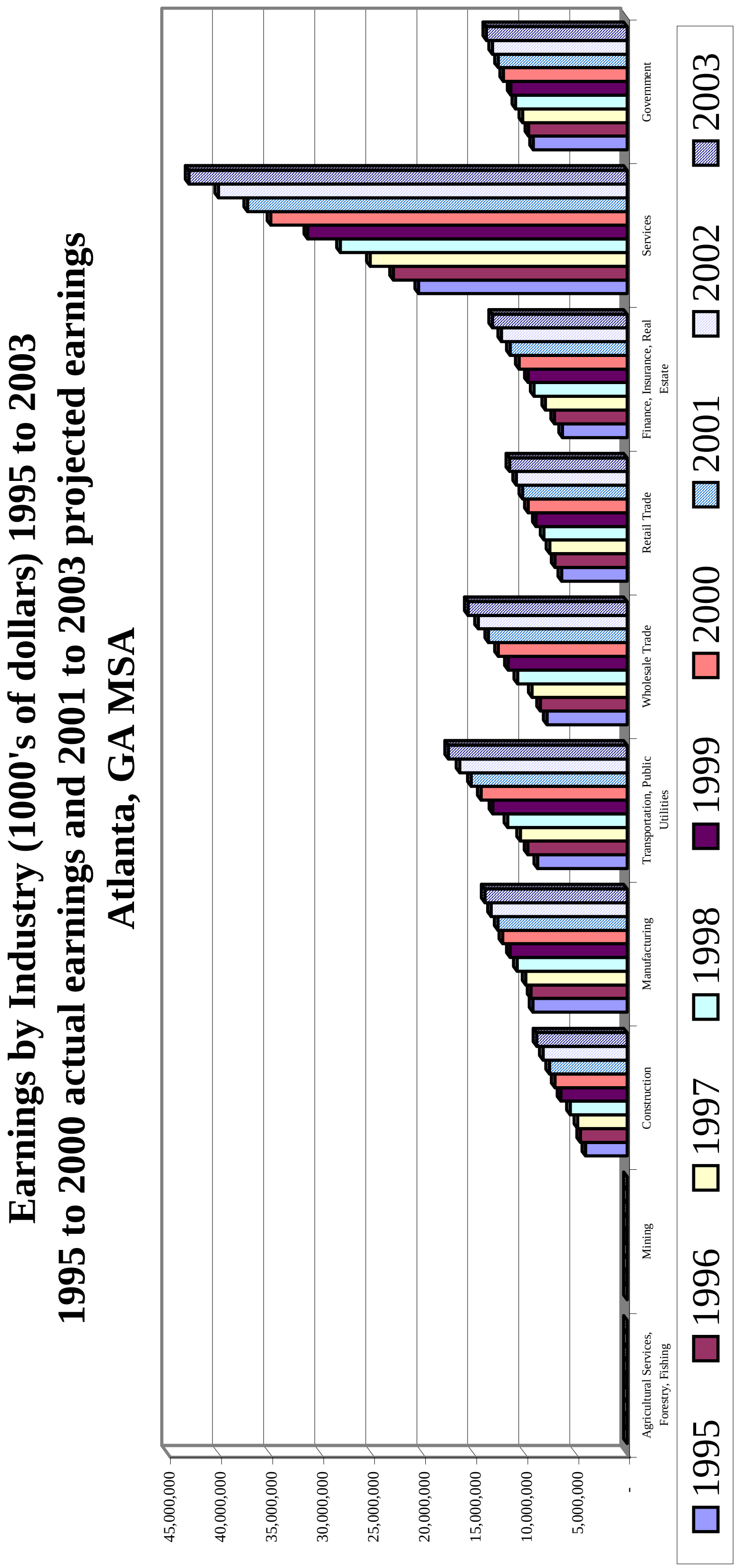


Population 1995 to 2003
1995 to 2000 actual population and 2001 to 2003 projected population
Atlanta, GA MSA



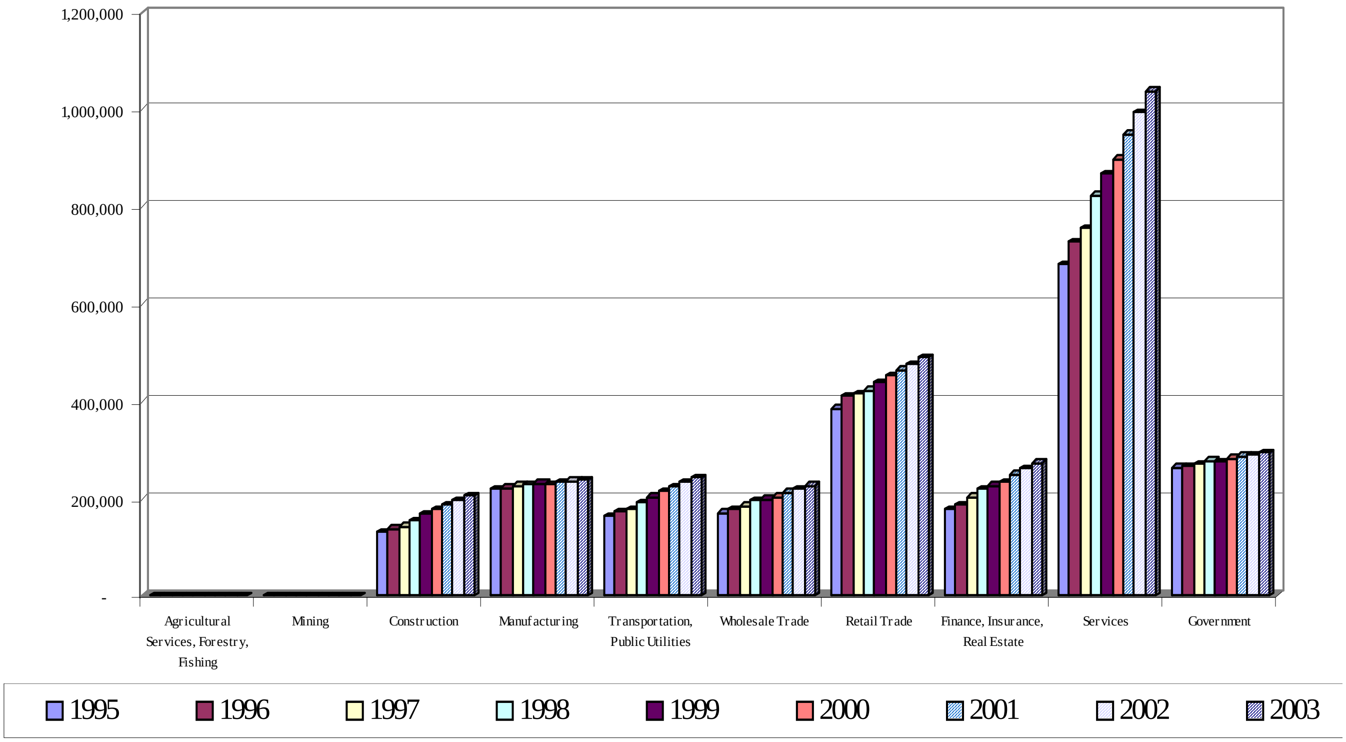
Per Capita Personal Income (PCPI) (in dollars) 1995 to 2003
1995 to 2000 actual PCPI and 2001 to 2003 projected PCPI
Atlanta, GA MSA



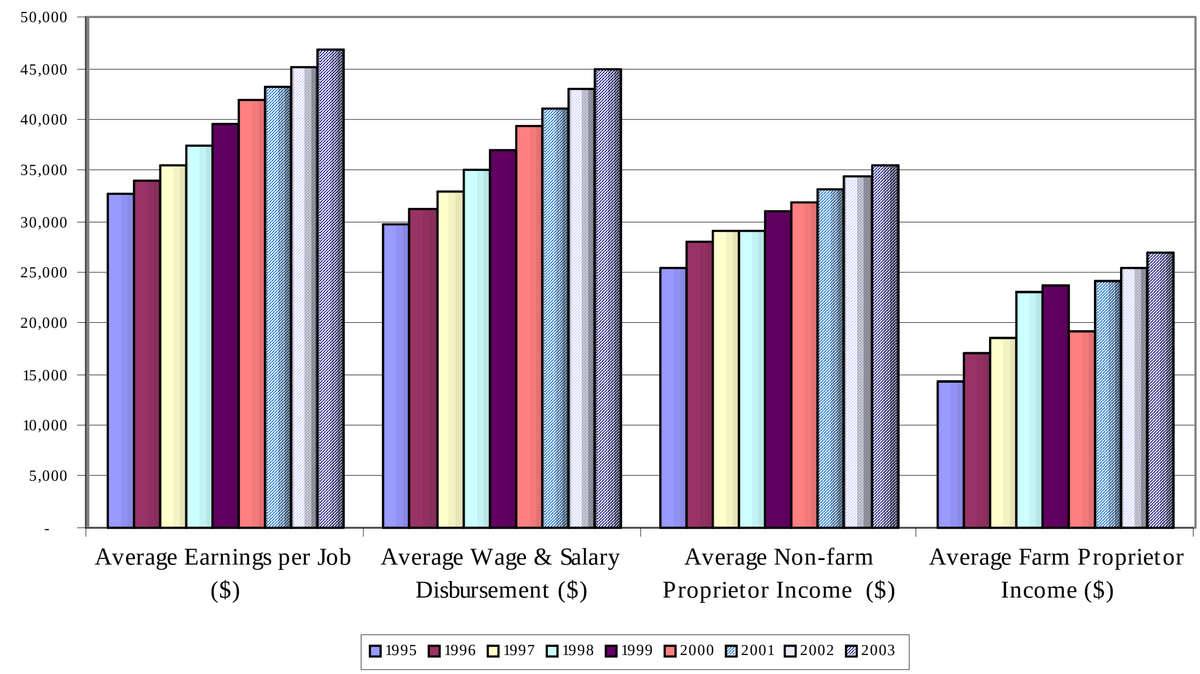


Earnings by Industry (1000's of dollars) 1995 to 2003
1995 to 2000 actual earnings and 2001 to 2003 projected earnings
Atlanta, GA MSA
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
Agricultural Services, Forestry, Fishing
Mining
Construction
Manufacturing
Transportation, Public Utilities
Wholesale Trade
Retail Trade
Finance, Insurance, Real Estate
Services
Government
1995
1996
1997
1998
1999
2000
2001
2002
2003

Employment by Industry (number of jobs, f/t & p/t) 1995 to 2003
1995 to 2000 actual employment and 2001 to 2003 projected employment
Atlanta, GA MSA



Earnings and Income 1995 to 2003
1995 to 2000 actual and 2001 to 2003 projected
Atlanta, GA MSA



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ANNUAL STATEMENT STUDIES 2000 2001

312 **MANUFACTURING—WOOD HOUSEHOLD FURNITURE, EXCEPT UPHOLSTERED** SIC# 2511 (NAICS 337122, 337215)

Current Data Sorted By Assets							Comparative Historical Data	
						Type of Statement		
		5	10	2	5	Unqualified	53	56
	3	17	1			Reviewed	25	28
3	10	7	2		1	Compiled	29	27
5	2					Tax Returns	8	8
3	15	9	11		2	Other	50	61
	23 (4/1-9/30/99)		90 (10/1/99-3/31/00)				4/1/95-3/31/96 ALL	4/1/96-3/31/97 ALL
0-500M	500M-2MM	2-10MM	10-50MM	50-100MM	100-250MM			
11	30	38	24	2	8	**NUMBER OF STATEMENTS**	165	180
%	%	%	%	%	%	**ASSETS**	%	%
3.7	7.0	3.7	4.5			Cash & Equivalents	5.5	4.7
19.1	22.7	27.0	24.2			Trade Receivables - (net)	23.8	24.0
32.6	36.3	33.1	30.1			Inventory	33.8	32.5
.1	.4	2.6	2.5			All Other Current	1.6	1.1
55.5	66.4	66.4	61.3			Total Current	64.6	62.4
41.6	28.4	27.1	30.6			Fixed Assets (net)	27.1	29.4
.5	1.8	.9	3.5			Intangibles (net)	2.4	1.6
2.3	3.5	5.5	4.6			All Other Non-Current	5.8	6.5
100.0	100.0	100.0	100.0			Total	100.0	100.0
						LIABILITIES		
9.5	11.4	18.8	13.0			Notes Payable-Short Term	11.9	10.8
3.3	2.9	5.3	2.6			Cur. Mat.-L/T/D	3.9	4.5
10.8	14.3	14.0	10.6			Trade Payables	12.8	13.1
.0	.1	.3	.4			Income Taxes Payable	.5	.4
14.3	8.3	11.1	7.9			All Other Current	7.7	8.4
38.0	37.0	49.5	34.5			Total Current	36.7	37.3
43.2	15.2	17.3	16.0			Long Term Debt	16.9	16.8
.0	.0	.6	1.0			Deferred Taxes	.8	.7
2.6	8.8	6.0	3.5			All Other Non-Current	4.0	3.3
16.1	39.1	26.6	45.0			Net Worth	41.6	41.9
100.0	100.0	100.0	100.0			Total Liabilities & Net Worth	100.0	100.0
						INCOME DATA		
100.0	100.0	100.0	100.0			Net Sales	100.0	100.0
46.8	32.8	23.9	25.7			Gross Profit	25.8	25.3
39.4	26.0	21.1	18.2			Operating Expenses	21.1	21.7
7.4	6.8	2.8	7.5			Operating Profit	4.7	3.6
3.1	1.4	2.0	1.6			All Other Expenses (net)	1.7	1.4
4.2	5.4	.9	5.9			Profit Before Taxes	3.0	2.2
						RATIOS		
3.2	4.8	2.1	3.9				2.8	2.9
1.7	1.7	1.4	1.8			Current	1.8	1.9
.9	1.1	.9	1.4				1.3	1.3
1.9	1.9	1.1	1.9				1.4	1.4
.9	.8	.6	.9			Quick	.8	(179) .9
.1	.3	.3	.5				.5	.5
0 UND	17 21.3	23 15.9	40 9.1				26 14.2	26 13.8
25 14.6	31 11.9	35 10.3	46 7.9			Sales/Receivables	41 9.0	39 9.3
64 5.7	48 7.6	54 6.8	57 6.4				52 7.0	50 7.3
23 16.1	32 11.3	34 10.7	47 7.7				50 7.3	41 9.0
44 8.3	74 4.9	61 5.9	80 4.6			Cost of Sales/Inventory	73 5.0	66 5.5
112 3.3	162 2.3	100 3.6	133 2.7				107 3.4	104 3.5
0 UND	11 34.0	15 24.6	9 40.4				12 30.5	13 27.4
16 23.1	24 15.3	25 14.7	25 14.4			Cost of Sales/Payables	22 16.4	24 15.3
27 13.6	46 8.0	41 9.0	44 8.4				37 10.0	35 10.3
6.1	4.8	5.7	3.4				4.9	4.9
11.5	7.8	18.4	7.0			Sales/Working Capital	8.5	9.5
−79.5	50.2	−100.9	11.3				19.0	20.7
5.6	9.4	5.4	10.1				6.6	7.8
2.3	(29) 4.5	(37) 2.4	(21) 2.7			EBIT/Interest	(152) 2.8	(167) 3.2
.4	1.2	.8	1.8				1.1	1.1
		3.4	4.2				4.1	4.9
		(13) 1.2	(11) 3.0			Net Profit + Depr., Dep., Amort./Cur. Mat. L/T/D	(72) 2.1	(72) 2.4
		.7	1.5				1.3	1.1
2.2	.1	.3	.4				.4	.4
4.0	1.0	1.0	.8			Fixed/Worth	.7	.7
−26.1	5.2	2.5	1.4				1.3	1.4
1.6	.5	1.5	.4				.6	.6
8.7	1.8	2.8	1.5			Debt/Worth	1.6	1.4
−57.0	9.1	5.1	3.9				3.9	3.2
	51.7	35.3	29.8				31.8	33.2
	(24) 23.8	(33) 13.0	(22) 17.6			% Profit Before Taxes/Tangible Net Worth	(153) 14.8	(163) 14.7
	7.5	−2.5	11.0				3.8	2.3
17.7	19.9	10.9	14.3				13.3	14.6
7.3	10.5	4.5	6.0			% Profit Before Taxes/Total Assets	5.6	5.9
−4.7	.7	−1.3	3.2				.4	.4
22.4	33.2	20.5	8.5				18.6	14.9
9.2	11.9	12.1	6.4			Sales/Net Fixed Assets	8.2	7.9
5.2	5.2	6.8	5.4				5.7	5.1
4.4	3.3	3.4	2.2				2.8	2.9
3.8	2.7	2.5	1.8			Sales/Total Assets	2.2	2.2
2.6	1.7	1.7	1.4				1.7	1.7
	.6	.7	1.8				1.1	1.3
	(26) 1.7	(37) 1.4	2.3			% Depr., Dep., Amort./Sales	(143) 2.0	(161) 2.0
	2.6	2.2	3.0				2.7	3.0
	2.7	1.5					1.5	2.1
	(13) 6.0	(16) 2.4				% Officers', Directors', Owners' Comp/Sales	(67) 2.5	(65) 3.4
	10.1	3.6					5.8	6.7
11351M	87692M	454629M	889095M	281143M	2055303M	Net Sales ($)	4828583M	5676068M
3338M	34562M	179847M	515434M	139488M	1263568M	Total Assets ($)	2566687M	3026059M

M = $ thousand MM = $ million

See Pages 11 through 20 for Explanation of Ratios and Data

MANUFACTURING—WOOD HOUSEHOLD FURNITURE, EXCEPT UPHOLSTERED SIC# 2511 (NAICS 337122, 337215) **313**

Comparative Historical Data / **Current Data Sorted By Sales**

4/1/97-3/31/98 ALL	4/1/98-3/31/99 ALL	4/1/99-3/31/00 ALL		0-1MM	1-3MM	3-5MM	5-10MM	10-25MM	25MM & OVER
			Type of Statement						
42	40	22	Unqualified				1	7	14
31	18	21	Reviewed		1	3	6	9	2
43	39	23	Compiled	1	10	4	1	5	2
10	16	7	Tax Returns	2	4		1		
48	53	40	Other	5	8	5	7	6	9
					23 (4/1-9/30/99)		90 (10/1/99-3/31/00)		
174	166	113	**NUMBER OF STATEMENTS**	8	23	12	16	27	27
%	%	%	**ASSETS**	%	%	%	%	%	%
5.7	6.2	4.7	Cash & Equivalents		5.0	10.4	5.1	2.6	3.7
23.6	23.2	24.3	Trade Receivables - (net)		20.6	20.8	25.1	26.9	27.6
33.2	32.1	33.0	Inventory		37.5	35.0	41.0	31.2	30.4
1.8	1.5	1.6	All Other Current		1.8	.9	1.9	1.5	2.2
64.3	63.0	63.6	Total Current		64.8	67.0	73.2	62.2	63.9
28.3	29.1	29.8	Fixed Assets (net)		28.5	27.0	23.4	30.6	26.4
1.3	3.0	2.0	Intangibles (net)		1.6	2.0	1.1	1.3	4.2
6.2	4.8	4.6	All Other Non-Current		5.1	4.0	2.3	5.8	5.4
100.0	100.0	100.0	Total		100.0	100.0	100.0	100.0	100.0
			LIABILITIES						
11.4	12.1	13.7	Notes Payable-Short Term		15.2	9.9	16.1	20.8	8.3
4.4	3.6	3.6	Cur. Mat.-L/T/D		3.8	2.5	4.1	5.6	1.9
13.0	11.6	12.5	Trade Payables		14.0	12.3	12.0	15.1	10.5
.5	.3	.2	Income Taxes Payable		.0	.0	.4	.3	.4
10.2	8.2	9.7	All Other Current		14.5	5.7	13.9	8.0	8.7
39.5	35.8	39.7	Total Current		47.5	30.4	46.6	49.8	29.8
16.2	19.6	18.5	Long Term Debt		22.1	9.2	14.4	19.1	12.0
.7	.5	.6	Deferred Taxes		.0	1.0	.3	.5	1.3
3.0	5.7	5.6	All Other Non-Current		9.5	3.4	7.4	5.6	2.9
40.6	38.4	35.7	Net Worth		20.9	56.0	31.2	25.0	54.0
100.0	100.0	100.0	Total Liabilities & Net Worth		100.0	100.0	100.0	100.0	100.0
			INCOME DATA						
100.0	100.0	100.0	Net Sales		100.0	100.0	100.0	100.0	100.0
27.5	27.7	28.9	Gross Profit		33.7	27.0	29.1	23.3	22.9
22.4	23.1	23.1	Operating Expenses		29.1	21.4	25.3	19.3	15.3
5.1	4.6	5.8	Operating Profit		4.6	5.6	3.8	4.0	7.6
1.2	1.4	1.7	All Other Expenses (net)		1.9	.3	2.0	2.0	.9
3.9	3.2	4.1	Profit Before Taxes		2.7	5.3	1.8	2.0	6.7
			RATIOS						
3.0	3.3	3.2			2.8	6.5	2.4	2.1	3.9
1.8	1.9	1.6	Current		1.3	2.7	1.6	1.2	2.3
1.2	1.2	1.1			1.0	1.2	1.2	.9	1.5
1.4	1.6	1.6			1.8	2.6	1.2	1.1	2.0
.8	.8	.8	Quick		.4	.9	.6	.5	1.1
.4	.4	.4			.2	.4	.3	.4	.7
23 15.7	18 20.4	24 15.2			7 50.8	10 35.7	22 16.4	32 11.6	44 8.4
39 9.3	39 9.4	41 8.9	Sales/Receivables		25 14.6	34 10.7	30 12.3	40 9.2	51 7.1
49 7.4	50 7.3	54 6.8			42 8.8	45 8.1	50 7.4	52 7.0	59 6.2
43 8.4	36 10.1	40 9.2			37 9.8	26 13.8	40 9.2	34 10.6	49 7.4
69 5.3	64 5.7	73 5.0	Cost of Sales/Inventory		80 4.5	45 8.1	82 4.5	57 6.4	80 4.5
104 3.5	107 3.4	109 3.3			114 3.2	94 3.9	127 2.9	95 3.8	97 3.8
15 25.0	10 35.2	13 29.0			10 35.5	4 96.7	13 28.8	16 23.4	15 24.8
23 15.6	20 18.1	24 15.5	Cost of Sales/Payables		24 15.0	16 22.3	25 14.4	27 13.4	22 16.8
35 10.3	33 11.0	39 9.3			44 8.2	34 10.7	38 9.6	46 7.9	29 12.5
4.5	4.6	4.8			6.1	4.7	5.1	6.6	3.9
8.8	7.9	8.4	Sales/Working Capital		14.4	6.2	6.3	22.8	6.9
30.8	28.7	35.4			-100.4	57.3	23.9	-33.2	8.5
8.6	7.4	8.5			6.1	37.2	6.0	4.3	26.0
(160) 3.8	(148) 3.3	(108) 2.8	EBIT/Interest		(22) 2.5	4.2	2.7	(26) 2.4	(24) 8.3
1.5	1.2	1.3			.4	.2	.4	1.6	2.1
4.3	4.9	4.4						3.5	9.9
(64) 2.4	(48) 2.4	(30) 2.6	Net Profit + Depr., Dep., Amort./Cur. Mat. L/T/D					(10) 2.4	(10) 4.5
1.2	1.0	1.2						1.1	1.6
.3	.3	.3			.5	.1	.2	.6	.4
.7	.7	.9	Fixed/Worth		3.0	.4	.8	1.4	.5
1.4	2.3	2.7			-2.0	1.5	1.6	6.2	1.0
.6	.5	.7			1.8	.2	1.2	1.5	.3
1.5	1.8	2.3	Debt/Worth		5.0	.6	2.4	3.0	1.0
3.9	4.6	5.0			-9.6	2.2	4.0	20.5	1.8
42.2	33.7	37.7			71.1	43.7	34.7	29.0	38.5
(157) 24.0	(144) 18.0	(97) 21.7	% Profit Before Taxes/Tangible Net Worth		(14) 36.4	20.9	(15) 19.5	(22) 14.2	(26) 20.5
5.1	5.5	9.5			16.2	-1.3	.6	7.8	14.0
15.3	15.1	15.6			19.1	30.6	13.0	9.1	17.8
9.1	7.0	7.7	% Profit Before Taxes/Total Assets		7.8	11.4	6.6	5.2	12.3
1.7	.9	1.3			-4.7	-1.1	-3.2	2.2	4.0
21.1	17.6	17.3			30.8	36.2	34.7	15.9	9.7
7.9	8.7	8.0	Sales/Net Fixed Assets		11.4	11.6	15.9	9.6	6.4
5.2	4.9	5.3			5.8	6.2	7.7	5.4	5.4
3.0	3.0	2.9			3.8	3.2	3.0	3.5	2.3
2.2	2.2	2.3	Sales/Total Assets		2.7	2.8	2.4	2.4	1.8
1.7	1.6	1.6			1.7	2.4	1.7	1.6	1.5
1.2	1.1	.9			.8	.5	.5	1.0	1.6
(153) 2.0	(151) 1.7	(103) 1.9	% Depr., Dep., Amort./Sales		(20) 2.1	1.1	1.4	(26) 1.7	(24) 2.1
2.8	2.7	2.7			2.7	2.6	2.1	2.7	2.7
2.0	1.4	1.5			1.4				
(66) 3.5	(66) 3.2	(36) 3.4	% Officers', Directors', Owners' Comp/Sales		(13) 4.5				
6.3	6.2	6.8			9.9				
4905252M	5424644M	3779213M	Net Sales ($)	4828M	45369M	48223M	117753M	461518M	3101522M
2691503M	3060320M	2136237M	Total Assets ($)	4005M	23163M	19186M	52566M	239925M	1797392M

M = $ thousand MM = $ million

See Pages 11 through 20 for Explanation of Ratios and Data

PARTICIPANT NOTES

APPENDIX VIII

Federal Rules of Practice and Procedure

NOTE: This is an excerpt directly from the full document (spelling and punctuation has not been altered). The full document may be viewed, in PDF format, at www.uscourts.gov. The articles herein are in force as of December 1, 2002.

ARTICLE VII. OPINIONS AND EXPERT TESTIMONY

Rule 701. Opinion Testimony by Lay Witnesses

If the witness is not testifying as an expert, the witness' testimony in the form of opinions or inferences is limited to those opinions or inferences which are

(a) rationally based on the perception of the witness, and

(b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue, and

(c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

(As amended Mar. 2, 1987, eff. Oct. 1, 1987; Apr. 17, 2000, eff. Dec. 1, 2000.)

Rule 702. Testimony by Experts

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if

(1) the testimony is based upon sufficient facts or data,

(2) the testimony is the product of reliable principles and methods, and

(3) the witness has applied the principles and methods reliably to the facts of the case.

(As amended Apr. 17, 2000, eff. Dec. 1, 2000.)

Rule 703. Bases of Opinion Testimony by Experts

The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted. Facts or data that are otherwise inadmissible shall not be disclosed to the jury by the proponent of the opinion or inference unless the court determines that their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect.

(As amended Mar. 2, 1987, eff. Oct. 1, 1987; Apr. 17, 2000, eff. Dec. 1, 2000.)

Rule 704. Opinion on Ultimate Issue

(a) Except as provided in (b), subdivision testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.

(b) No expert witness testifying with respect to the mental state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto. Such ultimate issues are matters for the trier of fact alone.

(As amended Oct. 12, 1984.)

Rule 705. Disclosure of Facts or Data Underlying Expert Opinion

The expert may testify in terms of opinion or inference and give reasons therefore without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross–examination.

(As amended Mar. 2, 1987, eff. Oct. 1, 1987; Apr. 22, 1993, eff. Dec. 1, 1993.)

Rule 706. Court Appointed Experts

(a) Appointment.—The court may on its own motion or on the motion of any party enter an order to show cause why expert witnesses should not be appointed, and may request the parties to submit nominations. The court may appoint any expert witnesses agreed upon by the parties, and may appoint expert witnesses of its own selection. An expert witness shall not be appointed by the court unless the witness consents to act. A witness so appointed shall be informed of the witness' duties by the court in writing, a copy of which shall be filed with the clerk, or at a conference in which the parties shall have opportunity to participate. A witness so appointed shall advise the parties of the witness' findings, if any; the witness' deposition may be taken by any party; and the witness may be called to testify by the court or any party. The witness shall be subject to cross–examination by each party, including a party calling the witness.

(b) Compensation.—Expert witnesses so appointed are entitled to reasonable compensation in whatever sum the court may allow. The compensation thus fixed is payable from funds which may be provided by law in criminal cases and civil actions and proceedings involving just compensation under the fifth amendment. In other civil actions and proceedings the compensation shall be paid by the parties in such proportion and at such time as the court directs, and thereafter charged in like manner as other costs.

(c) Disclosure of appointment.—In the exercise of its discretion, the court may authorize disclosure to the jury of the fact that the court appointed the expert witness.

(d) Parties' experts of own selection.—Nothing in this rule limits the parties in calling expert witnesses of their own selection.

(As amended Mar. 2, 1987, eff. Oct. 1, 1987.)

Note: Research provided by KeyValueData (dba www.keyvaluedata.com) - (800) 246-8488

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PARTICIPANT NOTES

APPENDIX IX

Other Methods to Project Earnings

I. TREND LINE STATIC METHOD

Up to this point, earnings have been plotted as average earnings without regard to "fit". The analyst must frequently answer the question, "What is a good fit?", as it pertains to determining trends in future earnings.

In order to develop a trend line with the best fit, the analyst can utilize a least squares formula based on the Gauss-Markov Theorem, which states that:

Within the class of linear unbiased estimators of slope, the least squares estimator has minimum variance.

Since this is a statistical calculation it should only be used when there is an adequate (at least five years, preferably seven) number of data points.

A. FORMULA

The trend line static method utilizes the following least squares formula:

$Y = a_0 + bx$

Where: $$a_0 = \frac{\Sigma Y - b\,(\Sigma X)}{N} = \text{intercept of Y axis}$$

And: $$b = \frac{N\,(\Sigma\, X\, Y) - (\Sigma\, X)\,(\Sigma\, Y)}{N\,(\Sigma\, X^2) - (\Sigma\, X)^2} = \text{slope}$$

x = Total # of observed years.
X = The i^{th} year, and weighting to be accorded in the i^{th} year (x^2).
Y = Earnings in the i^{th} year.
N = Number of observations.
Σ = Sum of the variables (X, Y, X^2, or XY)

The trend line static method in estimating future earnings is based on the above least squares formula, utilizing historical economic earnings to estimate the amount of future earnings. This method is most appropriately used when the company's past earnings trend has been consistent (either upward or downward) and can reasonably be expected to continue.

The trend line static method establishes an earnings amount in the last year, which is then assumed to occur at the same level throughout the estimated future period.

B. EXAMPLE

Assume Aubré Company had the following historical economic net income over the last five years:

2002	$110,600
2003	119,500
2004	131,700
2005	135,200
2006	140,400

C. CALCULATE THE TREND LINE

X	Y	X^2	X•Y
1	110,600	1	110,600
2	119,500	4	239,000
3	131,700	9	395,100
4	135,200	16	540,800
5	140,400	25	702,000

$\Sigma X=15$ $\Sigma Y=637{,}400$ $\Sigma X^2= 55$ $\Sigma X\bullet Y= 1{,}987{,}500$

D. DETERMINE VALUE OF b (SLOPE)

$$b = \frac{5(1{,}987{,}500) - [15(637{,}400)]}{5(55) - (15)^2}$$

$$b = \frac{9{,}937{,}500 - 9{,}561{,}000}{275 - 225}$$

$$b = \frac{376{,}500}{50}$$

$$b = \$7{,}530$$

E. DETERMINE VALUE OF a_0 (INTERCEPT OF Y AXIS)

Where $$a_0 = \frac{\Sigma Y - b(\Sigma X)}{N}$$

$$a_0 = \frac{637{,}400 - 7{,}530(15)}{5}$$

$$a_0 = \$104{,}890$$

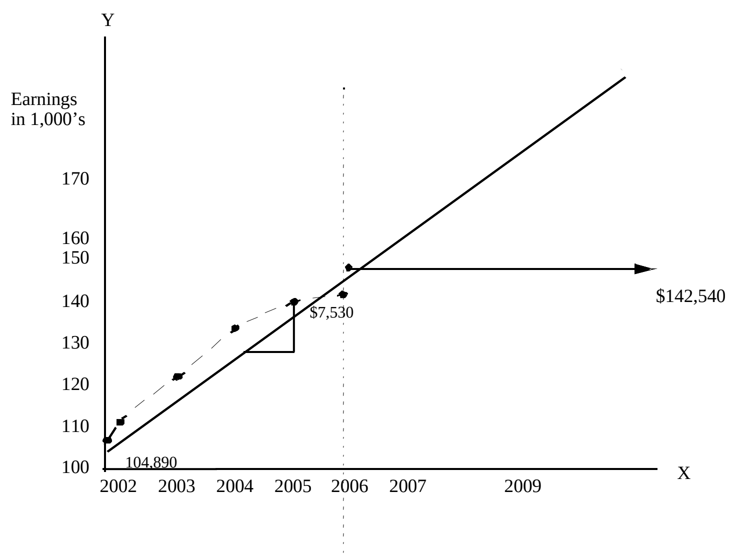
F. SOLVE FOR AMOUNT OF ESTIMATED FUTURE INCOME

$$Y = a_0 + bx$$

$$Y = 104{,}890 + 7{,}530(5)$$

$$Y = \$142{,}540 \ (2006)$$

The above example can be graphically illustrated as follows:



Even though a trend line has been developed, this method assumes that future estimated earnings will continue on a static basis (no growth), as do the unweighted and weighted average methods. This method simply estimates the level at which earnings will continue.

The trend line static method often puts a heavier weighting on the latest year, as does the weighted average method. However, because the trend line static method is based on least square formulas, it produces a trend line that lessens the impact which any particular year has on the calculation. The trend line static method assumes a capitalization process of earnings rather than a discounting process.

II. TREND LINE PROJECTED METHOD (DATA IS INCREASING AT A DECLINING RATE)

This projection approach is a linear or straight-line approach where it is expected that growth will continue to occur but at a declining rate.

The first three methods discussed assume no future positive or negative growth in earnings; in other words, future earnings are assumed to be static. Based on analysis, if it is determined that it is reasonable to expect continued future positive or negative growth in earnings, the analyst can utilize a method which accommodates such growth.

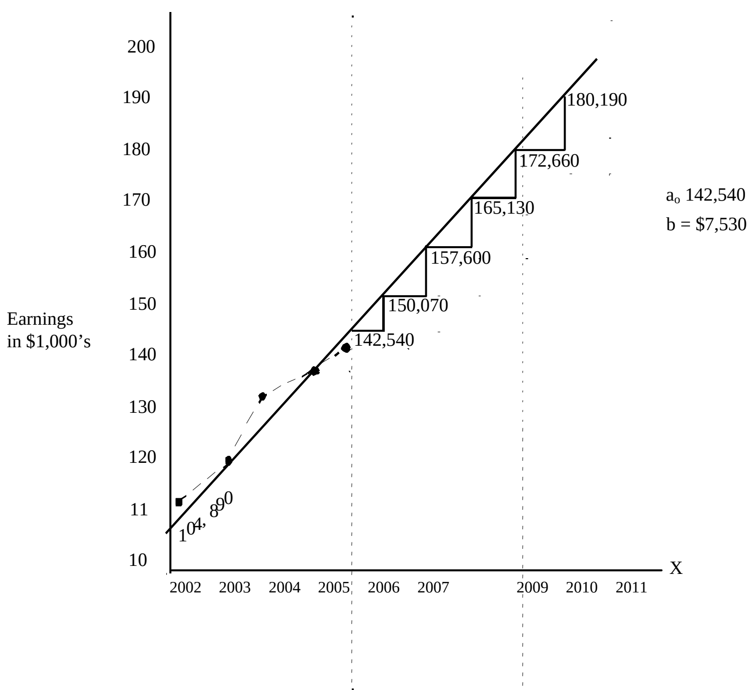
The first of these methods is the trend line projected. The trend line projected method builds on the trend line static method, utilizing identical formulae (see page 8) to develop a trend line. The difference in the two methods is how future earnings are assumed to behave. The trend line static method assumes "static" future earnings, that is, no growth or decline, whereas the trend line projected method assumes growth or decline.

The trend line projected method is also based on the least squares formula, utilizing historical economic/normalized earnings to estimate the amount of future earnings. This method is most appropriately used when the company's past trend in earnings can reasonably be expected to continue.

The trend line projected method establishes an earnings amount in the latest year. It then projects specific earnings amounts into the future five year period by increasing the earnings of the latest year by the value of 'b'.

The trend line projected method would be more appropriate than either the weighted average or the unweighted average methods, if the most recent year's earnings (income) significantly increases or decreases. It is also useful if growth or decline trends are based on other factors (other than past historical earnings) and the latest year's results are not necessarily indicative of the company's future earnings potential. The trend line projected method is also useful if the company has demonstrated consistent increases or decreases in its earnings.

We can graphically illustrate this by beginning with the same graphically illustrated data in the prior trend line static example.



Using the previously discussed least squares formula, Y = a_0 + bx, we can estimate income for years 2007 through 2011 as follows:

2007 = 104,890 + (6) (7,530) = 150,070
= 104,890 + (7) (7,530) = 157,600
2009 = 104,890 + (8) (7,530) = 165,130
2010 = 104,890 + (9) (7,530) = 172,660
2011 = 104,890 + (10) (7,530) = 180,190

III. PROJECTED GROWTH RATE IN EARNINGS METHOD (Data is increasing at a constant rate.)

Data is increasing at a constant rate; it is not linear. This "curve" is also referred to as an exponential curve. This method, which assumes growth in earnings, is the projected growth rate method, sometimes referred to as the "projection method". It is used:

1. To determine the annual compounded or average growth rate in earnings based on the last five years historical economic earnings.
2. To apply the same growth rate to the latest year's earnings, and continue this process over the following four consecutive years.

The projected growth rate method is applied to the latest year's historical economic earnings as a basis for estimating future earnings. It is most appropriately used when historical economic earnings suggest a consistent trend that the analyst feels has a high probability of continuing. Continuation of this earnings trend is almost guaranteed. This is the case for example, where existing contracts are already in place, ensuring the company's continued growth for several more years (five or more).

Example

Assume Lorenco Inc. had the following historical economic earnings for the last five years. Based on specific contracts the company has a high probability (nearly guaranteed) of continuing to generate earnings at the same growth rate it has experienced over the last five years.

	Historical Earnings	**Annual Growth Rate**
2002	$100,000	Base
2003	115,000	15%
2004	135,000	17%
2005	160,000	19%
2006	185,000	16%

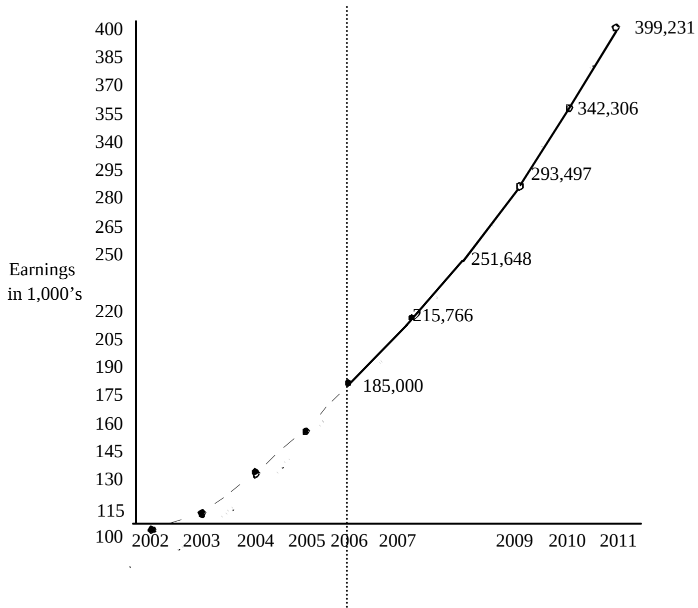
Average growth rate = 16.75%
Compound growth rate = 16.63%

a. Lotus = rate (FV, PV, TERM)

b. HP 12C
PV = -100,000
FV = 185,000
N = 4
I = Calculate
Projected next five years of earnings:

1995	185,000 x 1.1663	=	215,766
1996	215,766 x 1.1663	=	251,648
1997	251,648 x 1.1663	=	293,497
1998	293,497 x 1.1663	=	342,306
1999	342,306 x 1.1663	=	399,231

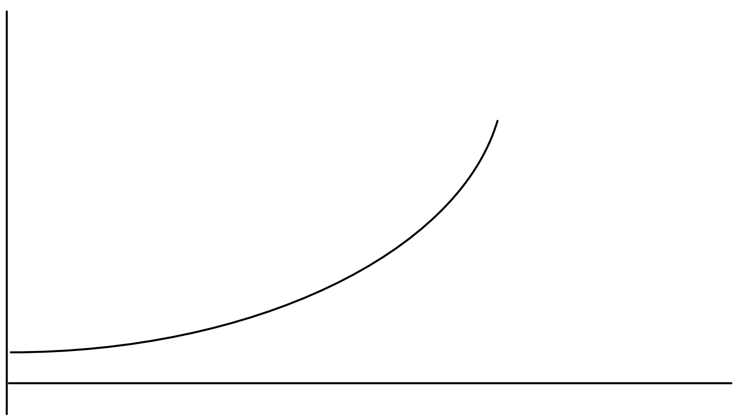
This example can be graphically illustrated as follows:



The estimate of future earnings determined by using the unweighted, weighted, or trend line static methods will be applied in a capitalization process, whereas, the trend line projected and the projected growth rate methods will be applied in a discounted earnings process.

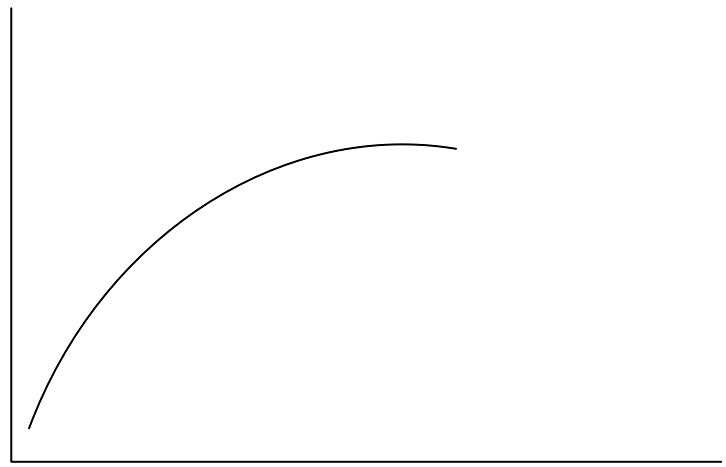
IV. OTHER GROWTH RATE PROJECTION METHODS

A. GEOMETRIC (Data is Increasing at an Increasing Rate)

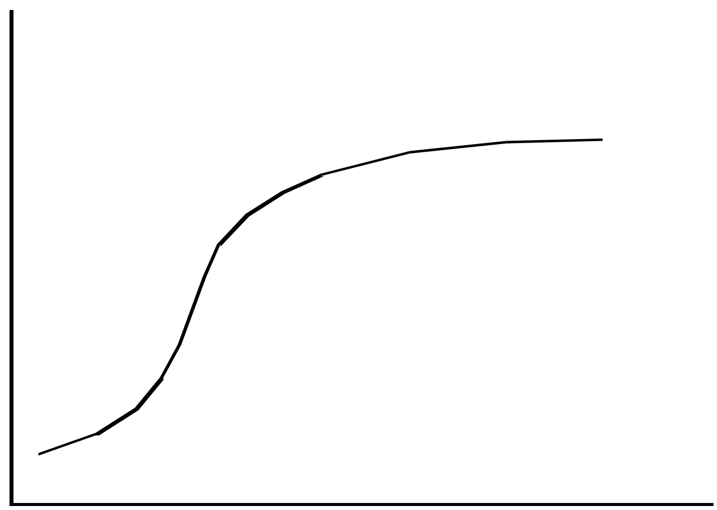


The geometric curve is sometimes referred to as the power curve.

B. LOGARITHMIC (Data is Increasing But at an Increasingly Declining Rate)



C. THE GOMPERTZ CURVE (Slow Growth Followed by Rapid Growth Followed by Slowing of Growth and Then a Declining Growth Rate)



This curve represents trends which have a general "S" shape where a series of data have an early rate of growth that is small. This is followed by a period of acceleration and then slowing again in the long term. Data curves for many mature companies and products often follow this curve. The Gompertz curve follows the introductory, growth, and early mature phases of the life cycle.

V. SELECTING AN APPROPRIATE METHOD

The following is based on an article by Robert L. Green, CPA, CVA, CFE, "Using Correlation Analysis in Determining Proper Method to Project Earnings," *The Valuation Examiner®*, 1st Quarter 1994. Excerpts reprinted with permission from NACVA.

At some point in a valuation, the analyst must select one of the aforementioned methods in order to estimate future earnings. The analyst should become familiar with the necessary criteria for each method, and simply view a graphical pattern of historical earnings, in order to arrive at a decision as to the appropriate method.

A. CORRELATION ANALYSIS

Certain professionals have advocated the use of correlation analysis as a more objective tool in the selection process. The correlation coefficient (*r*) and the coefficient of determination (r^2) are two statistically derived values that can be used to assist the analyst in making a projection method selection. The formulae for these derivations are as follows:

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2]\ [N\Sigma Y^2 - (\Sigma Y)^2]}}$$

and

$$r^2 = \frac{[(N\Sigma XY) - (\Sigma X)(\Sigma Y)]^2}{[N\Sigma X^2 - (\Sigma X)^2]\ [N\Sigma Y^2 - (\Sigma Y)^2]}$$

Note: Σ = sum

The coefficients of correlation and determination are measures of the covariance of X and Y relative to the variance of X and Y themselves.

The coefficient of determination (r^2) is more widely used. Simply put, r^2 indicates how well the estimated equation fits the data, or the goodness of the fit in the regression.

The coefficient of determination can also be expressed as follows:

$$r^2 = \frac{\text{Unexplained Variance}}{\text{Total Variance}}$$

In the context of this analysis the variables can be defined as:

N = number of observations

X = the i^{th} year

Y = earnings for a particular year

By using the coefficient of determination, the analyst is determining how much of the change in earnings from one year to the next is explained by the mere passage of time (i.e., a time series analysis).

To illustrate, data from the above example for the Projected Growth Rate in Earnings method shows:

	X	Y
2002	1	100,000
2003	2	115,000
2004	3	135,000
2005	4	160,000
2006	5	185,000

Calculation (in 1,000's)

X	**Y**	**X•Y**	**X^2**	**Y^2**
1	100	100	1	10,000
2	115	230	4	13,225
3	135	405	9	18,225
4	160	640	16	25,600
5	185	925	25	34,225
15	695	2,300	55	101,275

$$r^2 = \frac{[(5 \text{ x } 2{,}300) - (15 \text{ x } 695)]^2}{[(275 - 225) \text{ x } (506{,}375 - 483{,}025)]}$$

$$r^2 = \frac{1{,}155{,}625}{1{,}167{,}500}$$

$$r^2 = .98983$$

The coefficient of determination is a measurement of how much of the variation in Y is explained by X. Therefore, in this example, approximately 99% of the change in earnings (Y) is explained by the mere passage of time or years (X). Since the r^2 is greater than 95%, this would provide the analyst with significant confidence in predicting future earnings in this example.

Although the r^2 computed above indicates that there is a high correlation between the passage of time and the change in earnings, it raises a particular question: What level of r^2 is necessary to suggest the use of one method of estimating future earnings versus another?

Robert L. Green, of Prima Facie Software, Inc. provided the following ranges:

The following list suggests ranges of r^2 which appear to be reasonable for our needs in selecting the appropriate method of projecting earnings:

Method of Projection	***r^2 Range***
Unweighted Average	*.00 - .59*
Weighted Average	*.60 - .69*
Trend-Line Static	*.70 - .79*
Trend-Line Projected	*.80 - .89*
Projected Growth Rate	*.90 - 1.00*

"Although the above ranges are subjectively derived, it will give the analyst a useful backdrop to use in deciding upon one method of projection over another. Regardless of the method employed, whether it be a graphical method or the coefficient of determination method, or a combination of the two, the analyst must realize that common sense and informed judgment must be the determining factor in ultimately deciding upon the most appropriate method to project earnings."

Robert L. Green, CPA, CVA

PARTICIPANT NOTES

APPENDIX X

Duff & Phelps, LLC
Risk Premium Report 2005

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Duff & Phelps, LLC
Risk Premium Report
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Risk Premium Report
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Biography

Mr. Grabowski, ASA, is a Managing Director in the Duff & Phelps valuation practice and formerly with Standard & Poor's Corporate Value Consulting. Mr. King, CFA, is National Technical Director of Valuation Services at Mesirow Financial Consulting. We want to thank Sean Connor for his assistance in assembling the exhibits presented herein and Chad Johnson with editing and quality control.

Exhibits

This report discusses market data presented in several accompanying tables. These tables (along with this report) are available for purchase at www.ibbotson.com. The following is a complete list of these tables.

Two sets of tables with data updated through December 31, 2004 accompany the discussion in Part I of this report. These are:

Exhibits A-1 through A-8 Equity risk premiums vs. company size (eight measures of size)

Exhibits A-1 and A-2 are included in this excerpt; the entire *Risk Premium Report 2005* is available at www.ibbotson.com

Exhibits B-1 through B-8 Premiums over CAPM vs. company size (eight measures of size)

Exhibits B-1 and B-2 are included in this excerpt; the entire *Risk Premium Report 2005* is available at www.ibbotson.com

Two sets of tables with data updated through December 31, 2004 accompany the discussion in Part II of this report. These are:

Exhibits C-1 through C-8 Relation between size and company risk (eight measures of size)

Exhibits C-1 and C-2 are included in this excerpt; the entire *Risk Premium Report 2005* is available at www.ibbotson.com

Exhibits D-1 through D-3 Equity risk premiums vs. company risk (three measures of risk)

Exhibit D-1 is included in this excerpt; the entire *Risk Premium Report 2005* is available at www.ibbotson.com

Also, we have prepared two sets of tables that summarize the data presented in the above exhibits. These summary tables are not otherwise referenced in this report:

"Premiums over Long-Term Riskless Rate" (3-page summary of exhibits A-1 through A-8 and D-1 through D-3)

"Premiums over CAPM" (2-page summary of exhibits B-1 through B-8)

These Exhibits are available in the *Risk Premium Report 2005* at www.ibbotson.com

Risk Premium Report
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Introduction

We have previously presented historical equity risk premiums for 25 size-ranked portfolios using eight alternate measures of company "size".[1] Part I of this report describes the latest revision of our study (most recently known as the Standard & Poor's Corporate Value Consulting *Risk Premium Report*) that now includes historical data updated through the end of 2004. As with our earlier research, this study made use of the database of the Center for Research in Security Prices ("CRSP") at the Graduate School of Business at the University of Chicago together with Standard & Poor's Compustat database.

Part II of this report presents an update of data that appeared in another article.[2] Part II presents data quantifying the relationship between rates of return, company size, and fundamental measures of company risk.

Part I: Historical Equity Risk Premiums and Company Size

We sort companies by size, breaking the New York Stock Exchange ("NYSE") universe into 25 size-ranked portfolios and adding American Stock Exchange ("AMEX") and National Association of Securities Dealers Automated Quotations ("NASDAQ") listed companies. These portfolios are limited to companies with a track record of profitable performance (we create a separate "high financial risk" portfolio composed of companies that are losing money, have high leverage, or are in bankruptcy). We use eight alternate measures of company "size", including fundamental financial characteristics such as sales and book value. The data shows a clear inverse relationship between size and historical rates of return.

A number of considerations have motivated us to pursue lines of research into historical equity returns using a) alternative measures of company size; b) methods of filtering the data to remove the effects of high financial risk; and c) elimination of companies without a proven record of performance.

What is Size?

Traditionally, researchers have used market value of equity as a measure of "size" in conducting historical rate of return research. For instance, this is the basis of the "small stock" return series published by Ibbotson Associates. But there are various reasons for seeking alternative measures of size.

First, it has been pointed out in the financial literature that researchers may unwittingly introduce a bias when ranking companies by "market value."[3] Market value is not just a function of "size"; it is also a function of the discount rate. Therefore, some companies will not be risky (high discount rate) because they are small, but instead will be "small" (low market value) because they are risky. Choosing a measure of size other than market value will help isolate the effects that are purely due to small size in the historical record.

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1 "New Evidence on Size Effects and Equity Returns", *Business Valuation Review*, September 1996 (covering the period 1963-1994); "Size Effects and Equity Returns: An Update", *Business Valuation Review*, March 1997. Both articles are available at www.appraisers.org, go to "Business Valuation".
2 "New Evidence on Equity Returns and Company Risk", *Business Valuation Review*, September 1999 (revised March 2000). Both articles are available at www.appraisers.org.
3 "A Critique of Size Related Anomalies," Jonathan Berk, *Review of Financial Studies*, vol. 8, no. 2 (1995).

Also, the market value of equity is an imperfect measure of the size of a company's operations. Companies with large sales or operating income may have a small market value of equity if they are highly leveraged.

The use of fundamental accounting measures (such as assets or net income) may have the practical applied benefit of removing the need to make a "guesstimate" of size for comparative purposes. For example, such data might eliminate certain circularities that may arise in applying size-based adjustments to a discount rate for determining the market value of a privately held business.

Description of the Data

This study made use of the database of the Center for Research in Security Prices ("CRSP") at the University of Chicago, together with Standard & Poor's Compustat database. The population of companies considered in our study was taken from the intersection of the CRSP universe and the Compustat universe (that is to say, our study is limited to firms that are covered by both databases). We excluded American Depository Receipts (ADRs) and non-operating holding companies from the data set. We also exclude financial service companies (SIC code = 6). Some of the financial data used in our study are difficult to apply to many companies in the financial sector (e.g. "sales" at a commercial bank), and financial institutions support a much higher ratio of debt to equity than is normal in other industries. Also, companies in the financial services sector were poorly represented during the early years of the Compustat database.

The Compustat database was established in 1963 and in this study we calculated historical returns for the period 1963 through 2004. Compustat data is available for some companies going back into the 1950s, but this earlier data only consists of back histories for companies that were added to Compustat in 1963 or later. We exclude the pre-1963 data in order to avoid the obvious "selection bias" that would otherwise result.

For each year covered in our study, we considered only financial data for the fiscal year ending no later than September of the previous year. For example, in allocating a company to a portfolio to calculate returns for calendar year 1995, we consider financial data through the latest fiscal year ending September 1994 or earlier (depending on when the company's fiscal year ended).

For each year since 1963, we filtered the universe of companies to exclude the following:

- Companies lacking 5 years of publicly traded price history;
- Companies with sales below $1 million in any of the previous five fiscal years;
- Companies with a negative 5-year-average EBITDA (earnings before interest, taxes, depreciation and amortization).

Companies that pass this test have been traded for several years, have been selling at least a minimal quantity of product, and have been able to achieve some degree of positive cash flow from operations. This screening was a response to the argument that the "small cap" universe may consist of a disproportionate number of high-tech companies, start-up companies, and recent Initial Public Offerings, and that these unseasoned companies may be inherently riskier than companies with a track record of viable performance. The number of companies eliminated by these criteria varies from year to year over the sample period.

Once we eliminated the companies described above, we created a separate portfolio for companies with any one of the following characteristics:

- Companies identified by Compustat as in bankruptcy or in liquidation;
- Companies with 5-year-average net income available to common less than zero (either in absolute terms or as a percentage of the book value of common equity);
- Companies with 5-year-average operating income (defined as sales minus (cost of goods sold plus selling, general and administrative expenses plus depreciation)) less than zero (either in absolute terms or as a percentage of net sales);
- Companies with negative book value of equity at any of the previous five fiscal year-ends;
- Companies with debt-to-total capital of more than 80% (with debt measured in book value terms and total capital measured as book value of debt plus market value of equity).

These companies were excluded from our base set and placed in a separate portfolio which we refer to as the "high financial risk" portfolio. We sought in this manner to isolate the effects of high financial risk. Otherwise, the results might be biased for smaller companies to the extent that highly leveraged and financially distressed companies tend to have both high returns and low market values. It is possible to imagine financially distressed (or highly risky) companies that lack any of the above characteristics. It is also easy to imagine companies which have one of these characteristics but which would not be considered financially distressed. Nevertheless, we are confident that the resulting "high financial risk" portfolio is composed largely of companies whose financial condition is significantly inferior to the average public company.

The number of companies classified as "high financial risk" varied over the sample period. These companies represented approximately 25% of the data set in recent years, but less than 5% in 1963. Certain technical changes in methodology have resulted in a greater number of companies falling into the "high financial risk" portfolio than in versions of this study published prior to 2000.

The exclusion of companies based on historical financial performance does not imply any unusual foresight on the part of hypothetical investors in these portfolios. In forming portfolios to calculate returns for a given year, we exclude companies on the basis of performance during previous years (e.g., average net income for the five prior fiscal years), rather than current or future years. For instance, to form portfolios for 1963, we take into account the average net income for the five fiscal years preceding September 1962. We repeat this procedure for each year from 1963 through the latest available year.

Altogether, we have either excluded or segregated certain types of companies on the basis of past financial performance or trading history. We adopted this approach in response to arguments that the inclusion of such companies might introduce a bias in favor of the size effect to the extent that such companies tend to have low market values. A critic unfamiliar with this history might question whether we are introducing a bias by excluding such companies. We have run alternate analyses in which no company is excluded or segregated on the basis of past history (that is, using all available non-financial companies) and the results are similar to those reported herein.

Ranking Companies by Size

For the companies remaining in our base set, we formed portfolios of securities based upon relative size. Results for eight alternate measures of "size" are reported in the accompanying exhibits.

For each year, we formed portfolios by sorting all of the companies in the base set that traded on the NYSE. The size cutoffs (or "breakpoints") were chosen so as to divide the NYSE companies evenly into 25 groups. Once the breakpoints were chosen companies from the AMEX (available after 1962) and companies quoted on the

NASDAQ National Market System (available after 1972) were added to these portfolios. Since NASDAQ and AMEX companies are generally small relative to NYSE companies, their addition to the data set produces portfolios that are more heavily populated at the "small cap" end of the spectrum.[4]

The portfolios were rebalanced annually: that is, the companies were re-ranked and sorted at the beginning of each year. Portfolio rates of return were calculated using an equal-weighted average of the companies in the portfolio.

Correcting for "Delisting Bias"

An article by Tyler Shumway provided evidence that the CRSP database omits delisting returns for a large number of companies.[5] These returns are missing for the month in which a company is delisted from an exchange. Shumway collected data for a large number of companies that had been delisted for performance reasons (such as bankruptcy or insufficient capital). He found that investors incurred an average loss of about 30% after delisting. He further showed that delisting for non-performance reasons (such as mergers or changes of exchange) tended to have a neutral impact in the month that the delisting occurred.

We have incorporated the Shumway evidence into our rate of return calculations. In calculating rates of return, we have imputed a 30% loss in the month of delisting in all cases in which CRSP identified the reason for delisting as performance related, and also in all cases in which the reason for delisting was unknown.[6]

Measurement of the Historical Equity Risk Premium

The accompanying exhibits report average historical equity risk premiums for the period 1963 (the year that the Compustat database was inaugurated) through 2004. A longer-run average historical equity risk premium is often used as an indicator of the expected equity risk premium of a typical investor. Our measure of returns is based on dividend income and capital appreciation and represents returns after corporate taxes.

To estimate historical equity risk premiums, we first calculated an average rate of return for each portfolio over our sample period. Then, we subtracted the average income return earned on long-term Treasury bonds over the same period (using Ibbotson Associates' Stocks, Bonds, Bills and Inflation, or "SBBI," data) to arrive at an average historical equity risk premium.

[4] Some readers may wonder why we use NYSE breakpoints rather than ranking the entire NYSE/AMEX/NASDAQ universe. The consistent use of NYSE breakpoints avoids an apples-to-oranges mixing of pre-1972 (pre-NASDAQ) ranking criteria with post-1972 ranking criteria. Otherwise, for example, one would end up lumping "average" NASDAQ companies (in recent years) into the portfolios that contain much larger "average" NYSE companies (in earlier years) when calculating average returns for the mid-sized portfolios over the full sample period. The only logical alternatives are either to adopt our approach or to exclude NASDAQ companies altogether.

[5] "The Delisting Bias in CRSP data", Tyler Shumway, *Journal of Finance*, March 1997.

[6] This approach is consistent with updates that we have published since 1998. More recent evidence suggests that the average "delisting" loss is less than Shumway's original estimate. See "CRSP Delisting Returns", April 2001, white paper prepared by the Center for Research in Security Prices at http://gsbwww.uchicago.edu/research/crsp/news/downloads.

Presentation of the Results

In the accompanying exhibits we present summary data for companies ranked by various measures of size. The exhibits are as follows:

Measures of Equity Size
Exhibit A-1: *Market value of common equity* (common stock price times number of common shares outstanding).

Exhibit A-2: *Book value of common equity* (does not add back the deferred tax balance).

Exhibit A-3: *5-year average net income* (net income before extraordinary items).

Measures of Company Size
Exhibit A-4: *Market value of invested capital* (market value of common equity plus carrying value of preferred stock, long-term debt (including current portion) and notes payable)("MVIC").

Exhibit A-5: *Total Assets* (as reported on the balance sheet).

Exhibit A-6: *5-year average EBITDA* (operating income before depreciation plus non-operating income).

Exhibit A-7: *Sales* (net).

Exhibit A-8: *Number of employees* (number of employees, either at year-end or yearly average, including part-time and seasonal workers and employees of consolidated subsidiaries; excludes contract workers and unconsolidated subsidiaries).

The exhibits include the following statistics:

- Average of the sorting criteria (e.g., average number of employees) for the latest year
- The number of companies in each portfolio in the latest year
- Beta calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year (see Ibbotson Associates' SBBI Valuation Edition 2005 Yearbook pp. 115-121 for a description of the "sum beta" method)
- Standard deviation of annual historical equity returns
- Geometric average historical equity return since 1963
- Arithmetic average historical equity return since 1963
- Arithmetic average historical equity risk premium over long-term Treasuries since 1963
- "Smoothed" average historical equity risk premium: the fitted premium from a regression with the average historical equity risk premium as dependent variable and the logarithm of the average sorting criteria as independent variable. (We present the coefficients and other statistics from this regression analysis in the top right hand corner of the exhibits.)
- Average carry value of preferred stock plus long-term debt (including current portion) plus notes payable ("Debt") as a percent of MVIC since 1963

Each of exhibits A-1 through A-8 shows one line of data for each of the 25 size-ranked portfolios, plus a separate line for the "high financial risk" portfolio. In each case, the "high financial risk" statistics are drawn only from companies for which the ranking criterion (e.g., sales, number of employees, etc.) is available. This gives rise to slight variations among the exhibits for the statistics for this portfolio (not all Compustat data items are available for all companies in all years). Exhibit A-1 presents the most complete set of data for this category of companies.

For comparative purposes, we also report average returns from Ibbotson Associates' SBBI series for Large Companies, Small Companies, and Long-Term Government Bond Income Returns for the period 1963 through the latest year.

Some Observations on the Data

By whatever measure of size we use, the result is a clear inverse relationship between size and historical equity returns. However, when one sorts by a size measure other than market value, the relationship is slightly flattened (compare exhibits A-1 and A-4, which use market value, with the other exhibits). The average historical equity risk premiums for the smallest companies are generally lower when one sorts by criteria other than market value.

The historical average Debt to MVIC ratio is approximately 30% for most size categories, regardless of the sorting criteria. This suggests that differences in leverage do not explain the small company effect in our sample. The leverage in the "high financial risk" portfolio is significantly higher than that of any of the other portfolios.

Premiums over CAPM

In the context of the Capital Asset Pricing Model ("CAPM"), the greater betas of the smaller companies explain some but not all of the higher average returns in these size-ranked portfolios. This can be verified by calculating a "Return in Excess of CAPM" using a methodology similar to that used in Ibbotson Associates' SBBI 2005 Yearbook (pp. 139-140 in the Classic Edition, pp. 134-143 in the Valuation Edition). An example of this calculation will illustrate the method. The following example uses data for Portfolio 19 of companies ranked by Book Value of Equity from exhibit A-2:

A. Portfolio beta = 1.19
B. Average historical market risk premium = 4.90% (historical large stock equity risk premium)
C. Indicated CAPM premium (A X B) =5.83%
D. Arithmetic average long-term Treasury income return = 7.28%
E. Indicated CAPM return (C + D) = 13.11%
F. Arithmetic average historical equity return = 17.01%
G. Return in excess of CAPM (F - E) = 3.9%

This compares to a premium over the overall market of 4.83% (F minus D minus B). In our exhibits we report betas calculated using the "sum beta" method applied to monthly portfolio return data. This method yields higher betas for smaller companies than would be obtained using ordinary least squares.

Exhibits B-1 through B-8 report calculations of premiums over CAPM for each portfolio for each of our eight measures of size. The exhibits report the following statistics:

- Average of the sorting criteria (e.g., average number of employees) for the latest year
- Beta calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year (see Ibbotson Associates' SBBI Valuation Edition 2005 Yearbook, pp. 115-121, for a description of the "sum beta" method)
- Arithmetic average historical equity return since 1963
- Arithmetic average historical equity risk premium over long-term Treasuries since 1963
- Indicated CAPM premium, calculated as the beta of the portfolio multiplied by the average historical market risk premium since 1963 (measured as the difference between Ibbotson Associates' Large Stock total returns and Ibbotson Associates' income returns on long-term Treasury bonds)
- Premium over CAPM, calculated by subtracting the "Indicated CAPM Premium" from the "Arithmetic Equity Risk Premium"
- "Smoothed" Premium over CAPM: the fitted premium from a regression with the historical "Premium over CAPM" as dependent variable and the logarithm of the average sorting criteria as independent variable

Practical Application of the Data

This data can be used as an aid in formulating estimated required rates of return using objective measures of the "size" of a subject company. The historical equity risk premiums reported in exhibits A-1 through A-8 have not been adjusted to remove beta risk and, therefore, they should not be multiplied by a CAPM beta or otherwise included in a CAPM analysis. The data reported in exhibits B-1 through B-8 can be used in the context of a CAPM analysis.

A straightforward method of arriving at a discount rate would be a simple "build-up" approach using the historical equity risk premiums over the long-term riskless rate presented in exhibits A-1 through A-8. These premiums incorporate the "small company" effect. One could match the sales or total assets of the subject company with the portfolios composed of companies of similar size. The smoothed premiums of these portfolios can then be added to the yield on long-term Treasury bonds as of the valuation date to obtain benchmarks for the required rate of return.

The "smoothed" average premium is the most appropriate indicator for most of the portfolio groups. At the largest-size and smallest-size ends of the range, the average historical equity risk premiums tend to jump off of the smoothed line, particularly for the portfolios ranked by size as measured by market value (exhibits A-1 and A-4). For the largest companies (the first portfolio), the observed historical relationship flattens out and the smoothed premium may be an inappropriate indicator. For the smallest companies in our range (portfolio 25), the smoothed average premium is likely the more appropriate indicator.

Sometimes one must estimate the required rate of return for a company that is significantly smaller than the average size of even the smallest of our 25 portfolios. In such cases, it may be appropriate to extrapolate the equity risk premium to smaller sizes using the slope and constant terms from the regression relationships that we use in deriving the "smoothed" premiums. In so doing, one must be careful to remember that the logarithmic relationship is base-10, and that the financial size data is in millions of dollars, such that the log of $10 million is log(10), not log(10,000,000). Also, as a general rule one should be cautious about extrapolating a statistical relationship far beyond the range of the data used in the statistical analysis.

A brief example will illustrate the use of the regression equations in estimating an equity risk premium. Assume a company has book value of $50 million. If we insert this figure into the regression relationship reported in exhibit A-2 ("Companies Ranked by Book Value of Equity"), we obtain the following estimate of the risk premium:

Smoothed Premium = 17.826% - 3.233% log (50) = 17.826% - 3.233% (1.699) = 12.33%

Use of a portfolio's average historical rate of return to calculate a discount rate is based (in part) upon the implicit assumption that the risks of the subject company are quantitatively similar to the risks of the average company in the subject portfolio. If the risks of the subject company differ materially from the average company in the subject portfolio, then an appropriate discount rate may be lower (or higher) than a return derived from the average equity risk premium for a given portfolio. Material differences between the expected returns for a subject company and a given portfolio of stocks may arise due to differences in leverage (the average Debt/MVIC of the portfolios are displayed in exhibits A-1 through A-8 and exhibits C-1 through C-8), operating risks (the average unlevered portfolio sum beta for the portfolios are displayed in exhibits C-1 through C-8) or other fundamental risk factors.

The premium over CAPM data presented in exhibits B-1 through B-8 can be used to make size adjustments to a discount rate derived using the CAPM. When used in this manner, the premium over CAPM would be added to the CAPM calculation. That is, the premium should not be multiplied by beta, but instead should be added to the sum of the riskless rate and the product of beta times the aggregate market risk premium. This is similar to the methodology recommended in Ibbotson Associates' *SBBI Valuation Edition 2005 Yearbook*, p. 58.

The equity risk premiums reported here are historical averages since 1963. We report the average historical equity risk premium over the same period for Ibbotson Associates' Large Company stocks (essentially the S&P 500). This average was 4.90% over the period 1963-2004. If one's estimate of the equity risk premium for the S&P 500 on a forward-looking basis were materially different from the average historical equity risk premium since 1963, it may be reasonable to assume that the other historical portfolio returns reported here would differ on a forward-looking basis by approximately a similar differential.[7] For example, assume that your current estimate of the expected equity risk premium for Large Company stocks were 6.14%.8 The difference between the average historical risk premium since 1963 of 4.90% for Large Company stocks and the 6.14% forward-looking risk premium for Large Company stocks can be added to the average equity risk premium for the portfolio (observed or "smoothed") that matches to the size of the subject company to arrive at an adjusted forward-looking risk premium for the subject company. This forward-looking risk premium can then be added to the riskless rate as of the valuation date to estimate an appropriate rate of return for the subject company. This reasoning does not apply to the premiums over CAPM since these are based on relative performance over the reported period.

Estimating Required Rates of Returns: An Example

In this section we will show how the data reported here can be used to estimate the required return on equity or discount rate for a hypothetical company. Assume the subject company has the following characteristics:

Market Value of Equity	$120 million
Book Value of Equity	$100 million
5-year Average Net Income	$10 million
Market Value of Invested Capital	$180 million

[7] This average historical equity risk premium is consistent with the estimated equity risk premium on a forward-looking basis at the beginning of 2005. See: "Equity Risk Premium – What Valuation Consultants Need to Know About Recent Research-2005 Update", Roger J. Grabowski and David W. King, *Valuation Strategies*, September/October 2005. For a more complete discussion of the differences between historical realized risk premiums and forward-looking estimates see:"Equity Risk Premium", chapter one in *The Handbook of Business Valuation and Intellectual Property Analysis*, McGraw-Hill (2004).
[8] Supply side equity risk premium (arithmetic average) 1926-2004, Table 5-6, Ibbotson Associates' *SBBI Valuation Edition 2005 Yearbook*, p 96.

Total Assets	$300 million
5-year Average EBITDA	$30 million
Sales	$250 million
Number of Employees	200

If we are using a "build-up" method, we want to determine a premium over the riskless rate. The simplest approach is to turn to exhibits A-1 through A-8, and, for each of the eight size characteristics, locate the portfolio whose size is most similar to the subject company. For each guideline portfolio, the column labeled "Smoothed Average Equity Risk Premium" gives an indicated historical risk premium over the riskless rate. Example 1 shows the premiums indicated for our hypothetical company.

Example 1

Equity Risk Premiums over Riskless Rate: Using Guideline Portfolios

	Company Size	Relevant Exhibit	Guideline Portfolio	Premium over Riskless
Market Value of Equity	$120 mil.	A-1	24	12.3%
Book Value of Equity	$100 mil.	A-2	24	11.3%
5-year Average Net Income	$10 mil.	A-3*	23	11.4%
Market Value of Invested Capital	$180 mil.	A-4*	24	12.0%
Total Assets	$300 mil.	A-5*	23	11.2%
5-year Average EBITDA	$30 mil.	A-6*	24	11.8%
Sales	$250 mil.	A-7*	23	11.1%
Number of Employees	200	A-8*	25	12.6%
Mean premium over riskless rate				11.7%
Median premium over riskless rate				11.6%

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These premiums can be added to the riskless rate to derive an indicated required return on equity. In deriving the average historical equity risk premiums reported in exhibits A-1 through A-8, we have used Ibbotson Associates' income return on long-term Treasury bonds as our measure of the historical riskless rate. Therefore, a 20-year Treasury bond yield is the most appropriate measure of the riskless rate for use with our reported premiums.

With a riskless rate as of the valuation date of 5.5% (say), the above premiums would indicate a required rate of return on equity ranging from 16.6% to 18.1%, with an average of 17.2%.

As an alternative, one can estimate premiums using the regression equations that underlie the smoothed premium calculations. These equations are reported on exhibits A-1 through A-8. To estimate a premium, we multiply the logarithm of "size" by the slope coefficient, and add the constant term, as described above. In practice this approach generally produces results that are very similar to those of the guideline portfolio approach presented above (unless one is extrapolating to a company that is much smaller than the average size for the 25th portfolio). Example 2 illustrates this approach for our hypothetical company.

Example 2

Equity Risk Premiums over Riskless Rate: Using Regression Equations

	Company Size	Relevant Exhibit	Constant term	Slope term	log(Size)	Premium over Riskless
Market Value of Equity	$120 mil.	A-1	19.828%	-3.566%	2.079	12.4%
Book Value of Equity	$100 mil.	A-2	17.826%	-3.233%	2.000	11.4%
5-year Average Net Income	$10 mil.	A-3	*	*	1.000	11.5%
Market Value of Invested Capital	$180 mil.	A-4	*	*	2.255	12.1%
Total Assets	$300 mil.	A-5	*	*	2.477	11.2%
5-year Average EBITDA	$30 mil.	A-6	*	*	1.477	11.7%
Sales	$250 mil.	A-7	*	*	2.398	11.2%
Number of Employees	200	A-8	*	*	2.301	12.6%
Mean premium over riskless rate						11.8%
Median premium over riskless rate						11.6%

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One can adjust the observed premiums over the riskless rate for differences in financial leverage between the average companies comprising the portfolio and the subject company. The company in the example has a Debt/MVIC = $60 /$180 = 33% which is slightly more leverage than the average of the companies comprising portfolio 24 of Exhibits A-1 (29.13%) and A-4 (27.95%).[9]

But assume that the subject company had no debt in its capital structure. For example, we "unlever" the average levered risk premium in Exhibit A-1, portfolio 24, as follows:

Unlevered realized risk premium = Levered realized risk premium / [1 + D/E (1-t)]

where the average Debt to Equity ("D/E") ratio of the portfolio is based on the average Debt to MVIC for the portfolio since 1963 and the income tax rate, t, is the estimated federal plus effective state income tax rate for the companies comprising the portfolio companies. The income tax rate, t, we use is based on the average marginal federal corporate income tax rate for the tax bracket with the largest taxable income each year since 1963 plus an estimated weighted average state income tax rate.

We report unlevered average realized risk premiums for each of the eight size measures in exhibits C-1 through C-8. The unlevered average realized risk premium for portfolio 24 equals 10.2%. This compares to the average levered realized risk premium of 12.5% (not smoothed) reported in exhibit A-1.

These unlevered realized risk premiums represent the rates of return on a debt-free basis; the unlevered realized risk premiums can be used for estimating required rates of return for companies with no debt.

The unlevered realized risk premium can also be used as the first step in a relevering calculation where the subject company's debt level differs from the average debt level of the portfolio companies. To relever the realized risk premium, one can use the following formula:

[9] Debt equals MVIC ($180 million) minus Market Value of Equity ($120 million).

Levered realized risk premium = Unlevered realized risk premium x [1 + D/E (1-t)]

where the Debt to Equity ratio for the subject company is measured in terms of the carrying amount of Debt and the market value of equity for the subject company and the income tax rate, t, equals the marginal income tax rate for the subject company.[10]

An alternative to the "build up" approach is the CAPM. Appraisers commonly adjust the indicated required return by adding a size premium. With this adjustment, the formula for required return becomes:

Required Return = Riskless Rate + (Beta x Market Risk Premium) + Size Premium

The size premium can be measured using the "Premiums over CAPM" presented in exhibits B-1 through B-8. To estimate this size premium, we can turn to the exhibits and follow a procedure similar to what we used above when we determined premiums over the riskless rate. Again, the simplest approach is to find the "Smoothed Premium over CAPM" of the guideline portfolios in a manner similar to example 1. Example 3 illustrates this approach for our hypothetical company.

Example 3

Premiums over CAPM: Using Guideline Portfolios

	Company Size	Relevant Exhibit	Guideline Portfolio	Premium over CAPM
Market Value of Equity	$120 mil.	B-1	24	6.0%
Book Value of Equity	$100 mil.	B-2	24	5.0%
5-year Average Net Income	$10 mil.	B-3*	23	5.2%
Market Value of Invested Capital	$180 mil.	B-4*	24	5.6%
Total Assets	$300 mil.	B-5*	23	5.0%
5-year Average EBITDA	$30 mil.	B-6*	24	5.5%
Sales	$250 mil.	B-7*	23	5.1%
Number of Employees	200	B-8*	25	6.4%
Mean premium over CAPM				5.5%
Median premium over CAPM				5.4%

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If the indicated CAPM estimate before the size adjustment (Riskless Rate + Beta x Market Risk Premium) is 11.0% (say), then the above size premiums indicate a required rate of return on equity ranging from 16.0% to 17.4%, with an average of 16.5%.

As an alternative, we can use the regression equation reported in exhibits B-1 through B-8 to estimate premiums over CAPM. Again, this is similar to the method presented in example 2 for determining premiums over the riskless rate. Example 4 illustrates the results for our hypothetical company.

[10] See Ibbotson Associates' *SBBI Valuation Edition 2005 Yearbook*, pp 123 – 124. The unlevering and relevering of the realized risk premium may result in a different result than if one unlevers and relevers guideline company betas and adds the size premiums from exhibits B-1 through B-8, "Premium over CAPM".

Example 4

Premiums over CAPM: Using Regression Equations						
	Company Size	Relevant Exhibit	Constant term	Slope term	log(Size)	Premium over CAPM
Market Value of Equity	$120 mil.	B-1	11.921%	-2.799%	2.079	6.1%
Book Value of Equity	$100 mil.	B-2	9.371%	-2.152%	2.000	5.1%
5-year Average Net Income	$10 mil.	B-3	*	*	1.000	5.3%
Market Value of Invested Capital	$180 mil.	B-4	*	*	2.255	5.7%
Total Assets	$300 mil.	B-5	*	*	2.477	5.0%
5-year Average EBITDA	$30 mil.	B-6	*	*	1.477	5.4%
Sales	$250 mil.	B-7	*	*	2.398	5.1%
Number of Employees	200	B-8	*	*	2.301	6.4%
Mean premium over CAPM						5.5%
Median premium over CAPM						5.4%

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One can unlever the portfolio betas. For example, we "unlever" the portfolio beta in Exhibit A-1, portfolio 24, as follows:

Unlevered portfolio beta = Levered portfolio beta / [1 + D/E (1-t)]

where the average Debt to Equity ("D/E") ratio of the portfolio is based on the average Debt to MVIC for the portfolio since 1963 and the income tax rate, t, is the estimated federal plus effective state income tax rate for the companies comprising the portfolio companies. The income tax rate, t, we use is based on the average marginal federal corporate income tax rate for the tax bracket with the largest taxable income each year since 1963 plus an estimated weighted average state income tax rate.

We report unlevered portfolio betas for each of the eight size measures in exhibits C-1 through C-8. The unlevered portfolio beta for portfolio 24 equals 1.04. This compares to the levered portfolio beta of 1.27 reported in exhibit A-1.

Unlevered betas are often called "asset betas" in the literature as they represent the risk of the operations of the business with the risk of financial leverage removed.

One can relever the beta based on the Debt of the subject company. To relever the beta, one can use the following formula:

Levered beta = Unlevered beta x [1 + D/E (1-t)]

where the Debt to Equity ratio for the subject company is measured in terms of the carrying amount of Debt and the Market Value of Equity for the subject company and the income tax rate, t, equals the marginal income tax rate for the subject company.

The unlevering formulae discussed above and used in exhibits C-1 through C-8 for unlevering the average realized risk premiums and portfolio betas for portfolios 1 through 25 and the relevering formulae discussed above assume that the business risk is fully borne by the equity capital; that is the variability of operating cash flows have a negligible effect on the risk of the debt capital. As a first approximation, this assumption appears reasonable for most of the companies comprising portfolios 1 through 25.

Application of the unlevering formulae to the high financial risk portfolio may be problematic for various reasons: the book value of debt may be a bad proxy for the market value of debt for many of these companies; debtholders have a greater share of the operating risk of the company for highly levered companies; and the ability to utilize tax shields for interest expense may be impaired for companies that are losing money.

Changes from Previously Published Versions of this Study

Readers may be interested in the difference between the data presented herein and analogous data published in articles that appeared in 1996 and 1997 (cited above), a 1995 article ("The Size Effect and Equity Returns" *Business Valuation Review*, June 1995), as well as annual updates published on the Ibbotson website since 1998 (most recently known as the Standard & Poor's Corporate Value Consulting *Risk Premium Report*):

- The 1995 article reported 30-year historical averages. We currently report averages since 1963.
- The 1995 article looked only at the market value of equity as a measure of size. We currently look at eight alternate measures of size.
- The current report includes Total Assets as one of the measures of size. This replaces a Book Value of Invested Capital measure that appeared in the 1996 and 1997 articles.
- The current report excludes newly listed companies, places many companies into a separate "high financial risk" portfolio, includes AMEX and NASDAQ companies, and includes only companies covered by Compustat. The 1995 article used all operating NYSE companies found in the CRSP database.
- The 1995 article used market-weighted averaging to calculate the portfolio rates of return. The current report uses equal-weighted averaging.
- The 1995 article used natural logarithms, while the current report uses base-10 logarithms. This makes no difference in the calculation of the "smoothed" premiums, but we have found that base-10 logs are easier to explain than natural logs.
- The 1995 and 1996 articles included financial companies. The current report excludes financial companies.
- The current report corrects for possible "delisting bias" in the CRSP database. The 1995, 1996, and 1997 articles did not make this adjustment.
- The current report includes tables showing "Premiums over CAPM". Versions of this study before 2000 did not include these tables.
- Certain revisions in methodology (made for technical reasons) expanded the number of companies in the "high financial risk portfolio" relative to versions published before 2000.
- The current report changes the method of using financial data such that no data is considered for fiscal years ending less than three months before the formation of portfolios. Versions of this study prior to 2001 allowed use of financial data through the previous month end.
- The current report uses the "sum beta" method applied to monthly returns to estimate portfolio betas. Versions before 2003 estimated betas using ordinary least squares with annual data.
- The current report includes unlevered average risk premiums and sum betas for each portfolio. Prior versions did not include this data.
- The current report incorporates various corrections and other changes that have affected the CRSP and Compustat databases since the data in the earlier articles was generated.

Part II: Historical Equity Risk Premiums and Company Risk

Background

We previously published the results of research correlating historical equity returns (and historical equity risk premiums) directly with measures of company risk derived from accounting information.[11] These may also be called "fundamental" measures of company risk to distinguish these risk measures from a stock market-based measure of equity risk such as beta. Part II of this report presents an update of this research. This study made use of the database of the Center for Research in Security Prices ("CRSP") at the Graduate School of Business at the University of Chicago together with Standard & Poor's Compustat database.

A variety of academic studies have examined the relationship between financial statement data and various aspects of business risk.[12] Research has shown that measures of earnings volatility can be useful in explaining credit ratings, predicting bankruptcy, and explaining the CAPM beta.

Part II of this report examines three separate measures of risk:

- Operating margin (the lower the operating margin, the greater the risk);
- Coefficient of variation in operating margin (the greater the coefficient of variation, the greater the risk);
- Coefficient of variation in return on equity (the greater the coefficient of variation, the greater the risk).

Coefficient of variation is the standard deviation divided by the mean. It measures volatility relative to the average value of the variable under consideration. This normalizes for differences in the magnitude of the subject variables.

In Part II we present two varieties of data. First, we display the relationship between measures of company size and the above-mentioned measures of company risk. We do so by presenting average risk measures for each of the size-ranked portfolios of companies that were used in exhibits A-1 through A-8 (as described in Part I of this report). Next, we document the relationship between these risk measures and historical rates of return. The results reported herein suggest a positive relationship; that is, the greater the risk as measured by historical accounting information, the greater the rate of return earned by equity investors.

We sort companies by the measure of risk, breaking the NYSE universe into 25 risk-ranked portfolios and adding AMEX and NASDAQ companies. These portfolios are limited to companies with a track record of profitable performance (we create a separate "high financial risk" portfolio composed of companies that are losing money, have high leverage, or are in bankruptcy). We use three alternate measures of company "risk", all based on fundamental financial characteristics. The data shows a clear relationship between risk and historical rates of return.

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[11] "New Evidence on Equity Returns and Company Risk", *Business Valuation Review*, September 1999 (revised March 2000). These articles are available at www.appraisers.org.

[12] A survey of the academic research can be found in *The Analysis and Use of Financial Statements*, 3rd edition, White et al., Wiley (2003), chapter 18.

Size and Risk

Traditionally, appraisers have used company "size" as a factor in determining discount rates for smaller companies. Small companies are believed to have higher required rates of return than large companies because small companies inherently are more risky. The historical data (as published by Ibbotson Associates and our previous articles and reports) verifies that small companies have, in fact, earned higher rates of return over long-run periods. Does the evidence support the claim that smaller companies inherently have greater risk? Our previous articles and reports have demonstrated that small companies exhibit greater risk as measured by two stock market-based indicators: beta and price volatility. The present study goes further by demonstrating that as company size decreases measures of risk calculated from financial statement data increase.[13]

It has been pointed out in the financial literature that researchers may be mixing a "size" effect with a "risk" effect when measuring company size by "market value".[14] Market value is not just a function of "size"; it is also a function of the discount rate. Therefore, some companies will not be risky (high discount rate) because they are small, but instead will be "small" (low market value) because they are risky. This motivated us to consider alternative measures of "size" in our previous articles and reports, where we looked at measures unrelated to market values such as Total Assets and Number of Employees. Part II of this report goes further in documenting indicators of risk in portfolios of stocks of small companies. It also goes beyond size and investigates the relation between equity returns and fundamental risk measures.

Is "size" correlated with financial risk measures?

Exhibits C-1 through C-8 display fundamental risk measures for portfolios formed by ranking public companies by "size". These exhibits report statistics for the same size-ranked portfolios as we described in Part I of this report.

Exhibit C-1 displays 25 portfolios with size measured by Market Value of Equity. The exhibit shows, for each portfolio, the average historical equity risk premium since 1963 (this repeats information reported in exhibit A-1). Also shown are five measures of risk corresponding to each portfolio:

- Beta (calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year);
- Unlevered sum beta;
- Average operating margin (since 1963);
- Average coefficient of variation of operating margin (since 1963); and
- Average coefficient of variation of return on book equity (since 1963).

We see that beta of the portfolios decrease (as expected) as market value of equity increases.[15] We see that average operating margin increases as market value of equity increases. We see that average coefficient of variation of operating margin and average coefficient of variation of return on book equity decrease as market

[13] A similar point was made by Barry Goodman in a presentation at the October 1997 ASA Advanced Business Valuation Conference in San Francisco.
[14] "A Critique of Size Related Anomalies," Jonathan Berk, *Review of Financial Studies*, vol. 8, no. 2 (1995)
[15] In our work on "size" as reported in Part I of this report, we have determined that, in the context of the CAPM, the higher betas of the small companies explain some but not all of the higher average historical equity returns in these portfolios.

value of equity increases. Also, we see that the three fundamental measures of risk display increasing risk as size decreases and the historical equity risk premium increases.[16]

Exhibits C-2 through C-6 display similar results for five other measures of size:

- Exhibit C-2: Size as measured by Book Value of Equity;
- Exhibit C-3*: Size as measured by Net Income;
- Exhibit C-4*: Size as measured by Market Value of Invested Capital;
- Exhibit C-5*: Size as measured by Total Assets;
- Exhibit C-6*: Size as measured by EBITDA.

Exhibit C-7* indicates that there is little differentiation in operating margin as size as measured by sales changes. The coefficient of variation of operating margin and return on book equity both indicate increasing risk as size decreases, as in the other exhibits.

Exhibit C-8* indicates that there is little differentiation in operating margin as size as measured by number of employees changes. The coefficient of variation of operating margin and return on book equity both indicate increasing risk as size decreases, as in the other exhibits.

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Why not just use measures of "size" as the measure of risk?

First, certain measures of size (such as market value of equity) may be imperfect measures of the risk of a company's *operations*. For example, a company with a large and stable operating margin may have a small and unstable market value of equity if it is highly leveraged. In this case the risk of the underlying operations is low while the risk to equity is high.

Second, while small size may indicate greater risk, some small companies have been able to maintain near economic monopolies by holding a geographic or market niche such that their riskiness is less than indicated by size. Alternatively, while larger "size" (as measured by sales, for example) may indicate less risk, some companies may be more risky than the average of companies with similar sales. For example, assume the subject company were expecting to emerge from reorganization following bankruptcy. The risk premium appropriate for this company may be more accurately imputed from the pro-forma operating profit (after removing non-recurring expenses incurred during the bankruptcy) than from its size as measured by sales. Use of fundamental accounting measures of risk allows one to directly assess the riskiness of the subject company.

Description of the Data

In the empirical work presented in Part II, we use the same underlying data set as was used in forming the size-based portfolios that we describe in Part I. The reader can refer to Part I for a description of our methodology for excluding certain classes of companies based on corporate status, industry, trading history, and financial performance. Also, Part I includes a description of the criteria used in separating certain companies into a "high financial risk" portfolio based on indicators of poor earnings, bankruptcy, or high leverage. As in Part I, this study

[16] Were one to calculate the respective correlations, those statistics would relate average portfolio statistics (e.g. average size vs. average risk) rather than correlation statistics across individual companies. At the individual company level, the correlations are much lower.

made use of the database of the Center for Research in Security Prices ("CRSP") at the University of Chicago, together with Standard & Poor's Compustat database.

As described in Part I, our data set excludes or segregates certain companies based on past financial performance or trading history. We have run alternate analyses in which no company is excluded or segregated on the basis of past history (that is, using all available non-financial companies), and the results are similar to those reported here.

Ranking Companies by Risk

For the companies remaining in our base set, we formed portfolios of securities based upon relative risk. Results for the three alternate measures of "risk" are reported in the accompanying exhibits.

For each year, we formed portfolios by sorting all of the companies in the base set that traded on the NYSE. The risk cutoffs (or "breakpoints") were chosen so as to divide the NYSE companies evenly into 25 groups. Once the breakpoints were chosen, companies from the AMEX (available after 1962) and companies quoted on the NASDAQ National Market System (available after 1972) were added to these portfolios.

The portfolios were rebalanced annually: that is, the companies were re-ranked and sorted at the beginning of each year. Portfolio rates of return were calculated using an equal-weighted average return of the companies in the portfolio. As described in Part I, our calculation of rates of return includes a correction for the "delisting bias" in the CRSP database.

Measurement of the Historical Equity Risk Premium

The accompanying exhibits report average statistics for the period 1963 (the year that the Compustat database was inaugurated) through 2004. A long-run average historical equity risk premium is often used as an indicator of the expected return of a typical investor. Our measure of returns is based on dividend income and capital appreciation, and so represents returns after corporate taxes.

To estimate historical equity risk premiums, we first calculated an average rate of return for each portfolio over our sample period. Then, we subtracted the average income return earned on long-term Treasury bonds over the same period (using Ibbotson Associates' SBBI data) to arrive at an average historical equity premium.

Presentation of the Results

In the accompanying exhibits we present summary data for companies ranked by various measures of risk. The exhibits are as follows:

Exhibit D-1: Companies ranked by Operating Margin (operating income divided by sales; operating income is defined as sales minus (cost of goods sold plus selling, general, and administrative expenses plus depreciation)). This is calculated as the mean operating income for the five prior years divided by the mean sales for the five prior years. (Note that this composite ratio is usually very close to a simple average of the annual ratios of operating income to sales, except in extreme cases generally involving companies with high growth rates.) Companies were re-ranked annually: for example, for the year 2001 we sorted companies into portfolios according to their mean operating margins for years 1996-2000, and then calculated the market return for 2001. (More precisely, in this example the statistics would be calculated for the most recent five fiscal years ending on or before September 2000.)

Exhibit D-2*: Companies ranked by Coefficient of Variation of Operating Margin. This is calculated as the standard deviation of operating margin over the prior five years divided by the mean operating margin for the same years, where operating margin is operating income as defined above divided by sales. Note that for calculating this coefficient, average operating margin is a simple average of the annual ratios of operating income to sales, rather than the composite ratio used in exhibit D-1. Companies were re-ranked annually: for example, for the year 2001 we sorted companies into portfolios according to their coefficient of variation for the years 1996-2000, and then calculated the market return for 2001. (More precisely, in this example the statistics would be calculated for the most recent five fiscal years ending on or before September 2000.)

Exhibit D-3*: Companies ranked by Coefficient of Variation of Return on Book Value of Equity. This is calculated as the standard deviation of return on book equity for the prior five years divided by the mean return on book equity for the same years (where return on book equity is net income before extraordinary items minus preferred dividends divided by book value of common equity). Companies were re-ranked annually: for example, for the year 2001 we sorted companies into portfolios according to their coefficient of variation for the years 1996-2000, and then calculated the market return for 2001. (More precisely, in this example the statistics would be calculated for the most recent five fiscal years ending on or before September 2000.)

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These exhibits include the following statistics:

- The median of the sorting criteria for the latest year (e.g., the median average operating margin for the latest five years before 2003). Note: The reported average risk statistics in exhibits D-1, D-2, and D-3 are not the same numbers as reported in exhibits C-1 through C-8. In exhibits C-1 through C-8, the reported statistics are calculated for portfolios of companies grouped according to size and are averages since 1963. In exhibits D-1, D-2, and D-3, the reported statistics are calculated for portfolios grouped according to risk, independent of the "size" of the companies, and are not averages since 1963.
- Log (base-10) of the median of the sorting criteria
- The number of companies in each portfolio in 2003
- Beta relative to the S&P 500 calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year (see Ibbotson Associates' SBBI Valuation Edition 2005 Yearbook, pp. 115-121 for a description of the "sum beta" method)
- Standard deviation of historical annual equity returns
- Geometric average historical equity return since 1963
- Arithmetic average historical return since 1963
- Arithmetic average historical equity premium over long-term Treasuries since 1963
- "Smoothed" average historical equity risk premium: the fitted premium from a regression with the historical equity risk premium as dependent variable and the logarithm of the average sorting criteria as independent variable
- Average Debt as a percent of the MVIC since 1963

Each exhibit shows one line of data for each of the 25 risk-ranked portfolios, plus a separate line for the "high financial risk" portfolio. In each case, the "high financial risk" statistics are drawn only from companies for which the ranking criterion (e.g., five-year average operating margin, etc.) is available. This gives rise to slight variations among the exhibits for the "high financial risk" statistics, because not all Compustat data items are available for all companies in all years.

For comparative purposes, we also report average returns from Ibbotson Associates' SBBI series for Large Companies, Small Companies, and Long-Term Government Bond Income Returns for the period 1963 through 2004.

By each measure of risk that we use, the result is a clear relationship between risk and historical equity returns. The portfolios of companies with higher risk have yielded higher rates of return.

The historical average Debt/MVIC ratio does not appear to be strongly correlated with either the level or the volatility of the operating margin (exhibits D-1 and D-2). This suggests that leverage does not explain the greater returns of the riskier portfolios. As expected, the leverage in the "high financial risk" portfolio is significantly greater than that of any of the other portfolios. The Debt/MVIC ratio may have moderate correlation with the volatility of return on book equity (exhibit D-3). Higher leverage may accordingly explain some of the higher returns exhibited by the riskier portfolios (by this measure of risk).

In our sample, the companies that are riskier according to accounting information (operating margins and coefficients of variation) have also exhibited greater risk according to stock market-based risk statistics (betas and standard deviations of annual returns).

Practical Application of the Data

The data presented here can be used as an aid in formulating estimated required rates of return using objective measures of the "risk" of a subject company.

A straightforward method of arriving at a benchmark discount rate would be a simple "build-up" approach, using the data to estimate a total equity risk premium. One could match, say, the operating margin of the subject company with the portfolio composed of stocks with a similar average operating margin. The smoothed premium for this portfolio can then be added to the yield on long-term Treasury bonds as of the valuation date, resulting in a benchmark required rate of return. The "smoothed" average premium is a more appropriate indicator than the actual historical observation for most of the portfolio groups. Examples 6 and 7 illustrate the application of this method for a hypothetical company.

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Example 5

Coefficient of Variation of Operating Margin:
(Standard Deviation of Operating Margin)/(Average Operating Margin)

		2004	2003	2002	2001	2000
Net Sales		$900	$800	$850	$750	$900
Operating Income		$150	$120	$130	$ 80	$140
Operating Margin		16.7%	15.0%	15.3%	10.7%	15.6%
Standard Deviation of Op. Margin	2.3%					
Average Operating Margin	14.6%					
Coefficient of Variation	15.8%					

Coefficient of Variation of Return on Book Value of Equity:
(Standard Deviation of ROE)/(Average of ROE)

		2004	2003	2002	2001	2000
Book Value		$820	$710	$630	$540	$500
Net Income b4 extraordinary items		$110	$ 80	$ 90	$ 40	$100
Return on Book Equity (ROE)		13.4%	11.3%	14.3%	7.4%	20.0%
Standard Deviation of ROE	4.6%					
Average ROE	13.3%					
Coefficient of Variation	34.7%					

Example 5 shows, for a hypothetical company, the calculation of the mean (average) and standard deviation over the last five fiscal years of operating margin and return on book value of equity ("ROE"). The ratio of the standard deviation to the mean is the coefficient of variation. These risk metrics can be used in conjunction with exhibits D-1 through D-3 to estimate a premium over the riskless rate. Example 6 illustrates the procedure.[17]

[17] For simplicity, in example 6 we use the average of the operating margins over five years (14.6%), rather than a composite ratio of average operating income divided by average sales (the actual ranking criteria in exhibit D-1). Readers may verify that the composite ratio is similar (14.8%), indicating an identical guideline equity risk premium over the riskless rate.

Example 6

Equity Risk Premiums over Riskless Rate: Using Guideline Portfolios				
	Company Indicator	Relevant Exhibit	Guideline Portfolio	Premium over Riskless
Operating Margin	14.7%	D-1	8	8.8%
CV(Operating Margin)	15.7%	D-2*	16	9.3%
CV(ROE)	34.7%	D-3*	15	8.8%
Mean premium over riskless rate				9.0%
Median premium over riskless rate				8.8%

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The indicated equity risk premium can be added to the riskless rate to get an estimate of the required rate of return on equity. Assuming a riskless rate of 5.5% (say) and in isolation from other considerations, the results suggest a required return on equity in a range of 14.3% to 14.8%, with an average of 14.5%.

Practical application of this data should not be conducted in isolation from other considerations about the subject company, its industry, or the general economic environment. For instance, a wholesale distributor might have thin operating margins compared to the average company on the NYSE, yet those margins might exhibit unusually low variation due to a particularly strong position in a stable market niche. Alternatively, a company's variation of operating income (calculated in the manner used in our study) might be uncharacteristically high due to an unusual event several years in the past. Appropriate knowledge of the company and its industry would give useful guidance in reconciling the historical equity risk premiums reported here and the historical equity risk premiums reported in Part I for portfolios of companies ranked by size. Size can be an important consideration in determining an appropriate discount rate.

The use of a portfolio's average historical rate of return to calculate a discount rate is based (in part) upon the implicit assumption that the risks of the subject company are quantitatively similar to the risks of the average company in the subject portfolio. If the risks of the subject company differ materially from the average company in the subject portfolio, then an appropriate discount rate may be lower (or higher) than a return derived from the average premium for a given portfolio. The data reported in exhibits C-1 through C-8 (where risk statistics are reported for each size category) may be helpful in making such a determination.

Changes from Previously Published Versions of this Study (Part II)

- The current report includes average unlevered risk premiums and sum betas for each portfolio in exhibits C-1 through C-8. Prior versions did not include this data.
- Versions of our study published after 1999 have included the three separate measures of risk described in Part II of this report and presented in exhibits C-1 through C-8 and exhibits D-1 through D-3.
- Various changes in methodology over the last several years have affected the underlying database, and these are summarized at the end of Part I.
- In the current version of exhibits D-1 through D-3, we report medians of the sorting criteria for the most recent year, while versions before 2003 reported the average of the medians for all years since 1963.

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Companies Ranked by Market Value of Equity **Exhibit A-1**

Historical Equity Risk Premium: Average Since 1963
Data for Year Ending December 31, 2004

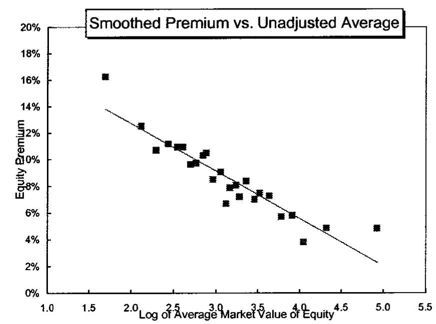
Portfolio Rank by Size	Average Mkt Value ($mils.)	Log of Average Mkt Value	Number as of 2004	Beta (SumBeta) Since '63	Standard Deviation of Returns	Geometric Average Return	Arithmetic Average Return	Arithmetic Equity Risk Premium	*Smoothed Average Equity Risk Premium*	Average Debt/ MVIC
1	84,208	4.93	44	0.91	17.03%	10.78%	12.11%	4.83%	*2.26%*	16.44%
2	20,847	4.32	36	0.92	16.73%	10.88%	12.15%	4.87%	*4.43%*	22.87%
3	11,172	4.05	42	0.98	16.64%	9.83%	11.08%	3.80%	*5.39%*	25.14%
4	8,187	3.91	41	0.97	16.46%	11.88%	13.09%	5.81%	*5.87%*	25.94%
5	6,025	3.78	44	0.97	16.11%	11.84%	13.00%	5.72%	*6.35%*	27.05%
6	4,339	3.64	42	1.03	17.14%	13.25%	14.55%	7.27%	*6.86%*	27.02%
7	3,335	3.52	47	1.03	18.12%	13.35%	14.76%	7.48%	*7.26%*	27.38%
8	2,872	3.46	42	1.08	19.77%	12.56%	14.28%	7.00%	*7.50%*	26.42%
9	2,278	3.36	44	1.08	18.78%	14.13%	15.65%	8.37%	*7.86%*	25.36%
10	1,889	3.28	46	1.10	18.76%	12.92%	14.47%	7.19%	*8.15%*	25.16%
11	1,717	3.23	44	1.09	18.79%	13.77%	15.34%	8.06%	*8.29%*	25.16%
12	1,460	3.16	47	1.11	19.38%	13.55%	15.14%	7.86%	*8.54%*	25.72%
13	1,312	3.12	43	1.09	21.15%	12.00%	13.97%	6.69%	*8.71%*	26.66%
14	1,131	3.05	50	1.14	19.81%	14.63%	16.35%	9.07%	*8.94%*	27.33%
15	915	2.96	56	1.14	20.34%	13.89%	15.78%	8.50%	*9.27%*	26.70%
16	766	2.88	55	1.14	22.13%	15.69%	17.79%	10.51%	*9.54%*	25.99%
17	704	2.85	54	1.21	23.94%	15.23%	17.59%	10.31%	*9.67%*	26.79%
18	582	2.76	63	1.20	22.77%	14.73%	16.99%	9.71%	*9.97%*	27.03%
19	502	2.70	62	1.24	24.53%	14.39%	16.90%	9.62%	*10.20%*	26.54%
20	406	2.61	79	1.26	24.11%	15.71%	18.21%	10.93%	*10.53%*	27.40%
21	354	2.55	65	1.27	23.96%	15.85%	18.22%	10.94%	*10.74%*	27.61%
22	274	2.44	100	1.27	24.82%	15.89%	18.47%	11.19%	*11.14%*	27.89%
23	197	2.29	87	1.24	24.86%	15.35%	17.98%	10.70%	*11.65%*	28.33%
24	132	2.12	148	1.27	25.18%	17.21%	19.79%	12.51%	*12.27%*	29.13%
25	49	1.69	337	1.30	31.67%	19.64%	23.52%	16.24%	*13.79%*	31.27%
High financial risk			665	1.62	38.48%	16.82%	22.15%	14.87%		47.95%
Large Stocks (Ibbotson SBBI data)						10.89%	12.18%	4.90%		
Small Stocks (Ibbotson SBBI data)						15.24%	17.96%	10.68%		
Long-Term Treasury Income (Ibbotson SBBI data)						7.26%	7.28%			

Equity Risk Premium Study: Data through December 31, 2004
Data Smoothing with Regression Analysis
Dependent Variable: Average Premium
Independent Variable: Log of Average Market Value of Equity

Regression Output:

Constant		19.828%
Std Err of Y Est		1.051%
R Squared		86%
No. of Observations		25
Degrees of Freedom		23
X Coefficient(s)	-3.566%	
Std Err of Coef.	0.297%	
t-Statistic	-11.99	

*Smoothed Premium = 19.828% - 3.566% * Log(Market Value)*



 24 *Distributed by* **Ibbotson**Associates

Risk Premium Report
2005

Companies Ranked by Book Value of Equity **Exhibit A-2**

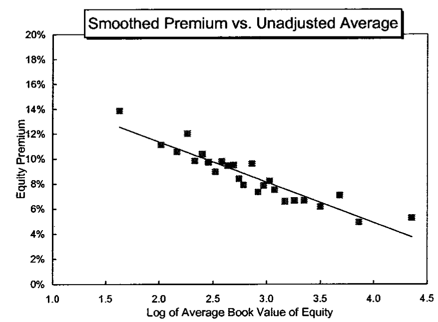
Historical Equity Risk Premium: Average Since 1963
Data for Year Ending December 31, 2004

Portfolio Rank by Size	Average Book Val. ($mils.)	Log of Average Book Val.	Number as of 2004	Beta (SumBeta) Since '63	Standard Deviation of Returns	Geometric Average Return	Arithmetic Average Return	Arithmetic Equity Risk Premium	*Smoothed Average Equity Risk Premium*	Average Debt/ MVIC
1	22,708	4.36	41	0.84	16.38%	11.32%	12.55%	5.27%	*3.74%*	27.45%
2	7,264	3.86	37	0.85	16.65%	10.99%	12.21%	4.93%	*5.34%*	31.94%
3	4,806	3.68	37	0.90	16.60%	13.17%	14.37%	7.09%	*5.92%*	33.60%
4	3,158	3.50	39	0.90	16.81%	12.21%	13.45%	6.17%	*6.51%*	31.58%
5	2,233	3.35	40	0.99	16.98%	12.73%	13.96%	6.68%	*7.00%*	30.26%
6	1,819	3.26	48	1.00	19.01%	12.38%	13.93%	6.65%	*7.29%*	30.71%
7	1,482	3.17	38	0.98	16.70%	12.66%	13.89%	6.61%	*7.57%*	29.36%
8	1,183	3.07	40	1.05	16.69%	13.61%	14.80%	7.52%	*7.89%*	27.61%
9	1,063	3.03	39	1.09	19.62%	13.87%	15.50%	8.22%	*8.04%*	28.19%
10	940	2.97	42	1.02	18.88%	13.61%	15.14%	7.86%	*8.21%*	29.42%
11	830	2.92	43	1.09	19.06%	13.03%	14.61%	7.33%	*8.39%*	28.47%
12	724	2.86	45	1.05	19.31%	15.27%	16.88%	9.60%	*8.58%*	30.37%
13	603	2.78	51	1.12	18.92%	13.60%	15.17%	7.89%	*8.84%*	27.83%
14	546	2.74	50	1.12	20.06%	13.95%	15.68%	8.40%	*8.98%*	27.96%
15	490	2.69	43	1.11	19.95%	15.00%	16.77%	9.49%	*9.13%*	27.93%
16	430	2.63	55	1.17	21.02%	14.75%	16.71%	9.43%	*9.31%*	27.89%
17	380	2.58	66	1.19	22.01%	14.98%	17.08%	9.80%	*9.49%*	26.27%
18	333	2.52	57	1.23	21.43%	14.25%	16.24%	8.96%	*9.67%*	27.86%
19	286	2.46	58	1.19	21.64%	15.07%	17.01%	9.73%	*9.88%*	28.52%
20	251	2.40	72	1.22	22.62%	15.50%	17.65%	10.37%	*10.07%*	26.92%
21	213	2.33	76	1.22	22.43%	14.95%	17.11%	9.83%	*10.30%*	27.89%
22	182	2.26	80	1.24	24.36%	16.77%	19.30%	12.02%	*10.52%*	27.12%
23	146	2.16	95	1.25	24.56%	15.28%	17.85%	10.57%	*10.83%*	27.99%
24	104	2.02	139	1.29	25.59%	15.60%	18.39%	11.11%	*11.30%*	27.55%
25	43	1.63	387	1.33	31.95%	17.25%	21.12%	13.84%	*12.56%*	26.91%
High financial risk			665	1.61	38.06%	17.09%	22.29%	15.01%		48.78%
Large Stocks (Ibbotson SBBI data)						10.89%	12.18%	4.90%		
Small Stocks (Ibbotson SBBI data)						15.24%	17.96%	10.68%		
Long-Term Treasury Income (Ibbotson SBBI data)						7.26%	7.28%			

Equity Risk Premium Study: Data through December 31, 2004
Data Smoothing with Regression Analysis
Dependent Variable: Average Premium
Independent Variable: Log of Average Book Value of Equity

Regression Output:		
Constant		17.826%
Std Err of Y Est		0.787%
R Squared		87%
No. of Observations		25
Degrees of Freedom		23
X Coefficient(s)	-3.233%	
Std Err of Coef.	0.263%	
t-Statistic	-12.28	

*Smoothed Premium = 17.826% - 3.233% * Log(Book Value)*



 25 *Distributed by* **Ibbotson**Associates

Risk Premium Report
2005

Companies Ranked by Market Value of Equity **Premium over CAPM** **Exhibit B-1**

Historical Equity Risk Premium: Average Since 1963
Data for Year Ending December 31, 2004

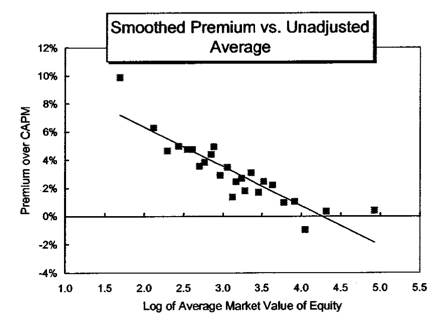
Portfolio Rank by Size	Average Mkt Value ($mils.)	Log of Size	Beta (SumBeta) Since '63	Arithmetic Average Return	Arithmetic Equity Risk Premium	Indicated CAPM Premium	Premium over CAPM	Smoothed Premium over CAPM
1	84,208	4.93	0.91	12.11%	4.83%	4.44%	0.38%	-1.86%
2	20,847	4.32	0.92	12.15%	4.87%	4.53%	0.34%	-0.17%
3	11,172	4.05	0.98	11.08%	3.80%	4.78%	-0.97%	0.59%
4	8,187	3.91	0.97	13.09%	5.81%	4.77%	1.04%	0.97%
5	6,025	3.78	0.97	13.00%	5.72%	4.75%	0.97%	1.34%
6	4,339	3.64	1.03	14.55%	7.27%	5.06%	2.21%	1.74%
7	3,335	3.52	1.03	14.76%	7.48%	5.02%	2.45%	2.06%
8	2,872	3.46	1.08	14.28%	7.00%	5.31%	1.69%	2.24%
9	2,278	3.36	1.08	15.65%	8.37%	5.28%	3.09%	2.52%
10	1,889	3.28	1.10	14.47%	7.19%	5.38%	1.81%	2.75%
11	1,717	3.23	1.09	15.34%	8.06%	5.36%	2.70%	2.87%
12	1,460	3.16	1.11	15.14%	7.86%	5.42%	2.44%	3.06%
13	1,312	3.12	1.09	13.97%	6.69%	5.33%	1.36%	3.19%
14	1,131	3.05	1.14	16.35%	9.07%	5.60%	3.47%	3.38%
15	915	2.96	1.14	15.78%	8.50%	5.59%	2.91%	3.63%
16	766	2.88	1.14	17.79%	10.51%	5.57%	4.94%	3.85%
17	704	2.85	1.21	17.59%	10.31%	5.92%	4.39%	3.95%
18	582	2.76	1.20	16.99%	9.71%	5.88%	3.83%	4.18%
19	502	2.70	1.24	16.90%	9.62%	6.07%	3.56%	4.36%
20	406	2.61	1.26	18.21%	10.93%	6.19%	4.74%	4.62%
21	354	2.55	1.27	18.22%	10.94%	6.20%	4.74%	4.79%
22	274	2.44	1.27	18.47%	11.19%	6.21%	4.98%	5.10%
23	197	2.29	1.24	17.98%	10.70%	6.07%	4.63%	5.50%
24	132	2.12	1.27	19.79%	12.51%	6.23%	6.28%	5.99%
25	49	1.69	1.30	23.52%	16.24%	6.36%	9.88%	7.19%
High financial risk			1.62	22.15%	14.87%	7.93%	6.94%	
Large Stocks (Ibbotson SBBI data)				12.18%	4.90%			
Small Stocks (Ibbotson SBBI data)				17.96%	10.68%			
Long-Term Treasury Income (Ibbotson SBBI data)				7.28%				

Equity Risk Premium Study: Data through December 31, 2004
Data Smoothing with Regression Analysis
Dependent Variable: Premium over CAPM
Independent Variable: Log of Average Market Value of Equity

Regression Output:

Constant		11.921%
Std Err of Y Est		1.029%
R Squared		80%
No. of Observations		25
Degrees of Freedom		23
X Coefficient(s)	-2.799%	
Std Err of Coef.	0.291%	
t-Statistic	-9.61	

*Smoothed Premium = 11.921% - 2.799% * Log(Market Value)*



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Companies Ranked by Book Value of Equity — **Premium over CAPM** — **Exhibit B-2**

Historical Equity Risk Premium: Average Since 1963
Data for Year Ending December 31, 2004

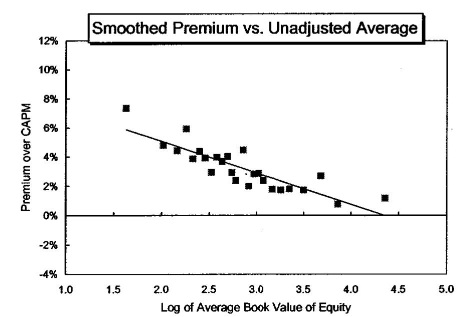
Portfolio Rank by Size	Average Book Val. ($mils.)	Log of Size	Beta (SumBeta) Since '63	Arithmetic Average Return	Arithmetic Equity Risk Premium	Indicated CAPM Premium	Premium over CAPM	Smoothed Premium over CAPM
1	22,708	4.36	0.84	12.55%	5.27%	4.10%	1.18%	-0.01%
2	7,264	3.86	0.85	12.21%	4.93%	4.14%	0.78%	1.06%
3	4,806	3.68	0.90	14.37%	7.09%	4.39%	2.70%	1.45%
4	3,158	3.50	0.90	13.45%	6.17%	4.43%	1.74%	1.84%
5	2,233	3.35	0.99	13.96%	6.68%	4.87%	1.81%	2.16%
6	1,819	3.26	1.00	13.93%	6.65%	4.91%	1.74%	2.35%
7	1,482	3.17	0.98	13.89%	6.61%	4.82%	1.79%	2.55%
8	1,183	3.07	1.05	14.80%	7.52%	5.14%	2.38%	2.76%
9	1,063	3.03	1.09	15.50%	8.22%	5.33%	2.89%	2.86%
10	940	2.97	1.02	15.14%	7.86%	5.01%	2.85%	2.97%
11	830	2.92	1.09	14.61%	7.33%	5.32%	2.01%	3.09%
12	724	2.86	1.05	16.88%	9.60%	5.14%	4.47%	3.21%
13	603	2.78	1.12	15.17%	7.89%	5.49%	2.39%	3.39%
14	546	2.74	1.12	15.68%	8.40%	5.47%	2.93%	3.48%
15	490	2.69	1.11	16.77%	9.49%	5.45%	4.03%	3.58%
16	430	2.63	1.17	16.71%	9.43%	5.73%	3.70%	3.70%
17	380	2.58	1.19	17.08%	9.80%	5.83%	3.97%	3.82%
18	333	2.52	1.23	16.24%	8.96%	6.01%	2.94%	3.94%
19	286	2.46	1.19	17.01%	9.73%	5.82%	3.92%	4.08%
20	251	2.40	1.22	17.65%	10.37%	6.00%	4.37%	4.21%
21	213	2.33	1.22	17.11%	9.83%	5.95%	3.87%	4.36%
22	182	2.26	1.24	19.30%	12.02%	6.09%	5.93%	4.51%
23	146	2.16	1.25	17.85%	10.57%	6.14%	4.42%	4.71%
24	104	2.02	1.29	18.39%	11.11%	6.31%	4.80%	5.03%
25	43	1.63	1.33	21.12%	13.84%	6.51%	7.33%	5.86%
High financial risk			1.61	22.29%	15.01%	7.91%	7.10%	
Large Stocks (Ibbotson SBBI data)				12.18%	4.90%			
Small Stocks (Ibbotson SBBI data)				17.96%	10.68%			
Long-Term Treasury Income (Ibbotson SBBI data)				7.28%				

Equity Risk Premium Study: Data through December 31, 2004
Data Smoothing with Regression Analysis
Dependent Variable: Premium over CAPM
Independent Variable: Log of Average Book Value of Equity

Regression Output:

Constant	9.371%
Std Err of Y Est	0.784%
R Squared	75%
No. of Observations	25
Degrees of Freedom	23
X Coefficient(s)	-2.152%
Std Err of Coef.	0.262%
t-Statistic	-8.20

*Smoothed Premium = 9.371% - 2.152% * Log(Book Value)*



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Risk Premium Report
2005

Exhibit C-1

Companies Ranked by Market Value of Equity: Comparative Risk Characteristics
Data for Year Ending December 31, 2004

	Portfolio Statistics for 2004			Portfolio Statistics for 1963-2004								
Portfolio Rank by Size	Average Mkt Value ($mils.)	Log of Size	Number of Firms	Average Equity Risk Premium	Average Debt to MVIC	Average Debt to Market Value of Equity	Average Unlevered Risk Premium	Beta (SumBeta) Since '63	Average Unlevered Beta	Average Operating Margin	Average CV(Operating Margin)	Average CV(ROE)
1	84,208	4.93	44	4.8%	16.44%	19.7%	4.4%	0.91	0.82	15.2%	9.6%	14.0%
2	20,847	4.32	36	4.9%	22.87%	29.7%	4.2%	0.92	0.80	13.0%	10.6%	17.4%
3	11,172	4.05	42	3.8%	25.14%	33.6%	3.2%	0.98	0.83	13.3%	11.2%	17.2%
4	8,187	3.91	41	5.8%	25.94%	35.0%	4.9%	0.97	0.82	12.7%	12.0%	18.5%
5	6,025	3.78	44	5.7%	27.05%	37.1%	4.8%	0.97	0.81	12.6%	12.8%	19.4%
6	4,339	3.64	42	7.3%	27.02%	37.0%	6.1%	1.03	0.86	13.3%	12.5%	18.6%
7	3,335	3.52	47	7.5%	27.38%	37.7%	6.2%	1.03	0.85	12.6%	13.7%	20.9%
8	2,872	3.46	42	7.0%	26.42%	35.9%	5.9%	1.08	0.91	12.4%	13.6%	20.3%
9	2,278	3.36	44	8.4%	25.36%	34.0%	7.1%	1.08	0.91	12.2%	13.9%	21.0%
10	1,889	3.28	46	7.2%	25.16%	33.6%	6.1%	1.10	0.93	11.9%	13.6%	21.4%
11	1,717	3.23	44	8.1%	25.16%	33.6%	6.8%	1.09	0.93	11.8%	14.8%	20.6%
12	1,460	3.16	47	7.9%	25.72%	34.6%	6.6%	1.11	0.93	11.7%	14.6%	19.6%
13	1,312	3.12	43	6.7%	26.66%	36.3%	5.6%	1.09	0.91	11.1%	14.8%	20.5%
14	1,131	3.05	50	9.1%	27.33%	37.6%	7.5%	1.14	0.95	11.2%	15.0%	21.5%
15	915	2.96	56	8.5%	26.70%	36.4%	7.1%	1.14	0.95	10.9%	17.2%	23.0%
16	766	2.88	55	10.5%	25.99%	35.1%	8.8%	1.14	0.96	10.3%	17.5%	24.0%
17	704	2.85	54	10.3%	26.79%	36.6%	8.6%	1.21	1.01	10.0%	18.0%	24.9%
18	582	2.76	63	9.7%	27.03%	37.0%	8.1%	1.20	1.00	9.7%	20.3%	27.8%
19	502	2.70	62	9.6%	26.54%	36.1%	8.1%	1.24	1.04	9.4%	20.6%	26.9%
20	406	2.61	79	10.9%	27.40%	37.7%	9.1%	1.26	1.05	9.0%	23.7%	30.7%
21	354	2.55	65	10.9%	27.61%	38.1%	9.1%	1.27	1.05	8.5%	23.0%	30.3%
22	274	2.44	100	11.2%	27.89%	38.7%	9.3%	1.27	1.05	8.2%	25.1%	34.6%
23	197	2.29	87	10.7%	28.33%	39.5%	8.8%	1.24	1.02	7.9%	26.7%	34.2%
24	132	2.12	148	12.5%	29.13%	41.1%	10.2%	1.27	1.04	7.6%	28.6%	38.4%
25	49	1.69	337	16.2%	31.27%	45.5%	13.0%	1.30	1.04	6.1%	42.1%	55.4%

Note: CV(X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates. The average blended income tax rate used is 42.4%.

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Risk Premium Report
2005

Exhibit C-2

Companies Ranked by Book Value of Equity: Comparative Risk Characteristics
Data for Year Ending December 31, 2004

	Portfolio Statistics for 2004			Portfolio Statistics for 1963-2004								
Portfolio Rank by Size	Average Book Value ($mils.)	Log of Size	Number of Firms	Average Equity Risk Premium	Average Debt to MVIC	Average Debt to Market Value of Equity	Average Unlevered Risk Premium	Beta (SumBeta) Since '63	Average Unlevered Beta	Average Operating Margin	Average CV(Operating Margin)	Average CV(ROE)
1	22,708	4.36	41	5.3%	27.45%	37.8%	4.4%	0.84	0.69	13.0%	12.8%	18.4%
2	7,264	3.86	37	4.9%	31.94%	46.9%	3.9%	0.85	0.67	14.0%	11.8%	16.7%
3	4,806	3.68	37	7.1%	33.60%	50.6%	5.6%	0.90	0.70	12.2%	11.8%	18.5%
4	3,158	3.50	39	6.2%	31.58%	46.2%	4.9%	0.90	0.72	12.5%	12.3%	21.2%
5	2,233	3.35	40	6.7%	30.26%	43.4%	5.4%	0.99	0.81	12.8%	12.7%	21.2%
6	1,819	3.26	48	6.7%	30.71%	44.3%	5.4%	1.00	0.81	12.4%	13.2%	21.4%
7	1,482	3.17	38	6.6%	29.36%	41.6%	5.4%	0.98	0.80	13.1%	13.3%	22.0%
8	1,183	3.07	40	7.5%	27.61%	38.1%	6.2%	1.05	0.87	12.7%	14.2%	21.5%
9	1,063	3.03	39	8.2%	28.19%	39.2%	6.8%	1.09	0.90	12.4%	14.2%	20.6%
10	940	2.97	42	7.9%	29.42%	41.7%	6.4%	1.02	0.83	11.8%	14.8%	20.2%
11	830	2.92	43	7.3%	28.47%	39.8%	6.0%	1.09	0.89	11.9%	14.7%	23.3%
12	724	2.86	45	9.6%	30.37%	43.6%	7.8%	1.05	0.85	12.3%	14.2%	20.4%
13	603	2.78	51	7.9%	27.83%	38.6%	6.5%	1.12	0.93	11.4%	16.3%	22.5%
14	546	2.74	50	8.4%	27.96%	38.8%	6.9%	1.12	0.92	10.9%	15.5%	21.6%
15	490	2.69	43	9.5%	27.93%	38.8%	7.8%	1.11	0.92	10.5%	15.8%	22.6%
16	430	2.63	55	9.4%	27.89%	38.7%	7.8%	1.17	0.97	10.1%	17.6%	25.0%
17	380	2.58	66	9.8%	26.27%	35.6%	8.2%	1.19	1.00	10.7%	16.8%	24.3%
18	333	2.52	57	9.0%	27.86%	38.6%	7.4%	1.23	1.02	10.1%	19.3%	25.7%
19	286	2.46	58	9.7%	28.52%	39.9%	8.0%	1.19	0.98	9.9%	19.2%	27.7%
20	251	2.40	72	10.4%	26.92%	36.8%	8.6%	1.22	1.02	9.2%	20.9%	29.8%
21	213	2.33	76	9.8%	27.89%	38.7%	8.1%	1.22	1.01	9.4%	22.3%	31.2%
22	182	2.26	80	12.0%	27.12%	37.2%	10.0%	1.24	1.04	8.5%	24.0%	30.0%
23	146	2.16	95	10.6%	27.99%	38.9%	8.7%	1.25	1.04	8.7%	23.7%	33.1%
24	104	2.02	139	11.1%	27.55%	38.0%	9.2%	1.29	1.07	8.2%	26.0%	36.0%
25	43	1.63	387	13.8%	26.91%	36.8%	11.5%	1.33	1.11	7.2%	37.5%	50.0%

Note: CV(X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates. The average blended income tax rate used is 42.4%.

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Risk Premium Report
2005

Companies Ranked by Operating Margin **Exhibit D-1**

Historical Equity Risk Premium: Average Since 1963
Data for Year Ending December 31, 2004

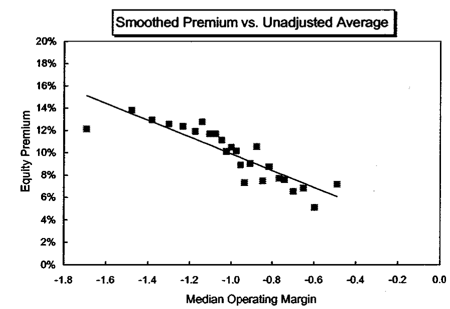
Portfolio Rank by Size	Median Operating Margin	Log of Median Op Margin	Number as of 2004	Beta (SumBeta) Since '63	Standard Deviation of Returns	Geometric Average Return	Arithmetic Average Return	Arithmetic Equity Risk Premium	*Smoothed Average Equity Risk Premium*	Average Debt/ MVIC
1	32.4%	-0.49	80	0.81	17.08%	13.22%	14.46%	7.18%	*6.07%*	31.05%
2	25.3%	-0.60	55	0.76	16.61%	11.16%	12.38%	5.10%	*6.87%*	34.95%
3	22.3%	-0.65	55	0.80	16.09%	12.95%	14.11%	6.83%	*7.28%*	32.86%
4	20.0%	-0.70	52	0.95	17.08%	12.50%	13.80%	6.52%	*7.64%*	27.19%
5	18.1%	-0.74	50	0.99	17.56%	13.53%	14.88%	7.60%	*7.96%*	22.78%
6	17.1%	-0.77	65	1.11	18.94%	13.46%	15.01%	7.73%	*8.15%*	19.24%
7	15.3%	-0.81	67	1.15	19.92%	14.36%	16.01%	8.73%	*8.51%*	18.33%
8	14.3%	-0.85	59	1.12	19.60%	13.05%	14.76%	7.48%	*8.75%*	20.20%
9	13.3%	-0.88	49	1.19	19.98%	16.11%	17.84%	10.56%	*8.97%*	20.97%
10	12.4%	-0.91	64	1.20	21.74%	14.29%	16.31%	9.03%	*9.20%*	21.67%
11	11.7%	-0.93	64	1.21	21.31%	12.65%	14.61%	7.33%	*9.40%*	22.71%
12	11.1%	-0.95	55	1.18	21.45%	14.27%	16.19%	8.91%	*9.55%*	23.10%
13	10.6%	-0.98	63	1.21	22.37%	15.34%	17.45%	10.17%	*9.72%*	22.90%
14	10.0%	-1.00	66	1.20	23.10%	15.46%	17.79%	10.51%	*9.90%*	23.97%
15	9.5%	-1.02	58	1.22	24.62%	14.92%	17.39%	10.11%	*10.08%*	24.87%
16	9.0%	-1.05	67	1.17	22.91%	16.14%	18.41%	11.13%	*10.25%*	26.72%
17	8.4%	-1.07	59	1.26	24.45%	16.39%	18.97%	11.69%	*10.46%*	27.24%
18	7.9%	-1.10	79	1.26	24.85%	16.33%	18.98%	11.70%	*10.69%*	28.02%
19	7.2%	-1.14	73	1.29	25.12%	17.44%	20.07%	12.79%	*10.97%*	29.40%
20	6.7%	-1.17	68	1.27	26.48%	16.30%	19.20%	11.92%	*11.21%*	31.50%
21	5.8%	-1.23	82	1.25	25.88%	16.96%	19.66%	12.38%	*11.66%*	31.76%
22	5.0%	-1.30	106	1.29	28.88%	16.43%	19.84%	12.56%	*12.16%*	32.37%
23	4.2%	-1.38	94	1.29	26.14%	17.42%	20.22%	12.94%	*12.77%*	34.14%
24	3.3%	-1.48	89	1.31	28.64%	17.80%	21.10%	13.82%	*13.50%*	33.88%
25	2.0%	-1.69	99	1.29	27.87%	16.16%	19.41%	12.13%	*15.12%*	33.27%
High financial risk			665	1.62	38.48%	16.82%	22.15%	14.87%		47.95%
Large Stocks (Ibbotson SBBI data)						10.89%	12.18%	4.90%		
Small Stocks (Ibbotson SBBI data)						15.24%	17.96%	10.68%		
Long-Term Treasury Income (Ibbotson SBBI data)						7.26%	7.28%			

Equity Risk Premium Study: Data through December 31, 2004
Data Smoothing with Regression Analysis
Dependent Variable: Average Premium
Independent Variable: Log of Median Operating Margin

Regression Output:

Constant		2.381%
Std Err of Y Est		1.189%
R Squared		77%
No. of Observations		25
Degrees of Freedom		23
X Coefficient(s)	-7.526%	
Std Err of Coef.	0.860%	
t-Statistic	-8.75	

*Smoothed Premium = 2.381% - 7.526% * Log(Operating Margin)*



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APPENDIX XI

FT&T
Answers To
Chapter Review Questions

Review Questions Chapter 1 Introduction to Business Valuation

1. Primary opportunities for the valuation analyst can be found in working with:
   a. Business owners, investors, attorneys, and individuals performing valuations for a variety of reasons including estate planning and taxation, litigation support, mergers and acquisitions, and financial statement reporting
   A is Correct—As described on page 13 of Chapter One, there are many different purposes for valuations It should be noted that this list is not comprehensive, there are many other sources of valuation work.
   b. Business owners as only the owner of a business can engage a valuation analyst for a valuation engagement of a business
   Incorrect—Though the valuation analyst is often engaged by the owner of the business being valued, this is not the only way a valuation analyst may be engaged. In a divorce case, for example, the marital judge may order a valuation to be performed for the non-owner spouse.
   c. Other CPA firms as every privately held company is required to estimate the value of its intangible assets for financial statement reporting purposes
   Incorrect—Although privately held companies may need to determine the value of its intangible assets under FASB Accounting Standards Codification 805 or 350, this is not a requirement nor does this represent the primary opportunity for valuation analysts.
   d. Business owners in order to estimate the value of a group of assets as allocated on Form 8594.
   Incorrect—Although Form 8594 is the Asset Acquisition Statement used in allocation of purchase price, this is not a primary source of engagements for valuation analysts

2. What is the basic difference between an appraisal and a valuation?
   a. The act or process of determining the value of a business, business ownership interest, security, or intangible asset is an appraisal whereas a valuation is the process of determining the value of gems, equipment, furnishings, and other tangible assets to be used in determining the value of a business.
   Incorrect—The definitions for a valuation and an appraisal are reversed.
   b. Nothing; they are the same thing.
   Incorrect—There are times when valuation analysts will use the term "appraisal report" of a business but never "valuation report" of gems or other tangible assets. Tangible assets (whether used as part of the value of a business or not) require an appraisal by a qualified tangible asset valuator before they can be included in the business valuation. A valuation analyst is not qualified by this training to place a value on a tangible asset, only to place a value on the value of a business, business ownership interest, security or intangible asset.
   c. Appraisal is usually for a tangible asset and a valuation is usually for stock or interest in stock of a company or other intangible asset.
   C is Correct—Although the terms are often interchanged in a business valuation, a valuation analyst should define the meaning of each term in any written report, so as to prevent confusion by the report reader.
   d. Valuation is usually for stock or bond or other public security and an appraisal is usually for a non-public asset, stock or bond.
   Incorrect—Whether or not a company is public or non-public (private) does not change the meaning of the words valuation and appraisal.

3. Risk management in the valuation niche demands solid training and staying current through continuing education.
   a. True
      A is Correct—The depth of training, along with continuing one's learning and education helps the valuation analyst better evaluate the risks related to a particular engagement and make better choices.
   b. False
      Incorrect—Lack of appropriate training and not staying current with continuing education increases the risks of misapplying methods, using outdated techniques, and issuing incorrect conclusions of value.

4. A buy/sell agreement:
   a. Avoids litigation
      Incorrect—An agreement, properly drawn and executed, often can prevent litigation if it is entered into at the beginning of a business relationship. Some buy/sell agreements are themselves are subjects of litigation, especially if they do not establish a methodology to be followed by the parties to the agreement.
   b. Notes that an independent valuation is to be performed, when, and why
      Incorrect—Although this seems to be a logical step in any buy/sell agreement, the majority do not contain reference to a business valuation, or reasons under which a valuation should be performed.
   c. Identifies when or what events trigger a buyout, identifies how any buyout will be funded, and identifies the timing of any buyout
      C is Correct—Business owners, especially those in partnerships, or of owners close to retirement, use a buy/sell agreement to define who the new owners of the business will be, how they will pay or be paid for it. What is missing in many is the way to amicably establish the value of the business, often resulting in shareholder disputes.
   d. Always identifies the interest rate, if any, applicable
      Incorrect—Although many modern buy-sell agreements do peg the interest rates to be used, not all of them do so.

5. The most commonly quoted regulatory and professional bodies for business valuation are:
   a. NACVA, AICPA
      Incorrect—The National Association of Certified Valuators and Analysts and American Institute of CPAs are member organizations for valuation analysts and do not regulate conduct of non-members.
   b. IRS, DOL, FASB
      B is Correct—The Internal Revenue Service, Department of Labor and Financial Accounting Standards Board provide regulations for all practitioners to heed.
   c. ASA, IBA
      Incorrect—The American Society of Appraisers and the Institute of Business Appraisers are member organizations for valuation analysts, and do not regulate conduct of non-members.
   d. IACVA, ABV
      Incorrect—The International Association of Consultants, Valuation Analysts is a member organization and does not regulate conduct of non-members. A CPA may be Accredited in Business Valuations by the AICPA, and having an accreditation does not allow that individual to regulate valuations.

6. Three theoretical standards of value are:
   a. Investment value, going concern value, and fair market value
      Incorrect—Going concern value is premise of value
   b. Fair market value, investment value, and fair value
      B is Correct—The theoretical standards of value include fair market value, fair value and investment value
   c. Going concern value, asset value, and fair value
      Incorrect—Both going concern value and asset value are premises of value and not Standards of value.
   d. Book value, fair market value, and liquidation value
      Incorrect—According to the text, book value and liquidation value are both a premise of value; fair market value is the only standard of value listed

7. Fair Market Value is based upon:
   a. In business valuation, a legally created standard of value that applies to specific statutory transactions
      Incorrect—Fair Value is a legally created standard of value that applies to specific statutory transactions.
   b. The market value, the standard of value applicable in cases of dissenting stockholders' valuation rights. Fair market value, with respect to a dissenter's shares, means the value of the shares immediately before the effectuation of the corporate action to which the dissenter objects, excluding any appreciation or depreciation in anticipation of the corporate action unless exclusion would be inequitable
      Incorrect—It is Fair Value (the statutory value) which defines dissenting stockholders' valuation rights.
   c. The value described by an arms length transaction between a knowledgeable willing buyer and a knowledgeable willing seller
      C is Correct—In its broadest definition, FMV is the amount, price, highest price, most probable price, cash or cash-equivalent price at which property would change hands or the ownership might be justified by a prudent investor or at which a willing buyer and seller would exchange, would agree to exchange, possibly with equity to both and both fully aware of having knowledge or at least acting knowledgeably of the relevant facts, possibly even acting prudently and for self-interest and with neither being under compulsion, abnormal pressure, undue duress or any particular compulsion.
   d. The value described by an arm's length transaction involving a willing buyer or a willing seller—and depends upon the reason you have been retained to perform a business valuation
      Incorrect—Fair market value, per RR 59-60, mandates both a willing knowledgeable buyer and seller, and is independent of the reason for the valuation.

8. A valuation analyst must match the appropriate standard of value to the purpose for which the valuation engagement is performed.
   a. If the context in which the valuation is to be used is not critical and no lawsuit is in process, then the valuation analyst will always select fair value.
      Incorrect—Fair value will likely be the standard of value described by statute but not always. The valuation analyst must work with the client (and client attorneys if needed) to define the standard of value to be used – it is they who determine the standard of value, not the valuation analyst.
   b. A valuation for buying a business will be the same as for selling that business. It is the nature of the business that defines the standard of value.
      Incorrect—A buyer and seller have differing points of view and will view the subject company differently. A buyer, for example, will look at the synergy element whereas a seller may be looking at retirement. The business is a vehicle, not the determining factor.
   c. A valuation for securing a new loan should be done the same as a valuation in a divorce.
      Incorrect—Mortgage companies do look for investment value. Although both valuations may imply using investment value as the standard of value, for a divorce valuation, state law defines the standard of value to be used in valuing a business in a divorce. The analyst must look to applicable state law for the definition of the standard of value to be used.
   d. The valuation is to be used only for the purpose for which it was done and will likely be inappropriate for another use even by the same company or client.
      D is Correct—Valuations are specific to a point in time and to the reason the valuation was performed. For example, the valuation cannot be re-used, even by the same entity, at a different point in time, as the financial data underlying the analysis will have changed.

9. A valuator relies on quantifiable objective data in performing a valuation, attempting to remove as much subjectivity as possible. An advocate:
   a. Does essentially the same thing for a specific client
      Incorrect—It is not the client but the professional situation which defines whether the valuator is or is not an advocate. Although valuation analysts do (and should) advocate their own position, that position should be arrived at objectively.
   b. Introduces subjective factors and attempts to rely more heavily on qualitative factors
      B is Correct—An advocate, such as an attorney, attempts to use objective data in such a way as to assist his client in "looking good" and to place the opposing client in an unfavorable light.
   c. Is a valuator who works only for attorneys
      Incorrect—A valuator should strive to be objective at all times, whether or not the client is an attorney.
   d. Is an attorney who works for a valuation firm to edit valuation reports to prevent ambiguous terms and advocate the use of proper legal terms so the firm won't be sued
      Incorrect—Such an attorney-editor might become an advocate of some kind when in a court of law, but as an editor, advocacy would not be an issue.

10. What are the three main reasons for tax related valuations?
    a. Estate tax, gift tax, and allocation of purchase price
    A is Correct—All three valuations would be performed for tax purposes.
    b. Estate tax, buy/sell agreements, and litigation
    Incorrect—Valuations in buy/sell agreements and litigation are performed for non-tax reasons, and whether or not tax is involved is secondary to the reason for the valuation.
    c. ASC 805 (formerly FASB 141), ASC 350 (formerly FASB 142), and estate tax
    Incorrect—Valuations performed under FASB regulations are performed for regulatory reasons. And whether or not tax is involved is secondary to the reasons for the valuation.
    d. ASC 350 (formerly FASB 142), litigation, and gift tax
    Incorrect—FASB valuations are performed for regulatory reasons, and whether or not tax is involved is secondary. Litigation valuations are performed for a variety of reasons, some of which will have tax consequences, but tax issues are secondary.

11. The American Medical Association refers to going concern value as an "in-place value."
    a. True
    A is Correct—They consider the assets, assembled, in place, licensed, known systems and procedures set up so the buyer does not have to start over from scratch.
    b. False
    Incorrect—The American Medical Association refers to going concern value as an "in-place value," because they consider the assets, assembled, in place, licensed, known systems and procedures set up so the buyers does not have to start over from scratch.

12. The major point(s) of Internal Revenue Code §2703 is/are:
    a. For estate, gift and other tax purposes, the value of any property is determined without regard to any right or restriction relating to the property
    Incorrect—Although this is partially true, there are exemptions under section (b) that would make this statement false.
    b. An exception to restrictions on property exists for any option, agreement, right or restriction which (1) is a bona fide business arrangement, (2) is not a device to transfer property for less than its fair market value, (3) is comparable to similar arm's length arrangements; and (4) these safe harbors must be independently satisfied. The mere showing that a right or restriction to property is a bona fide business arrangement is not sufficient to establish the absence of a device
    Incorrect—Although this is partially true, the text must be considered in light of the general rule.
    c. Each right or restriction must be tested separately. A right or restriction is considered to meet the three 'safe harbor' requirements if more than 50% of the applicable property is owned by individuals who are not members of the transferor's family. Property owned by non-family members must be subject to the same rights or restrictions
    Incorrect—It is a partial and incomplete answer. IRC §2703 is a complex code, and a valuer needs to be aware of the full impact of issues raised in IRC §2703.
    d. Both a and b, but not c
    Incorrect—C is incorporated into IRC §2703, providing two key issues valuation analysts relating to family ownership a valuer should be aware of. A valuer should be certain family and non-family ownership are subject to the same rights/restrictions.
    e. a, b, and c
    E is Correct—All issues listed are key parts of IRC §2703. Valuation analysts must carefully address each of the issues raised with input form legal counsel when performing a valuation engagement for tax purposes.

13. The Internal Revenue Service first introduced the concept of goodwill and excess earnings when they issued:
    a. ARM 34
       A is Correct—ARM 34 was issued in 1920 as a result of the enactment of prohibition to assist the taxpayer in dealing with excess earnings and intangibles such as goodwill.
    b. Revenue Ruling 59-60
       Incorrect—RR 59-60 was issued in 1959 and outlined factors to be used in valuing a closely held business, involved itself with Estate and Gift Taxes and is widely accepted for tax and non–tax purposes.
    c. Revenue Ruling 68-609
       Incorrect—Revenue Ruling 68-609 was issued after ARM 34 but did address intangibles specifically goodwill and introduced a formula to determine value and sometimes referred to as the “excess earnings method” or “treasury method”.
    d. APB Opinion 16
       Incorrect—APB Opinion 16 was issued by the Financial Accounting Standards Board and dealt with business combinations later superseded by FAS 141.

14. Which of the following factors should be considered when valuing a closely held business under Revenue Ruling 59-60?
    i. Nature and history of the business
    ii. Economic outlook and industry condition
    iii. Methods to calculate preferred stock
    iv. The earnings capacity of the company

    a. i, ii, and iv
       A is Correct—Revenue ruling 59-60 lists the following factors, which require careful analysis:
       1. The nature and history of the business
       2. The economic outlook and outlook of the specific industry
       3. The book value of the stock and the financial condition of the business
       4. The earnings capacity of the company
       5. The dividend-paying capacity of the business
       6. Existence of goodwill value
       7. Sales of the stock and the size of the block of stock to be valued
       8. The market price of stocks of corporations engaged in a similar line of business.
    b. ii, iii, and iv
       Incorrect—Methods to calculate preferred stock are included in Revenue Ruling 83-120, and are not part of revenue Ruling 59-60.
    c. i, ii, and iii
       Incorrect—Although the nature and history of the business and earnings capacity of the company are covered under Revenue Ruling 59-60, methods to calculate preferred stock are included in Revenue Ruling 83-120.
    d. All of the above
       Incorrect—Methods to calculate preferred stock are included in Revenue Ruling 83-120.

15. If a valuator is retained to value a company for estate tax purposes, it is acceptable for the valuator to value the business as a/an:
    a. Advocate
       Incorrect—When valuing a company for estate and gift tax purposes the valuator must appear as an expert. This includes being objective and independent.
    b. Independent expert
       B is Correct—When valuing a business for estate and gift tax purposes an expert wants to appear objective and independent compared to being an advocate.
    c. Related party
       Incorrect—As a related party the valuator's independence would be impaired therefore implying a position of advocacy for the client.
    d. Employee of the company
       Incorrect—As an employee of the Company the valuator's independence would be impaired therefore implying a position of advocacy for the client.

16. IRC Section 401(a)(28)(C) requires the use of an "independent appraiser." For ESOP valuations to be independent, the following conditions must be met:
    a. The valuator is qualified, performs appraisals on a regular basis, and is not a related party
       A is Correct—A firm will be treated as an independent valuator under Sec. 401(a)(28)(C) if all of the following conditions are met; (a) The firm represents itself to the public as a valuator or performs appraisals on a regular basis, (b) The valuator is qualified to value the type of property, (c) The valuator is not a related party.
    b. The valuator is qualified, may be a related party, and performs appraisals on a regular basis
       Incorrect—The valuator is a related party it would project the appearance of advocacy and independence would be impaired.
    c. The valuator is qualified, does not perform appraisals on a regular basis, and is not a related party
       Incorrect—The valuator does not perform appraisals on a regular basis this would impair the qualifications of an independent valuator. (Note: A valuator does not have to perform appraisals on a regular basis to be independent; a valuator may be able to obtain the necessary assistance by using the mentoring program through NACVA to obtain the necessary support.
    d. The valuator does not need to be qualified, but must perform appraisals regularly and is not a related party
       Incorrect—Under the IRS regulation the valuator must now be qualified to meet the requirements of independence.

17. Under Sarbanes-Oxley, an independent auditor is explicitly forbidden to provide "appraisal valuation services, fairness opinions or contribution-in-kind reports" for any of its audit clients.
    a. True
       A is Correct—Under Sarbanes-Oxley, an independent auditor is explicitly forbidden to provide "appraisal or valuation services, fairness opinions, or contribution-in-kind reports" for any of its audit clients.
    b. False
       Incorrect—If an auditor performed valuation services for their audit clients, they would no longer be independent or able to issue an audit opinion.

18. Before the valuation analyst can proceed in valuing a business, the first step an analyst must determine is:
    a. The purpose of the valuation
       A is Correct—Once the purpose of the valuation is determined, the valuator may be able to determine what the appropriate standard of value is, a method to apply and if any discounts or premiums should be applied.
    b. The best method to apply
       Incorrect—The valuator cannot determine the best methods to apply without first understanding the purpose of the valuation.
    c. The standard of value
       Incorrect—The first step in any valuation process should be determining the purpose.
    d. The appropriate marketability discount
       Incorrect—Determining discounts for marketability and control would not be considered until the enterprise value has been established.

19. Which of the following cases provides guidance as to the admissibility of expert testimony in appraising a business:
    a. *Daubert v. Merrill Dow*
       A is Correct—The court held that the Federal Rules of Evidence, not Frye, provide the standard for admitting expert scientific testimony in a federal trial; nothing in the rules gives any indication that "general acceptance" is a necessary precondition to the admissibility of scientific evidence. While *Daubert* itself did not address the admissibility of expert testimony in appraising a business, it is generally accepted that it provides guidance for valuation purposes
    b. *Estate of Walter Gross v. Commissioner*
       Incorrect—Court ruling related to tax effect of S Corporation
    c. *Estate of Davis v. Commissioner*
       Incorrect—Court ruling related to discounts for trapped-in gains
    d. *Estate of Roark v. Commissioner*
       Incorrect—Case related to the failure to properly substantiate a donation results in denial of charitable tax deductions

20. The United States Department of Labor issues regulations specifically pertaining to business valuations for:
    a. Employee Stock Ownership Plans
       A is Correct—The Department of Labor issues regulations specifically pertaining to business valuations for Employee Stock Ownership Plans.
    b. Gift and estate tax returns
       Incorrect—The Internal Revenue Service issued Revenue Ruling 59-60 which applies to valuing business for gift and estate tax returns.
    c. Merger and acquisitions
       Incorrect—The Internal Revenue Service has issued guidance a valuator would apply for merger and acquisitions.
    d. Partner disputes
       Incorrect—The Internal Revenue Service and state law may provide guidance a valuator would apply for partner disputes.

21. Value equals the benefit stream divided by a required rate of return is an example of what principle?
    a. Alternative principle
       Incorrect—The alternative principle applies the concept a buyer and seller has alternatives.
    b. Principle of substitution
       Incorrect—The principle of substitution implies the value of a thing tends to be determined by the cost of acquiring an equally desirable substitute.
    c. Investment value principal
       C is Correct—The investment principle is based on the difficulty of valuing a closely held business because there a lack of an active free trading market. Therefore closely held businesses are valued based on the investment value principle. The simplified formula is: Value = Benefit Stream/Required Rate of Return.

22. A fundamental relationship exists between rate of return from an investment and the amount of risk in the investment. Therefore:
    a. An investor would expect a higher rate of return from a treasury note compared to large company stock
       Incorrect—The Treasury note is considered a riskless investment; therefore an investor would require less of a return from a treasury note than company stock.
    b. An investor would expect a higher rate of return from a six month CD compared to a 5-year treasury bond
       Incorrect—A six month CD would be considered more liquid than a 5-year treasury bond, therefore the rate of return from a 6 month CD would be less.
    c. An investor would expect a higher rate of return from a publicly traded company compared to a privately held company
       Incorrect—The publicly traded stock could be converted to cash in a couple of days. There is a market to trade a publicly traded stock. Whereas a privately held corporation does not have such a market and it is uncertain whether a market actually exists for a privately held company and the time it would take an investor to convert their investment to cash would take longer, therefore requiring a higher rate of return for an investment in a private company.
    d. An investor would expect a higher rate of return from a publicly traded stock compared to a 5-year treasury bond
       D is Correct—Due to the nature of the investment a treasury bond is less risky than a publicly traded stock and therefore a publicly traded stock would require a higher rate of return.

23. Strategic/Investment value is defined as:
    a. The amount at which property would change hands between a hypothetical willing buyer and a willing seller
       Incorrect—Fair market value is defined as "the price at which the property would change hands between a willing buyer and a willing seller, when the former is not under any compulsion to buy and the latter us not under any compulsion to sell both parties having reasonable knowledge of relevant facts."
    b. An amount determined under statutory standard of value
       Incorrect—Fair Value has several meanings, in most states fair value is the statutory standard of value applicable in cases of dissenting stockholders' valuation rights.
    c. The value to a particular investor based on individual investment requirements and expectations
       C is Correct—Strategic or Investment value is the value to a particular investor based on individual investment requirements and expectations.
    d. The value as if the business is going to continue operating as it presently is operating
       Incorrect—Going Concern value is a premise of value based on the notion the business is going to continue to operate as it presently is operating.

24. Revenue Ruling 93-12 was a significant benefit to taxpayers as it allowed that:
   a. Valuation of a minority (i.e., non-controlling) interest in an entity will not have to consider either the transferor or the transferee as they relate to control of the entity
      A is Correct – Revenue Ruling 93-12 eliminated the "family attribution rule" and states that "A minority discount will not be disallowed solely because a transferred interest, when aggregated with interests held by family members, would be a part of a controlling interest." This greatly enhanced estate and gift tax planning opportunities for individual taxpayers.
   b. Valuation of an ownership interest in a business for gift tax purposes would always allow rates of return on tangible assets between 8% and 10%
      Incorrect – The rates of return on tangible assets, provided for illustrative purposes only, are found in Revenue Ruling 68-609 in the discussion of the "excess earning" or "Treasury" method of valuation.
   c. Contributions of non-cash property for federal income tax purposes shall always be valued based on the historical cost of the property
      Incorrect – Contributions of non-cash property for federal income tax purposes is discussed in Revenue Procedure 66-49 and provided information and guidelines relative to appraisals of contributed property.
   d. Adopted the "family attribution" rule, which states that no minority interest discount is available for blocks of stock transferred to family members when the family holds a controlling interest in the entity
      Incorrect – Revenue Ruling 93-12 eliminated the "family attribution rule" as defined in this option which was introduced in Revenue Ruling 81-253.

Review Questions Chapter 2 Financial Statement Analysis

1. Chianti Corp. reports the following items in their Balance Sheet: $70,000 fixed assets, $3,500 cash, $1,200 short term marketable securities, $4,500 in accounts receivables, $6,000 in inventories, $1,000 in prepaid expenses, $4,000 accounts payable and $2,100 in current notes payable. What is Chianti Corp.'s Current Ratio?
   a. 7.24
      Incorrect—This appears to be a mathematical error.
   b. 2.65
      B is Correct—See calculation below.
   c. 2.49
      Incorrect—This answer does not include short term marketable securities.
   d. 1.51
      Incorrect—This answer does not include either inventory or prepaid expenses.

Cash	$ 3,500
Short-term marketable securities	1,200
Accounts receivable	4,500
Inventories	6,000
Prepaid expenses	1,000
Total current assets	**$16,200**
Accounts payable	$ 4,000
Short-term notes payable	2,100
Total current liabilities	**$ 6,100**

$$\frac{\text{Current assets} \quad 16{,}200}{\text{Current liabilities} \quad 6{,}100} = \mathbf{2.65}$$

2. Assume the same facts as in question number one, what is Chianti Corp.'s Cash Ratio?
   a. 1.51
      Incorrect—This answer includes all assets except inventory and prepaid insurance.
   b. 1.75
      Incorrect—This answer includes all assets except accounts receivable and prepaid insurance.
   c. 2.49
      Incorrect—This answer includes all assets except prepaid insurance.
   d. 0.77
      D is Correct—Cash ratio equals cash & cash equivalents/current liabilities

$$\frac{\text{Cash + short-term marketable securities (\$3,500 + 1,200)}}{\text{Current liabilities (\$6,100)}}$$

= 0.77

3. Assuming that Chianti Corp. reported annual sales of $100,000, cost of goods sold of $65,000, average receivables of $5,600, average inventories of $3,800, and average payables of $5,700. What is Chianti Corp.'s Receivables Turnover and Average Receivables Collection Period?

Receivables Turnover	Avg. Rec. Collection Period	
a. 10.0	36.5	**Incorrect**—The receivable turnover calculation appears to be a mathematical error.
b. 11.61	31.5	**Incorrect**—This answer assumes the numerator is cost of goods sold rather than sales.
c. 6.25	58.4	**Incorrect**—This answer subtracts cost of goods sold from sales prior to dividing by average accounts receivable.
d. 17.9	20.4	**D is Correct—**Receivable Turnover: Sales/Average Receivables Receivable Turnover = $100,000 / $5,600 Receivable Turnover = **17.9** Avg. Rec. collection period = 365/17.9 Avg. Rec. Collection Period = **20.4 days**

4. Assuming the same facts as outlined in question three, what is Chianti Corp.'s Inventory Turnover? And Average Inventory Processing Period?

Inventory Turnover	Avg. Inventory. Processing Period	
a. 12.4	29.4	**Incorrect**—This appears to be a mathematical error based on the numbers provided.
b. 26.5	13.8	**Incorrect**—This answer divides sales by the average inventory.
c. 17.11	21.3	**C is Correct—**Inventory Turnover = Cost of Goods Sold / Average inventory Inventory Turnover = $65,000 / $3,800 Inventory Turnover = **17.11** Average Inventory Processing Period = 365 / Inventory Turnover 365 / 17.11 Average Inventory Processing Period = **21.3 days**
d. 13.4	27.2	**Incorrect**—This appears to be a mathematical error based on the numbers provided.

5. Assuming the same facts as in question three, what is Chianti Corp.'s Cash Conversion Cycle?
   a. 7.24 days
      Incorrect—This implies that the payable payment period is 34.5 days.
   b. 26.1 days
      Incorrect—This implies that the payable payment period is 15.6 days.
   c. 9.7 days
      C is Correct—Cash conversion cycle = inventory turnover period + days to collect receivables – payable payment period
      Cash conversion cycle = 21.3 (see #4) + 20.4 (see #3) – 32 (see payable payment calculation below)
      Cash conversion cycle = **9.7**
      Payable payment period = (365/(cost of goods sold/avg payables)) *or* (365/($65,000/$5,700))
   d. -5.67 days
      Incorrect—This implies that the payable payment period is 46.4 days.

6. Assuming that Chianti Corp. Reports Net Income of $5,200 and that its average total equity is $49,000, what is Chianti's Return on Equity?
   a. 9.42%
      Incorrect- This calculation incorrectly reverses the formula and calculates the return on equity as average total equity/net income.
   b. 21.20%
      Incorrect- This calculation incorrectly doubles the net income amount to $10,400 before applying the formula.
   c. 10.61%
      C is Correct—Return on equity = net income/average total equity
      Return on equity = $5,200 / $49,000
      Return on equity = 10.61%
   d. 11.51%
      Incorrect – This implies that the net income amount is incorrectly stated as $5,640.

7. Based on the information provided in questions one through six, what is Chianti Corp.'s Net Profit Margin and Equity Turnover?

Net Profit Margin	Equity Turnover	
a. 9.42%	2.13	**Incorrect**—This uses an erroneous net profit margin from question 6 and a mathematical error in the equity turnover calculation.
b. 5.2%	2.04	**B is Correct—**Net profit margin = Net income/sales Net profit margin = $5,200 / $100,000 Equity turnover = Sales / Average equity = $100,000 / $49,000 = **2.04**
c. 10.61%	2.04	**Incorrect**—The equity turnover calculation is correct, but the return on equity is used in place for the net profit margin.
d. 8.0%	4.32	**Incorrect**—Both answers appear to be mathematical errors.

8. The conversion of the balance sheet and income statement line items to percentages based on total assets or total sales is often referred to as:
   a. Trend analysis
      Incorrect—Trend analysis analyzes the financial statements over time.
   b. Common-size analysis
      B is Correct—Common-size analysis is the process of converting the balance sheet and income statement line items to percentages of total assets or total sales.
   c. Financial ratio analysis
      Incorrect—Financial Ratio Analysis is based on specific formulas and looks at profitability, leverage, equity, etc. of a company.
   d. Comparative analysis
      Incorrect—Comparative analysis is comparing the company's financial statements from year to year and to industry averages.

9. A financial analysis of any business would include all of the following EXCEPT for:
   a. An analysis of each balance sheet item over the period being analyzed
      Incorrect—The valuation analyst should analyze the balance sheet over each period being analyzed.
   b. An analysis of industry ratios in the same NAICS code as the company being analyzed
      Incorrect—This type of financial analysis should be performed.
   c. An analysis of the income statement, where each item is reported as a percentage of sales
      Incorrect—This common size analysis should be performed.
   d. An investigation as to the existence of inventory as of the valuation date
      D is Correct—The valuation analyst would rely on representations of management regarding the existence of inventory; a financial analysis would not detect the existence of inventory, however a physical inspection of the inventory may take place during a site visit.

10. Ratio analysis will assist the valuation analyst in determining the following:
   a. The financial condition of the company
      Incorrect—Ratio analysis could indicate how well the company is doing but C is also correct making E the best answer.
   b. Identifying all the strengths and weaknesses of the company
      Incorrect—An analysis of financial ratios will help identify a company's strengths and weaknesses, it has limitations and will not necessarily identify all strengths and weaknesses.
   c. The relative operating risks of the company
      Incorrect—Because A is also correct.
   d. Both a and b
      Incorrect—An analysis of financial ratios will help identify a company's strengths and weaknesses, it has limitations and will not necessarily identify all strengths and weaknesses.
   e. Both a and c
      E is Correct—This is the best answer to the question because ratio analysis may indicate how well the company is doing and identify some of the operating risks of the Company.
   f. Both b and c
      Incorrect—An analysis of financial ratios will not necessarily identify all of a company's strengths and weaknesses.

11. The most conservative ratio in measuring a company's solvency is the:
    a. Current ratio
       Incorrect—The current ratio is determined by dividing all current assets by current liabilities, because this includes items such as inventory and accounts receivable, this is not the most conservative ratio for measuring a Company's solvency.
    b. Quick ratio
       Incorrect—The quick ratio is determined by dividing current assets less inventory by current liabilities. This ratio is more conservative than the current ratio, however because it includes accounts receivable it is not the most conservative.
    c. Cash ratio
       C is Correct—The cash ratio is the most conservative measure of solvency because it includes only cash and marketable securities in its measurement of liquidity.
    d. Turnover ratio
       Incorrect—Turnover ratios apply to accounts receivable, inventory and accounts payable and do not indicate the solvency of a Company.

12. A high inventory turnover can indicate all of the following EXCEPT:
    a. Better liquidity
       Incorrect—A high inventory turnover ratio would indicate better liquidity. Inventory turnover is cost of sales for the time period analyzed divided by the average of beginning plus ending inventory. Therefore the higher the turnover the quicker inventory is being sold and therefore the more frequently inventory is converted into cash.
    b. Superior merchandising
       Incorrect—A high inventory turnover ratio would be an indication of superior merchandising. The higher the inventory turnover ratio the more frequently inventory is being sold and it therefore is a good indication of superior merchandising by the company.
    c. Shortage of inventory
       Incorrect—A high inventory turnover ratio would indicate a potential shortage of inventory.
    d. Obsolete inventory
       D is Correct—A low inventory turnover can indicate poor liquidity or obsolete inventory.

13. What type of ratios may a valuation analyst generally use to evaluate management performance?
    a. Operating profitability ratios
       A is Correct—Operating profitability ratios are used in the evaluation of management performance. These ratios include Cost of sales/Sales and Gross margin analysis.
    b. Liquidity ratios
       Incorrect—These ratios are used to measure a firm's ability to pay its near term financial obligations.
    c. Financial risk ratios
       Incorrect—These ratios measure a firm's degree of operating leverage.
    d. Business risk analysis
       Incorrect—These ratios assess the business risk.

14. Which of the following statements is correct?
    a. A high inventory turnover and a low gross profit may indicate that a higher volume is necessary to produce a satisfactory return on total assets.
    A is Correct—A high inventory turnover and a low gross profit may indicate that a higher volume is necessary to produces a satisfactory return on total assets.
    b. The net fixed asset turnover ratio is crucial when appraising a service business.
    Incorrect—Fixed assets usually do not drive the profits of a service business.
    c. If a company's cost of sales/sales ratio is decreasing, it may indicate competition is forcing the company to cut profit margins or it may indicate the company is unable to pass its increasing costs to its customers.
    Incorrect—If a company's cost of sales as a % of sales is increase, it may indicate competition is forcing the company to cut profit margins or the company cannot pass increasing costs to its customers.
    d. Companies with significant fixed operating costs in proportion to variable costs can better weather an economic downturn.
    Incorrect—A company with significant fixed costs could not trim costs in a downturn.

15. Which ratio measures the ability to service total interest-bearing debt?
    a. Interest coverage ratio
    Incorrect—This ratio is a measure of a firm's ability to meet its interest payments.
    b. Operating cash flow ratio
    Incorrect—This ratio measures a firm's ability to generate the resources required to meet its current liabilities.
    c. Operating cash flow to long-term debt
    Incorrect—This ratio measures the ability to service total long term debt.
    d. Operating cash flow to total debt ratio
    D is Correct—Operating cash flow to total debt ratio measures the ability to service total interest-bearing debt.

16. What is the purpose of dividing a receivable or inventory turnover ratio by 365?
    a. We can never do enough math, so why not add another equation
    Incorrect—Math is always fun, and the purpose of dividing a turnover ratio by 365 days is to determine how long it may take to convert a current asset into cash.
    b. To determine the number of days it may take to convert a current asset into cash
    B is Correct—By dividing a receivable or inventory turnover ratio by 365 days a valuation analyst can determine how many days it will take to convert the current asset into cash.
    c. To determine if a company is effectively utilizing its fixed assets
    Incorrect—A fixed asset turnover could indicate any obsolete equipment, however the business is usually not in the business of selling fixed assets for a profit. Therefore dividing a fixed asset turnover ratio by 365 days would not applicable to this type of ratio.
    d. To determine a company's operating efficiency.
    Incorrect—Operating efficiency ratio analyze how efficient the company utilizes assets compared with converting assets into cash.

Review Questions Chapter 3 Economic/Normalized Financial Statements

1. Using the above illustration for sample year 2002, a comparative analysis for the Advanced Products Company, Inc. shows the industry profit margin per RMA to be 39.7%, whereas Advanced shows:
   a. 36.00%
      Incorrect—36% is for 1998.
   b. 37.00%
      Incorrect—37% is for 2000.
   c. 37.33%
      C is Correct—37.33% is for 2002.
   d. 38.24%
      Incorrect—38.24% is for 2001.

2. Using the illustration for year 2002, a comparative analysis for the Advanced Products Company, Inc. RMA shows the industry accounts receivable turnover ratio to be 7.7 and Advanced accounts receivable turnover ratio to be 9.9.
   a. This indicates industry as a whole is better managing accounts receivable than Advanced. **Incorrect—**The lower turnover ratio by itself – without any qualifying information **-** indicates Advanced is better at managing accounts receivable than the industry as a whole.
   b. This indicates Advanced is better at managing accounts receivable than the industry as a whole. **B is Correct—**The higher turnover ratio of Advanced indicates it is better at managing accounts receivable than the industry as a whole.
   c. This indicates that the industry as a whole and Advanced both carefully monitor accounts receivable.
      Incorrect—There is not enough information in the calculated ratios to discover the degree of monitoring by either the industry or any one industry member.
   d. This indicates that the industry as a whole and Advanced do not monitor accounts receivable with enough care, and both need to strive toward 5.0 as the ideal.
      Incorrect—There is not enough information to determine that there is an ideal for the industry.

3. The valuation analyst needs historical performance data in order to:
   a. Decide whether or not the subject company is using the proper taxed based accounting
      Incorrect—Although the historical data may indicate what the valuation analyst believes to be incorrect basis; this is a matter for an auditor or other internal control, not for the valuation analyst.
   b. Check and see whether or not the owner is taking too much in salary
      Incorrect—If, after all fiscal and economic analysis is complete, the valuation analyst believes salary to be an issue important to the reason for the valuation, the valuator may want to adjust salary. If salary is not an issue important to the reason for the valuation, no adjustment will likely be made.
   c. Find whether or not national economic reality may be properly reflected in the current year data
      Incorrect—There would not be enough information in the data itself to judge whether or not it is realistic from a national economic standpoint; other research would have to be done in order to form an opinion on this issue.
   d. Analyze and compare various years in the company history to identify trends, strengths, weaknesses, and look for potential adjustments to normalize if adjustments are necessary and/or deemed appropriate
      D is Correct—The valuation analyst with access to historical financial data is better able to determine trends and to look for potential adjustments to normalize.

4. Advanced Product's accounting shows various items of machinery that were purchased three years ago for $100,000. Their net book value today is $50,000. To replace the machinery today would cost $130,000. The estimated market value today (if sold as is today) is $100,000. Would a balance sheet adjustment be advised?
   a. Yes. The valuation analyst should adjust the balance sheet to fair market value and consider adjustment of depreciation expense on the income statement as well as the related tax affect on both the balance sheet and income statement.
      A is Correct—This would be a typical adjustment for a valuation analyst to make in valuing a company.
   b. No. Valuation analysts do not have control over equipment, and adjusting the balance sheet would negatively skew company value.
      Incorrect—Whether or not the valuation analyst has control is not the issue. In looking at the company and analyzing its value as of the date of valuation, the analyst should consider depreciation and amortization, normalizing both if needed in order to calculate an unbiased value for the company.
   c. Yes. Since the company's inception, it has witnessed continually increasing costs for its inventory. As a result of these cost pressures, Advanced decided to convert to the LIFO method for costing its inventory in 1980. This data shows the adjustment was already made by the company.
      Incorrect—Changing how inventory costing is done is not related to net book value of machinery.
   d. No. The company owns two of its three facilities and leases the other. Advanced is not likely to update machinery for a leased facility.
      Incorrect—Leasing of facilities is not related to machinery book value.

5. Net Income can be based on GAAP (Generally Accepted Accounting Principles) or TBA (Tax Basis Accounting), but neither may be economic reality.
   a. This is true because TBA is done to minimize payments to banks and other lending institutions.
      Incorrect—Tax based accounting is to save/minimize payment of taxes.
   b. This is true as GAAP is too specific, and each company is unique. Therefore–even using the same set of accounting practices–no two companies will keep their books in the same exact way.
      Incorrect—GAAP is too general and it is this general form applied to a unique company which causes differences among companies as to how they keep their books.
   c. This is true as corporations (all kinds), public companies, partnerships, sole proprietorships, privately held family businesses, and any varying degrees in between, all have different rules and principles under which they are found. These affect fiscal statements, and the valuation analyst must know what the underlying concept of any given company is as opposed to what it may state in the numbers.
      C is Correct—Individualized companies have different rules, different numbers, and different principles. This creates a difference in economic reality for any given company.
   d. This is true as GAAP accounting is so similar to TBA that the numbers for one company in the same year will be different. Economic reality does not need to be reflected in either GAAP or TBA.
      Incorrect—Actually GAAP and TBA are so different numbers for one company in the same year will be different. TBA is used to minimize tax payments, and this definitely makes a difference in how the numbers are calculated. And neither may reflect economic reality.

6. When a valuation analyst is able to obtain audited GAAP compliance financial statements, most likely, normalized adjustments will not be necessary because of the high level of confidence placed on these issued financial statements.
   a. True
      Incorrect—Audited financial statements provide a very high level of confidence on the financial information. However, the valuator may still have to make normalizing and controlling adjustments for items such as officer's compensation, non–operating income & expense, and excess assets.
   b. False
      B is Correct—Even if financial statements are prepared under GAAP, these statements often present a picture that is different from economic reality.

7. The main objective for adjusting the financial statements of a closely held company is:
   a. To determine if the owner is taking unreasonable compensation
      Incorrect—This may be a type of normalizing adjustment but it is not the main objective.
   b. To adjust the financial statements of a business to more closely reflect its true economic financial position and results of operations on a historical and current basis
      B is Correct—The main objective for adjusting the financial statements of a closely held company is to more closely reflect its true economic financial position and results of operations on a historical and current basis.
   c. To adjust the financial statements to ensure the financial statements are in conformity with Generally Accepted Accounting Principles
      Incorrect—GAAP financial statements may not present a picture of economic reality.
   d. To adjust the financial statements so there is consistency in the financial statements over the time period the valuator is analyzing
      Incorrect—The valuator is trying to depict "a true economic picture" not consistency.

8. Which one of the following is NOT a general category of normalized adjustments?
   a. Removal of excess cash
      Incorrect—Excess cash could be considered a non-operating asset. The valuator may adjust excess cash from the balance sheet but will add this back into the conclusion of value.
   b. Inventory adjustment when inventory is recorded on a FIFO basis
      B is Correct—If inventory is recorded under LIFO an valuator may make a normalized adjustment.
   c. Reasonable compensation for owners
      Incorrect—Adjusting for owners' compensation would be described as a control adjustment. A control adjustment may be made based on the level of value being appraised.
   d. Bad debt adjustment for a significant write off due to an unexpected bankruptcy filing by a major customer
      Incorrect—An adjustment for a significant amount of bad debts would be an adjustment for non-recurring or extraordinary events.

9. Which of the following are considered "control" adjustments?
   a. Officers' compensation and depreciation adjustments
      Incorrect—An adjustment to officer's compensation would be considered a control adjustment however an adjustment of depreciation would not be controlling but considered a normalizing adjustment.
   b. Discretionary spending and depreciation adjustments
      Incorrect—An adjustment to discretionary spending would be a control adjustment and an adjustment of depreciation would not be controlling but considered a normalizing adjustment.
   c. Discretionary spending and officers' compensations
      C is Correct— Adjustments to discretionary spending and officers compensation would be considered control adjustments.
   d. Depreciation adjustments and bad debt adjustments
      Incorrect—Adjustments for depreciation expense and bad debts would be considered normalizing adjustments.

10. A pending lawsuit, unrecorded pension liabilities, and capital gains tax on unrealized appreciation of assets are what type of normalized adjustments?
   a. Non-operating adjustments
      Incorrect—Non operating adjustments would be made for assets recorded on the balance sheet which are not necessary for the normal operations of the business.
   b. Non-reoccurring adjustments
      Incorrect—Examples would include sale of fixed assets and recognizing bad debts.
   c. Contingent liability adjustments
      C is Correct—The purpose of these adjustments is for the valuation analyst to determine if any contingent liabilities exist that are not recorded on the balance sheet.
   d. Timing adjustments
      Incorrect—Examples of timing adjustments include long term contracts and installment sales. The objective is for the valuator to understand revenue and expenses are recorded in the proper periods.

11. The cost to replace an asset under a particular fact situation is known as:
   a. Fair market value
      Incorrect—Fair market is defined as the price property would change hands between a hypothetical willing buyer and willing seller, both not under any compulsion to buy or sell and have the knowledge.
   b. Fair value
      Incorrect—Fair value is mainly a statutory value which can vary from state to state.
   c. Replacement cost
      C is Correct—Replacement cost is the cost to replace an asset under a particular fact situation.
   d. Strategic value
      Incorrect—Strategic value is the value to a particular investor.

12. In 2006, a company purchased a new operating press costing $300,000. The company elected Section 179 depreciation for this piece of equipment. An appropriate normalization adjustment would be:
   a. Do nothing
      Incorrect—When a company depreciates equipment using 179 bonus depreciation a valuator should adjust depreciation expense to accurately reflect depreciation over the assets useful life.
   b. Adjust the income statement, only to add back Section 179 depreciation
      Incorrect—Not only should the valuator adjust the income statement a balance sheet adjustment should be made to reflect the adjusted net book value of the asset.

c. Adjust the income statement to add back the Section 179 depreciation and adjust the balance sheet to reflect the fair market value of the asset
C is Correct—The valuator should adjust both the income statement and the balance sheet.

d. Adjust the balance sheet only to reflect the fair market value of the equipment
Incorrect—The valuator not only should adjust the balance sheet the income statement should be adjusted to reflect the annual depreciation expense based on the useful life of the asset.

Issues to Consider in Chapter 3–Bonus Question

Item 1 The estimated reserve for non-collectible accounts receivable is $50,000 and is based on approximately 1% of the company's most recent annual gross sales. Both the company and its auditors believe that the reserve is reasonable. However, after reviewing the receivable list, the president of the company estimates that actual bad debts on existing receivables will be only about $20,000.

Note Consider if the President has knowledge that supersedes the company and the auditors' position on the non-collectible accounts. Will this adjustment be self-serving to the President or does it accurately reflect the current financial position?

Item 2 Since the company's inception, it has witnessed continually increasing costs for its inventory. As a result of these cost pressures, Advanced decided to convert to the LIFO method for costing its inventory in 1980. Therefore, it is determined that Advanced's actual current inventory is understated by $80,000.

Note Consider an adjustment to inventory for the LIFO reserve. Consider if an adjustment must be made for each year or only the current year.

Item 3 The company owns two of its three facilities and leases the other. Due to a recent refinance proposal, the company obtained an MAI appraisal on both of the properties it owns. The total MAI appraisal for both properties is $250,000 and the current book value for both properties is $125,000.

Note Adjust the property to fair market value. Consider adjustment for deferred taxes on the built-in gains of the property.

Item 4 The company has various items of machinery that were purchased three years earlier for $100,000. Their net book value today is $50,000. To replace the machinery today would cost $130,000. The estimated market value today (if sold as is today) is $100,000.

Note Adjust the balance sheet to fair market value. Consider adjustment of depreciation expense on income statement as well as the related tax effect on the balance sheet and income statement.

Item 5 The company has a negotiable note receivable, received in an arms-length transaction, bearing 12% interest over 5 years. If this note represents a safe loan with minimal risk of non-collection, its value is determined by comparison with similar safe notes. If the going rate for similar safe notes is 18% to 20%, then the face value of the note must be discounted to account for the interest rate differential.

Note Consider reducing the face value of the note to reflect the present value at 12% versus similar safe notes at 18%.

Observation (regarding #5 above):

In the above example the valuation dispute will probably center around one of two points: determination of the going interest rate for other safe loans and determination of the appropriate discount rate. In order to determine a safe rate, consideration should be given to the rates in effect for government securities, prime commercial paper, and corporate bond yields with similar maturity dates. There will probably be no precise comparable, and as such, an acceptable range should be developed. The calculation should be based upon present value factors and not a flat percentage reduction because the note is payable over a future period of time.

Review Questions Chapter 4 Defining and Estimating the Future Benefit Stream

1. Cash flows that are calculated as: net income after tax plus non-cash charges, less applicable capital expenditures, less additions to net working capital to support operations, plus changes in long-term debt from borrowings required for operations, less changes in long-term debt for repayments:
   a. Equals net cash flow to equity
      A is Correct—The valuation analyst should be aware that other definitions may be used which are part the body of knowledge, and should always define how the valuation analyst determined net cash flow to equity.
   b. Equals equity to debt ratio
      Incorrect—The debt to equity ratio is calculated by dividing total debt by total equity.
   c. Equals invested equity
      Incorrect—Return on equity is calculated by dividing net income by ½ of beginning common equity and ending common equity.
   d. Equals operations equity
      Incorrect—If you were calculating the operating margin ratio, you would divide the income from operations by net sales.

2. The formula for net cash flow to invested capital can be calculated as:
   a. Net income before tax, plus non-cash charges, less capital expenditures, less additions to net working capital for operations, less interest expense (tax-affected)
      Incorrect—One must consider net income after tax, i.e., taxes must be paid to properly calculate net cash flow. If taxes are not paid, cash or other equity must be adjusted.
   b. Net income after tax, plus non-cash charges, less capital expenditures, less additions to net working capital for operations, plus interest expense (tax-affected)
      B is Correct— The valuation analyst should be aware that other definitions may be used which do fit within the body of knowledge and should always define how the valuation analyst determined net cash flow to invested capital.
   c. Net income after tax, plus non-cash charges, less capital expenditures, less additions to net working capital for operations, less interest expense (tax-affected)
      Incorrect—One must include interest expense and it should be tax-affected. EBITDA should not be treated as if it were free cash flow.
   d. Net income after tax, plus non-cash charges, plus capital expenditures, plus additions to net working capital for operations, less interest expense (tax-affected)
      Incorrect—Interest expense (tax-affected) should be *added back* in the formula.

3. Bell Landscape Company has the following historical earnings:

Year	Earnings
1	$75,400
2	65,200
3	87,600
4	90,500
5	53,900

Which method of projecting earnings would appear most appropriate to estimate future benefits?

a. Weighted average method
Incorrect—Weighted average method is used when the analyst can see past earnings indicated a pattern likely to recur in the future. This is not the observed pattern in this historical data set.

b. Unweighted average method
B is Correct—Unweighted average method is probably the most appropriate method because no historical pattern or trend exists that would suggest any year or years results are any more indicated than the rest of the historical data.

c. Trend Line—static method
Incorrect—Trend line—static methods best fit data increasing at a steady but declining rate. This is not the observed pattern in this historical data set.

d. Gompertz curve method
Incorrect—Gompertz curves best fit periods of slow growth followed by rapid growth followed by slowdown in growth and a declining growth rate. This is not the observed pattern in this historical data set.

4. Using the data provided above in question 3 for Bell Landscape, estimate the future benefits, using the method you have selected in question 3:

a. $73,340
Incorrect—This answer would be calculated using a weighted average method where the most recent year is given the greatest weight (5), declining by one (1) for each prior year with the oldest year given the least weight (1). The pattern of data does not suggest this to be the best method to use to calculate future benefits.

b. $75,700
Incorrect—This answer is calculated based on an inverse weighted average method, and does not fit the data pattern.

c. $93,150
Incorrect—This is not the amount calculated using an unweighted average method.

d. $74,520
D is Correct—This amount is calculated using an unweighted average method as follows: 75,400 + 65,200 + 87,600 + 90,500 + 53,900 equals $372,600 divided by 5 (the total number of years of data used) equals $74,520.

5. Start-up Jennings Baker Company provided you the following historical data:

Year	Earnings
1	($15,300)
2	32,400
3	89,600

Which method of projecting earnings would appear most appropriate to estimate future benefits?

a. Weighted average method
A is Correct—Weighted average method is typically used when the analyst concludes more recent past earnings/losses are more representative of the expected future results, or the historical data demonstrates a trend (profitability) that is expected to continue in the future. The startup costs in year 1 are not likely to recur, and profitability seems more likely.

b. Unweighted average method
Incorrect—No historical pattern or trend exists in this historical data which would suggest any year or years' results are any more indicated than the rest of the historical data.

c. Trend Line—static method
Incorrect—Trend line—static methods best fit data increasing at a steady but declining rate. This is not the observed pattern in this historical data set.

d. Gompertz curve method
Incorrect—Gompertz curve best fits periods of slow growth followed by rapid growth followed by slowdown in growth and a declining growth rate. This is not the observed pattern in this historical data set.

6. Net cash flow to equity will result in what type of value:

a. Invested capital
Incorrect—Net cash flow to invested capital will result in value of invested capital.

b. Equity
B is Correct—The net cash flow to equity will result in a value of equity capital.

c. Controlling interest
Incorrect—Controlling interest relates to the nature of the ownership interest being valued The value of equity capital can be determined on a controlling or non-controlling basis.

d. Non-controlling (i.e., minority) interest
Incorrect—Non-controlling (i.e., minority) interest relates to the nature of the ownership interest being valued. The value of equity capital can be determined on either a controlling or non-controlling basis.

7. When discounting cash flow to invested capital, the appropriate discount rate is:
   a. Cost of equity
      Incorrect—The appropriate discount rate when discounting cash flow to equity is cost of equity)
   b. Weighted average cost of capital
      B is Correct—When discounting cash flow to invested capital, the appropriate discount rate is the weighted average cost of capital (WACC). As its name implies, WACC blends a company's cost of equity with its cost of debt to arrive at the company's overall cost of capital. WACC adds versatility to the valuation in that it can be developed based on a number of assumptions involving the company's debt in its capital structure. These assumptions can include greater debt, less debt, or debt under different terms.
   c. Capital asset pricing model
      Incorrect—The capital asset pricing model does not consider the cost of debt, which is necessary to estimate the value of invested capital.
   d. Ibbotson build-up method
      Incorrect—This is an appropriate method in determining a discount rate to be used when discounting cash flows to equity

8. Generally, an estimated future benefit stream is based on historical economic income when:
   a. There is a lack of historical information
      Incorrect—Used when historical information is indicative of future benefits, if there is a lack of historical information, estimated future benefits would be based on projected income.
   b. Start up or development stage companies
      Incorrect—If valuing a start up or development stage company future benefits would generally be based on projected income.
   c. The future benefit stream is estimated to be non-linear
      Incorrect—If estimated future benefits are based on historical economic income the future benefit stream is generally estimated to be linear.
   d. The future benefit stream is estimated to be linear
      D is Correct—Estimated future benefits are based on historical income when future benefits are linear.

9. A linear benefit stream is a stream of future benefits that is expected to grow or decline at a variable rate.
   a. True
      Incorrect—A linear benefit stream is a stream of future benefits that is expected to grow or decline at a constant rate
   b. False
      B is Correct—A non-linear benefit stream is a stream of future benefits that is expected to grow or decline at a variable rate.

10. Two most commonly used methods to estimate future benefits based on a linear benefit stream are:
    a. Weighted average method and unweighted average method
       A is Correct—Two of the most commonly used methods to estimate future benefits based on a linear benefit stream are weighted average method and unweighted average method.
    b. Weighted average method and projected cash flow method
       Incorrect—The weighted average method is used when the analyst concludes one or more of the historical years are more representative of the future estimated benefits or that a trend or pattern exists and is expected to continue. The projected cash flow method is the most commonly used method to determine future benefits of a non-linear benefit stream
    c. Unweighted average method and projected cash flow method
       Incorrect—An unweighted average method is typically used when the analyst concludes all of the past earnings are representative of the expected future benefits and no existing pattern or trend would suggest that any one year or years' results are more indicative than the rest of the historical data. Projected cash flow would be used when the benefit stream is non-linear.
    d. Projected cash flow method and projected earnings method
       Incorrect—The projected cash flow and projected earnings method are most commonly used methods to determine future benefits of a non-linear benefit stream.

11. Using a weighted average method to determine a future benefit stream, a valuation analyst assigns more weight to the most recent years. This indicates:
    a. The valuation analyst determined the most recent year is the most indicative of future years
       A is Correct—The weighted average of historical economic earnings is most appropriately used for calculating future earnings when there appears to be a general pattern that may be extrapolated into the future.
    b. All of the past earnings are representative of the expected future benefits
       Incorrect—A weighted average method is typically used when the valuation analyst concludes that certain past earnings are more representative.
    c. No existing pattern or trend would suggest that any one year or years is more indicative than the rest of the historical data
       Incorrect—This would be unweighted average method.
    d. There is no apparent trend in the historical earnings
       Incorrect—The weighted average method is used when there appears to be a general pattern.

12. Using the Trend Line Projected Method, growth or data is:
    a. Increasing at a declining rate
       A is Correct— The trend line projected method is used where it is expected that growth is increasing at a declining rate.
    b. Increasing at an increasing rate
       Incorrect—When data is increasing at an increasing rate this is known as a Geometric method.
    c. Increasing at a constant rate
       Incorrect—When data is increasing at a constant rate this is known as the Projected Growth Rate in Earnings Methods
    d. Increasing at an increasingly declining rate
       Incorrect—When data is increasing at an increasingly declining rate this is referred to as logarithmic projection.

13. Projected economic income in constant real dollars is based on real dollars in the first year without regard for inflation.
    a. True
       A is Correct—Project economic income in constant real dollars is based on real dollars in the first year without regard for inflation.
    b. False
       Incorrect—If projected economic income in calculated in nominal dollars, then that would include inflation in the projected income

14. When utilizing projected or forecasted financial information, the adequate number of years to be included in the analysis is:

    a. 5 years for tax valuation per the Internal Revenue Service, 10 years for all other types of valuations
       Incorrect – There are no certain requirements for the number of years included in a forecast or projection for tax valuations or other types of valuations.
    b. A minimum of 10 years for all valuations
       Incorrect – There is no such minimum number of years requirement.
    c. Number of years based on the owner's investment horizon.
       Incorrect – The owner's investment horizon is not relevant as to the valuation based on a projection or forecast.
    d. The number of years until it is assumed the benefit stream becomes linear
       D is correct – The projection or forecast period should be as long as it takes until the benefit stream stabilizes and becomes linear, at which point the valuation analyst can then capitalize the benefit stream to determine the "terminal value."

Chapter 4 Bonus Question Responses:

Calculate the equity value using net cash flows to equity as the benefit stream. Assume a 20% after–tax net cash flow capitalization rate and a 15.58% weighted average cost of capital. Assume the net income (after–tax) is $500,000. Assume the non-cash charges are $250,000 a year, the expected capital expenditures to support the projected operations is $100,000 a year, the working capital necessary to support the projected operations is $50,000 a year, and the annual debt repayments are $250,000. Assume that the annual interest expense (tax effected) is $140,000 and that the debt capital is $3,000,000.

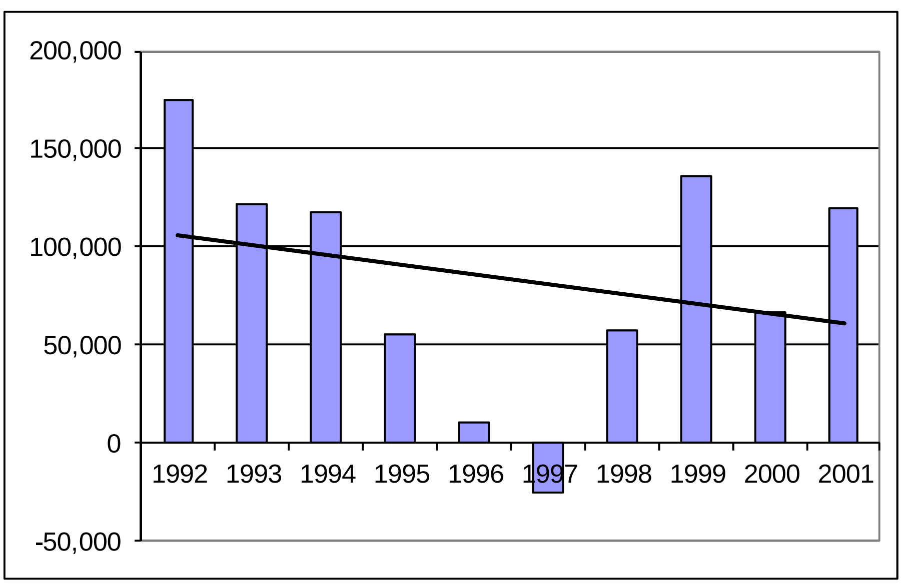
Net income (after-tax)	$ 500,000
Non-cash charges (e.g. depreciation, amortization, deferred revenue/taxes)	250,000
Capital expenditures necessary to support projected operations	(100,000)
Additions to net working capital necessary to support projected operations	(50,000)
Changes in long-term debt for repayments necessary to support projected operations	(250,000)
Net cash flow to equity	350,000
After-tax net cash flow capitalization rate	20%
Equity value	$1,750,000

Assuming the same facts as above, calculate the equity value using the net cash flows to invested capital.

ANSWER:

Net income (after-tax)	$	500,000
Non-cash charges (e.g., depreciation, amortization, deferred revenue, deferred taxes)		250,000
Capital expenditures necessary to support projected operations		(100,000)
Additions to net working capital necessary to support projected operations		(50,000)
Interest expense (net of tax deduction)		140,000
Net cash flow to equity		740,000
After-tax net cash flow capitalization rate		15.58%
Invested capital (rounded)		4,750,000
Debt		(3,000,000)
Equity capital	$	1,750,000

Debt	63.00%
Equity	37.00%
Total	100.00%
Debt - cost of capital (after-tax)	4.17%
Equity - cost of capital (after-tax)	35.00%
Weighted cost of capital	
Debt	2.63%
Equity	12.95%
Total	15.58%



This chart of trend line data (created in Excel) indicates this set of data probably doesn't lend itself well to linear analysis. Given trend linear analysis is inappropriate, how is the above chart useful to the valuation analyst? Or is it useful at all?

The type of data being charted is not identified. That is the first thing a valuation analyst must determine. What is being measured? It may be useful in showing the analyst a trend that might exist, or that something (seasonality) is affecting the numbers, or that there was some kind of change at the company for which the learning curve was very steep.

This unidentified data set also tells a valuation analyst to be certain to title as many of the charts as possible within the chart, so that when it is separated from any report, it is not misleading to another reader or user.

Review Questions Chapter 5 Capitalization/Discount Rates

1. What is a capitalization rate?
    a. The calculated external factor and internal factor multiplied by the investment factor.
    Incorrect—These are three of the factors that must be reviewed as they will influence the capitalization rate.
    b. Divisor (or multiplier) used to convert a defined stream of income to present value.
    B is Correct—The capitalization rate is a divisor or multiplier used to convert a defined stream of income (or benefit stream) determined by the valuation analyst to its present value.
    c. The price/earnings ratio divided by the dividend paying capacity.
    Incorrect—This formula will not yield a capitalization rate, although one may use P/E ratios or dividend ratios in the market method of valuation.
    d. Rate of return used to convert a series of future income amounts to their present value.
    Incorrect—This is not the definition of a capitalization rate.

2. What is a discount rate?
    a. The calculated external factor and internal factor multiplied by the investment factor.
    Incorrect—These are three of the factors that must be reviewed as they will influence the discount rate.
    b. Divisor or multiplier used to convert a defined benefit stream to present value.
    Incorrect—This is the definition of a capitalization rate.
    c. The price/earnings ratio divided by the dividend paying capacity.
    Incorrect—This formula will not yield a discount rate, although one may use PE ratios or dividend ratios in the market method of valuation.
    d. A rate of return used to convert a series of future income amounts to their present value.
    D is Correct—A discount rate is the rate of return used by the valuation analyst to convert a series of future benefit streams to their present value.

3. Earnings for Jasper Company for the last five years are shown below: What are the weighted average historical earnings?

Year	Earnings	Weight
1999	1,230,000	1
2000	1,240,000	2
2001	1,245,000	3
2002	1,230,000	4
2003	1,230,000	5

a. 1,230,000
Incorrect—$1,230,000 is an unweighted average amount
b. 1,234,333
B is Correct—The formula is the total of each earnings amount multiplied by its assigned weight divided by the sum of the weights.
c. 3,703,000
Incorrect—This is triple the average.
d. 7,714,581
Incorrect— This is not the weighted average.

4. Using the weighted average historical earnings from question #3, if the calculated discount rate is 15% and long-term growth is 3%, what is the indicated value of Jasper Company based on a capitalization of single-period earnings method?
a. $ 8,228,900
Incorrect—This figure is obtained by capitalizing 1,234,333 by 15%.
b. $15,429,200
Incorrect—This figure is unchanged and a terminal value represents the value of a company in the terminal year of an earnings forecast.
c. $10,286,100
Incorrect—This amount incorrectly uses the capitalization for next year without increasing the weighted average historical earnings by 3% to represent the estimated future benefit stream.
d. $10,594,700
D is Correct—This amount is calculated by increasing the weighted average historical earnings by the estimated long-term sustainable growth of 3% to determine the estimated future benefit stream for then dividing the amount by the capitalization rate of 12% (discount rate of 15% minus long-term sustainable growth rate of 3%). Another calculation would be to take the capitalization rate for next year of 12% and divide it by one plus the estimated long-term sustainable growth rate (12% / (1+.03) = 11.65%) and using the result to capitalize the weighted average historical earnings of $1,234,333 without adjusting for growth. Both methods will result in the same indicated value..

5. A capitalization rate and a discount rate are essentially the same thing.
a. True
Incorrect—A capitalization rate can be used to determine a value where the anticipated growth in the benefit stream is stable while a discount rate is used to convert a series of future benefit streams to a present value.
b. False
B is Correct—Discount rates are applied to convert a series of future income amounts to present value whereas capitalization rates are applied to a single-period benefit stream to convert to a value.

6. The price earnings ratios for five public companies are: 8.20, 4.60, 5.00, 4.86, and 2.10. The after-tax capitalization rate is:
   a. 16.00%
      Incorrect—This is a generic number used in text examples as a given rate.
   b. 18.08%
      Incorrect—This answer is the result of a higher average and likely due to mathematical errors.
   c. 20.19%
      C is Correct— The formula to determine a capitalization rate from a series of price/earnings ratios is: 1/(sum of P/E ratios / number of P/E ratios). Here the calculation is 1/((8.20 + 4.60 + 5.00 + 4.86 + 2.10)/5) = 20.19%
   d. 24.76%
      Incorrect—This number does not correctly apply the formula but is simply the sum of the P/E ratios themselves.

7. The primary formula for the Capital Asset Pricing Model (CAPM) is:
   a. Expected return = risk-free rate divided by beta multiplied by the expected return on a market portfolio.
      Incorrect—The market portfolio in this definition would be overvalued.
   b. Expected return = risk-free rate multiplied by beta multiplied by the expected return on a market portfolio less the risk-free rate.
      Incorrect—The beta-adjusted market return should be added to the risk-free rate, not multiplied
   c. Expected return = risk-free rate plus beta multiplied by the expected return on a market portfolio less the risk-free rate.
      C is Correct—Some valuation analysts substitute the average pre-tax return on equity for the market portfolio in CAPM. The valuation analyst needs to define which is used and why.
   d. Expected return = beta divided by the risk-free rate multiplied by the expected return on a market portfolio less the risk-free rate.
      Incorrect—Beta is not divided by the risk-free rate

8. To calculate the weighted average cost of capital (WACC):
   a. Calculate the cost of debt plus the cost of equity in proportion to their book values.
      Incorrect—The weights of both the cost of debt and the cost of equity are measured based on fair market value, not book value.
   b. Calculate the weighted average earnings and divide by the ratio of debt to equity.
      Incorrect—To calculate the WACC, the after-tax weighted cost of debt is added to the weighted cost of equity.
   c. Calculate the after-tax weighted cost of debt and add the weighted cost of equity.
      C is Correct—Formula for weighted average cost of capital is cost of capital = after tax weighted cost of debt + weighted cost of equity. The weights of both the debt and equity components are measure at fair market value.
   d. Calculate the interest rate on a mid-range treasury bond and divide by beta.
      Incorrect—Beta is important in many financial calculations, but is not appropriate in calculating debt or equity; the treasury rate may be useful in calculating debt but it does not factor directly into the general calculation for cost of capital.

9. An estimate of a long-term sustainable growth rate should:
   a. Equal inflation plus the real volume growth that can be achieved with additional capital investment
      Incorrect—Growth should include inflation and what the analyst can see as real growth by using only currently invested capital.
   b. Equal inflation less the real volume growth that can be achieved with additional capital investment
      Incorrect—Growth plus inflation must be taken into account in a growth rate used by the valuation analyst.
   c. Equal inflation plus the real volume of growth that can be achieved without additional capital investment
      C is Correct—The theoretical basis for long-term sustainable growth is that it cannot exceed the outlook for inflation plus the outlook for growth in the real gross domestic product (GDP).
   d. None of the above
      Incorrect—A long-term sustainable growth rate can be estimated based on expected inflation and growth in real gross domestic product (GDP)

10. Earnings per share is:
   a. The price of risk less the difference between the expected rate of return on a portfolio and the reasonable rate.
      Incorrect—This is the definition of a market risk premium, not earnings per share.
   b. The price of the dividend divided by the price.
      Incorrect—This is the definition of dividend yield.
   c. The market price per share divided by the book value per share.
      Incorrect—This is the definition of price to book ratio.
   d. The net income less preferred stock dividends divided by the number of common shares outstanding.
      D is Correct—This is the definition of earnings per share (EPS)

11. To convert a pre-tax capitalization rate to after-tax capitalization rate:
   a. Multiply the pre-tax capitalization rate by 1 minus the expected tax rate.
      A is Correct—The formula to convert an after-tax capitalization rate to a pre-tax capitalization rate is to multiply the pre-tax capitalization rate by 1 minus the expected tax rate.
   b. Divide the after-tax capitalization rate by 1 minus the expected tax rate.
      Incorrect—This is the formula to convert an after-tax capitalization rate to a pre-tax capitalization rate.
   c. Multiply the pre-tax capitalization rate by 1 plus the expected tax rate.
      Incorrect—In conversion, subtract the actual tax rate from one.
   d. Divide the after-tax rate by 1 plus the expected tax rate.
      Incorrect—This is not a formula for converting to either an after-tax capitalization or pre-tax capitalization rate.

12. Answer To Practice Exercise

Benefit Stream	**Discount/Capitalization Rate**
Capitalization of Earnings/Cash Flow	**Ibbotson Build-Up Approach**
	+ Risk-free rate
	+Equity risk premium
Pre-tax earnings (income before taxes)	**+Size premium**
	+ Company specific risks
After-tax earnings (net income)	**= After-tax net cash flow discount rate**
	– Long-term sustainable growth rate
Net cash flow to invested capital	**= After-tax net cash flow capitalization rate for next year**
	÷ Adjustment for current year
Net cash flow to equity(current year)	**= After-tax net cash flow capitalization rate for current year**
	+ Cash to earnings factor
Pre-tax excess earnings	**= After-tax net income capitalization rate for current year**
	+ Intangible earnings factor
After-tax excess earnings	**= After-tax intangible capitalization rate for the current year**
	Tax effect:
Discounting Future Cash Flows	**= Pre-tax net income capitalization rate for current year**
	= Pre-tax intangible capitalization rate for the current year
Projected cash flows	
	Weighted Average Cost of Capital (WACC)
	+ Weighted Cost of Debt
	+ Weighted Cost of Equity
	= WACC

13. General expectations of the particular business being valued, the size of the business being valued, and the nature of the business being valued are examples of:
    a. External factors that may influence the capitalization or discount rate
    Incorrect—External factors include; expectations of the general economy, existing conditions of the economy, expectations of the industry and existing conditions of the particular industry.
    b. Internal factors that may influence the capitalization or discount rate
    B is Correct—General expectations, size, and nature of the business being valued are internal factors that may influence the capitalization or discount rate.
    c. Investment factors that may influence the capitalization or discount rate
    Incorrect—Investment factors include risks associated with the investment itself, expectations as to the capital appreciation and liquidity of the investment and level of the expected management burden of the investment
    d. Marketability factors which affect the capitalization or discount rate
    Incorrect—Marketability relates to converting and investment into cash.

14. It is generally accepted that the capitalization rate is equivalent to the discount rate less:
    a. Short-term growth rate
       Incorrect—The short-term growth rate does not adequately consider the long-term sustainable growth rate necessary for accurate valuation calculations.
    b. Long-term sustainable growth rate
       B is Correct—The discount rate less the long term sustainable growth rate equals the capitalization rate.
    c. Equity risk premium
       Incorrect—The equity risk premium is a factor used to determine a discount rate and unrelated to the company specific growth rate.
    d. Risk free rate
       Incorrect—The risk free rate is generally the long-term governmental bond rate and should not be confused with the growth rate.

15. Which variable below is NOT included in the Ibbotson Build-Up Method?
    a. Risk free rate of return
       Incorrect—The risk free rate is the starting point for the Build-Up Method.
    b. Beta
       B is Correct—Beta is a component of the capital asset pricing model and is not included in the Ibbotson Build-up Method.
    c. Size premium
       Incorrect—Size premiums are included in the Build-Up Method, generally after the equity risk premium.
    d. Specific company risk
       Incorrect—The factors included in the Ibbotson Build-Up formula include the risk free rate of return, the equity risk premium, size premium, industry risk premium and company specific risk.

16. Which component of the Ibbotson Build-Up Method relates to the "unsystematic risk" associated with a particular business entity?
    a. Risk free rate
       Incorrect—The risk free rate relates to maturity risk. Maturity risk is the risk that the value may fluctuate due to changes in interest rates.
    b. Equity risk premium
       Incorrect—The equity risk premium relates to systematic risk. Systematic risk is uncertainty of future returns based on movements of the market.
    c. Beta
       Incorrect—Beta is not a component of the Ibbotson Build-Up Method
    d. Specific company risk premium
       D is Correct—The specific company risk premium relates to the unsystematic risk of a particular business entity.

17. Which of the following is not an assumption of the Capital Asset Pricing Model (CAPM)?
    a. Investors are risk averse
       Incorrect—The Capital Asset Pricing Model assumes all investors are risk averse.
    b. There are no taxes and no transactional costs
       Incorrect—The Capital Asset Pricing Model assumes there are no taxes or transactional costs.
    c. The rate received from lending money is the same as the cost of borrowing
       Incorrect—The Capital Asset Pricing Model assumes the rate received from lending money is the same as the cost of borrowing.
    d. All investors do not have identical investment holding periods
       D is Correct—The Capital Asset Pricing Model assumes all investors have identical holding periods.

18. Using the Modified Capital Asset Pricing Model a valuation analyst determines beta = 1.08, this means:
    a. The subject company is no more or no less volatile than the industry
       Incorrect—This would represent a beta of 1.0
    b. The subject company is less volatile than the industry
       Incorrect—This would be a beta less than 1.0
    c. The subject company is more volatile than the industry
       C is Correct—When beta is 1.08 this is representative that the company is more volatile or more risky than the overall industry.
    d. The subject company has no relative market risk
       Incorrect—This would mean the company has a zero beta which is equivalent to the risk free rate.

19. WACC can add versatility to the valuation, in that a valuation analyst could change the capital structure of an entity when valuing a non-controlling (i.e., minority) interest.
    a. True
       Incorrect—When valuing a non-controlling interest the valuator cannot change the capital structure of an entity.
    b. False
       B is Correct—A non-controlling (i.e.,minority) interest, by its nature, would not have the ability to change the capital structure of an entity.

20. If a valuation analyst uses the weighted average cost of capital (WACC) and is valuing only the equity of the company, the valuation analyst would:
    a. Capitalize equity and ignore the debt
       Incorrect—This method would yield an incorrect value as the debt would be included in the WACC, but not the benefit stream.
    b. Capitalize invested capital then subtract existing debt
       B is Correct—Using the WACC method and valuing only the equity of the company the valuation analyst must calculate the value of the company's entire capital structure and then subtract the debt.
    c. Determine the present value of the debt only
       Incorrect—Using the WACC the valuation analyst must determine the present value of invested capital.
    d. Capitalize the cash flow net of debt
       Incorrect—If valuing the equity using the WACC, the valuation analyst should use cash flow to invested capital and value the entire capital structure and then subtract the company's debt.

21. The criteria for companies included in the measurement data used to determine the equity risk premiums found in the Duff & Phelps Risk Premium report would include all EXCEPT:
    a. Must be publicly traded for 5 years
    Incorrect—Companies included in the measurement data must meet certain criteria including must be publicly traded for 5 years.
    b. Must have sales greater than $1 million in any of the previous 5 years
    Incorrect—This is to ensure companies in bankruptcy or liquidation are not used for analysis. The Risk Premium report has a separate “high financial risk” portfolio for those companies.
    c. Cannot be a financial service company
    Incorrect—Because financial service companies are excluded from the measurement data
    d. EBITDA can either be negative or positive based on the most recent 5 year average
    D is Correct—Companies must have a <u>positive</u> 5 year average EBITDA for the previous five fiscal years

22. The Duff & Phelps equity risk premium measurements are sorted into ____________________ measures of size.
    a. five
    Incorrect—This is the number of criteria in the “high financial risk” category.
    b. eight
    B is Correct—The Duff & Phelps equity risk premium measurement data is sorted into eight (8) measurements of size.
    c. ten
    Incorrect—This is the number of size premium deciles in the Ibbotson data.
    d. twelve
    Incorrect—This is an incorrect number as there are only eight criteria.

23. What component of cost of capital using a build-up method would the Duff & Phelps data help you determine:
    a. Company specific risk
    Incorrect—This factor is used to estimate the unsystematic risk of the target company.
    b. Equity risk premium
    B is Correct—The Duff & Phelps data was developed to measure the equity risk premium in determining the cost of capital.
    c. Risk free rate
    Incorrect—The risk free rate is generally the long-term governmental bond rate.
    d. Beta
    Incorrect—Beta is used in the Modified CAPM, not the Build-Up Method.

24. What are the four general risk factor categories of the risk rate component model (RRCM)?
    a. Competition, financial strength, profitability and stability of earnings, and management ability and depth
       A is Correct—The primary factors of the RRCM include competition, financial strength, management ability and depth, and profitability and stability of earnings.
    b. Competition, national economic effects, local economic effects, and depth of management
       Incorrect—National and local economic effects would not be considered primary factors of the RRCM.
    c. Local economic effects, financial strength, market stability, and profitability and stability of earnings
       Incorrect—Local economic effects and market stability are not considered primary factors of the RRCM.
    d. National and local economic effects, financial strength, management ability, and competition
       Incorrect—National and local economic effects would not be considered primary factors of the RRCM.

Review Questions Chapter 6 Commonly Used Methods of Valuation

1. The three general approaches that need to be considered by the valuation analyst in each valuation engagement include:
    a. Income, Asset Based, and Excess Earnings
       Incorrect— Excess Earnings is a method, not an approach to valuation.
    b. Market, Treasury, and Income
       Incorrect— Treasury is a method, not an approach to valuation.
    c. Income, Going Concern, and Market
       Incorrect— Going Concern refers to a premise of value, not an approach to valuation.
    d. Income, Asset Based, and Market
       D is Correct— Income, Asset Based and Market refer to the three general approaches to valuation which a valuation analyst must consider in each valuation engagement.

2. As a component of the capitalization of future earnings or cash flows method, the future earnings or cash flows as estimated by the valuation analyst:
    a. Are always calculated on an after-tax basis
       Incorrect—The future earnings or cash flows may be calculated on a pre-tax or after-tax basis (be careful of the word “always” in business valuation). It is extremely important, however, that the valuation analyst ensure that the basis of the benefit stream, either pre-tax or after-tax, match the basis of the capitalization rate.
    b. Exclude any income or expense items generated from non-operating assets and liabilities
       B is Correct—As their name implies, non-operating assets and liabilities do not contribute to the operations of a business, and any income or expense items related to them should not be included in the benefit stream in the capitalization of earnings/cash flows method. The value of any non-operating assets or liabilities are added back to the calculated value of the operating business to determine the overall.
    c. Are based only on the historical results of operations in the fiscal year closest to the valuation date
       Incorrect—Any number of fiscal years, weighted or unweighted, can be used to estimate the future earnings or cash flows in this method.
    d. Exclude any compensation to the owner(s) of the business
       Incorrect—Compensation to the owner(s) of the business should be included in the estimation of future earnings or cash flows. However, based on the facts and circumstances of the

particular valuation engagement, the compensation amounts may be adjusted as a normalizing adjustment by the valuation analyst.

3. If the capitalization of future earnings/cash flows method is used in a valuation engagement for U.S. Gift Tax purposes, the valuation analyst is required to include how many historical years in the estimate of the future earnings/cash flows?
   a. At least three years, based on Treasury Regulations
   Incorrect—The Treasury Regulations do not specify a particular number of historical years which are required to be included in the estimate of future earnings/cash flows.
   b. As many years as the valuation analyst deems appropriate, based on his/her professional judgment
   B is Correct—The valuation analyst, in their financial analysis, will need to use his/her professional judgment in the determination of how many historical years are relevant in the calculation of the estimate of future earnings/cash flows.
   c. Five years, based on requirements of the Internal Revenue Service.
   Incorrect—The Internal Revenue Service does not specify a particular number of historical years which are required to be included in the estimate of future earnings/cash flows.
   d. Two to five years, based on Treasury Regulations.
   Incorrect— There is no specific requirement noted in the Treasury Regulations.

4. In the discounted earnings/cash flows method, the Gordon Growth Model is used:
   a. To determine the period of stabilized earnings/cash flows of the company
   Incorrect—The period of stabilized earnings/cash flows is based on assumptions developed for the projection period, not through use of the Gordon Growth Model, which is one possible method used to calculate the "terminal value" in the discounted earnings/cash flows method.
   b. To determine the number of periods (years) needed in the projection period
   Incorrect—The number of periods (years) needed in the projection period are based on assumptions used by management as to how long it will take the company to achieve a stabilized level of operations. The Gordon Growth Model is one possible method used to calculate the "terminal value" in the discounted earnings/cash flows method. In closely held businesses, the owner and owner's family may be the only stockholder(s) and may have approved this debt.
   c. To calculate the "terminal value" of the company
   C is Correct— The Gordon Growth Model is one possible method used to calculate the "terminal value" in the discounted earnings/cash flows method.
   d. To calculate the present value factor based on an assumed rate of return
   Incorrect—The present value factors are calculated based on the developed discount rate, not by the Gordon Growth Model, which is one possible method used to calculate the "terminal value" in the discounted earnings/cash flows method.

5. To find useful and relevant comparable guideline publicly traded companies to use in the market approach is:
   a. Relatively easy because numerous comparable guideline publicly traded companies exist for the privately held businesses that are the subject of the valuation analysts valuation engagements
      Incorrect—There are relatively few, if any, guideline publicly traded companies that are comparable to the privately held companies that are the subject of the typical valuation engagement.
   b. Relatively easy because finding comparable guideline publicly traded companies is quick and inexpensive as the information is readily available from public sources
      Incorrect—Finding comparable guideline publicly traded companies is a time consuming and costly approach. The valuation analyst must perform significant financial analysis of the subject company and each potential comparable company.
   c. Relatively difficult because the methodology relies on explicit financial forecasts which are not readily available for the comparable companies
      Incorrect—Although the market approach requires significant financial and operational analysis to determine the comparable companies, it does not rely on explicit financial forecasts but uses relatively simple financial ratios in order to determine a value.
   d. Relatively difficult because company size differential, management depth, product and services diversity and access to debt capital will seldom match the privately held company being valued
      D is Correct—These reasons and others require the valuation analyst to understand, reconcile, and adjust for any perceived differences and similarities between the guideline comparable publicly traded companies and the company being valued.

6. The primary methods used to calculate the value of privately held business interests in the income approach are:
   a. Capitalization of Earnings/ Cash Flows Method and Excess Earnings/Treasury Method
      Incorrect—The Excess Earnings methods are hybrid methods, containing elements of both the Income and Asset Approaches.
   b. Excess Earnings/Treasury Method and Discounted Earnings/Cash Flows Method
      Incorrect— The only income approach method noted in this option is the Discounted Earnings/Cash Flows method.
   c. Capitalization of Earnings/Cash Flows Method and Discounted Earnings/Cash Flows Method.
      C is Correct—These are the two primary methods within the income approach.
   d. Discounted Earnings/Cash Flows Method and Price/EBITDA Method
      Incorrect—The Price/EBITDA Method is a market approach, not an income approach.

7. According to Russel L. Parr in *Investing in Intangible Assets*, there are ten essential characteristics of an intangible asset. One such essential characteristic is:
   a. To provide an economic advantage in the form of lower manufacturing or operating costs such as substituting high cost high quality materials for low cost materials enabling a higher quality product
      Incorrect—Actually the opposite would be true – enabling the use of low cost materials to maintain a product of equal quality – would be an intangible asset.
   b. To provide an economic advantage in the form of lower manufacturing or operating costs such as reducing the amount of labor required to manufacture, inspect, package or account for a product
      B is Correct—This is one of the ten essential characteristics of an intangible asset per Parr's *Investing in Intangible Assets*.

c. To provide an economic advantage in the form of lower manufacturing or operating costs such as lowering high manufacturing speeds by reducing fuel or electric power requirements **Incorrect—**The opposite is correct—producing higher manufacturing speeds and still being able to reduce fuel or electric power requirements—would be what is needed.

d. To provide an economic advantage in the form of lower manufacturing or operating costs such as reducing shipping costs by eliminating manufacturing environmental hazards
Incorrect—The two issues—shipping a product and an environmental hazard created by manufacturing – do not directly relate.

8. The Financial Accounting Standards Board (FASB) has issued Accounting Standards Codifications that address valuation considerations for goodwill and other intangible assets. Which of the following is correct?
   a. ASC 830 did not affect valuations based on arms-length bargaining.
   Incorrect—ASC 830 deals with foreign currency translation and not valuation issues.
   b. ASC 59-60 does affect valuations, and the valuation analyst must take care to follow the eight factors outlined in ASC 59-60.
   Incorrect—There is no ASC 59-60. The answer is confusing the ASC with Revenue Ruling 59-60 which is often quoted as the basis for valuing a business.
   c. ASC 66-49 outlined procedures to all types of non-cash property for which an appraisal is required for gifting and/or charitable contribution.
   Incorrect—There is no ASC 66-49. The answer is confusing the ASC with Revenue Ruling 66-49 which outlines procedures for all types of non-cash property being gifted and/or charitably donated.
   d. ASC 350 addresses how intangible assets acquired with a group of assets (but not those required in a business combination) should be accounted for upon their acquisition.
   D is Correct—ASC 350 discusses accounting for intangible assets outside a business combination, and its oft-stated companion ASC 805 discusses accounting for intangible assets in a business combination.

9. When valuing the stock of a real estate holding company, most likely the valuator will give the greatest weight to which method?
   a. Capitalization of earnings method
   Incorrect—When valuing a real estate holding company, the value of the stock is most closely related to the underlying assets owned by the company and not the earnings generated from the asset. Therefore an asset approach would be most appropriate.
   b. Book value method
   Incorrect—The book value method is based on the company's book value and does not take into account fair market value as of the valuation date.
   c. Adjusted net assets method
   C is Correct—The Adjusted Net Assets Method is a sound method for estimating the value of a non-operating business such as a real estate holding company
   d. Rule of thumb
   Incorrect—Rules of thumb are not valid valuation methods and should only be used as a sanity check.

10. Using the adjusted net asset method, the valuation analyst only values the tangible assets of the company.
    a. True
       Incorrect—If only tangible assets are used, there will likely be significant differences between the other methods (income and market) due to the missing identifiable intangible asset values.
    b. False
       B is Correct—Both tangible and identifiable intangible assets are valued in determining total adjusted net assets.

11. The adjusted net assets method generally sets a _______________ for determining total entity value.
    a. floor value
       A is Correct—The adjusted net assets method generally sets a floor or the minimum value for determining the total entity value.
    b. high value
       Incorrect—The adjusted net assets method generally sets a floor value or minimum value an owner with a controlling interest would sell their ownership interest for.
    c. forced liquidation value
       Incorrect—In a forced liquidation a shareholder may not be able to obtain the fair market value of the underlying assets.
    d. investment value
       Incorrect—Investment value represents the value to a particular investor.

12. Which one of the following adjustments would be a normalized adjustment to the balance sheet in the adjusted net assets method?
    a. Convert inventory from FIFO to LIFO
       Incorrect—Inventory should be valued on a FIFO basis; the carrying cost of inventory on the balance sheet should be representative of the most recent prices to acquire the inventory.
    b. Remove excess cash
       B is Correct—If the valuator identifies excess cash, the excess cash would be considered a non operating asset and removed from a normalized balance sheet.
    c. Adjust owner's compensation
       Incorrect—An adjustment to owner's compensation would be an appropriate adjustment on the income statement not the balance sheet.
    d. Remove expenses related to fire damage of a Company's manufacturing plant
       Incorrect—An adjustment for expenses due to a fire would be adjusted on the income statement.

13. Which method is based on the theory that the total value of a company is the present value of its projected future earnings plus the present value of the terminal value?
    a. Capitalization of earnings
    Incorrect—The capitalization of earnings is determined based on a single earning stream and divided by the discount rate less a long term growth rate.
    b. Discounted cash flows
    B is Correct—The Discounted cash flow method is based on the theory that the total value of a company is the present value of its projected future earnings plus the present value of the terminal value.
    c. Excess earnings
    Incorrect—The excess earnings method is a formula method that combines both an income and asset approach.
    d. Adjusted net assets method
    Incorrect—The adjusted book value method is based on the fair market value of the company's net assets.

14. The mid period method of discounting should be used when the equity holder:
    a. Has access to cash flows at the end of the year (or period)
    Incorrect—If the equity holder only has access to the cash flows at the end of the year, then the valuator should use an end of period discount rate.
    b. Has access to cash flows throughout the year (or period)
    B is Correct—The mid period discounting method should be used when the equity holder has access to the cash flow throughout the year to receive dividends
    c. Does not have access to any cash flows
    Incorrect—The mid period discounting method should be used when the equity holder has the ability to receive cash flows throughout the year, when the company does not generate any cash flows this method would not be appropriate.
    d. A and B
    Incorrect—This answer cannot be correct, as the items described in A and B cannot occur at the same time.

15. Advantages of the market approach include:
    a. It uses actual data, it is relatively simple to apply, and it is inexpensive to determine.
    Incorrect—The market approach is a costly approach, when done correctly, the analyst must perform significant financial analysis on the subject company.
    b. It uses actual data, it is inexpensive to determine, the data obtain via transaction databases are very reliable.
    Incorrect—The market approach is costly to implement when done correctly and the reliability of transactional data is questionable.
    c. It uses actual data, it is relatively simple to apply, and it does not rely on explicit forecasts.
    C is Correct—The market approach uses actual data for comparison purposes, it can be relatively simple to apply and does not rely on explicit forecasts.
    d. It is user friendly, relatively inexpensive to determine, and simple to apply.
    Incorrect—In order to identify comparable companies, verify comparability, and identify the underlying assumptions built into the pricing model, the market approach is often very time consuming and costly.

16. Which two private company transactional databases cover relatively small companies?
    a. BIZCOMPS and DoneDeals
       Incorrect—The BIZCOMPS database covers transactions of relatively small companies, however, the DoneDeals database includes deal prices ranging from $1 million to $1 billion.
    b. BIZCOMPS and Institute of Business Appraisers(IBA)
       B is Correct—The BIZCOMPS and IBA databases cover transactions of relatively small companies.
    c. Institute of Business Appraisers (IBA) and Mergerstat
       Incorrect—The IBA database covers transactions of relatively small companies, however, Mergerstat data generally include transactions where one of the companies was publicly traded.
    d. Mergerstat and BIZCOMPS
       Incorrect—The BIZCOMPS database cover transactions of relatively small companies, however, Mergerstat data generally include transactions where one of the companies was publicly traded.

17. Using the market approach, “price” should be matched to the appropriate parameter based on which providers of capital in the numerator will be paid with the monies given in the denominator. Market value of invested capital (MVIC) is usually the numerator that is paired with _____________ in the denominator.
    a. EBITDA
       A is Correct—Any denominators that exclude interest should usually be matched with a corresponding numerator of invested capital.
    b. pretax income
       Incorrect—Market value of equity as the numerator would be paired with pretax income.
    c. net income
       Incorrect—Market value of equity as the numerator would be paired with net income.
    d. book value of equity
       Incorrect—Market value of equity as the numerator would be paired with book value of equity.

18. Which method combines the income and asset based approaches to arrive at a value of a closely held business?
    a. Adjusted net assets value method
       Incorrect—This is an asset based approach.
    b. Discounted cash flows method
       Incorrect—This is an income based approach.
    c. Guideline public companies method
       Incorrect—This is a market based approach.
    d. Excess earnings method
       D is Correct—The excess earnings method incorporates elements of both the income and asset approaches to arrive at the value of a privately held company.

19. A "pass-through" entity is one which:
    a. Passes the value of the entity to the owners in a taxable transaction
       Incorrect—A pass-through entity is one which pays no entity-level income taxes but passes on any income or loss to the owners.
    b. Pays no entity-level income taxes, but passes through any income or losses to the owners of the entity
       B is Correct—This is a proper definition of a pass-through entity.
    c. Calculates its entity-level tax liability and passes it through to the owners of the entity
       Incorrect—A pass-through entity does not incur any tax liability itself.
    d. Pays the individual taxes of the owners as a pass through item
       Incorrect—Although many pass-through entities may make distributions of cash to its owners to satisfy any individual tax liability they may incur as owners of the entity, the payment of the distribution is often discretionary and the entity does not pay the individual taxes of he owners.

20. Which model for valuing a minority interest in a pass-through entity assumes 100% of the company's earnings is being distributed?
    a. Mercer
       Incorrect—Mercer concludes that the amount of distributions causes no differences in value.
    b. Grabowski
       Incorrect—Although the Grabowski model assumes that 100% of free cash flow is available for distributions, it does not assume that 100% of the free cash flow will actually be distributed and allows for consideration of appropriate discounts for lack of control and lack of marketability to the extent that such amounts will not be distributed.
    c. Van Vleet
       C is Correct—This model assumes that the subject S Corporation is distributing 100% of its earnings and if this is not the case then any appropriate discount for lack of marketability should be adjusted.
    d. Treharne
       Incorrect—Treharne's model allows for varying levels of distributions from no distributions to 100% distribution.

21. The S election allows a shareholder to avoid which individual level tax?
    a. Capital gain tax
       Incorrect—Both the S and C corporations will pay capital gain tax.
    b. Income tax
       Incorrect—A Corporation will pay income taxes at corporate rates and the owners of an S corporation will pay income taxes at the individual's effective income tax rate.
    c. Dividend tax
       C is Correct—The S election allows a shareholder to avoid the dividend tax.
    d. Foreign tax
       Incorrect—A US S Corporation which conducts business in a foreign country would be subject to income taxes of that country and neither the shareholder nor the corporation would be able to avoid this tax. However, they may receive a tax credit for income taxes paid in a foreign country.

22. There are four recognized models for valuing a minority interest in a pass-through entity. Which of the following statements is incorrect?
    a. All four models recognize distributions impact value
       Incorrect—All four models recognize distributions impact value.
    b. All four models recognize there is potential value in retained net income
       Incorrect—All four models recognize there is potential value in retained net income.
    c. All four models assume the same holding period
       C is Correct—All four models recognize a different holding period. Treharne's model assumes the interest is held into perpetuity, Van Vleet assumes the ownership interest can be liquidates at the option of the shareholder, Mercer assumes a selected holding period and Grabowski considers two holding periods.
    d. All four models consider the dividend tax on C corporation dividends
       Incorrect—All four models consider the dividend tax on C Corporation dividends.

Chapter 6 Bonus Question Reponses

1. The **Excess Earnings/Treasury Method** presumes that the value of a business is the sum of the values of its adjusted net assets and intangible assets, using what is considered to be a "reasonable" return on the adjusted net assets. List the steps used in the method:
    a. Determine the estimated future earnings of the company. Usually this is the historical economic unweighted or weighted average earnings over the last five years, adjusted for any non-recurring items.
    b. Determine the unweighted or weighted average of the GAAP (or tax basis) net assets. This calculation should exclude goodwill or other intangible assets, whose value is also to be estimated by this method. The analyst uses GAAP assets in this step in order to ensure as much comparability with industry data as possible, from which a reasonable rate of return will be obtained in Step #3.
    c. Select a reasonable rate of return to apply to the GAAP net assets whose value was determined in Step #2. The most appropriate rate of return is the average return on equity (unweighted or weighted) for comparable companies, or as determined from industry averages.
    d. Multiply the value of the GAAP net tangible assets of the business, as determined in Step #2, by the rate of return determined in Step #3. The product is that portion of total earnings of the business attributable to a reasonable return on the weighted average or unweighted average net adjusted assets.
    e. The earnings determined in Step #4 are then subtracted from the total earnings determined in Step #1. The difference is the "excess" earnings that is attributable to the intangible assets being valued by this method.
    f. Select a capitalization rate which corresponds to an appropriate rate for a safe return, adjusting it accordingly to reflect the perceived level of risk associated with the company.
    g. The amount of excess earnings determined in Step #5 is then divided by the capitalization rate determined in Step #6. The amount thus derived is the estimated total value of intangible assets.
    h. Determine the current adjusted net assets at fair market value, utilizing the FMV adjusted net assets method. This determination excludes goodwill and all other intangible assets.
    i. The final step in valuing the entire business is the mere addition of the value of the intangible assets (determined in Step #7) to the adjusted net tangible assets (determined in Step #8).

2. List the steps to be used in **Excess Earnings/Reasonable Rate Method**:
   a. Determine the estimated future earnings of the company.
   b. Determine the current adjusted net assets at fair market value, utilizing the FMV adjusted net assets method. This determination must exclude goodwill and other intangible assets.
   c. Select a reasonable rate of return to apply to adjusted net assets whose value was determined in Step #2. The rate chosen should correspond to the relative liquidity and risk of the underlying assets which it is being applied to.
   d. Multiply the value of the adjusted net tangible assets of the business determined in Step #2 by the rate of return determined in Step #3. The product is the portion of total earnings attributable to a return on adjusted net assets. Adjusted net assets, once again, exclude intangible assets of any kind.
   e. The earnings determined in Step #4 are then subtracted from the total earnings determined in Step #1. The difference is the "excess" earnings considered to be attributable to the intangible assets being valued by this method.

3. Geri Co has a 10-year history of weighted average profits of $900,000 and a weighted average dividend paid of 3.5% of earnings. Comparable companies indicate a weighted average yield of 6.2%.

   1st - Calculate the value under the **dividend payout** method:

   Earnings: 900,000
   Dividend amount: 900000 X 3.5% = 31500
   Weighted average yield of comparables: 6.2%
   Dividend payout value: 31500 ÷ 6.2% = 508,065.

   2nd - Calculate if the weighted average dividend payout was:

   45% = 900000 X 45% = 40500 ÷ 6.2% = 6,532,258
   30% = 900000 X 30% = 270,000 ÷ 6.2% = 4,354,839
   50% = 900000 X 50% = 450000 ÷ 6.2% = 7,258,065

   QUESTION: What issues do you see using this method?
   a. Family owned businesses often pay out the bulk of their profits to family members in various ways. These are usually termed dividends by many courts.
   b. Would a buyer pay that much for this company? Use a justification of purchase method to document your opinion.
   c. Differences in capital structure between this company and public comparable companies make it difficult to truly compare dividend payout potential.

4. The steps used when valuing a company using the **discounted earnings** method are:
   a. Determine projected annual estimated earnings of the business for an appropriate forecast period (generally three to five years into the future).
   b. Estimate a long term (perpetual) growth rate for earnings for the period beginning after the forecast period.
   c. Determine an appropriate discount rate.
   d. Calculate the present values of the projected annual earnings using the discount rate. Next, calculate a terminal value using the cap rate (discount rate minus the perpetual growth rate), then use the discount rate to determine the present value of the terminal value.
   e. Sum the present values determined above.

Review Questions Chapter 7 Valuation Discounts and Premiums

1. Select the reason(s) why a discount for lack of marketability (DLOM) for a controlling interest, even one that is 100%, may be applicable.
   a. Uncertain time horizon to complete the offering or sale
   Incorrect—This is one of the correct options available.
   b. Cost to prepare for and execute the offering or sale
   Incorrect— Although this is a correct option, there are two correct options available.
   c. The eventual sale price is finalized
   Incorrect—The eventual sale price for a controlling (or non-controlling) interest is never certain until the transaction actually takes place.
   d. Market conditions may require a quick sale
   D is Correct—Both option “a” and “b” are valid reasons why a DLOM is appropriate for a controlling interest.

2. What circumstances permit the additive application of the DLOC and DLOM?
   a. There are no circumstances permitting additive application of discounts
   A is Correct—When more than one discount is applicable, they should be taken individually in successive order—generally the DLOC first and then the DLOM.
   b. When the DLOM is applied prior to the DLOC
   Incorrect— The order in which the discounts are applied is not the issue, although it is more theoretically correct to apply the DLOC first as the DLOM relates directly to the non-controlling interest that is the subject of the valuation.
   c. When the DLOC is applied prior to the DLOM
   Incorrect—The order in which the discounts are applied is not the issue. The issue is whether or not one should total the discounts being applied and take one total discount.
   d. All circumstances require the addition of all applicable discounts
   Incorrect—While it is true that Courts often apply only one discount, how the court arrives at the final number is a matter of law judgment and not valuation judgment. Valuation discounts are to be taken successively but not additively.

3. Which of the following best describes the concept of marketability?
   a. How much one will be paid for a bundle of rights
   Incorrect—The amount of payment is not the issue in marketability.
   b. The best listing price to get the greatest number of buyers
   Incorrect—Listing can be done at any time and quite easily. Listing a property for sale is not the issue in marketability.
   c. How quickly an interest can be sold in terms of cash
   C is Correct—The speed of sale is the primary issue in marketability.
   d. Having control of the assets of a business
   Incorrect—Asset control may affect how cash might be paid out, but this is not the issue in marketability.

4. The DLOM and DLOC show a relationship in valuations that:
   a. Indicate it is more difficult to sell a non-controlling (i.e., minority) interest in any privately-held business than to sell a controlling interest in that same business
   A is Correct—A number of studies indicate that it is more difficult to sell a non-controlling interest in a privately-held entity than a controlling interest.
   b. The greater the DLOC, the greater the DLOM
   Incorrect—There is no empirical data that supports this relationship.
   c. A DLOM is only available for a non-controlling interest, which is also subject to a DLOC
   Incorrect—Controlling interests can also be subject to a DLOM.
   d. Indicate it is harder to sell a controlling interest in any business than to sell a non-controlling (i.e., minority) interest in that same business
   Incorrect— A number of studies indicate that the opposite is true, it is more difficult to sell a non-controlling interest in a privately-held entity than a controlling interest.

5. It would be appropriate for the valuation analyst to use the restricted stock studies DLOM average of 35% in the valuation of a non-controlling (i.e., minority) interest.
   a. Yes. The studies were done by well-known entities, including the SEC, and, as such, can be trusted by the valuation analyst and report receiver to be accurate.
   Incorrect—A one-style discount is not applicable to all companies or all situations. Each situation is unique and must be looked at in and of itself. Trust in the studies is not the issue.
   b. No. Not all the studies are published, and, therefore, those numbers must be deleted from what the valuation analyst uses.
   Incorrect—Even though some studies are not published, this does not in and of itself determine what discount a valuation analyst should use.
   c. Yes. The studies are updated periodically, so the average is current and applicable to today's valuations.
   Incorrect—The issue is not whether the studies are new or old.
   d. No, the average rate of 35% may be used as a starting point for the valuation analyst.
   D is Correct—The valuator must take additional steps, such as application of current case law, such as *Mandelbaum*, and other studies to determine a reasonable discount.

6. The formula used to generate an implied minority interest discount from control premium data (such as found in the *Mergerstat Review*) is:
   a. 1 minus ((1) divided by (1 minus Control Premium))
   Incorrect—The control premium is not to be subtracted.
   b. 1 plus ((1) divided by (1 plus the control premium))
   Incorrect—The second part of the calculation relating to control premium is not added to 1.0.
   c. 1 minus ((1) multiplied by (1 plus the control premium))
   Incorrect—The control premium calculation is not multiplied by 1.
   d. 1 minus ((1) divided by (1 plus the control premium))
   D is Correct—Thus if the control premium is 44.70% the implied minority interest discount is calculated to be 30.89%.

9. In a valuation in which the valuation analyst applies both a marketability discount and a discount for lack of control, the application of the discounts is additive not multiplicative.
   a. True
      Incorrect—When both a discount for lack of control and a discount for lack of marketability are applied, the application of the discounts is multiplicative.
   b. False
      B is Correct—When both a discount for lack of control and a discount for lack of marketability are applied, the application of the discounts is multiplicative, not additive.

10. Which level of value would be considered equivalent to owning stock in a publicly traded company?
   a. Control marketable
      Incorrect—Most investors in a publicly traded stock own a minority interest.
   b. Minority marketable
      B is Correct—A marketable minority interest is most representative of owning stock in a publicly traded company.
   c. Synergistic value
      Incorrect—A synergistic value is a level of value to a specific investor
   d. Minority non-marketable
      Incorrect—Owning stock in a publicly traded company would be considered marketable and could be converted into cash fairly quickly.

11. The ability of an individual to set company policy, appoint management, and ability to determine dividend policy and payments are examples of:
   a. A minority interest
      Incorrect—A minority shareholder would not be able to change any management policies.
   b. A control interest
      B is Correct—A controlling interest would have the ability to set company policy, appoint management and determine dividend policy.
   c. An equal shareholder with 50% operating control
      Incorrect—A 50% interest is not considered controlling interest.
   d. A shareholder of a publicly traded company
      Incorrect—Majority of shareholders in a publicly traded company have a minority interest, they would have a vote in management decisions but individually would not be able to set policy, appoint management and determine dividend policy.

12. The following are sources of empirical data on control/minority interests except for:
    a. *Mergerstat Review*
    Incorrect—*Mergerstat Review* is published annually by Applied Financial Information, LP to determine control/minority interest information from tender offers and industry transactions.
    b. Morningstar Principia
    Incorrect—Morningstar Principia provides a database on closed-end funds which provides discounts for lack of control as used in the price/net asset value method under the market approach.
    c. SEC Studies
    Incorrect—SEC Studies were published in the Office of the Chief Economist as a source of empirical data on control/minority interests.
    d. Emory Studies
    D is Correct—The Emory studies may be used to determine a discount for lack of marketability.

13. It would not be surprising for a valuation analyst to have the same marketability discount for a controlling interest as they would when valuing a minority interest.
    a. True
    Incorrect—It would be very rare for a controlling interest to have a marketability discount equal or higher than for that of a minority interest.
    b. False
    B is Correct—Where discounts for lack of marketability are appropriate for controlling interests, they are typically much smaller than those for minority interests.

14. Which of the following factors may increase a marketability discount?
    a. Restrictions on transfer, limited access to financial information, and an imminent public offering
    Incorrect—An imminent public offer would decrease the discount because a public offering would instantly make the shares marketable (excluding restricted stock agreements).
    b. Little or no dividends, little prospect of going public, and high dividend payouts
    Incorrect—High dividend payouts would decrease the value of the discount.
    c. Low dividend payouts, limited access to financial information, and an imminent public offering
    Incorrect—Low dividends payouts and limited access to financial information would increase the marketability discount, but an imminent public offering would decrease the discount.
    d. Restrictions on transfers, little or no dividends, and limited access to financial information
    D is Correct—Any time there are restrictions on transfers, little or no dividends, and when an individual has limited information to financial information all of these would be considered risk factors which would increase a marketability discount.

15. What are the two primary cases listed in the Internal Revenue Service Valuation Training for Appeals Officers as the basis for discounts for lack of marketability?
    a. *Simplot* and *Central Trust Co.*
       Incorrect—*Simplot* related with swing vote implications.
    b. *Central Trust Co.* and *Estate of Andrews*
       B is Correct—*Central Trust Co.* and *Estate of Andrews* are the two primary cases listed in the Internal Revenue Service Valuation Training for appeals Officers as the basis for discounts of lack of marketability.
    c. *Estate of Andrews* and *Estate of Gross*
       Incorrect—*Estate of Gross* related to the tax effect of pass through entities.
    d. *Estate of Gross* and *Estate of Adams*
       Incorrect—Both the estate of gross and Adams relate to the tax effect of pass through entities.

16. Which court case specifically isolates the issue of marketability discounts?
    a. Simplot
       Incorrect—Court case relates to swing vote implications.
    b. Estate of Kelly
       Incorrect—Court case discusses control and minority interest discounts.
    c. Mandelbaum
       C is Correct—The *Mandelbaum* case specifically isolated the issue of marketability discounts and the court listed various factors to calculate this discount.
    d. Gross
       Incorrect—Discusses tax effect on pass through entities.

17. It would be appropriate for a valuator, when adjusting assets to their fair market value, to also make an adjustment for the liability resulting from a built-in capital gains tax.
    a. True
       A is Correct—When writing up fixed assets to fair market value for valuation purposes, it is relevant to consider the application of the deferred tax liability to reflect the economic reality of the company's balance sheet.
    b. False
       Incorrect—When adjusting assets to their fair market value it would also be appropriate for the valuator to make and adjustment for the liability resulting from build-in capital gains.

18. Transactions offering a substantial amount of a single entity's stock, which visibly creates a supply that exceeds current demand may result in a:
    a. Blockage discount
       A is Correct—The need for a blockage discount usually arises in consideration of supply and demand influences in the publicly traded securities markets. In other words, a transaction offering a substantial block of a single entity's issued and outstanding shares may create a supply that exceeds current demand. Such an occurrence will generally impair the subject company's value because of the reduced liquidity associated with the oversupply.
    b. Key person discount
       Incorrect—A key person discount is an additional discount for a company where thin management and there is a strong dependency on a single individual.
    c. Restrictive agreement discount
       Incorrect—This discount is the result of various documents such as restrictive stock agreements or buy sell agreements that limit the ability of a shareholder to sell or transfer stock.
    d. Investment company discount
       Incorrect—An investment company discount arise from a minority shareholder to force a sale of and illiquid asset such as a building.

Chapter 7 Bonus Questions Responses

1. Your state __________________ what does your state consider a majority interest?
   While we cannot answer for your state here it is written in corporation law of some states that a 33.33% interest has the power to liquidate. This is generally considered a control option. *(Check the laws of the state in which the subject company is domiciled and note the special rules for minority and controlling interest.)*

2. Synergy—what is this and how does it affect value?
   a. An aggregation of two companies where a particular asset makes a section of the other firm more profitable explains synergy.
   b. Value is increased—as the value of the firm with the asset makes the value of the larger organization exceed any value calculated of each on a standalone basis. Therefore, one cannot simply add the value of the two companies valued on standalone basis—the effect of the synergy must be considered. Important in buyouts or sales.

Review Questions Chapter 8 Professional Standards

1. What are the types of Valuation Services recognized by the Professional Standards?
   a. The Professional Standards recognize two types of services, Conclusion of Value and Calculated Value.
      Incorrect—Conclusion of Value and Calculated Value are the results of the Valuation Services provided by the member.
   b. The Professional Standards recognize two types of services, Valuation Engagements and Calculation Engagements.
      B is Correct—These are the two types of services that can be provided by complying with the Development and Reporting Standards of the Professional Standards.
   c. The Professional Standards recognize three types of services, Conclusion of Value Services, Opinion of Value Services, and Estimate of Value Services.
      Incorrect—The Conclusion of Value is the end result of a Valuation Engagement, not a type of Valuation Service, while the Opinion of Value and Estimate of Value Services represent terms that are not defined by the Professional Standards.
   d. The Professional Standards recognize two types of services, Conclusion of Value Services and Opinion of Value Services.
      Incorrect—Conclusion of Value and Opinion of Value are not recognized services provided for in the Professional Standards.

2. The Professional Standards are applicable when valuing the following:
   a. Real estate
      Incorrect—The Professional Standards are not applicable to the valuation of real estate.
   b. Intangible asset
      Incorrect—Although the Professional Standards are applicable to the valuation of an intangible asset, they are also applicable to the value of a business ownership interest, option “c”.
   c. Business ownership interest
      Incorrect—The Professional Standards are applicable to the valuation of more than a business ownership interest; they are applicable to valuing a “*business, business ownership interest, security, or intangible asset.*” as discussed in Section III.A.
   d. B and C
      D is Correct—The Professional Standards are applicable when valuing a *business, business ownership interest, security, or intangible asset* (Sec. III.A.)

3. The Professional Standards are:
   a. Rules-based
      Incorrect—The Professional Standards are principle-based, taking the form of general principles, relying on the interpretation and professional judgment of the member in order to be implemented. Rules-based standards would limit the flexibility and use of the member's professional judgment in the performance of their services.
   b. Applicable to economic damages reports
      Incorrect—The Professional Standards are for Valuation or Calculation Engagements, not for economic damages engagements.
   c. Not applicable to valuations performed for transactions (M&A engagements)
      Incorrect—The Professional Standards should be followed by members performing Valuation or Calculation Engagements for transactional purposes.
   d. Principles-based
      D is Correct—The Professional Standards are principle-based, taking the form of general principles, relying on the interpretation and professional judgment of the member in order to be implemented.

4. If I am also a member of ASA must I still also follow the Professional Standards in a Valuation Engagement?
   a. No. As a member, you may select which organization's standards are most appropriate to the valuation you are performing and write your report in the manner prescribed by that organization.
      Incorrect—The member may not choose standards on a report by report basis. The member is bound by the standards of each organization to which the member belongs.
   b. No. This would confuse the requestor of the report.
      Incorrect—In fact, the report could well be in danger of being questioned as accurate or even totally denied by the report receiver if any standards by which the analyst is bound are callously ignored.
   c. Yes. If you are a member of more than one certifying organization with standards, you must adhere to all of them as required by that organization.
      C is Correct—You are required to follow the standards of each and every organization to which you belong. You should also state these organizations by name in your report.
   d. Yes. When the analyst is expressing a range of values, it is necessary to document the Professional Standards definition of a range of values.
      Incorrect—Documenting the Professional Standards definition—or any definition found in the International Glossary of BV Terms—is a good idea. This is not the reason why the member needs to adhere to professional standards of any certifying organization to which that member belongs.

5. Under the Professional Standards, when expressing a Conclusion of Value, the value amount may be communicated :
   a. As a range of values
      Incorrect—Although a Conclusion of Value may be communicated as a range of values, it may also be communicated as a single number as noted in Section IV.B.
   b. As a single number
      Incorrect—A Conclusion of Value may be communicated as either a single number or a range as noted in Section IV.B. of the Professional Standards.
   c. Orally
      Incorrect—The communication of a Conclusion of Value may be either oral or written as noted in Section V.B., the Reporting Standards, Form of Report.
   d. All of the above
      D is Correct—A conclusion of Value may be communicated as a single number or a range (Sec. IV.B) and either orally or in a written report (Sec. V.B).

6. When performing Other Services as defined by the Professional Standards, all of the Professional Standards shall apply except for:
   a. General and Ethical Standards
      Incorrect—General and Ethical Standards apply to all professional services performed by members (Sec. III.A.).
   b. Development Standards
      Incorrect—According to Section IV.A., the Development Standards apply when a member expresses a Conclusion of Value or a Calculated Value and do not necessarily apply to Other Services.
   c. Reporting Standards
      Incorrect—Like the Development Standards, the Reporting Standards apply when a member expresses a Conclusion of Value or a Calculated Value as noted in Section V.A. and do not necessarily apply to Other Services.
   d. A and B
      Incorrect—Whereas General and Ethical Standards apply to all professional services performed by members according to the Scope of Services (Sec. III.A), the Development Standards apply when a member expresses a Conclusion of Value or a Calculated Value, not when a member is providing Other Services.
   e. None of the above, all standards apply
      Incorrect—Development and Reporting Standards do not necessarily apply when performing Other Services.
   f. B and C
      F is Correct—When performing Other Services, the Development and Reporting Standards do not apply.

7. A member may perform a Valuation Engagement for a contingent fee when expressing a Conclusion of Value.
   a. True
      A is Correct—Under Reporting Standard Sec. V.C.1.(g)(2), a member may perform a valuation engagement for a contingent fee when expressing a conclusion of value, but must disclose such financial arrangements in his or her report.
   b. False
      Incorrect—Performing a valuation engagement for a contingent fee is not expressly prohibited under the Professional Standards.

8. According to the Development Standards, a member must identify all of the following except for:
   a. Subject to be valued
      Incorrect—Under the Development Standards the subject to be valued must be identified.
   b. Purpose and use of the valuation
      Incorrect—Under the Development Standards the purpose of the valuation must be disclosed.
   c. Premise of value
      Incorrect—Under the Development Standards the premise of value must be disclosed.
   d. Member's industry experience
      D is Correct—The member may include their industry experience on their CV but it is not required to be identified according to the Development Standards.

9. A member shall not express either a Conclusion of Value or a Calculated Value unless the member and the member's firm state whether or not the member or the member's firm has a financial interest in the subject of the engagement.
   a. True
      A is Correct—A member shall not express a Conclusion of Value or a Calculated Value unless the member or the member's firm state either of the following:
      "I (We) have no financial interest or contemplated financial interest in the subject of this report"
      "I (We) have a (specify) financial interest or contemplated financial interest in the subject of this report"
   b. False
      Incorrect—Without the independence statement, the valuator would violate the Professional Standards.

10. The Reporting Standards would NOT be exempt for a Valuation Engagement for what purpose?
   a. Gift tax
      A is Correct—Gift tax Valuation Engagements require a report for compliance and reporting purposes and are not exempt from the Reporting Standards.
   b. Family law
      Incorrect—The term "family law" implies a litigation engagement and as such, is exempt from the Reporting Standards as noted in Section V.D. of the Professional Standards.
   c. Shareholder oppression action
      Incorrect—A shareholder oppression action would be "*a valuation performed for a matter before a court, an arbitrator, a mediator, or other facilitator*" and therefore "*is exempt from the reporting provisions of these standards.*" (Sec. V.D.).
   d. Breach of contract litigation
      Incorrect—A breach of contract litigation is a litigation engagement and is exempt from the Reporting Standards but still must comply with the Development Standards and all other Professional Standards.

11. A report expressing a Conclusion of Value may be presented in a:
    a. Summary Report
       Incorrect—Although a Conclusion of Value may be presented in a written Summary Report, it may also be presented in a Detailed Report according to Section V.B., Form of Report.
    b. Detailed Report
       Incorrect—A Detailed Report is not the only form of report available for a Conclusion of Value, it may also be presented in a Summary Report which is an "*abridged version of the information that would be applied in a detailed report…*". (Sec. V.C.2.).
    c. Restricted Report
       Incorrect—The Professional Standards do not refer to a "Restricted Report."
    d. Letter Report
       Incorrect—The Professional Standards do not refer to a "Letter Report."
    e. A and B
       E is Correct—The Reporting Standards allow a Conclusion of Value to be presented in either a Summary Report or a Detailed Report.

12. The primary difference between a Valuation Engagement and a Calculation Engagement is that:
    a. A Calculation Engagement is a shorter form of a Valuation Engagement.
       Incorrect—A Calculation Engagement is where the client and member agree to specific valuation approaches, methods, and the extent of selected procedures and a Valuation Engagement requires that a member applies valuation approaches and methods deemed in their professional judgment to be appropriate.
    b. A Calculation Engagement can result in a range of values whereas a Valuation Engagement can only result in a single value.
       Incorrect—Both a Calculation Engagement and a Valuation Engagement can result in a range of values.
    c. The results of a Valuation Engagement can only be presented in a Detailed Report while the results of a Calculation Engagement can only be presented in a Summary Report.
       Incorrect—Detailed Reports and Summary Reports are used to present the results of a Valuation Engagement whereas a Calculation Report is used to present the results of a Calculation Engagement.
    d. A Valuation Engagement requires that a member applies valuation approaches and methods deemed in their professional judgment to be appropriate, whereas a Calculation Engagement occurs when the client and member agree to specific valuation approaches, methods, and the extent of selected procedures.
       D is Correct—According to the definitions of Valuation Engagement and Calculation Engagement as found in the Professional Standards.

Chapter 8 Bonus Questions Reponses

1. Why isn't Fair Value defined in the glossary?
   Because there are two types of Fair Value used as a Standard of Value, one for stautory purposes and two for financial statement reporting, there isn't a single definition that currently will fit all possible engagements. For statutory purposes, Fair Value may be defined differently by each state and juristiction. And the definition of Fair Value for financial statement reporting purposes is still subject to revisions by certain regulatory bodies.

2. Why doesn't the Professional Standards endorse USPAP?
   The Uniform Standards of Professional Appraisal Practice (USPAP) is applicable to the appraisal process for many different disciplines including real property, personal property, intangibles, and business valuation. It attempts to provide a set of quality control standards for the appraisal process. The Professional Standards does not endorse USPAP as it already adequately addresses the quality control standards and valuation processes and procedures specifically for the valuation of businesses, business ownership interests, securities, and intangible assets. Although there are some sections of USPAP which apply to valuation of a business, the Professional Standards already include these items in its content.

Review Questions Chapter 9 Valuation Engagement & Obtaining Information

1. External information includes all of the following except:
   a. General Economic Information
      Incorrect—Economic Information is external information.
   b. General Industry Information
      Incorrect—General Industry Information is external
   c. Local and Regional Economic and Industry Information
      Incorrect—These are all external information.
   d. History, nature and organization of the subject company
      D is Correct—The history, nature and organization of the subject is all internal information.

2. What is the main purpose of obtaining external information?
   a. To provide the analyst with the most recent 5 years of financial information
      Incorrect—Financial information would be provided by management and considered internal information.
   b. To gain an understanding of the company's operations and its products or services
      Incorrect—This is internal information
   c. To give the analyst knowledge of any outside factors that may directly or indirectly affect the future operations of the subject company
      C is Correct—The analyst must consider external factors in all valuation engagements.
   d. To comply with the report writing standards as set forth in the Professional Standards
      Incorrect—Analyzing external factors is part of the development standards.

3. The valuation engagement checklist for Adler-Cottino Wood Furniture, Inc. is found in Chapter 10. What Purpose, Standard**,** and Premise of Value (in that order) were determined for this case?
   a. FMV, Controlling Interest and Arms-Length Transaction
      Incorrect—FMV is a standard of value, Controlling interest relates to possible discounts or premiums, Arms-length transaction relates to FMV.
   b. Related Party, Estate and Going concern
      Incorrect—Related Party is not the purpose of the valuation, Estate is the purpose of the valuation not the standard of value and going concern is the premise of value.
   c. Buy-Sell, Capitalization of Earnings, Net Asset Value
      Incorrect—Buy-Sell is not the purpose of the valuation, Capitalization of Earnings is a method of valuation and Net Asset Value is a method of valuation.
   d. Estate Tax valuation for Form 706, FMV and Going Concern
      D is Correct—Estate Tax Valuation is the Purpose, FMV is the Standard and Going Concern is the premise of value.

4. What is the valuation analyst's main objective when gathering internal information?
   a. To examine historical and projected financial data including Financial Statements, Income Tax Returns and Budgets
      Incorrect—This is one of the steps in gathering internal information but not the main objective.
   b. To keep abreast of changing general economics to ascertain how it may impact the assumptions that are made during the valuation process
      Incorrect—This is an objective of examining external information.
   c. To gain an adequate understanding of the subject company's operational management and earnings ability
      C is Correct—This is the main objective when gathering internal information.
   d. To examine the current location(s) and physical condition of the subject company's facilities and operational assets
      Incorrect—This is a small part of the overall objective of obtaining adequate understanding of the subject company's operational management and earnings ability.

5. The Market Approach for valuing businesses utilizes information from Specific Comparable Companies. In order for a company to be truly comparable it must share all of the following characteristics with the subject company except:
   a. Companies must have similar capital structures
      Incorrect—Large, diversified publicly traded companies cannot be comparable to smaller closely held businesses without similar capital structures.
   b. Companies must have the same number of stockholders
      B is Correct—Although the capital structure must be similar: there are no requirements for a specific number of stockholders.
   c. Companies must be of similar size, relative to sales volume and total assets
      Incorrect—Although there is debate as to how large the comparable company can be (ex. 10 – 25x revenue), there are basic financial indicators to ensure comparability.
   d. Companies must have similar competitive positions within the industry.
      Incorrect—Having similar competitive positions within the industry is a characteristic of comparability.

6. Independence of the valuator will be impaired if:
   a. The member who performs the appraisal or the member's firm prepares the tax return of the subject entity
      Incorrect—Preparing a tax return will not result in a valuator's independence being impaired.
   b. The member or the member's firm performs an audit of the subject company's financial statement
      B is Correct—Independence will be impaired if the members firm performs the auditing of the client.
   c. Your neighbor's best friend owns 100% of the subject company
      Incorrect—This may end the friendship but will not impair you as a valuator.
   d. The member or member's firm performs a compilation of the subject company's financial statement
      Incorrect—A compilation of the subject company by your CPA firm will not result in a conflict of interest.

7. When defining the engagement the valuation analyst should identify:
   a. Purpose, ownership interest, and profitability of the subject entity
      Incorrect—It is not necessary for the firm to be profitable when defining the engagement. However, it may indicate whether there is money to pay you.
   b. Purpose, valuation date, and valuation approach to be utilized
      Incorrect—The valuation approach will be determined once the analyst gains an understanding of the unique nature of the subject company, not when defining the engagement.
   c. Purpose, ownership interest, and valuation date
      C is Correct—When defining an engagement all three items, purpose, ownership and interest to be valued should be determined.
   d. Ownership interest, report date, and valuation approach
      Incorrect—When defining the engagement most likely the valuation approach will not be determined at this stage.

8. Before starting an engagement, the valuation analyst must obtain an engagement letter.
   a. True
      Incorrect—Although not required, it cannot be emphasized enough how important a properly written engagement letter is.
   b. False
      B is Correct— The Professional Standards state *"A member shall establish, with the client, a written or oral understanding of the nature, scope, and limitations of services to be performed and the responsibilities of the parties."*

9. In a litigation engagement, a valuation analyst should be independent and objective; if an attorney wants the valuation analyst to give a specific and tailored answer, this will not impair independence or objectivity.
   a. True
      Incorrect—Although the reporting standards do not apply to litigation engagements, NACVA members are still required to adhere to §1.2(a) – Integrity & Objectivity.
   b. False
      B is Correct—If an attorney wants the valuation analyst to tailor his/her opinion to get the result the attorney wants, an objective and independent valuation analyst should decline this engagement.

10. Of the following sources of information, which source provides data which can be specifically compared to the subject company?
    a. U.S. Bureau of Census
       Incorrect—This is a good source of economic information for such items as construction spending, manufacturing, retail sales, etc.
    b. Federal Reserve Banks
       Incorrect—This is a good source of economic information for such items as consumer credit, industrial production, capacity utilization, etc.
    c. Ibbotson Valuation Yearbook
       Incorrect—This is a good source for cost of capital information.
    d. BIZCOMPS
       D is Correct—BIZCOMPS is a source of specific company information.

Review Questions Chapter 10 Search for Adjustments

1. After the historical financial statements have been adjusted for economic or normalizing items, the analyst should begin a thorough financial analysis of the adjusted financial statement data. Such analysis helps to identify all of the following trends except?
   a. Where has the company been?
   Incorrect—The historical performance of the company will be identified by a thorough financial analysis.
   b. Where is the company today?
   Incorrect—The financial condition of the company today will be identified by an analysis of its balance sheet.
   c. What are the current and future management needs?
   C is Correct—Current and future management needs are not determined by the valuation analyst.
   d. Where might the company be in the future?
   Incorrect—An analysis of the company's current balance sheet as well as its past performance through its historical income statements will assist in identifying the trends for its future.

2. When adjustments have been made to increase the value of assets to their appraised or market value, a corresponding adjustment recognizing the amount of deferred income taxes should also be made. There have been conflicting arguments for doing so in valuation literature. What is the most often cited argument against recording deferred income taxes on the increased value of assets over book values?
   a. When selling the stock of an entity and not the asset itself, the assets do not have to be adjusted to fair market value, therefore, deferred taxes would not need to be adjusted.
   Incorrect—Assets should be adjusted to fair market value for all valuations.
   b. Deferred taxes are only booked for timing issues related to the recognition of income statement items.
   Incorrect—Deferred taxes are recorded for balance sheet and income statement items.
   c. Deferred taxes should not be recorded unless the company has specific plans to liquidate within a reasonable period following the date of the valuation.
   C is Correct—The IRS, in Letter Ruling 9150001 (e) stated that ….income taxes are not taken into account where the event that would generate these expenses is speculative.
   d. The tax court has ruled in the *Estate of Dunn, Estate of Davis,* and the appeal of *Dunn* that no discount was given for taxes.
   Incorrect—In these three cases, a discount was given for income tax related to the trapped in gains.

3. Which of the following are categorized as "Risk" ratios of a company?
   a. Accounts Receivable Turnover Ratios and Current Liabilities as a percent of assets
   Incorrect—These are turnover ratios and balance sheet ratios, respectively.
   b. Total Debt as a percent of Assets and Long term Debt as a percent of Assets
   Incorrect—These are Balance Sheet ratios.
   c. Operating Profit as a percent of Sales and Interest Coverage Ratio
   Incorrect—These are Income statement ratios and Risk ratios, respectively.
   d. Current Ratio and Quick Ratio
   D is Correct—Both are considered risk ratios.

4. When comparing Adler-Cottino to the Industry in Exhibits 10-7 and 10-8, Chapter 10, which of the following statements is/are true:
   a. The Company's current, quick, and debt/equity ratios are all significantly favorable relative to the industry
      Incorrect—Although this is correct, all of the options listed are correct.
   b. The Company has a different asset mix than the companies that make up the median of the RMA data
      Incorrect—This is but one of the correct options available as an answer.
   c. The Company's long-term debt as a percentage of assets is lower than the industry median
      Incorrect—All of the statements are correct.
   d. The Company's operating performance is much better than the industry on average and is superior to the industry relative to financial strength, leverage and liquidity
      Incorrect—This option, although correct, is not the only correct option available.
   e. All of the above
      E is Correct—All of the statements are correct.

5. A Comparative Analysis utilizes information from two sources and can involve either a comparison of the subject company with specific comparable companies or with industry averages for a historical period of one or more years. Which two sources of the subject company are used to perform a Comparative Analysis?
   a. RMA and Integra
      Incorrect—These are databases for various public companies.
   b. Common-Size Analysis and Ratio Analysis
      B is Correct—Both are necessary to prepare a Comparative analysis.
   c. Historical and Normalized Financial Statements
      Incorrect—Not used in a comparative analysis.
   d. Forecasted and Budgeted Financial Statements
      Incorrect—These are examples of projections.

6. Normalized financial statements should allow the valuation analyst to:
   a. Present a financial picture which represents fair market values
      A is Correct—Normalized financial statements should allow a valuator to represent market value and make meaningful comparisons.
   b. Present a financial picture to appease the client
      Incorrect—Valuation analysts are supposed to be objective and independent and normalized financial statements should present a true picture of operations.
   c. Present a financial picture to reflect a predetermined answer
      Incorrect—Normalized financial statements should present a true picture of operations.
   d. To increase a valuation anlysts fees
      Incorrect—Although it takes time to identify and determine relevant normalization adjustments, they are not applied simply to increase the fee for the valuation engagement.

7. What is the best way to determine if a normalizing adjustment should be made to Accounts Receivable?
   a. Common size the balance sheet
      Incorrect—Common sizing would not indicate a collection issue
   b. Use trend analysis
      Incorrect—Trend analysis would not indicate a collection problem.
   c. Look at accounts receivable aging
      C is Correct—Looking at the accounts receivable aging is the first step in identifying if there is a collection issue.
   d. Discuss with management
      Incorrect—Although the valuation analyst should discuss the adjustment with management, if the valuation analyst does not first look at an aging report, the issue may never surface

8. In Exhibit 10-2, what would be a good reference source to use as a bench mark to determine excess cash?
   a. Ibbotson
      Incorrect—Ibbotson is a good reference side when determining a discount and capitalization rate.
   b. BizComps
      Incorrect—BizComps is a good reference when looking for market comparables to your subject company.
   c. RMA
      C is Correct—RMA is a good benchmark to use as a benchmark when determine average amounts of cash needed to operate the company.
   d. An inquiry with management provides enough support
      Incorrect—It is possible management will only tell you what they want you to hear.

9. Ratio Analysis can be an effective tool to compare how well a company is performing to industry bench marks.
   a. True
      A is Correct—Ratio Analysis can be an effective tool to compare how well a company is performing to industry bench marks.
   b. False
      Incorrect—Ratio analysis can be an effective tool, if properly applied, to compare how well a company is performing to industry bench marks.

Review Questions Chapter 11 Practice Case Workshop

1. In gathering the necessary information to complete Adler-Cottino as an example of a report you can use for later reference,
    a. It is necessary to be able to fully describe the history and nature of the business being valued.
    A is Correct—This is a necessary part of any valuation.
    b. It is not necessary to understand this business or any business, as the company's management is running the business.
    Incorrect—If you don't understand the type of business, find out what you need to have/attend to learn about it, and document what you did.
    c. A personal tour of the business can't be done, so there is not a way to put anything meaningful in the report.
    Incorrect—Although a personal tour of this imaginary business can't be done, you can piece together what you would find in a site-visit from the data provided in the worksheet.
    d. Note that the type of organizational structure will not be applicable to any other company you would value.
    Incorrect—Adler-Cottino is a C-corporation, with a board of directors, and will be similar to other C-corporations you encounter.

2. In defining the valuation engagement prior to issuing a valuation report:
    a. Ascertain whether the necessary client information and technical resources are available. If not, decline the valuation.
    Incorrect—In divorce valuations, information may not be available in the quality or quantity you would like. A valuation can (and perhaps in this example, should) be performed. Note in your report what data you were denied, and how it affected the outcome.
    b. Define the ownership interest to be valued as this will affect any premiums or discounts to be discussed in the final report.
    B is Correct—The percentage of ownership interest will definitely impact the outcome of your report, especially in the area of discounts.
    c. You must obtain a client representation letter.
    Incorrect—NACVA suggests obtaining such a letter if possible, but it is not mandated.
    d. You must obtain a client engagement letter
    Incorrect—If a full understanding and communication can be gotten without a letter, a letter isn't necessary. A letter is helpful if properly written, but not mandated.

APPENDIX XII

Business Valuation Professional Services Agreement Template Calculation Engagement Oral Report / Written Report

NACVA – BUSINESS VALUATION PROFESSIONAL SERVICES AGREEMENT TEMPLATE
CALCULATION ENGAGEMENT
ORAL REPORT / WRITTEN REPORT

DISCLAIMERS:

1. It is strongly suggested that all members submit their professional services agreement template to their attorney for review and comment on a regular basis.
2. The language included in this template is based on the NACVA *Professional Standards* and does not necessarily follow the *Statement on Standards for Valuation Services No. 1* (SSVS No.1) as published by the American Institute of Certified Public Accountants (AICPA) or any other standards. If the member is a Certified Public Accountant who is a member of the AICPA, the member should modify the template and include language necessary to comply with SSVS No.1.
3. This template to be used as guidance only, it is the members responsibility to insure the language used in their professional services agreements adhere to appropriate rules and regulations.

DATE

CLIENT
ADDRESS

Re: Calculation Engagement

Dear CLIENT/ATTORNEY:

OPTION 1: Engaged by Client
The purpose of this letter (hereinafter, the "Agreement") is to confirm our understanding of the terms of our engagement and the nature and limitations of the services Valuation Advisors LLP (hereinafter, the "Firm") will provide to you.

OPTION 2: Engaged by Attorney
The purpose of this letter (hereinafter, the "Agreement") is to confirm our understanding of the terms of our engagement and the nature and limitations of the services Valuation Advisors LLP (hereinafter, the "Firm") will provide to Law Firm, P.A. (hereinafter, "Counsel") on behalf of Joe Smith (hereinafter, "Client" or "Counsel's Client").

OPTION 3: Engaged by Client under Attorney's Direction
The purpose of this letter (hereinafter, the "Agreement") is to confirm our understanding of the terms of our engagement and the nature and limitations of the services Valuation Advisors LLP (hereinafter, the "Firm") will provide, as discussed with you and your attorney, Jane Doe, Esq., in the connection with the litigation matter of Smith v. Smith. Your attorney will direct our services.

CLIENT
DATE
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PURPOSE OF THE ENGAGEMENT

The objective of the calculation engagement is to provide to you with a calculated value of a [%INTEREST] (hereinafter, the "Subject Interest") in the [ENTITY] (hereinafter, the "Company", "Limited Partnership", etc.) as of [DATE] on a controlling/non-controlling, marketable/non-marketable basis for [STATE PURPOSE]. The results of the engagement will be expressed as a calculated value.

As stated in the NACVA *Professional Standards*, "A Calculation Engagement occurs when the client and member agree to specific valuation approaches, methods and the extent of selected procedures and results in a Calculated Value." [1]

[OPTIONAL] Since we will not be developing a conclusion of value, we will not provide any testimony related to this engagement.

The resulting calculated value should not be used for any other purpose or by any other party for any purpose. Client's use of the calculation report for any purpose except that set forth above shall constitute a material breach of this Agreement.

STANDARD AND PREMISE OF VALUE

OPTION 1: Fair Market Value Definition (International Glossary of Business Valuation Terms):

The engagement will use fair market value as the standard of value. Fair market value is defined in *The International Glossary of Business Valuation Terms*, issued by the American Institute of Certified Public Accountants (AICPA), the American Society of Appraisers, the Canadian Institute of Chartered Business Valuators, the National Association of Certified Valuators and Analysts and the Institute of Business Appraisers, as:

> **"The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."**

OPTION 2: Fair Market Value-Definition (Gift Tax):

The engagement will use fair market value as the standard of value. Fair market value is defined in Section 25.2512-1 of the U.S. Treasury regulations (Gift Tax Regulations) as:

> "The price at which such property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell, and both having reasonable knowledge of relevant facts."

[1] NACVA *Professional Standards*, Section 2.1.b

CLIENT
DATE
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OPTION 3: Fair Market Value Definition (Estate Tax):

The engagement will use fair market value as the standard of value. Fair market value is defined in Section 20.2031-1(b) of the U.S. Treasury regulations (Estate Tax Regulations) as:

> **"The price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts."**

OPTION 4: Fair Market Value Definition (Charitable Contributions):

The engagement will use fair market value as the standard of value. Fair market value is defined in Section 1.170A-1(c)(2) of the U.S. Treasury regulations (Charitable Contributions) as:

> **"The price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts."**

OPTION 5: Fair Value (Shareholder Dissent and Oppression Litigation):

The engagement will use fair value as it relates to [shareholder dissent litigation / shareholder oppression litigation] as the standard of value. As the definition of fair value for these engagements is a judicially mandated concept, we will rely on the appropriate definition of fair value that will be provided to us by [ATTORNEY].

OPTION 6: Fair Value (Financial Reporting under U.S. GAAP):

The engagement will use fair value as the standard of value. The definition of fair value for financial reporting purposes under United States generally accepted accounting principles (GAAP) is found in *Statement of Financial Accounting Standards No. 157, Fair Value Measurements*, issued by the Financial Accounting Standards Board and is stated as:

> "The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date."

Our analysis will be based on the premise that the ENTITY [will continue to operate as going concern/is in forced/orderly liquidation] [OR OTHER APPLICABLE PREMISE OF VALUE].

SCOPE OF THE CALCULATION ENGAGEMENT

The client and the Firm will agree to specific valuation approaches and methods and the extent of procedures that will be performed. This calculation engagement and our report will be subject to the Statement of Assumptions and Limiting Conditions that we expect to be similar to those attached as Appendix A.

CLIENT
DATE
Page 4

The calculation engagement will use only the following valuation approaches/methods [SPECIFY APPROACHES/METHODS]:

FIRM REPRESENTATIONS

This engagement will be conducted in accordance with the *Professional Standards* of the National Association of Certified Valuators and Analysts, [INCLUDE OTHER STANDARDS IF APPLICABLE].
Valuation Advisors LLP agrees to hold in strict confidentiality all proprietary information provided by you in connection with the engagement.

Professionals and other resources of the Firm will be used in this engagement as we deem necessary and appropriate. We will use our professional judgment in determining what records and documents will be reviewed and relied on for the purpose of forming our conclusion of value.

The Firm, its officers, owners and staff [HAVE/HAVE NO] financial interest or contemplated financial interest in the property that is the subject of this [detailed / summary] valuation report. [IF A FINANCIAL INTEREST DOES EXIST, DISCLOSE]. We have no interest in or bias with respect to the Subject Interest or the owners thereof.

Fees paid to the Firm for the engagement will neither be dependent nor contingent upon any transaction or value.

Our engagement cannot be relied on to disclose errors, irregularities, or illegal acts, including fraud or defalcations that may exist. However, in the event something comes to our attention that we believe to be of interest, we will bring it to your attention. At the conclusion of the engagement we may ask you to sign a representation letter on the accuracy and reliability of the financial information used in the engagement.

Additional representations for this engagement can be found in Appendix A.

CLIENT RESPONSIBILITIES

You agree to provide financial and other information to us as reasonably necessary for us to complete our engagement. You will represent that all information and documentation provided or to be provided is true, correct and complete to the best of your knowledge and belief. You hereby agree that we may rely upon such information and documentation without independent investigation or verification.

You agree that we are not required to update our analyses and conclusion for events and circumstances occurring after the date of our report.
It is expressly understood that any reports or other documents produced by the Firm, will not be provided to any parties except the Client, Client's Counsel, or its other professional advisors. It is further understood that our valuation report is solely for the use of the Client, and that our report may not be reproduced, distributed, or extracted in whole or in part without the Firm's express

CLIENT
DATE
Page 5

written permission. If we grant such limited permission in this letter or elsewhere, and you reproduce any portion or all of our valuation report, we must approve the masters or printer's proofs of the report before they are published.

You agree that possession of the work papers or other written documentation regarding the engagement does not carry with it the right of publication of all or part of it, nor may it be used or relied upon without previous written consent for any purpose other than that set forth above. No third parties are intended to be benefited. Schedules, information and other work papers developed during the engagement by the Firm or supplied by you or the Companies are the sole property of the Firm and are not subject to examination or production to the client at any time during or after the engagement.

REPORTING RESULTS

OPTION 1 – WRITTEN REPORT

The calculated value of the Subject Interest will be expressed in a written calculation report as either a [SINGLE AMOUNT/RANGE OF VALUES]. Our report will include the following statement:

> "This Calculation Engagement did not include all of the procedures required for a Conclusion of Value. Had a Conclusion of Value been determined, the results may have been different."

OPTION 2 – ORAL REPORT

Our calculated value of the Subject Interest will be expressed in an oral report communicated to [CLIENT].

FEES AND BILLING

Our fees are based upon an estimate of the time necessary to prepare our analysis and document our findings. Our professional fees for this engagement are estimated to be $FEE, plus out-of-pocket costs. We will require a retainer of $RETAINER prior to the start of our engagement. We will not issue the final calculation report unless all invoices pertaining to this engagement have been paid in full.

If for any reasons beyond our control this engagement shall be delayed for more than twenty (20) consecutive business days, we shall issue a progress bill for the portion of the work completed at such time. This invoice must be paid before commencement of subsequent work. The quoted fee is subject to an increase if the scope or terms of this Agreement change. We will notify you in advance of any change in scope.

NOTE: The following section related to delinquent accounts and collections should be tailored to your Firm's and statutory collection practices and policies.

A PERCENT% service charge per month will be applied to all delinquent accounts that are 30 days or more past due. We reserve the right to suspend or terminate services, as well as to withdraw as experts, if our invoices are not paid within 30 days of the invoice date; accordingly, our engagement will be deemed to have been completed even if we have not completed a report. You will be

CLIENT
DATE
Page 6

obligated to compensate us for all time expended and to reimburse us for all out-of-pocket expenditures through the date of suspension/termination. You must notify our office within ten (10) business days of the date of an invoice should you have any questions regarding it and, upon such notification, we will review the invoice with you in detail. Accordingly, absent such a request, we will consider that you have accepted our invoice as presented.

If we deem it necessary to seek alternative means of collection relative to our invoices, we shall be entitled to recover attorney's fees and costs of collection in addition to our fees in any litigation in which we may prevail. Each of us hereby waives the right to a jury trial. You also agree to allow your attorney to include any unpaid balances due our Firm in any charging lien filed with the court. Additionally, you agree to forego any attempt to assert liability against our Firm for incidental damages.

If the Firm is called upon to render services, give testimony, produce documents, answer depositions or interrogatories, or otherwise become involved in connection with any administrative or judicial proceedings, investigations or inquiries relating to the engagement, you will pay, in addition to the fees herein, for the time reasonably required to be expended by any partner or employee of the Firm, at our standard hourly rates as then in effect, plus out-of-pocket expenses relating thereto. Professional fees for such services are independent of this engagement.

OPTIONAL: ARBITRATION PROVISION

All claims, disputes and other matters in question between Valuation Advisors LLP and you arising out of, or relating to, this engagement and engagement letter, or its breach, shall be decided by arbitration in [LOCATION]. Either Valuation Advisors LLP or you may serve upon the other by certified mail a written demand that the dispute, explaining in detail its nature, be submitted to arbitration. Within ten (10) days, after service of such demand, each of us shall appoint a neutral arbitrator from the approved list of mediators and arbitrators appointed by the [COURT] in and for [LOCATION]. If either of us fails within the specified time to appoint an arbitrator, the single appointed arbitrator will have the right to decide alone, and his/her decision will be binding on both of us. The two appointed arbitrators shall select and appoint an independent third arbitrator. The written, and signed under oath, decision of two arbitrators shall be final and binding upon us. The arbitrators shall decide the total of the expenses, including reasonable attorney's fees, and award them to the prevailing party. If the two appointed arbitrators fail to agree upon a third arbitrator within ten (10) days after their appointment, then either of us may apply, upon notice to the other, to any court of competent jurisdiction in [LOCATION], for the appointment of a third arbitrator, and any such appointment shall be binding upon us. Judgment on the arbitrators' decision, including the decision on who is to pay expenses, may be entered by any court of competent jurisdiction in [LOCATION].

DELIVERY AND TIMING

Our ability to deliver a final valuation report is dependent upon our timely receipt of the required information. We will use our best efforts to meet any reasonable deadlines. We are prepared to begin this assignment upon authorization and will deliver a draft report to you approximately [TIME ESTIMATE – NUMBER OF DAYS] after timely receipt of all requested information.

CLIENT
DATE
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TERMINATION
Failure to make the payments required by this agreement, or failure by you to comply with the terms of this agreement will give us the sole option to terminate the agreement.

ACCEPTANCE
This agreement will become effective when we receive a signed copy of this letter and the requested retainer. Please sign and return the enclosed copy of this letter, with the $RETAINER retainer, in the enclosed preaddressed envelope by [ENGAGEMENT CUTOFF DATE]. If we do not receive these items by this date, and you do not inform us otherwise, we will presume that you do not intend to engage our Firm. If the need for additional services arises, we will revise our agreement with you and we will enumerate these revisions in an addendum to this letter.

Thank you for the opportunity to be of service to you.

Very truly yours,

VALUATION ADVISORS LLP
For the Firm

Sarah Valuator, CPA, CVA
Partner

Accepted ___________________________________

Date ______________________________________

CLIENT
DATE
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APPENDIX A
ASSUMPTIONS & LIMITING CONDITIONS

NOTE: This is an illustrative list of assumptions and limiting conditions and is not meant to be all-inclusive. The member should include those assumptions and limiting conditions that are applicable to their engagement. The items included in this list may be duplicative.

The engagement is subject to the following assumptions and limiting conditions.

1. The calculated value arrived at herein is valid only for the stated purpose as of the date of the valuation.

2. Financial statements and other related information provided by the subject entity or its representatives, in the course of this engagement, have been accepted without any verification as fully and correctly reflecting the enterprise's business conditions and operating results for the respective periods, except as specifically noted herein. Valuation Advisors LLP has not audited, reviewed, or compiled the financial information provided to us and, accordingly, we express no audit opinion or any other form of assurance on this information.

3. Public information and industry and statistical information, if obtained, has been derived from sources we believe to be reliable. However, Valuation Advisors LLP makes no representation as to the accuracy or completeness of such information and has performed no procedures to corroborate the information.

4. This report and the calculated value arrived at herein are for the exclusive use of Valuation Advisors LLP's client for the sole and specific purposes as noted herein. They may not be used for any other purpose or by any other party for any purpose. Furthermore the report and calculated value are not intended by the author and should not be construed by the reader to be investment advice in any manner whatsoever. The estimate of value represents the considered opinion of Valuation Advisors LLP based on information furnished to them by Entity and other sources.

5. Neither all nor any part of the contents of this report (especially the calculated value, the identity of any valuation specialist(s), or the firm with which such valuation specialists are connected or any reference to any of their professional designations) should be disseminated to the public through advertising media, public relations, news media, sales media, mail, direct transmittal, or any other means of communication without the prior written consent and approval of Valuation Advisors LLP.

6. No change of any item in this calculation report shall be made by anyone other than Valuation Advisors LLP, and we shall have no responsibility for any such unauthorized change.

7. Unless otherwise stated, no effort has been made to determine the possible effect, if any, on the subject business due to future Federal, state, or local legislation.

CLIENT
DATE
Page 9

8. Unless otherwise informed or determined independently by Valuation Advisors LLP, it is assumed that there are no regulations of any government entity to control or restrict the use of the subject business's underlying assets and that the underlying assets will not operate in violation of any applicable government regulations, codes, ordinances, or statutes. Valuation Advisors LLP also assumes that, unless otherwise informed or determined independently, the subject business is in compliance with all federal, state and local laws and regulations, as well as up to date in regard to all filing and reporting requirements.

9. If prospective financial information approved by the Client and/or the Company has been used in our work, Valuation Advisors LLP has not audited, reviewed, or compiled the prospective financial information and therefore, does not express an audit opinion or any other form of assurance on the prospective financial information or the related assumptions. Events and circumstances frequently do not occur as expected and there will usually be differences between prospective financial information and actual results, and those differences may be material. Valuation Advisors LLP does not provide any assurance on the achievability of forecasts provided. Achievement of the forecasted results is dependent on actions, plans, and assumptions of management.

10. An actual transaction involving the business, the business ownership interest, the security, or the intangible asset may occur at a higher or lower value, depending on the circumstances surrounding the business, the business ownership interest, the security, or the intangible asset, and the motivations and knowledge of both the buyers and sellers at that time. Valuation Advisors LLP makes no guarantees about what values individual buyers and sellers may reach in an actual transaction.

11. The calculated value reflects facts and circumstances existing as of the valuation date. Except as noted, Valuation Advisors LLP has not considered subsequent events and we have no obligation to update our calculation for such events.

12. Valuation Advisors LLP assumes there are no other hidden or unexpected conditions of the entity that would adversely affect value, other than those indicated.

13. No opinion is intended to be expressed for matters that require legal or other specialized expertise, investigation, or knowledge beyond that customarily employed by valuation specialists valuing a business, a business ownership interest, security, or intangible asset.

14. Valuation Advisors LLP has not knowingly withheld or omitted anything from our calculation that would affect the calculated value.

APPENDIX XIII

Business Valuation Professional Services Agreement Template Valuation Engagement Oral Report / Written Report—Detailed / Summary

NACVA – BUSINESS VALUATION PROFESSIONAL SERVICES AGREEMENT TEMPLATE VALUATION ENGAGEMENT ORAL REPORT / WRITTEN REPORT – DETAILED / SUMMARY

DISCLAIMERS:

4. It is strongly suggested that all members submit their professional services agreement template to their attorney for review and comment on a regular basis.
5. The language included in this template is based on the NACVA *Professional Standards* and does not necessarily follow the *Statement on Standards for Valuation Services No. 1* (SSVS No.1) as published by the American Institute of Certified Public Accountants (AICPA) or any other standards. If the member is a Certified Public Accountant who is a member of the AICPA, the member should modify the template and include language necessary to comply with SSVS No.1.
6. This template to be used as guidance only, it is the members responsibility to insure the language used in their professional services agreements adhere to appropriate rules and regulations.

DATE

CLIENT
ADDRESS

Re: Business Valuation

Dear CLIENT/ATTORNEY:

OPTION 1: Engaged by Client
The purpose of this letter (hereinafter, the "Agreement") is to confirm our understanding of the terms of our engagement and the nature and limitations of the services Valuation Advisors LLP (hereinafter, the "Firm") will provide to you.

OPTION 2: Engaged by Attorney
The purpose of this letter (hereinafter, the "Agreement") is to confirm our understanding of the terms of our engagement and the nature and limitations of the services Valuation Advisors LLP (hereinafter, the "Firm") will provide to Law Firm, P.A. (hereinafter, "Counsel") on behalf of Joe Smith (hereinafter, "Client" or "Counsel's Client").

OPTION 3: Engaged by Client under Attorney's Direction
The purpose of this letter (hereinafter, the "Agreement") is to confirm our understanding of the terms of our engagement and the nature and limitations of the services Valuation Advisors LLP (hereinafter, the "Firm") will provide, as discussed with you and your attorney, Jane Doe, Esq., in the connection with the litigation matter of Smith v. Smith. Your attorney will direct our services.

CLIENT
COMPANY
DATE
Page 2 of 14

PURPOSE OF ENGAGEMENT

The objective of the valuation engagement is to provide to you with an independent conclusion of value of a [%INTEREST] (hereinafter, the "Subject Interest") in the [ENTITY] (hereinafter, the "Company", "Limited Partnership", etc.) as of [DATE] on a controlling/non-controlling, marketable/non-marketable basis for [STATE PURPOSE].

As stated in the NACVA *Professional Standards*, "A Valuation Engagement requires that a member apply valuation approaches or methods deemed in the member's professional judgment to be appropriate under the circumstances and results in a Conclusion of Value." [1]

The resulting conclusion of value should not be used for any other purpose or by any other party for any purpose. Client's use of the valuation report for any purpose except that set forth above shall constitute a material breach of this Agreement.

SCOPE OF THE ENGAGEMENT

It is anticipated that there will be no restrictions or limitations on the scope of this engagement. [IF RESTRICTIONS OR SCOPE LIMITATIONS EXIST, STATE HERE]. This valuation engagement and our report will be subject to the Statement of Assumptions and Limiting Conditions that we expect to be similar to those attached as Appendix A.

STANDARD AND PREMISE OF VALUE

OPTION 1: Fair Market Value Definition (International Glossary of Business Valuation Terms):

The engagement will use fair market value as the standard of value. Fair market value is defined in *The International Glossary of Business Valuation Terms*, issued by the American Institute of Certified Public Accountants (AICPA), the American Society of Appraisers, the Canadian Institute of Chartered Business Valuators, the National Association of Certified Valuators and Analysts and the Institute of Business Appraisers, as:

> **"The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."**

OPTION 2: Fair Market Value-Definition (Gift Tax):

The engagement will use fair market value as the standard of value. Fair market value is defined in Section 25.2512-1 of the U.S. Treasury regulations (Gift Tax Regulations) as:

[1] NACVA *Professional Standards*, Section 2.1.a

CLIENT
COMPANY
DATE
Page 3 of 14

> "The price at which such property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell, and both having reasonable knowledge of relevant facts."

OPTION 3: Fair Market Value Definition (Estate Tax):

The engagement will use fair market value as the standard of value. Fair market value is defined in Section 20.2031-1(b) of the U.S. Treasury regulations (Estate Tax Regulations) as:

> **"The price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts."**

OPTION 4: Fair Market Value Definition (Charitable Contributions):

The engagement will use fair market value as the standard of value. Fair market value is defined in Section 1.170A-1(c)(2) of the U.S. Treasury regulations (Charitable Contributions) as:

> **"The price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts."**

OPTION 5: Fair Value (Shareholder Dissent and Oppression Litigation):

The engagement will use fair value as it relates to [shareholder dissent litigation / shareholder oppression litigation] as the standard of value. As the definition of fair value for these engagements is a judicially mandated concept, we will rely on the appropriate definition of fair value that will be provided to us by [ATTORNEY].

OPTION 6: Fair Value (Financial Reporting Under U.S. GAAP):

The engagement will use fair value as the standard of value. The definition of fair value for financial reporting purposes under United States generally accepted accounting principles (GAAP) is found in *Statement of Financial Accounting Standards No. 157, Fair Value Measurements*, issued by the Financial Accounting Standards Board and is stated as:

> "The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date."

Our analysis will be based on the premise that the ENTITY [will continue to operate as going concern/is in forced/orderly liquidation] [OR OTHER APPLICABLE PREMISE OF VALUE].

CLIENT
COMPANY
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FIRM REPRESENTATIONS
Valuation Advisors LLP will conduct this engagement in accordance with the *Professional Standards* of the National Association of Certified Valuators and Analysts [INCLUDE OTHER STANDARDS IF APPLICABLE SUCH AS "…and the *2008 Uniform Standards of Professional Appraisal Practice* as promulgated by the Appraisal Foundation].

Valuation Advisors LLP agrees to hold in strict confidentiality all proprietary information provided by you in connection with the engagement.

Professionals and other resources of the Firm will be used in this engagement as we deem necessary and appropriate. We will use our professional judgment in determining what records and documents will be reviewed and relied on for the purpose of forming our conclusion of value.

The Firm, its officers, owners and staff [HAVE/HAVE NO] financial interest or contemplated financial interest in the property that is the subject of this [detailed / summary] valuation report. [IF A FINANCIAL INTEREST DOES EXIST, DISCLOSE]. We have no interest in or bias with respect to the Subject Interest or the owners thereof.

Fees paid to the Firm for the engagement will neither be dependent nor contingent upon any transaction or value.

Our engagement cannot be relied on to disclose errors, irregularities, or illegal acts, including fraud or defalcations that may exist. However, in the event something comes to our attention that we believe to be of interest, we will bring it to your attention. At the conclusion of the engagement we may ask you to sign a representation letter on the accuracy and reliability of the financial information used in the engagement.

Additional representations for this engagement can be found in Appendix A.

CLIENT RESPONSIBILITIES
You agree to provide financial and other information to us as reasonably necessary for us to complete our engagement. You will represent that all information and documentation provided or to be provided is true, correct and complete to the best of your knowledge and belief. You hereby agree that we may rely upon such information and documentation without independent investigation or verification.

You agree that we are not required to update our analyses and conclusion for events and circumstances occurring after the date of our report.

CLIENT
COMPANY
DATE
Page 5 of 14

It is expressly understood that any reports or other documents produced by the Firm, will not be provided to any parties except the Client, Client's Counsel, or its other professional advisors. It is further understood that our valuation report is solely for the use of the Client, and that our report may not be reproduced, distributed, or extracted in whole or in part without the Firm's express written permission. If we grant such limited permission in this letter or elsewhere, and you reproduce any portion or all of our valuation report, we must approve the masters or printer's proofs of the report before they are published.

You agree that possession of the work papers or other written documentation regarding the engagement does not carry with it the right of publication of all or part of it, nor may it be used or relied upon without previous written consent for any purpose other than that set forth above. No third parties are intended to be benefited. Schedules, information and other work papers developed during the engagement by the Firm or supplied by you or the Companies are the sole property of the Firm and are not subject to examination or production to the client at any time during or after the engagement.

REPORTING RESULTS (Optional for Litigation)
OPTION 1 – DETAILED WRITTEN REPORT
Our conclusion of value of the Subject Interest will be expressed in a written detailed report. The report will express the conclusion of value as a [SINGLE AMOUNT/RANGE OF VALUES]. A detailed report is structured to provide sufficient information to permit the intended user to understand the data, reasoning, and analyses underlying our conclusion of value.

OPTION 2 – SUMMARY WRITTEN REPORT
Our conclusion of value of the Subject Interest will be expressed in a written summary report. The report will express the conclusion of value as a [SINGLE AMOUNT/RANGE OF VALUES]. A summary report is structured to provide an abridged version of the information that would be provided in a detailed report and, therefore will not contain the same level of information as a detailed report.

OPTION 3 – ORAL REPORT
Our conclusion of value of the Subject Interest will be expressed in an oral report communicated to [CLIENT].

FEES AND BILLING
Our fees are based upon an estimate of the time necessary to prepare our analysis and document our findings. Our professional fees for the engagement are estimated to be $FEE, plus out-of-pocket costs. We will require a retainer of $RETAINER prior to the start of our engagement. We will not

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issue the final valuation reports unless all invoices pertaining to this engagement have been paid in full.

If for any reasons beyond our control this engagement shall be delayed for more than twenty (20) consecutive business days, we shall issue a progress bill for the portion of the work completed at such time. This invoice must be paid before commencement of subsequent work. The quoted fee is subject to an increase if the scope or terms of this Agreement change. We will notify you in advance of any change in scope.

NOTE: The following section related to delinquent accounts and collections should be tailored to your Firm's and statutory collection practices and policies.

A PERCENT% service charge per month will be applied to all delinquent accounts that are 30 days or more past due. We reserve the right to suspend or terminate services, as well as to withdraw as experts, if our invoices are not paid within 30 days of the invoice date; accordingly, our engagement will be deemed to have been completed even if we have not completed a report. You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket expenditures through the date of suspension/termination. You must notify our office within ten (10) business days of the date of an invoice should you have any questions regarding it and, upon such notification, we will review the invoice with you in detail. Accordingly, absent such a request, we will consider that you have accepted our invoice as presented.

If we deem it necessary to seek alternative means of collection relative to our invoices, we shall be entitled to recover attorney's fees and costs of collection in addition to our fees in any litigation in which we may prevail. Each of us hereby waives the right to a jury trial. You also agree to allow your attorney to include any unpaid balances due our Firm in any charging lien filed with the court. Additionally, you agree to forego any attempt to assert liability against our Firm for incidental damages.

If the Firm is called upon to render services, give testimony, produce documents, answer depositions or interrogatories, or otherwise become involved in connection with any administrative or judicial proceedings, investigations or inquiries relating to the engagement, you will pay, in addition to the fees herein, for the time reasonably required to be expended by any partner or employee of the Firm, at our standard hourly rates as then in effect, plus out-of-pocket expenses relating thereto. Professional fees for such services are independent of this engagement.

OPTIONAL: ARBITRATION PROVISION

All claims, disputes and other matters in question between Valuation Advisors LLP and you arising out of, or relating to, this engagement and engagement letter, or its breach, shall be decided by arbitration in [LOCATION]. Either Valuation Advisors LLP or you may serve upon the other by

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certified mail a written demand that the dispute, explaining in detail its nature, be submitted to arbitration. Within ten (10) days, after service of such demand, each of us shall appoint a neutral arbitrator from the approved list of mediators and arbitrators appointed by the [COURT] in and for [LOCATION]. If either of us fails within the specified time to appoint an arbitrator, the single appointed arbitrator will have the right to decide alone, and his/her decision will be binding on both of us. The two appointed arbitrators shall select and appoint an independent third arbitrator. The written, and signed under oath, decision of two arbitrators shall be final and binding upon us. The arbitrators shall decide the total of the expenses, including reasonable attorney's fees, and award them to the prevailing party. If the two appointed arbitrators fail to agree upon a third arbitrator within ten (10) days after their appointment, then either of us may apply, upon notice to the other, to any court of competent jurisdiction in [LOCATION], for the appointment of a third arbitrator, and any such appointment shall be binding upon us. Judgment on the arbitrators' decision, including the decision on who is to pay expenses, may be entered by any court of competent jurisdiction in [LOCATION].

DELIVERY AND TIMING
Our ability to deliver a final valuation report is dependent upon our timely receipt of the required information. We will use our best efforts to meet any reasonable deadlines. We are prepared to begin this assignment upon authorization and estimate that we will complete the engagement in approximately [TIME ESTIMATE – NUMBER OF DAYS] after timely receipt of all requested information.

GOOD FAITH OPINION OPTIONAL - DAUBERT CLAUSE
CLIENT acknowledges that the conclusion of value rendered by the valuation analyst is its good faith opinion supported by a reasonable amount of research and analysis, but it is only the unbiased judgment of the valuation analyst. Failure of its opinion to be accepted for any reason by any party, person, or government entity shall not constitute a breach of any of the valuation analyst's duties under this agreement, shall not constitute negligence of any kind on the part of the valuation analyst, shall not give rise to any cause of action by the client, and shall not relieve the client of any duties.

TERMINATION
Failure to make the payments required by this agreement, or failure by you to comply with the terms of this agreement will give us the sole option to terminate the agreement.

ACCEPTANCE
This agreement will become effective when we receive a signed copy of this letter and the requested retainer. Please sign and return the enclosed copy of this letter, with the $RETAINER retainer, in the enclosed preaddressed envelope by [ENGAGEMENT CUTOFF DATE]. If we do not receive these items by this date, and you do not inform us otherwise, we will presume that you do not

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intend to engage our Firm. If the need for additional services arises, we will revise our agreement with you and we will enumerate these revisions in an addendum to this letter.

Thank you for the opportunity to be of service to you.

Very truly yours,

VALUATION ADVISORS LLP
For the Firm

Sarah Valuator, CPA, CVA
Partner

Accepted ____________________________________

Date ____

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APPENDIX A
ASSUMPTIONS & LIMITING CONDITIONS

NOTE: This is an illustrative list of assumptions and limiting conditions and is not meant to be all-inclusive. The member should include those assumptions and limiting conditions that are applicable to their engagement. The items included in this list may be duplicative.

The engagement is subject to the following assumptions and limiting conditions.

1. a. The conclusion of value arrived at herein is valid only for the stated purpose as of the date of the valuation., or,

   b. This valuation is made for the purpose stated in the report and is to be used in its entirety. No third parties should rely on the information contained in this report without the advice of their attorney or accountant, and without confirming for themselves the information contained herein. Neither the report nor the information it contains should be used for any other purpose or function, and it is invalid if so used. Neither this appraisal nor any part of it shall be used separately or in connection with any other appraisal., or,

   c. This report and the conclusion of value arrived at herein are for the exclusive use of Valuation Advisors LLP's client for the sole and specific purposes as noted herein. They may not be used for any other purpose or by any other party for any purpose. Furthermore the report and conclusion of value are not intended by the author and should not be construed by the reader to be investment advice in any manner whatsoever. The conclusion of value represents the considered opinion of Valuation Advisors LLP based on information furnished to them by [CLIENT or ENTITY] and other sources.

2. Nothing came to our attention to cause us to believe that all facts and data set forth in this report are not true and correct. We have not knowingly withheld or omitted anything affecting value.

3. Valuation Advisors LLP and its associates have no present or contemplated future interest in the subject property of this report. We have no interest in or bias with respect to the subject property or to the owners thereof

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4. a. The fee for this valuation is not contingent upon value reported and is valid only for the purpose specified herein. We have no responsibility or obligation to update this report for events or circumstances occurring subsequent to the date of this report., or,

   b. The conclusion of value reflects facts and circumstances existing as of the valuation date. Except as noted, Valuation Advisors LLP has not considered subsequent events and we have no obligation to update our conclusion of value for such events.

5. All opinions as to values stated are presented as our considered opinion based upon the facts and data as set forth in the report. No responsibility is assumed for a seller's inability to obtain a purchaser at the values reported herein.

6. a. No opinion is intended to be expressed for matters that require legal or other specialized expertise, investigation, or knowledge beyond that customarily employed by valuation specialists valuing a business, a business ownership interest, security, or intangible asset., or,

   b. No responsibility is assumed for matters of a legal nature or other specialized expertise, investigation or knowledge beyond that customarily employed by appraisers valuing businesses. Valuation Advisors LLP assumes no responsibility for matters of a legal nature affecting the property appraised, nor is any opinion of title rendered. The appraisal assumes ownership in the highest form. Other than any specific exceptions described within the report, in reliance on management's representations, Valuation Advisors LLP has not reviewed any legal documents including, but not limited to, the articles of incorporation and bylaws (including amendments), minute books, distribution or franchise agreements, leases, employee or collective bargaining agreements, documents related to litigation or the like, warranties, guarantees, or loan agreements, or ESOP/ESOT agreements. To the extent Valuation Advisors LLP has reviewed such documents, it is acknowledged that evaluation of them, relative to any legal considerations or impact is outside the skills of the appraiser.

7. Financial statements and other related information provided by [CLIENT or ENTITY] or its representatives, in the course of this engagement, have been accepted without any verification as fully and correctly reflecting the enterprise's business conditions and operating results for the respective periods, except as specifically noted herein. Valuation Advisors LLP has not audited, reviewed, or compiled the financial information provided to us and, accordingly, we express no audit opinion or any other form of assurance on this information.

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8. Public information and industry and statistical information, if obtained, has been derived from sources we believe to be reliable. However, Valuation Advisors LLP makes no representation as to the accuracy or completeness of such information and has performed no procedures to corroborate the information.

9. We do not provide assurance on the achievability of the results forecasted by [ENTITY] because events and circumstances frequently do not occur as expected; differences between actual and expected results may be material; and achievement of the forecasted results is dependent on actions, plans, and assumptions of management.

10. This report is a valuation report designed to give a conclusion of value. It is not an accounting report and it should not be relied upon to disclose hidden assets or to verify financial reporting. The report is an opinion of value of the specific assets and liabilities considered by Valuation Advisors LLP.

11. The conclusion of value arrived at herein is based on the assumption that the current level of management expertise and effectiveness would continue to be maintained, and that the character and integrity of the enterprise through any sale, reorganization, exchange, or diminution of the owner's participation would not be materially or significantly changed.

12. Valuation Advisors LLP does not purport to be a guarantor of value. Valuation of closely held companies is an imprecise science, with value being a question of fact, and reasonable people can differ in their opinions of value. Valuation Advisors LLP has, however, used conceptually sound and commonly accepted methods and procedures of valuation in determining the opinion of value included in this report.

13. Neither all nor any part of the contents of this report (especially the conclusion of value, the identity of any valuation specialist(s), or the firm with which such valuation specialists are connected or any reference to any of their professional designations) should be disseminated to the public through advertising media, public relations, news media, sales media, mail, direct transmittal, or any other means of communication without the prior written consent and approval of Valuation Advisors LLP.

14. This written business valuation contains historical and normalized financial statements, as well as other financial presentations, used solely in developing and presenting the valuation of the entity, specified assets, and/or equity interest of such entity. These financial statements may contain departures from generally accepted accounting principles (GAAP) or an other comprehensive basis of accounting (OCBOA) because the purpose of such

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statements is solely to assist in developing and presenting the business valuation of an entity, specified assets, and/or equity interest of such entity. For this reason, it is understood by all parties that the financial statements, as well as other financial presentations, included in this written business valuation will not be used to obtain credit or for any purpose other than developing and presenting a business valuation of the entity, specified assets, and/or equity interest of such entity.

15. Users of this business valuation report should be aware that business valuations are based on assumptions regarding future earnings potential and/or certain asset values, which may or may not materialize. Therefore, the actual results achieved in the future will vary from the assumptions utilized in this valuation, and the variations may be material.

16. We have relied upon the representations of the owners, management, and other third parties concerning the value and useful condition of all equipment used in the business and any other assets or liabilities except as specifically stated to the contrary in this report. We have not attempted to confirm whether or not all assets of the business are free and clear of liens and encumbrances, or that the company has good title to all assets.

17. The valuation engagement and its conclusions are subject to review upon presentation of data, which may have been undisclosed or not available at the time of this report.

18. In connection with this engagement, Valuation Advisors LLP appraised none of the fixed assets.

19. Future services regarding the subject matter of this report, including, but not limited to testimony or attendance in court, shall not be required of Valuation Advisors LLP unless previous arrangements have been made in writing.

20. Valuation Advisors LLP is not an environmental consultant or auditor, and it takes no responsibility for any actual or potential environmental liabilities. Any person entitled to rely on this report, wishing to know whether any such liabilities exist, or the scope and their effect on the value of the property, is encouraged to obtain a professional environmental assessment. Valuation Advisors LLP does not conduct or provide environmental assessments and has not performed one for the subject property.

21. No change of any item in this appraisal report shall be made by anyone other than Valuation Advisors LLP, and we shall have no responsibility for any such unauthorized change.

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22. Unless otherwise stated, no effort has been made to determine the possible effect, if any, on the subject business due to future Federal, state, or local legislation.

23. Unless otherwise informed or determined independently by Valuation Advisors LLP, it is assumed that there are no regulations of any government entity to control or restrict the use of the subject business's underlying assets and that the underlying assets will not operate in violation of any applicable government regulations, codes, ordinances, or statutes. Valuation Advisors LLP also assumes that, unless otherwise informed or determined independently, the subject business is in compliance with all federal, state and local laws and regulations, as well as up to date in regard to all filing and reporting requirements.

24. Possession of this report, or a copy hereof, does not carry with it the right of publication of all or any part of this report without the expressed written consent of the Valuation Advisors LLP, and then only in the event of proper attribution. Should you provide copies, or the right to review, to others, said other parties may be assured that this report, while performed in the employ of our client, was prepared on a nonadvocacy basis. Said other parties, however, are cautioned that Valuation Advisors LLP has no duty to you, and therefore, no warranty is expressed or implied. Nothing in this report is intended to replace any third party's independent sole judgment, due diligence, or decision to seek legal, accounting or valuation counsel. All such other parties will be considered "unintended users" under the terms of our engagement.

25. This appraisal, unless specifically stated otherwise herein, assumes there are neither litigious, regulatory compliance and/or similar problems, nor restrictions or other qualifications within the documents referred to above, which could materially affect the value of the property being appraised. No representations or warranties are expressed or implied regarding such conditions and no consideration has been given to the possible effects of any such conditions.

26. Neither our opinion of value nor this report constitutes advice for any specific action.

27. Financial restructuring or a public offering has not been directly considered. If material changes, other than those specified herein, occur in the ownership, financing, or public offering opportunity, the impact upon value could be significant and some of the assumptions inherent in this valuation could be invalid.

28. In the event, differences exist between the financial data contained in a primary year's financial statements and the amounts shown for the same item in the prior year column of

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the following year's financial statements, it is understood we will use the amounts reflected in the prior year column of the following year's statements.

29. Valuation Advisors LLP has not made a specific compliance survey or analysis of the subject property to determine if it is subject to, or in compliance with, the American Disabilities Act of 1990, and this valuation does not consider the effect, if any, of noncompliance.

30. Unless otherwise provided for in writing and agreed to by both parties in advance, the extent of the liability for the completeness or accuracy of the data, opinions, comments, recommendations and/or conclusions contained in this report shall not exceed the amount paid to the appraiser for professional fees and, then only to the party(s) for whom this report was prepared.

31. If prospective financial information approved by the Client and/or the Company has been used in our work, Valuation Advisors LLP has not audited, reviewed, or compiled the prospective financial information and therefore, does not express an audit opinion or any other form of assurance on the prospective financial information or the related assumptions. Events and circumstances frequently do not occur as expected and there will usually be differences between prospective financial information and actual results, and those differences may be material. Valuation Advisors LLP does not provide any assurance on the achievability of forecasts provided. Achievement of the forecasted results is dependent on actions, plans, and assumptions of management.

32. The conclusion of value is based on the stated definition of value. An actual transaction involving the business, the business ownership interest, the security, or the intangible asset may occur at a higher or lower value, depending on the circumstances surrounding the business, the business ownership interest, the security, or the intangible asset, and the motivations and knowledge of both the buyers and sellers at that time. Valuation Advisors LLP makes no guarantees about what values individual buyers and sellers may reach in an actual transaction.

33. Valuation Advisors LLP assumes there are no other hidden or unexpected conditions of the entity that would adversely affect value, other than those indicated.

34. Valuation Advisors LLP has not knowingly withheld or omitted anything from our valuation that would affect the conclusion of value.

35. Valuation Advisors LLP did not consider the effect, if any, of Internal Revenue Code §2701 through §2704, nor do we express any opinion as to its applicability

APPENDIX XIV

The Core Body of Knowledge for Business Valuations

(Revised February 3, 2009)

SUBJECT MATTER	Percentage Emphasis on CVA/AVA Exam
I. OVERVIEW	**4%**
A. Purpose for business valuation	
1. Financial accounting	
2. Tax valuations	
3. Litigation	
4. Merger and acquisition	
B. Standards of value	
1. Definitions of standards of value, including	
a) Fair market value	
b) Fair value	
(1) Statutory	
(2) Financial reporting	
c) Investment (strategic) value	
d) Intrinsic (fundamental) value	
2. Relationship between purpose of the valuation and standard of value	
C. Premise of value	
1. Going concern	
2. Assemblage of assets	
3. Liquidation (orderly or forced)	
D. Levels of value	
1. Lack of control (minority) v. control	
2. Marketable v. non-marketable	
3. Strategic and investment value	
II. PROFESSIONAL RESPONSIBILITIES, QUALIFICATIONS, AND REGULATORY STANDARDS	**4.5%**
See Appendix I for country-specific professional responsibilities, qualifications, and regulatory standards.	
III. ENGAGEMENT ACCEPTANCE AND PLANNING	**3%**
A. Defining the engagement	
1. Valuation date and its importance	
B. Engagement Letters	
1. Purpose	
2. Content	
C. Acceptance	
1. Experience	
2. Staffing	
3. Expectations	
IV. QUALITATIVE ANALYSIS	**8%**
A. Sources of Data	
B. Economic Environment	
1. Macro-environment	

SUBJECT MATTER	Percentage Emphasis on CVA/AVA Exam

a) National economic data
b) Regional economic data
c) Metropolitan economic data
d) Relationship of economic activity to valuation
e) International elements and impact Competitive analysis

2. Micro-environment

C. Industry background
1. Economic data
2. Structure, trends, and life cycle

D. Company background
1. Site visit and discussions with management
2. History and nature
3. Economic data (cost structure, pricing power, marginal analysis)
4. SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats)

V. QUANTITATIVE ANALYSIS **16.5%**

A. Financial statements
1. Source (audited/reviewed/compiled/tax returns/internal)
2. Number of years to obtain
3. Common size
4. Trend analysis
5. Ratios
6. Comparative analysis
   a) Specific company
   b) Industry averages

B. Adjustments to financial statements
1. Normalizing
   a) Control v. non-control
   b) Discretionary
   c) Reasonable compensation analysis
   d) See Appendix II for country-specific accounting principles
   e) Extraordinary/non-recurring
2. Operating v. non-operating items
3. Off-balance sheet and unrecorded items

C. Statistical Analysis
1. Measures of central tendency (arithmetic, harmonic, geometric means)
2. Measures of dispersion (including variance and standard deviation)
3. Statistical strengths of numerical relationships (including covariance, correlation, coefficient of determination, and coefficient of variation)
4. Linear regression

D. Types of benefit streams and selection
1. Selection of appropriate time periods (including mid-year convention)
2. Selection of appropriate type of income/cash flow
3. Growth assumptions

SUBJECT MATTER	Percentage Emphasis on CVA/AVA Exam

a) Trend line projected
b) Constant
c) Erratic
d) Level
e) Declining growth approaches

4. Historical v. projection based on considerations
5. Relating effects due to economic/industry events and trends
6. Pass-through entities—tax effecting of the benefit stream

VI. VALUATION APPROACHES — 27.5%

A. Income approach

1. General theory
2. Defining applicable income/cash flow
3. Sources of data
4. Capitalization/discount rates
5. Commonly used methods
   a) Capitalized economic income/cash flow method (CCF), including Gordon Growth Model (constant growth model)
   b) Discounted economic income/cash flow method (DCF), including Gordon Growth Model (two stage model)
   c) Excess earnings (cash flow) method
      (1) See Appendix III for country-specific applications of the excess earnings method
      (2) Reasonable rate method
   d) Dividend paying capacity

B. Market approach

1. General theory
2. Commonly used methods
   a) Transactions in subject company's stock
   b) Transactions/sales of companies similar to subject
      (1) Guideline public companies
         (a) General theory
         (b) Selecting guideline companies
            i) Sources of data
            ii) Size adjustments
         (c) Equity v. invested capital (including multiples)
         (d) Selection of appropriate time periods
         (e) Selection of appropriate multiples
            i) Adjusting for growth, size, and company specific risk
      (2) Guideline merged and acquired companies
         (a) General theory
         (b) Sources of data
         (c) Consideration of the selection of data points
         (d) Transactional databases

SUBJECT MATTER	Percentage Emphasis on CVA/AVA Exam

i) See Appendix IV for country-specific transactional databases

C. Asset Approach
1. General theory
2. Sources of data
3. Commonly used methods
a) Book value
b) Adjusted net asset method
c) Excess earnings method
(1) See Appendix III for country-specific applications of the excess earnings method
(2) Reasonable rate method
d) Liquidation method (forced or orderly)
4. Identifying and valuing intangible assets
a) Approaches and methods
b) Estimated life
c) Impairment
5. Tax effecting the balance sheet (built-in capital gains)

D. Sanity Checks
1. General theory
2. Sources of data
3. Commonly used methods
a) Industry formulas ("Rules of Thumb")
b) Justification of purchase

E. Reconciliation of indicated values

VII. COST OF CAPITAL CONCEPTS AND METHODOLOGY, AND OTHER PRICING MODELS **15%**

A. Build-up method
1. Risk free rate
2. Equity risk premium
3. Size risk premium
4. Industry equity risk premium
5. Company specific risk
6. Supply side equity risk premium
7. Long-term sustainable growth
8. Other
9. See Appendix V for country-specific sources of risk premiums

B. Capital asset pricing model (CAPM) and Beta (ß) including un-levered and re-levered Betas
C. Weighted average cost of capital
D. Converting after tax risk rates to pre-tax rates
E. Other recognized methods

VIII. DISCOUNTS, PREMIUMS, AND OTHER ADJUSTMENTS **15.5%**

A. Levels of value and effect on discounts and premiums
1. Synergistic value

SUBJECT MATTER	Percentage Emphasis on CVA/AVA Exam
2. Control value	
3. Non-controlling, marketable value	
4. Non-controlling, non-marketable value	
B. Adjustments for Control Issues	
1. General theory	
2. Sources of data	
3. Ownership characteristics	
4. Magnitude	
5. Relationship to how benefit stream is defined	
C. Adjustments for Marketability Issues	
1. General theory	
2. Sources of data	
3. Ownership characteristics	
4. Restrictions on transferability	
5. Magnitude	
6. Models	
D. Discounts and premiums—understanding the empirical studies	
E. See Appendix VI for country-specific entity structures	
F. Allocation between Voting and Non-voting stock	
G. Professional v. practice goodwill	
H. Other valuation discounts and adjustments	
I. Current issues	
J. Subsequent events	
IX. RELATED TOPICS	**6%**
A. Case law—See Appendix VII for country-specific case law issues	
B. Intellectual property	
1. General theory	
C. See Appendix VIII for country-specific financial reporting issues	
D. See Appendix IX for country-specific judicial guidance information	
E. Roles of the valuation analyst in litigation services	
1. Expert witness	
2. Consultant	
3. Fact witness	
4. Other practitioner role	
F. See Appendix X for country-specific special classes of securities	

Appendices for Valuations in the United States

APPENDIX I

In the United States, the following bodies issue statements on professional responsibilities, qualifications, and regulations:

- A. NACVA—National Association of Certified Valuators and Analysts
- B. AICPA—American Institute of Certified Public Accountants
  1. Code of Professional Conduct
  2. Statement on Standards for Consulting Services, No. 1
  3. Statement on Standards for Valuation Services, No. 1
- C. ASA—American Society of Appraisers
- D. IBA—Institute of Business Appraisers
- E. The Appraisal Foundation (USPAP—Uniform Standards of Professional Appraisal Practice)
  1. General and ethical
  2. Standard No. 9
  3. Standard No. 10
- F. IRS—Internal Revenue Service
  1. Circular 230
  2. Business Valuation Guidelines
  3. Preparer penalties and disbarment
- G. SEC—Securities and Exchange Commission
  1. Sarbanes-Oxley Act of 2002 and related SEC Rules
- H. FASB—Financial Accounting Standards Board
- I. DOL—Department of Labor
- J. Ethical considerations
  1. Advocate v. expert
  2. Independence
- K. Other Applicable rules, requirements, and authoritative sources

APPENDIX II

In the United States, financial statement adjustments include changes to put the statements in compliance with Generally Accepted Accounting Principles (GAAP)

APPENDIX III

In the United States, use of the excess earnings method should include consideration of the Treasury Method.

APPENDIX IV

In the United States, examples of transactional databases include:

1. BIZCOMPS®
2. Institute of Business Appraisers
3. Pratt's Stats
4. Done Deals
5. Mergerstat
6. Others

APPENDIX V
In the United States, Morningstar/Ibbotson and Duff & Phelps are two standard sources of risk rates.

APPENDIX VI
In the United States, examples of business entities include:

1. S-corporation
2. C-corporation
3. Partnership
4. Limited liability company
5. Proprietorship

Special issues for the various forms should be considered.

APPENDIX VII
In the United States, case law directly related to business valuations is found for:

1. Income taxation
2. Estate and gift taxation
3. Employee Stock Ownership Plans
4. Family law
5. Commercial law
6. Other

APPENDIX VIII
In the United States, special valuation issues arise when reporting Fair Value for financial reporting purposes.

APPENDIX IX
In the United States, the Federal Rules of Civil Procedure (Rule 26) provide judicial guidance.

APPENDIX X
In the United States, there are several special classes of securities:

1. Preferred stock
2. Convertible instruments
3. Stock options and other derivative instruments

— Approved by the Valuation Credentialing Board
January 21, 2009

APPENDIX XV

Instructions For Self–Study Participants

Self–Study Instructions:

- After studying each chapter of the text, complete the Chapter Review Exam provided at the end of each chapter to determine your level of understanding.
- Compare your answers to those provided at the back of the text and reread the applicable materials again as needed.
- When you've finished your review of all chapters and appendices, complete the CPE "Self–Study" Exam provided near the back of the text.

    - Mark your answers by circling the correct answer for each question.
    - Mail the exam to:

CPE Exam Coordinator
NACVA
1111 Brickyard Road, Suite 200
Salt Lake City, UT 84106

PLEASE NOTE: NACVA does not provide answers to its exams to participants. You will be graded pass/fail. Passing requires 70% of the answers to be correct.

BUSINESS VALUATIONS:

Fundamentals, Techniques and Theory (FT&T)

CPE Exam for Self Study Participants Only

BUSINESS VALUATIONS:
FUNDAMENTALS, TECHNIQUES AND THEORY
SELF-STUDY EXAM

This examination must be completed and returned to the Consultants' Training Institute (CTI) within 1 year of the date the exam was issued, or the date this course was purchased. Passing grades will receive 12 hours of Continuing Professional Education (CPE) credits. CTI is an approved sponsor under the Quality Assurance Service program (QAS), offering the highest caliber of self-study courses and recognized by the National Association of State Boards of Accountancy.

NAME:____FIRM:_____________________________________

ADDRESS:____

CITY:____STATE:____________ZIP:_______________

TEL:__________________________FAX:_________________________EMAIL:______________________

Please Complete: I hereby attest that I have completed the course of study as prescribed by NACVA and have completed the exam being submitted herein. To study the materials, along with completing this examination, has taken me ____ total hours. *In accordance with the standards of the National Registry of CPE Sponsors, self-study CPE credits have been granted based on a 50-minute hour.*

Signature: ____ Date: _________________________

Earn 12 Hours of CPE for COMPLETING THIS EXAM*
The Cost is only (check applicable)
☐ $65.00 for non- NACVA/IBA Members
☐ $58.00 for NACVA/IBA Members

Please complete the information requested below and return the exam to NACVA for grading *:

Check #: ___________ Charge to my: ❑ AMEX ❑ VISA ❑ MasterCard ❑ Discover Card ❑ Diners Club

Credit Card Number: ____ Expiration Date: _______________

Credit Card Billing Address: ____

*If you paid for CPE with your original purchase of this course, you do not need to complete this section. If additional staff in your firm also want CPE credit for studying this course, simply have them copy and take this exam and submit it to NACVA with the appropriate fee. Please allow 4 to 6 weeks for grading.

MAIL EXAM TO:

CONSULTANTS' TRAINING INSTITUTE
1111 BRICKYARD ROAD
SUITE 200
SALT LAKE CITY, UT 84106-5401

Tel: (801) 486-0600 **FAX (801) 486-7500** **EMAIL: INFO@THECTI.COM**

Circle the correct answer

1. The development of the capitalization or discount rate requires which of the following?

    a. Identification of cash flow
    b. Retention as a business valuation analyst
    c. A determination of risk
    d. None of the above

2. Which body issues regulations pertaining to Employee Stock Ownership Plans (ESOP)?

    a. NACVA
    b. DOL
    c. FASB
    d. AICPA

3. Which factors have dramatically expanded the demand for business valuation?

    a. More marketing by NACVA
    b. Increase in the number of available BV analysts
    c. IRS requirements
    d. Economic instability and age demographics

4. What event in the 1920s forced the need for valuations of closely held businesses?

    a. Prohibition
    b. The depression
    c. The end of World War I
    d. The creation of the AICPA

5. Which standard provides authoritative guidance for gift, estate and inheritance taxes?

    a. RR 69-50
    b. ASC 805
    c. TAM 69543330005
    d. RR 59-60

6. The theoretical basis for valuing a closely held business is a hypothetical arms-length sale of a business between a buyer and a seller.

    a. True
    b. False

7. The most common reasons for non-tax valuations are:

   a. Estates, gifts, and lump sum purchase price
   b. Gift, ESOP, and charitable contributions
   c. Buy/sell agreements, litigation, and marital dissolution
   d. FASB 142, gifting, and purchase agreements

8. The liquidation value is:

   a. The value of a business enterprise that is expected to continue to operate in the future. The intangible elements of going concern value result from factors such as having a trained work force, an operational plant, and the necessary licenses, systems, and procedures in place
   b. The value that includes all costs of duplicating a business rather than acquiring a business
   c. The value of a business enterprise that is not expected to continue future operations
   d. The value of a business enterprise set by a judge to satisfy a judgment in a marital dissolution

9. Which IRS pronouncement is considered the most valuable piece of IRS literature as it pertains to business valuations?

   a. RR 59-60
   b. ARM 34
   c. RR 68-609
   d. RR 98-34

10. Which IRS pronouncement is referred to as the “excess earnings method”?

   a. RR 59-60
   b. ARM 34
   c. RR 68-609
   d. RR 98-34

11. Which IRS pronouncement introduced the concept of Goodwill?

   a. RR 59-60
   b. ARM 34
   c. RR 68-609
   d. RR 98-34

12. Which IRS pronouncement sets forth a methodology to value certain compensatory stock options?

   a. RR 59-60
   b. ARM 34
   c. RR 68-609
   d. RR 98-34

13. The 5 major steps of a valuation engagement are:

    a. Write the engagement letter, gather the information, define the value, prepare and issue the valuation report
    b. Define the engagement, gather the information, analyze the information, estimate enterprise value and prepare/issue the valuation report
    c. Define the engagement, write the valuation engagement letter, gather company information, prepare the data and issue the valuation report
    d. Gather information on the industry and the company, analyze the information, estimate company value, delineate all the limiting conditions, issue the valuation report

14. Three basic economic statements which you might include in your valuation are:

    a. Income statement, balance sheet, depreciation/amortization schedule
    b. Balance sheet, income statement, cost of sales statement
    c. Balance sheet, income statement, cash flow statement
    d. Income statement, balance sheet, debit/credit journal

15. Which of the following are typical categories to review in normalizing accounts for a valuation:

    a. Doubtful accounts, notes receivable, leases, and taxes
    b. Notes receivable, leases, compensation but not liabilities and insurance
    c. Inventory methods, depreciation methods but not non-operating items
    d. Capitalization and expensing, recognition of income, and expenses and taxes but not non-recurring or extraordinary costs

16. The formula to calculate the percentage growth in sales from period one to period two is:

    a. Period 2 net sales less period 1 net sales divided by period 1 net sales
    b. Period 1 net sales less period 2 net sales divided by period 1 net sales
    c. Period 1 net sales less period 2 net sales divided by period 2 net sales
    d. Period 2 net sales less period 1 net sales divided by period 2 net sales

17. The formula for calculating gross margin percentage is:

    a. Net sales less cost of sales divided by cost of sales
    b. Net sales less cost of sales divided by net sales
    c. Cost of sales less net sales divided by cost of sales
    d. Cost of sales less net sales divided by net sales

18. The formula for calculating the operating margin percentage is:

    a. Income from operations divided by cost of sales.
    b. Income from operations divided by sales commissions
    c. Income from operations divided by number of sales per year
    d. Income from operations divided by net sales

19. To calculate inventory turnover:

    a. Multiply the cost of goods sold by half the sum of beginning and ending inventory
    b. Divide the operating margin plus cost of goods sold by the sum of beginning inventory plus ending inventory
    c. Divide the sales commissions plus cost of goods sold by the ending inventory less the beginning inventory
    d. Divide the cost of goods sold by the sum of beginning inventory and ending inventory divided by two

20. Current assets divided by current liabilities calculates:

    a. Debt to equity ratio
    b. Current ratio
    c. Return on equity
    d. Net fixed assets ratio

21. Return on assets is calculated by:

    a. Obtaining net income divided by the product of total assets at the beginning of the period plus total assets at the end of the period divided by two
    b. Obtaining gross income divided by one half of the total assets at the end of the period
    c. Obtaining gross income plus total debt divided by one half of the total assets at the beginning of the period and one half of the total assets at the end of the period
    d. Obtaining net income plus net sales and dividing by one half of the total assets at the beginning of the period plus total assets at the end of the period

22. Earnings per share is:

    a. The price of risk-the difference between the expected rate of return on a portfolio and the reasonable rate
    b. The price of the dividend divided by the price
    c. The market price per share divided by the book value per share
    d. The net income less preferred stock dividends divided by the number of common shares outstanding

23. One of the factors the analyst should review in order to define the benefit stream (future income) potential of a company is:

    a. The amount the analyst is being paid for the valuation
    b. The method used by the listing broker to estimate the price of the business
    c. The need to use either earnings or cash flow as well as whether the valuation is using sellers discretionary cash/income EBIT, EBITDA or another type of earnings
    d. Net income after tax plus non-cash charges, less applicable capital expenditures, less additions to net working capital to support operations plus changes in long-term debt from borrowings required for operations less changes in long-term debt for repayments equals net cash flow to equity

24. Using the weighted average method (placing the greatest predictive value on the most current year, 20X3) estimate the future benefit for Jennings Baker Company:

Year	Earnings
20X1	($15,300)
20X2	32,400
20X3	89,600

a. 43,050
b. 53,050
c. 63,050
d. 73,050

25. Historical earnings are often used to estimate future income, when:

a. The purpose for the valuation is tax, buy-sell, or divorce
b. When history represents future operations and the future benefit stream is linear
c. When industry changes are minimal or don't affect the subject company in a material manner
d. When the local economic forecast for the area does not adversely affect the subject company
e. All of the above

26. Projected earnings are often used to estimate future income, when:

a. The purpose for the valuation is tax, buy-sell, or divorce
b. The history represents future operations and future benefit stream is linear
c. The industry changes are minimal or don't affect the subject company and it is mature
d. The economic forecasts for the area of domicile do not adversely affect the subject company so history is a good proxy
e. None of the above

27. Jason Consulting has the following normalized net cash flow to equity:

Year	Benefit Stream
1992	120,100
1993	(12,300)
1994	135,900
1995	57,900
1996	(25,600)
1997	10,700
1998	55,600
1999	117,800
2000	122,300
2001	175,000

What is the weighted average cash flow (rounded) for the period?

a. $120,000
b. $188,000
c. $88,000
d. $100,000

28. The capitalization rate and discount rate is actually a yield rate based on:

a. Safe or reasonable rate plus compensation for investment
b. Safe or reasonable rate plus compensation for risk
c. Safe or reasonable rate plus compensation for inventory loss
d. Safe or reasonable rate plus compensation for amortization and depreciation

29. Earnings for Deft Company are as follows:

Year	Earnings
1999	2,230,000
2000	2,240,000
2001	1,245,000
2002	1,230,000
2003	1,230,000

If the capitalization rate is 16%, the trend for the earnings in the future is:

a. Slightly down
b. Stagnant
c. Slightly up
d. Increased by 16%
e. None of the above

30. Earnings for Deft Company are as follows:

Year	Earnings
1999	2,230,000
2000	2,240,000
2001	1,245,000
2002	1,230,000
2003	1,230,000

If the discount rate is 19% and the capitalization rate is 16%, using the year 2003, and the 5th year present value factor of .747258, the present value of the terminal value is:

a. 4,983,000
b. 7,918,000
c. 5,917,000
d. 5,745,000
e. None of the above

31. In addition to the type of earnings selected, what are the two primary criteria for determining a capitalization or discount rate?

    a. Yield currently offered to attract capital or investment to the subject business type plus a risk factor relative to the company being valued
    b. Yield currently offered to attract capital or investment to the subject business type plus the public P/E ratio average of companies in the same business
    c. A risk factor relative to the company being valued plus the average of the historical growth rates of companies in the same business
    d. All of the above

32. The beta for Left Hand Glove Company is -0.8. This means:

    a. The company is slightly more volatile than its industry
    b. The company carries the same volatility as its industry
    c. The company is slightly less volatile than its industry
    d. Nothing. Beta measures terminal value

33. The price earnings ratios for 4 public companies are: 5.2, 4.6, 3.4, 4.86. The after-tax capitalization rate is:

    a. 16.00%
    b. 18.08%
    c. 20.19%
    d. 22.15%

34. What are the three approaches to a valuation?

    a. Asset, Market, Going Concern
    b. Income, Market, Tax
    c. Market, Asset, Tax
    d. Asset, Market, Income

35. Is valuation an art or a science?

    a. Neither
    b. Both
    c. An art but not a science
    d. A science but not an art

36. In order to use the dividend paying capacity method of valuation, the company being valued must pay or have paid a dividend.

    a. True
    b. False

37. The adjusted net asset valuation method is used:

    a. When the valuation analyst needs a minimum or floor value for the company, there are no earnings, the business is a holding company or an investment firm
    b. When the business was liquidated prior to valuation and the earnings met the market test
    c. When assets are under-performing according to the owner and the bank carries a mortgage on the business assets
    d. When the asset method of valuation is the easiest way to perform the calculations of value on the company

38. In Geri Co, the 5 year weighted average historical pre-tax economic earnings are $1,250,000. The tax rate is 28%. The hurdle and debt rate are 12.25%. The adjusted net assets from prior year-end is $2,050,000. The cap rate applicable to this kind of company is 25% pretax. Determine the value of this business using reasonable rate return on assets.

    a. $3,995,500
    b. $2,050,000
    c. $6,045,500
    d. Cannot be determined from the information provided

39. What is/are the primary factor(s) in determining the magnitude of a discount for lack of control (DLOC)?

    a. The ability to file a dissenting shareholder action
    b. The degree of control the interest holder possesses
    c. The ability to have a vote for each share held
    d. The knowledge management can do whatever it wants

40. What is "DLOM"?

    a. Discount for lack of mobility
    b. Discount for lack of minority interest
    c. Discount for lack of marketability
    d. Discount for lack of maintenance

41. What step(s) must precede the application of applicable discounts?

    a. Gather as much data as possible to support discounts
    b. Determine the base value of the equity or enterprise first
    c. Determine the growth rate of the entity
    d. Insure the hypothetical transaction is not seller financed

42. Which statement is correct?

    a. If the arm's length sale is on a minority basis, then a "discount" will apply to a majority interest
    b. If the arm's length sale is on a majority basis, then a "premium" will apply to a minority interest
    c. None of the above
    d. Both a and b

43. Restricted Stock Studies are considered when quantifying which of the following?

    a. Discounts for minority positions
    b. Discounts for lack of control
    c. Discounts for lack of marketability
    d. Both b and c
    e. Both a and c

44. Which item is true about a *lack of control*?

    a. No voting rights
    b. Usually not to be able to set management compensation
    c. Will receive dividends subordinate to the controlling interests
    d. Can purchase and sell assets held by the company

45. Flotation costs may be described as:

    a. Costs associated with listing a business for sale
    b. Costs associated with obtaining debt financing
    c. Costs associated with creating flotation debentures
    d. Costs associated with taking a closely held business public

46. Which of the following best describes the concept of *marketability*?

    a. The price that is paid for a bundle of rights
    b. The best listing price marketed to the greatest number of buyers
    c. How quickly an interest can be sold and converted to cash
    d. Having control of the assets of a business

47. Which studies or methods are applicable to quantifying the DLOC?

    a. Mergerstat Review Control Premium
    b. Cost of Flotation
    c. Restricted Stock Studies
    d. Pre-IPO Studies
    e. Both a and d

48. What is DLOC?

    a. Discount for lack of control
    b. Discount for lack of cash
    c. Discount for lack of carry-forward tax break
    d. Discount for lack of credit

49. Which of the following is true for a conclusion of value?

    a. A conclusion of value can include a minimum and maximum value.
    b. A conclusion of value includes two recognized levels: opinion of value or estimate of value.
    c. A conclusion of value which includes three recognized levels, one based upon a qualified valuation report, one based on a single expression of value and one determined by the trier of fact in a court of law.
    d. The two levels of a conclusion of value are determined by the method chosen by the analyst using either the Asset, Income or Market approach.

50. What is the difference between a conclusion of value and a calculated value?

    a. A conclusion of value is intended to be the most unambiguous expression of value and, therefore, can only be expressed as a single value. A calculated value may be stated as a range of values when, in the sole professional judgment of the valuation analyst, a conclusion of value cannot be stated
    b. A calculated value is the value provided initially by the analyst before completing all the required procedures. A conclusion of value is provided by the analyst in the valuation report. These two values will always be different but both are valid
    c. A calculated value is intended to be the most unambiguous expression of value and, therefore, can only be expressed as a single value. A conclusion of value may be stated as a range of values when, in the sole professional judgment of the valuation analyst, a calculated value cannot be stated
    d. A calculated value is a single number, as calculated by the analyst. A conclusion of value is a single number, which is approximately midway between a range of values estimated by the analyst
    e. None of the above

51. All valuation engagements are potentially litigation engagements. Based on this fact, the litigation waiver applies to each valuation performed by the analyst.

    a. True
    b. False

52. Per the Professional Standards, engagement letters are:

    a. Not required in litigation cases. The understanding may be oral
    b. Required for each valuation the analyst accepts
    c. Not required by law
    d. Required by law
    e. Required if the analyst is also a CPA

53. An opinion of value is intended by the Professional Standards to be the most unambiguous expression of a conclusion of value.

    a. As such, it should always be the one used by the valuation analyst.
    b. As such, it should be used only when the analyst is absolutely certain all reasonable valuation analysts will agree with the opinion.
    c. As such, it should be used in all long form valuation reports.
    d. An opinion of value is not defined nor referred in the Professional Standards effective January 1, 2011.

54. In litigation related engagements, if the valuation analyst is required to provide a written report, what reporting standards apply?

    a. USPAP
    b. The Professional Standards reporting standards
    c. Whether the analyst needs to provide a written report and what form such written report should take, depends upon the agreement between the client(s) and the analyst. No other standards apply
    d. In addition to complying with any agreement between the parties, the analyst is encouraged to clarify and consider the expectations of the client(s). Therefore, the lawyer's standards apply
    e. None of the above

55. When a valuation analyst is hired to critique a valuation report or reports prepared by another analyst, providing a commentary to the requestor:

    a. This may constitute providing a (an alternative) conclusion of value and, therefore, the Professional Standards' reporting standards may apply.
    b. This constitutes providing a conclusion of value but the Professional Standards' reporting standards do not apply to report review services.
    c. This does not constitute providing an engagement to value a company so none of the Professional Standards apply.
    d. This constitutes providing consulting services therefore, only the Professional Standards' ethics standards apply.

56. In determining the value of an enterprise:

    a. Value the enterprise using the three primary standards of value. Select the standard that provides the highest and best use of value
    b. Be sure proper care is taken to encompass all possible valuation outcomes even though you may use only one upon which to base your conclusion of value
    c. Be sure to follow IRS Revenue Ruling 59-60 or document your reasons for deviating from this principle standard
    d. Remember to keep the same standard of value throughout your report

57. Proper financial data for a valuation report should include:

    a. Obtain (if at all possible) the most recent five years of the company's financial statements
    b. Determine the accounting basis used and compare the performance to typical industry conventions
    c. Normalized comparable companies for comparison and multiple calculation purposes
    d. Both a and b
    e. None of the above

58. In writing a business valuation report use of third party research firm information:

    a. Is unethical because it means the analyst did not properly research the subject company
    b. Is ethical but creates a red flag that the analyst did not independently research the subject company
    c. Is ethical and an accepted practice. The analyst should read, understand and directly correlate the material provided by the outside resources to the subject company
    d. Is ethical if the business owner provides the analyst with the research data

59. To convert pre-tax rates to after tax rates:

    a. Multiply the pre-tax rate by 1 minus the tax rate
    b. Divide the after-tax rate by 1 minus the tax rate
    c. Multiply the pre-tax rate by 1 plus the tax rate
    d. Divide the after-tax rate by 1 plus the tax rate

60. When an analyst obtains audited financial statements for use in a valuation engagement normalizing adjustments are usually not necessary.

    a. True
    b. False

61. If an analyst determines that the earnings stream of a company is the most appropriate estimate of future benefits, in general, which earnings stream do analysts believe is the most reliable and stable?

    a. Net income from operations
    b. Net income before tax
    c. Net income before tax, depreciation and amortization
    d. Net income
    e. Net income adjusted for extraordinary items

62. When utilizing a discounted cash flow methodology, ___________ value represents the capitalized economic income once the benefit stream stabilizes, remains constant, grows or declines at a constant rate.

    a. terminal
    b. fair market
    c. stabilized cash flow
    d. linear benefit stream

63. The only difference between the build-up method and the modified capital asset pricing model is:

    a. Risk free rate
    b. Size premium
    c. Equity risk premium
    d. Beta
    e. Company specific risk factor

64. A company has a five year weighted average after tax cash flow for the next year of $125,000. It has been determined the discount rate is 19%, short term expected growth is 11%, and long-term sustainable growth is 3%. The analyst has also determined excess cash of $25,000. Retained Earnings are $452,000 as of the valuation date. What is the value of the company based on the capitalization of after tax cash flows?

    a. $625,000
    b. $657,895
    c. $781,250
    d. $806,250
    e. $1,258,250
    f. $1,233,250

65. ABC Company has projected the following cash flows:

    Year 1: $85,000
    Year 2: 105,000
    Year 3: 109,000
    Year 4: 115,000

    The analyst has determined an appropriate discount rate is 26% and the long-term growth rate is 2%. What is the terminal value?

    a. $442,300
    b. $488,750
    c. $451,200
    d. $479,200
    e. $217,700

66. In addition to control and marketability discounts/premiums, other modifications may include:

    a. Key person discounts
    b. Lack of diversification discount
    c. Build-in gains discounts
    d. Both a and b
    e. Both b and c
    f. All of the above

67. When the standard of value is fair market value, the three generally accepted levels of value under include:

    a. Controlling interest, marketable minority interest, and non-marketable control interest
    b. Marketable, non-marketable, and specific investor
    c. Controlling interest, non-marketable control value, and marketable control value
    d. Controlling interest, marketable minority, and non-marketable minority

68. The value of a 37% interest in Take'm or Leave'm Corp. was $675,000 before discounts and premiums. Using Mergerstat data the control premium was 34%. In addition the applicable marketability discount was determined to be 35%. What is the fair market value of Take'm or Leave'm?

    a. 289,575
    b. 209,250
    c. 307,250
    d. 335,205

69. Restricted stock studies and pre-IPO studies aid the analyst in quantifying the:

    a. Control premium
    b. Discount for minority interest
    c. Marketability discount
    d. Capitalization rate

70. The three behavioral standards defined by NACVA are:

    a. General, development, and reporting
    b. General, ethical, and reporting
    c. Reporting, developmental, and valuation methods
    d. Ethical, independence, and reporting

71. An analyst may be required to consider and adhere to guidelines and/or requirements of other organizations such as the Department of Labor and Internal Revenue Service.

    a. True
    b. False

72. On an engagement letter, it is encouraged to include:

    a. Purpose of the engagement
    b. Fees for the engagement
    c. Your curriculum vitae
    d. The number of valuations you have performed
    e. Both a and b

73. *The Technical Resource Handbook* is:

    a. A standard issued by the AICPA that all CPAs must follow in addition to the NACVA standards
    b. A reference guide published by NACVA
    c. A handbook on ethical considerations when valuing a business
    d. A keep you out of jail reference card
    e. A resource of unethical analysts

74. Normalized financial statements should allow the analyst to:

a. Present a financial picture which better represents the economic earning capacity of the entity
b. Present the subject company in its best financial footprint
c. Better compare the subject company to appropriate comparable companies
d. All of the above
e. Both a and c

75. In Exhibit 10-2, what would be a good reference source to use as a benchmark to determine excess cash?

a. Ibbotson
b. BIZCOMPS
c. RMA
d. An inquiry with management provides adequate support

76. Ratio Analysis may identify:

i. Strengths and weaknesses of a company
ii. How well the company is performing
iii. Company trends

a. i and ii
b. ii and iii
c. i, ii, and iii
d. i and iii

77. Under Sarbanes-Oxley, an independent auditor is explicitly forbidden to provide “appraisal valuation services, fairness opinions or contribution-in-kind reports” to its audit clients.

a. True
b. False

78. Which three build-up models are based on the premise of adding a weighted average risk premium based on competition, financial strength, depth and ability of management, earnings and the national and local economic efforts king to the risk free rate?

a. Black/Green, Value-Netex, and RRCM
b. Ibbotson, Black/Green, and Value-Netex
c. Schilt’s Risk Premiu, RRCM, and Black/Green
d. Schilt’s Risk Premium, Value-Netex, and RRCM
e. Asset, Market and Income

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FUNDAMENTALS, TECHNIQUES & THEORY

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