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BUSINESS VALUATION DIGEST

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Expert Testimony Procedures Related to Intellectual Property Controversies

Introduction

Valuation analysts ("analysts") are often called upon to provide litigation support and expert testimony services. Analysts may be called upon to provide such services regarding general commercial controversies such as: financial advisor professional liability, dissipation of corporate assets, taxation compliance (including income, transfer, and property taxes), business interruption and related insurance matters, breach of contract and related commercial claims, fraud, and misrepresentation, and lost profits and economic damages.

Analysts may provide expert testimony services in business/stock valuation-related controversies such as: income, gift, estate, and property tax disputes; shareholder disputes; equitable distribution/family law matters; eminent domain and condemnation disputes. And, analysts may provide expert testimony services in lost profits/economic damages controversies such as: deprivation cases, bankruptcy and reorganization conflicts, lender liability, commercial tort matters, and so on.

Valuation analysts are also called upon to provide litigation support and expert testimony services related to intellectual property disputes. Such disputes may involve claims of: infringement, breach of contract/license/joint venture agreement, breach of employment/noncompete/

confidentiality agreement, breach of commercialization/development agreement, solvency and insolvency, transfer pricing, federal income/gift/estate taxation, state and local property taxation, tortious damages and business interruption, purchase price allocations, and so on. This discussion will focus on expert witness procedures related to intellectual property litigation involving such issues as valuation, economic analysis, and transfer pricing.

Valuation analysts considering the inclusion of intellectual property expert testimony services in their professional repertoire should note that those services are stressful and demanding activities. There are numerous reasons why intellectual property expert testimony may be the most demanding of all of the analysts' professional services. Analysts should consider both (1) their own professional strengths and weaknesses with regard to intellectual property analysis and (2) the challenges of expert testimony services before embracing this professional service.

The first part of this discussion presents 10 factors why expert testimony represents such a rigorous and challenging service. The second part of this discussion presents 25 practical procedures for analysts who do provide litigation support/expert testimony services. The factors and procedures are not presented in any particular order of significance. And, the practical procedures are merely recommendations. As with all



professional procedures, expert testimony procedures are ultimately a matter of the individual analyst's reasoned judgment and professional experience.

Factors Regarding Expert Testimony Services Factor One

The schedule of the valuation/damages/transfer price expert witness is controlled entirely by the timetable of the litigation. This is true for the pre-trial phase of the litigation. The litigant and the litigant's lawyers typically expect the analyst to be immediately available for conferences, consultation, and/or questions, for example. This somewhat unrealistic expectation is due to the time constraints and tensions of the intellectual property litigation environment. The timing of the expert's work product (e.g., filing the expert report, responding to interrogatories, scheduling the deposition) is also dictated by the litigation timetable.

At trial, the expert has even less control over scheduling. The client's lawyers typically want to meet at all hours of the day or night to prepare for/review/respond to testimony. And, the analyst may have to wait in/around the courtroom for days waiting to actually testify. This wait is a function of both (1) the unpredictable pace of the trial and (2) the judge's other commitments (e.g., conferences/hearings regarding other cases). Due to this "downtime," analysts often have to put their other commitments on hold during much of a litigation engagement.

Factor Two

It is almost impossible to multitask during intellectual property expert witness engagements. Not only is the analyst's schedule dictated by the litigation, but the analyst usually cannot stay involved in other professional activities during critical parts of the engagement. During deposition and trial (whether as witness or observer), the analyst cannot readily return client phone calls, work on other files, or participate in current office/practice management issues, for example. Often, analysts have to put their other

practices/clients on hold during much of the litigation engagement.

Factor Three

Analysts who regularly participate in business/stock transaction negotiations or in taxation audits/negotiations work in an environment where the parties have an incentive to be reasonable. Clearly, in such situations, all parties are seeking to maximize their economic self-interests and to advance their positions. However, in a transaction, both parties ultimately want to get the deal done. In a taxation negotiation, both parties ultimately want to settle on a reasonable tax assessment.

In intellectual property litigation, the parties often don't have an incentive to be reasonable. In fact, the plaintiff/defendant, attorneys, and experts sometimes have an incentive to take extreme positions. As transaction/taxation negotiations proceed, the parties usually come closer to an agreement. This is because both sides ultimately benefit if a reasonable agreement is reached. In intellectual property litigation, the parties often take more unreasonable positions as the process proceeds. This is because each side wants to "win" at the expense of the other side. Analysts who aren't experienced in intellectual property litigation may not be comfortable working in an environment in which the principal parties do not always take reasonable positions.

Factor Four

In addition to acting reasonably, clients typically want to achieve a fair resolution with regard to most of the financial consulting services analysts perform. In transaction, taxation, financing, bankruptcy, and taxation engagements, both the client and other principal parties usually desire fairness. For example, even in a taxation dispute, the client is typically willing to pay the minimum amount of tax that is "fair." While the taxing authority has a different opinion of what amount that is, the tax collector typically wants the client to pay only the "fair" amount of tax.

In the intellectual property litigation environment, fairness is not always the objective of the litigants. In litigation involving infringement, commercial damages, or breach of contract, for example, the litigants sometimes seek to legally punish each other

as much as to achieve a “fair” economic resolution. While transaction, financing, and other engagements can be professionally stressful, they usually don’t involve the enmity and acrimony that often accompanies some litigation matters. Accordingly, analysts who do not want to work in an environment where parties have rancor and ill will should think twice about providing expert testimony services.

Factor Five

There is always a risk in litigation services that the client or the client’s counsel will not supply the analyst with all of the documents (or other evidence) needed to reach a fully informed opinion. Of course, analysts face this risk of deliberate or unintentional omissions in all professional services. However, in the intellectual property litigation context, the clients and counsel may have a particular incentive (1) to provide the analyst only with documents/data favorable to the client position and (2) to conceal from the analyst documents/data unfavorable to that position. In expert reports and testimony, analysts usually reach their professional opinion based on specifically identified documents /data. Accordingly, the analyst can change his or her valuation/damages/transfer price expert opinion if previously undisclosed documents/data are presented at deposition or trial. Nonetheless, some analysts may not be comfortable working in an environment where they cannot be totally confident of having all relevant information upon which to form an opinion.

Factor Six

Related to the issue of full disclosure, analysts should recognize that the intellectual property litigation environment encourages some parties to be less than absolutely truthful at all times. In fact, during deposition or trial testimony, it is noteworthy that only the expert witness is sworn to tell the truth. Neither the client counsel nor the opposing counsel are sworn to tell the truth. Rather, the analyst may be (1) asked questions or presented with hypotheticals that are based on incorrect facts or (2) presented with hypotheticals that are based on incorrect facts or untruthful assumptions. Some analysts may not want to work in an environment (1) where all parties are not

scrupulously honest and (2) where legal sophistry is used to trap or deceive an expert.

Factor Seven

It has been said that, during testimony, expert witnesses don’t have a friend in the courtroom. The analyst should understand that the client’s attorney is not the analyst’s attorney. The client’s attorney will aggressively pursue the interests of the client. Generally, but not always, the interests of the analyst coincide with the interests of the client. However, the goal of the analyst is to remain objectively unbiased and professionally honest at all times. The goal of the client and the client counsel is to present those facts most favorable to their position and to win their intellectual property claim (whatever it is). Accordingly, the client counsel always has the best interests of the client (and not of the analyst) in mind. Obviously, the interest of the opposing counsel is to discredit and even traduce the analyst. And, of course, the judge must remain neutral and not assist any experts in any way.

Factor Eight

In fact, some judges believe that all valuation/damages/transfer price experts are, essentially, hired guns. These judges believe that all expert analysis is results-oriented and all expert testimony is biased. In the opinion of these judges, experts are not necessarily the paragons of impartial veracity that analysts know themselves to be. Accordingly, testifying before such judges is somewhat of an uphill climb for the analyst to establish credibility.

Factor Nine

A very few negative comments about an expert’s analysis/testimony in a published judicial opinion can considerably impact the analyst’s litigation support practice. In other words, litigation services is a relatively high risk practice. Since published judicial opinions are easily researched by potential clients, a single unfavorable decision attributed to the analyst can sometimes jeopardize years of successful practice development.

Factor Ten

Expert testimony and other litigation support services are usually performed based on standard hourly billing rates. This fee arrangement is customary in order to maintain the analyst's professional independence. However, analysts who provide other types of financial advisory services often bill on either a fixed fee or a performance fee basis. Such financial advisory services include merger and acquisition consulting, transaction fairness opinions, financing placements, bankruptcy and reorganization consulting, among others.

The fixed fee arrangement is simple to understand (e.g., the fee for a certain type of fairness opinion is \$50,000). The performance fee arrangement may be either a percentage of a purchase/sale transaction price or a "bonus" payment if a transaction occurs (e.g., a \$250,000 "bonus" payment if the analyst helps the client successfully place a \$10 million debtor-in-possession financing). The point is that most other similarly complex financial advisory services earn the analyst a higher income per hour than litigation support services. And, these other similarly complex financial advisory services are less stressful than litigation support services.

Notwithstanding these negative factors, many analysts still enjoy the intellectual rigor and technical challenges associated with intellectual property-related litigation support and expert witness services. For analysts who are committed to this practice area, the following recommendations are intended to provide practical guidance with regard to valuation/damages/ transfer price expert witness procedures.

Expert Testimony Procedures

Procedure One

Intentionally or unintentionally, lawyers frequently misuse technical jargon in deposition/trial questions. If the lawyer's question includes incorrect use of jargon, it is usually a mistake for the analyst to answer the question before correcting it. This is true even if the analyst's answer correctly uses jargon. The recommended procedure is to (1) restate

the question using the correct jargon then (2) answer the question using the correct jargon.

It is a good idea to tell the lawyer "I have to restate your question in order to use the correct technical terminology." It is also a good idea to ask the lawyer "Before I answer, is that a fair restatement of your question?" If the lawyer demands that the expert answer the question as previously misstated, the analyst may have to respond "Respectfully, I just can't answer the question as you phrased it because it contains important technical errors." While the use of jargon may seem semantic to some, the precise use of technical terminology is particularly important in intellectual property valuation/damages/transfer price analyses and testimony.

Procedure Two

The most frequently recommended procedure is to make sure that the expert completely understands the lawyer's question before answering. If the analyst has any uncertainty as to what the lawyer is asking for, then the expert should ask that either (1) the question be rephrased or (2) the question be clarified. Alternatively, the analyst could restate the unclear question in order to eliminate the confusion. It may be a good idea for the analyst to preface the restated question with "Let me make sure I understand your question; are you asking me. . . .?"

It is important to all parties to the intellectual property litigation (i.e., principals, lawyers, finders of fact) that the record of the expert's testimony be unambiguously clear. In order for the record to be clear, both (1) the lawyer's question and (2) the expert's answer have to be easily – and correctly – understood. It is noteworthy that if the analyst cannot understand the examining lawyer's question, then it is likely that the finder of fact will not understand the question either.

Procedure Three

If the lawyer's question is clear and the analyst understands the question, then the expert should answer the specific question – and only the question – that was asked. This procedure is relevant even if the question is irrelevant to the topic of the examination. It is not the analyst's responsibility to formulate a "better" (i.e., more

relevant or more important) question for the lawyer. If the analyst understands the question and knows the answer, then the best procedure is to directly answer the question. The analyst should not suggest a more appropriate, meaningful, or relevant question. And, the analyst should not explain why the subject question is uninformed or irrelevant.

If the examining lawyer wants to ask an irrelevant question and the analyst understands and can answer the question, then the expert should answer as succinctly as possible. The analyst should not steer the examining lawyer into a more productive line of questioning.

Procedure Four

It is usually a good idea not to answer multiple or compound questions. An example of a multiple question is: “Did you review this document? And, did it affect your conclusion?” An example of a compound question is: “Did you review documents X, Y, and Z?” The reason not to answer such questions is that a correct answer can be confusing and ambiguous in a written record. For example, if the analyst answers “no” to the multiple question, the finder of fact may wonder if the expert (1) did not review the document or (2) did review the document but that review did not affect the expert’s conclusion. In other words, the record may not be clear as to which of the questions the analyst answered “no” to. Likewise, if the analyst answers “no” to the compound question, the finder of fact may be uncertain as to whether the expert (1) did not review any of the documents X, Y, and Z or (2) did review one/two of the three documents and did not review the other one/two of the three documents.

In order to avoid this unintentional ambiguity in the record, the analyst should ask the examining lawyer to restate the multiple/compound question as a series of simple questions. Then, the analyst can answer the simple questions one at a time.

Procedure Five

The answers to deposition/trial questions do not have time limits like chess matches or television game shows do. The analyst should not feel obligated to answer immediately—or even quickly. Rather, a good procedure when answering an examination question is (1) first, think about the

question, (2) second, think about a clear, cogent, and concise answer, and (3) then answer the question.

It is always a good idea to wait at least a few seconds before answering either a direct or a cross-examination question. Both in a deposition or at trial, those few seconds allow the expert time to mentally organize a meaningful answer. In a deposition or trial, those few seconds allow the court reporter to prepare for the answer; this helps avoid a garbled testimony transcript. During cross-examination, those few seconds allow the client’s lawyer to raise any appropriate objections. And, at trial, those few seconds allow the finder of fact to mentally digest the question and prepare for the answer.

Procedure Six

During intellectual property-related expert testimony, the written expert report is the analyst’s best friend. This is true when the analyst testifies at the trial. It is also true when the analyst testifies during a deposition. Accordingly, the analyst should always bring any written expert report to the witness stand (or to the deposition). It is appropriate to refer to the written expert report as often as possible. And, it is appropriate for the analyst to read from the expert report when appropriate, particularly to refresh the analyst’s recollection. It is important to remember that expert testimony is not a memory test!

Procedure Seven

It is important that the analyst be fully prepared to present the expert testimony. This means that the analyst should review all analyses and workpapers just prior to presenting expert testimony. The analyst should review any analysis notes just before presenting expert testimony. And, the analyst should review any written expert report just before presenting expert testimony. Of course, it is important for the expert to be familiar with the facts of the subject intellectual property litigation. In addition, the analyst should be familiar with – and be

prepared to explain – the expert report, the valuation/damages/transfer price analysis, and the value/damages/transfer price conclusions.

Procedure Eight

As a valuation/damages/transfer price expert witness, the analyst always tells the truth – as the analyst believes it. Expert witnesses (particularly valuation/damages/transfer price witnesses) always “win” if they tell the truth – that is, if they honestly and factually assert their opinions. As an expert witness, the analyst should believe in the “truth” of his or her expert analyses and conclusions. The analyst should demonstrate to the finder of fact a conviction in the fundamental truth of the expert conclusions and opinions. As an analogy, even if a missionary doesn’t convert the unbeliever to his religious beliefs, the missionary never loses faith in the truth of his conviction. Likewise, even if the finder of fact doesn’t agree with the expert value/damages/transfer price opinion, the analyst should always believe in the truth of his or her expert opinion.

Procedure Nine

Unless absolutely certain of the answer, the analyst should not trust his or her memory. Also, the analyst should never guess the answer to a question, either in direct examination or in cross-examination. It is always appropriate for the analyst to refer to the expert report, when necessary. It is also appropriate to refer to a specific document to “refresh your recollection.”

In both trial and deposition testimony, it is appropriate for the analyst to take all of the time necessary to completely read all documents that are being asked about. It is appropriate to take the necessary time to “refresh your recollection” about a document, or a workpaper, or a data source, for example. When it is the truthful answer, the analyst should not hesitate to admit: “I don’t recall.” Also, when it is the truthful answer, the analyst should not hesitate to admit: “I don’t know.”

Procedure Ten

Valuation/damages/transfer price experts are often confronted with short quotes from their written expert reports, from the opposing expert’s reports, from learned books and treatises, and so on. The analyst should not feel compelled to agree with short quotes that are taken out of context. The analyst should not feel compelled to read – and the analyst should not allow the examining attorney to read – only partial quotes from a written expert report, a treatise, a document, a journal article, and so on. It is always appropriate to read the entire quote first – and then read the entire quote into the record – before answering the question. In fact, it may be appropriate to read several paragraphs – or even an entire page – if necessary, before answering a question regarding a quotation. It is important for the expert to always put any quote in its proper context before answering the related question.

Procedure Eleven

It is inappropriate for an expert to argue during testimony, either with the examining attorney or with the finder of fact. It is also inappropriate for an expert to get overly excited. It is helpful for analysts to recall the deodorant product television commercial slogan: “never let them see you sweat.” Instead, it is common for experienced experts to assume an academic or pedantic attitude during testimony. After all, professors don’t argue with their students, they educate their students. The expert witness is in the courtroom to give expert advice to – that is, to educate – the finder of fact.

It is not the role of the expert to litigate the case, that’s the lawyer’s job. It is not the role of the expert to decide the case, that’s the job of the finder of fact. It is usually inappropriate for an expert to advocate for the position of his or her client. However, it is entirely appropriate as the analyst to advocate for the truth of his or her professional opinion.

Procedure Twelve

During expert testimony, it is always appropriate for the analyst to admit mistakes, if there are any. It is also appropriate for the analyst to admit any omissions, if there are any. Expert witnesses are sometimes confronted with the question: “If you

had known XXX, would that change your opinion of intellectual property value/damages/transfer price?" If the truthful answer to that question is yes, then the appropriate answer is "yes."

Intellectually honest experts can change their opinions based on new information. It is a truism that even the best experts sometimes make mistakes. However, the very best experts admit their mistakes, correct them, and continue with their testimony.

Procedure Thirteen

It is appropriate for the analysts to admit any material methodological or conceptual inconsistencies with prior expert reports, expert testimony, publications, for example. If it is relevant to the inconsistencies, it is appropriate for the analyst to explain how the facts and circumstances in the instant case are different than in previous litigation cases, previous valuation/damages/transfer price reports, and so on. It is appropriate for the analyst to admit if his or her methodology, research, and so on, have changed over time. It is intellectually honest for the analyst to admit, "I've changed my opinion on that issue."

Procedure Fourteen

It is appropriate for the analyst to admit any inconsistencies in his or her analysis with (and departures from) the *Uniform Standards of Professional Appraisal Practice* (USPAP), other valuation/damages/transfer price professional standards, professional society/association standards, generally accepted industry practices, authoritative intellectual property texts and treatises, to name a few. Nonetheless, it is equally appropriate for the analyst to explain why these analytical inconsistencies and departures are appropriate given the specific facts and circumstances of the subject valuation/damages/transfer price analysis.

Procedure Fifteen

Valuation/damages/transfer price experts are frequently asked the following type of question during the *voir dire* phase of the expert witness qualification at trial: "Are you an expert in the XYZ industry?" The question is intended to imply that the analyst does not have the appropriate experience or expertise to perform the subject

analysis. The analyst may consider an answer such as: "I am an expert in (1) valuing intellectual properties or (2) analyzing lost profits/economic damages/ transfer prices related to intellectual property in the XYZ industry. My testimony is based on my experience and expertise as a financial advisor and not on any operational experience in this particular industry."

Procedure Sixteen

If the analyst is confident with the expert analyses and conclusions, the analyst should readily: (1) admit to any procedures that were not performed; (2) admit to any interviews that were not conducted; (3) admit to any documents that were not reviewed; and (4) admit to any research that was not completed. As a valuation/damages/transfer price expert, the analyst should completely explain (1) what procedures were performed and why and (2) what procedures were not performed and why not.

The analyst should be confident when explaining why the procedures/analyses performed were adequate and appropriate under the circumstances. If the analyst believes that a thorough and rigorous analysis was performed, then the analyst should not be defensive about any procedures that were not performed.

Procedure Seventeen

As a confident and competent professional, the analyst should not be defensive about experience or credentials. Rather, the analyst should be proud of whatever experience and credentials he or she has. For example, if the analyst doesn't hold a doctorate degree, then it is not appropriate to become defensive or argumentative. Rather, it is better for the analyst to simply admit that he or she doesn't hold a Ph.D. Of course, it is appropriate to forthrightly admit any negative deficiencies in professional experience or credentials. Likewise, it is equally appropriate for the analyst to stress

all the positives about professional experience and credentials—particularly those related to the subject intellectual property valuation/damages/transfer price matter.

Procedure Eighteen

Experienced experts appreciate the importance of the re-direct examination phase of expert testimony. The re-direct examination period is the analyst's opportunity (1) to expand on those areas of direct examination testimony that were questioned during cross-examination, (2) to clarify any confusion that may have occurred during the questions and answers in cross-examination, and (3) to complete any otherwise incomplete answers to questions—for example, answers that were cut off by the opposing counsel—during cross-examination. Re-direct examination provides the analyst with the opportunity to correct any mistaken impressions that may have occurred during cross-examination.

Procedure Nineteen

Valuation/damages/transfer price experts often encounter such cross-examination follow-up questions as: "Where does it say that in your expert report?" or "It doesn't say that in your expert report, does it?" These questions are intended to imply: (1) that the written expert report is inadequate or incomplete, (2) that the analyst changed his or her conclusion between the time the expert report was issued and the occasion of the expert testimony, or (3) that some aspect of the analyst's testimony is inconsistent with what was written in the expert report. The analyst may consider the following response to this type of question is: "I endeavored to make my expert report as comprehensive as possible. In my previous answer, I was simply expanding on the description (or the conclusion, or the data, etc.) presented in my report."

Procedure Twenty

In order to keep the record clear, the analyst usually should not answer leading questions. Leading questions often start with

"Isn't it true . . ." An example of a leading question would be "Isn't it true that you didn't even perform procedure X during your analysis?" For the benefit of the finder of fact and the examining lawyer, the analyst should clearly and concisely explain his or her problems with the leading question. Unless the analyst is totally comfortable with the wording of the leading question, the analyst should not hesitate to ask the examining lawyer to rephrase the question before answering.

Procedure Twenty One

As with the presentation of any oral report, the analyst should remember who the audience is for the expert testimony. When answering questions, the analyst should talk directly to the judge (or to the jury). If the layout of the courtroom permits, the analyst should turn to face the judge (or the jury) when answering questions. The analyst should remember that the expert's role in the litigation process is to educate, enlighten, and convince the finder of fact. It has been said that the role of a testifying expert is somewhere between that of a professor and a preacher.

Procedure Twenty Two

It is important for the analyst to answer all questions completely. This may not be as easy as it sounds. Sometimes, examining lawyers will cut off the expert's answers, either deliberately or unintentionally. For the benefit of the finder of fact, the analyst should not allow his or her answers to be cut off. If the examining lawyer cuts off the answer with, "You've answered the question," the analyst can respond to the finder of fact, "No, I have not completely answered the question." When necessary, the analyst may directly address the finder of fact with a statement such as: "I didn't answer the last question completely and I would like to ensure that the record is complete in that regard."

The analyst may encounter a lawyer who admonishes: "Answer this question with a yes or no." However, not all questions can be answered with a "yes" or "no." For the benefit of the finder of fact and in order to ensure the completeness of the record, an appropriate response may be: "A yes or no answer would not completely answer that question and may be misleading to the Court."

Procedure Twenty Three

This procedure actually applies to both (1) expert testimony and (2) expert written reports:

1. do what you said, and
2. say what you did.

In other words, the analyst should perform all of the valuation/damages/transfer price procedures and analyses described in the expert report or in the expert testimony. And, in the expert report and in the expert testimony, the analyst should clearly and completely describe all of the procedures and analyses that were performed during the engagement.

Procedure Twenty Four

It is not uncommon for opposing counsel to subpoena copies of all of the analyst's workpapers, files, reference materials, and so on, prepared during the engagement. Accordingly, before any expert report is issued (or expert testimony is presented), the analyst should ensure that the case workpaper files are organized and complete. Once the subpoena is served, the files have to be copied and turned over "as is." Therefore, any extraneous documents or data should be removed from the case workpaper files before the subpoena arrives. Further, all analyses that were not completed or relied upon by the analyst should be discarded before the workpapers are subpoenaed. If it is the analyst's practice, all drafts of expert reports should be discarded once the final expert report is issued.

If subpoenaed, whatever documents are included in the workpaper file will have to be produced to opposing counsel. The analyst should expect that the opposing lawyer will thoroughly scrutinize the workpaper file. And the analyst should expect that the opposing lawyer will apply a negative interpretation to ambiguous memos, notes, report drafts, and the like, in the file. Accordingly, before the expert report is issued, the analyst's workpaper file should be ready for contrarian review.

Procedure Twenty Five

Opposing counsel usually has the right to inspect all notes, files, and reports that the expert brings to the deposition or the witness stand. This includes any handwritten notes that the analyst has made on his or her copy of the expert report. Analysts

sometimes prepare such notes to help organize their thoughts before providing expert testimony. However, the analyst should be aware that any documents brought to the deposition or trial may be subject to a thorough contrarian review. If the analyst does not wish to have his or her notes, annotated reports, or other documents subject to scrutiny, then the analyst should not bring these documents to the deposition or trial.

Summary and Conclusion

This discussion presented practical recommendations for analysts who provide expert testimony with regard to intellectual property valuation/economic damages/transfer price controversy cases. These recommendations are intended to be general in nature. As with all financial advisor professional procedures, analysts should understand that expert testimony is ultimately influenced by the individual's reasoned judgment and professional experience.

This discussion also presented several caveats for analysts who are considering intellectual property expert testimony services as part of their professional repertoire. Intellectual property-related litigation support and expert testimony services are professionally rewarding. However, they are arguably the most demanding and stressful services that analysts provide.

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The Real Cost of Equity

As central as it is to every decision at the heart of corporate finance, there has never been a consensus on how to estimate the cost of equity and the equity risk premium.¹

Conflicting approaches to calculating risk have led to varying estimates of the equity risk premium from 0 percent to 8 percent – although most practitioners use a narrower range of 3.5 percent to 6 percent. With expected returns from long-term government bonds currently about 5 percent in the US and UK capital markets, the narrower range implies a cost of equity for the typical company of between 8.5 and 11.0 percent. This can change the estimated value of a company by more than 40 percent and have profound implications for financial decision making.

Discussions about the cost of equity are often intertwined with debates about where the stock market is heading and whether it is over- or undervalued. For example, the run-up in stock prices in the late 1990s prompted two contradictory points of view. On the one hand, as prices soared ever higher, some investors expected a new era of higher equity returns driven by increased future productivity and economic growth. On the other hand, some analysts and academics suggested that the rising stock prices meant that the risk premium was declining. Pushed to the extreme, a few analysts even argued that the premium would fall to zero, that the Dow Jones industrial average would reach 36,000 and that stocks would earn the same returns as government bonds. While these views were at the extreme end of the spectrum, it is still easy to get seduced by complex logic and data.

We examined many published analyses and developed a relatively simple methodology that is both stable over time and overcomes the shortcomings of other models. We estimate that the real, inflation-adjusted cost of equity has been remarkably stable at about

7 percent in the US and 6 percent in the UK since the 1960s. Given current, real long-term bond yields of 3 percent in the US and 2.5 percent in the UK, the implied equity risk premium is around 3.5 percent to 4 percent for both markets.

The debate

There are two broad approaches to estimating the cost of equity and market risk premium. The first is historical, based on what equity investors have earned in the past. The second is forward-looking, based on projections implied by current stock prices relative to earnings, cash flows, and expected future growth.

The latter is conceptually preferable. After all, the cost of equity should reflect the return expected (required) by investors. But forward-looking estimates are fraught with problems, the most intractable of which is the difficulty of estimating future dividends or earnings growth. Some theorists have attempted to meet that challenge by surveying equity analysts, but since we know that analyst projections almost always overstate the long-term growth of earnings or dividends,² analyst objectivity is hardly beyond question. Others have built elaborate models of forward-looking returns, but such models are typically so complex that it is hard to draw conclusions or generate anything but highly unstable results. Depending on the modeling assumptions, recently published research suggests market risk premiums between 0 and 4 percent.³

Unfortunately, the historical approach is just as tricky because of the subjectivity of its assumptions. For example, over what time period should returns be measured—the previous 5, 10, 20, or 80 years or more? Should average returns be reported as arithmetic or geometric means? How frequently should average returns be sampled? Depending on the answers, the market risk premium based on historical returns can be estimated to be as high as 8 percent.⁴ It is clear that both historical and forward-looking approaches, as practiced, have been inconclusive.

Overcoming the typical failings of economic models

In modeling the behavior of the stock market over the last 40 years,⁵ we observed that many real economic variables were surprisingly stable over time (including long-term growth in corporate profits and returns on capital) and that much of the variability in stock prices related to interest rates and inflation (Exhibit 1). Building on these findings, we developed a simple, objective, forward-looking model that, when applied retrospectively to the cost of equity over the past 40 years, yielded surprisingly stable estimates.

Forward-looking models typically link current stock prices to expected cash flows by discounting the cash flows at the cost of equity. The implied cost of equity thus becomes a function of known current share values and estimated future cash flows (see sidebar, “Estimating the cost of equity”). Using this standard model as the starting point, we then added three unique characteristics that we believe overcome the shortcomings of many other approaches:

1. *Median stock price valuation.* For the US, we used the value of the median company in the S&P 500 measured by P/E ratio as an estimate of the market’s overall valuation at any point in time. Most researchers have used the S&P 500 itself, but we argue that the S&P 500 is a value-weighted index that has been distorted at times by a few highly valued companies, and therefore does not properly reflect the market value of typical companies in the US economy. During the 1990s, the median and aggregate P/E levels diverged sharply. Indeed by the end of 1999, nearly 70 percent of the companies in the S&P 500 had P/E ratios below that of the index as a whole. By using the median P/E ratio, we believe we generate estimates that are more representative for the economy as a whole. Since UK indices have not been similarly distorted, our estimates for the UK market are based instead on aggregate UK market P/E levels.

2. *Dividendable cash flows.* Most models use the current level of dividends as a starting point for projecting cash flows to equity. However, many corporations have moved from paying cash dividends to buying back shares and finding other ways to return cash to shareholders, so estimates based on ordinary dividends will miss a substantial

Exhibit 1. US median P/E vs. inflation



Source: McKinsey analysis

portion of what is paid out. We avoid this by discounting not the dividends paid but the cash flows available to shareholders after new investments have been funded. These are what we term “dividendable” cash flows to investors that might be paid out through share repurchases as ordinary dividends, or temporarily held as cash at the corporate level.

We estimate dividendable cash flows by subtracting the investment required to sustain the long-term growth rate from current year profits. This investment can be shown to equal the projected long-term profit growth (See sidebar, “Estimating the cost of equity”) divided by the expected return on book equity. To estimate the return on equity (ROE), we were able to take advantage of the fact that US and UK companies have had fairly stable returns over time. As Exhibit 2 shows, the ROE for both US and UK companies has been consistently about 13 percent per year,⁶ the only significant exception being found in UK returns of the late 1970s.

3. *Real earnings growth based on long-term trends.* The expected growth rate in cash flow and earnings was estimated as the sum of long-term real GDP growth plus expected inflation. Corporate profits have remained a relatively consistent 5.5 percent of US GDP over the past 50 years. Thus, GDP growth rates are a good proxy for long-term corporate profit growth. Real GDP growth has averaged about 3.5 percent per year over the last 80 years for the US and about 2.5 percent over the past 35

Exhibit 2. Return on book equity (ROE)

Source: McKinsey analysis

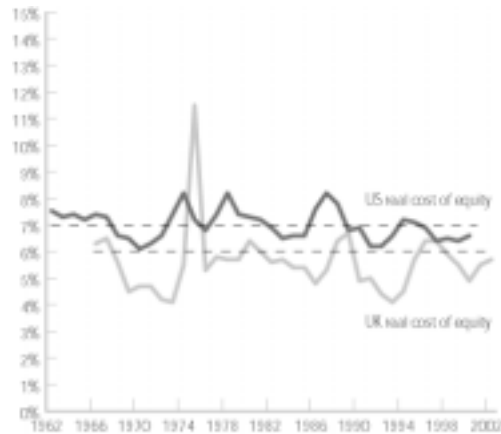
years for the UK. Using GDP growth as a proxy for expected earnings growth allows us to avoid using analysts' expected growth rates.

We estimated the expected inflation rate in each year as the average inflation rate experienced over the previous five years.⁷ The nominal growth rates used in the model for each year were the real GDP growth combined with the contemporary level of expected inflation for that year.

Results

We used the above model to estimate the inflation-adjusted cost of equity implied by stock market valuations each year from 1963 to 2001 in the US and from 1965 to 2001 for the UK (Exhibit 3). In the US, it consistently remains between 6 and 8 percent with an average of 7 percent. For the UK market, the inflation-adjusted cost of equity has been, with two exceptions, between 4 percent and 7 percent and on average 6 percent.

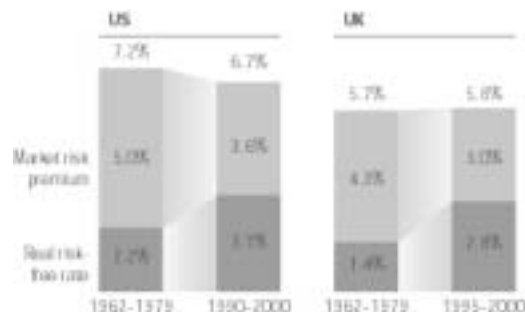
The stability of the implied inflation-adjusted cost of equity is striking. Despite a handful of recessions and financial crises over the past 40 years including most recently the dot.com bubble, equity investors have continued to demand about the same cost of equity in inflation-adjusted terms. Of course, there are deviations from the long-term averages but they aren't very large and they don't last very long. We interpret this to

Exhibit 3. Annual estimates of the real cost of equity

Source: McKinsey analysis

mean that stock markets ultimately understand that despite ups and downs in the broad economy, corporate earnings and economic growth eventually revert to their long-term trend.

We also dissected the inflation-adjusted cost of equity over time into two components: the inflation-adjusted return on government bonds and the market risk premium. As Exhibit 4 demonstrates, from 1962 to 1979 the expected inflation-adjusted return on government bonds appears to have fluctuated around 2 percent in the US and around 1.5 percent in the UK. The implied equity risk premium was about 5 percent in both markets.⁸ But in the 1990s, it appears that the inflation-adjusted return on both US and UK government bonds may have risen to 3 percent, with the implied equity risk premium falling to 3 percent and 3.6 percent in the UK and US respectively.

Exhibit 4. Decomposition of the inflation-adjusted cost of equity

Source: McKinsey analysis

Estimating the cost of equity

To estimate the cost of equity, we began with a standard perpetuity model:

$$P_t = \frac{CF_{t+1}}{k_e - g} \quad (1)$$

where P_t is the price of a share at time t , CF_{t+1} is the expected cash flow per share at time $t+1$, k_e is the cost of equity, and g is the expected growth rate of the cash flows. The cash flows, in turn, can be expressed as earnings, E , multiplied by the payout ratio:

$$CF = E (\text{payout ratio})$$

Since the payout ratio is the share of earnings left after reinvestment, replacing the payout ratio with the reinvestment rate gives:

$$CF = E (1 - \text{reinvestment rate})$$

The reinvestment rate, in turn, can be expressed as the ratio of the growth rate, g , to the expected return on equity:

$$\text{reinvestment rate} = \frac{g}{ROE}$$

And thus the cash flows can be expressed as:

$$CF = E \left(1 - \frac{g}{ROE} \right) \quad (2)$$

We then combined formulas (1) and (2) to get the following:

$$\frac{P_t}{E_{t+1}} = \frac{1 - \frac{g}{ROE}}{k_e - g} = \frac{E_{t+1}}{P_t} \left(1 - \frac{g}{ROE} \right) + g \quad (3)$$

If the inflation embedded in k_e and g is the same, we can then express equation 3 as:

$$k_{e,r} = \frac{E_{t+1}}{P_t} \left(1 - \frac{g}{ROE} \right) + g_r \quad (4)$$

Where $k_{e,r}$ and g_r are the inflation-adjusted cost of equity and real growth rate, respectively. We then solved for $k_{e,r}$ for each year from 1963 through 2001, using the assumptions described in the text of the article.

We attribute this decline not to equities becoming less risky (the inflation-adjusted cost of equity has not changed) but to investors demanding higher returns in real terms on government bonds after the inflation shocks of the late 1970s and early 1980s. We believe that using an equity risk premium of 3.5 to 4 percent in the current environment better reflects the true long-term opportunity cost for equity capital and hence will yield more accurate valuations for companies. **MoF**

1. Defined as the difference between the cost of equity and the returns investors can expect from supposedly risk-free government bonds.
2. See Marc H. Goedhart, Brendan Russel, and Zane D. Williams, "Prophets and profits?" McKinsey on Finance, Number 2, Autumn 2001.
3. See, for example, Eugene Fama and Kenneth French, "The Equity Premium," *Journal of Finance*, Volume LVII, Number 2, 2002; and Robert Arnott and Peter Bernstein, "What Risk Premium is 'Normal'," *Financial Analysts Journal*, March/April, 2002; James Claus and Jacob Thomas, "Equity premia as low as three percent?" *Journal of Finance*, Volume LVI, Number 5, 2001.

4. See, for example, Ibbotson and Associates, *Stock, Bonds, Bills and Inflation: 1997 Yearbook*.
5. See Timothy Koller and Zane Williams, "What happened to the bull market?" McKinsey on Finance, Number 1, Summer 2001.
6. One consequence of combining a volatile nominal growth rate (due to changing inflationary expectations) with a stable ROE is that the estimated reinvestment rate varies tremendously over time. In the late 1970s, in fact, our estimates are near 100 percent. This is unlikely to be a true representation of actual investor expectations at the time. Instead, we believe it likely that investors viewed the high inflation of those years as temporary. As a result, in all of our estimates, we capped the reinvestment rate at 70 percent.
7. This assumption is the one that we are least comfortable with, but our analysis seems to suggest that markets build in an expectation that inflation from the recent past will continue (witness the high long-term government bond yields of the late 1970s).
8. There is some evidence that the market risk premium is higher in periods of high inflation and high interest rates, as was experienced in the late 1970s and early 1980s.

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BY PETER STEGERF, CA¹, CMAA, CBV, CFE

Prejudgment Interest Has Become a Whole Lot More Interesting

The recent Supreme Court of Canada decision in *Bank of America Canada v. Mutual Trust Co.* [2002] S.C.J. No. 44 brings damages awards more in line with financial principles and commercial reality by finding that a breach of a mortgage contract warranted an award of compound pre- and post-judgment interest. This restored the Ontario trial judge's award, which had been overturned on appeal in favour of simple interest. The question now is whether *Bank of America* will apply to interest awards in other commercial damages cases such as breach of contract involving non-financial instruments, breach of fiduciary duty, patent infringement or even personal injury claims.

In 1987, Reemark Sterling I Ltd. was building a residential condominium project. Reemark entered into a takeout mortgage commitment (TOC) agreement with Mutual (now Clarica Trust Co.) whereby Mutual would provide mortgage financing to investors totalling \$36.5 million to purchase the units from Reemark. Reemark also arranged construction financing from Bank of America.

Reemark, Mutual and Bank of America later entered into an assignment of the TOC whereby Mutual would pay the \$36.5 million to Bank of America rather than Reemark until the construction loan was repaid. When the real estate market collapsed in 1991, Mutual refused to advance the mortgage funds. Bank of America appointed a receiver and sold the project for \$22.5 million. Bank of America sued and Mutual was found in breach.

The SCC upheld the trial judge's award to Bank of America of the shortfall in principal plus pre- and post-judgment interest at its stipulated construction loan rate of prime plus one percentage point, compounded monthly.

The SCC decision noted the following:

- The award of interest, once denied as usurious or granted to punish the defendant, is now regarded as proper economic compensation to the plaintiff.
- Simple interest makes an artificial distinction between money owed as principal and money owed as interest while compound interest treats a dollar as a dollar and is, therefore, a more precise measure of the time value of money.
- The time value of money is common knowledge and compound interest is the norm in banking and financial systems.
- The court should be able to award compound interest under common law to fully compensate a plaintiff.
- If the court could not award compound interest on the breach of a compound-interest loan, it would be unable to compensate the plaintiff for the value receivable had the contract been performed and would also encourage borrowers to breach their compound interest obligations.
- A compound-interest award addresses both expectation damages (the measure of the plaintiff's deprivation) and restitution damages (the measure of the defendant's gain).
- An award of compound pre- and post-judgment interest "will generally be limited to breach of contract cases where there is evidence that the parties agreed, knew, or should have known, that the money which is the subject of the dispute would bear compound interest as damages. It may be awarded as consequential damages in other cases but there should be the usual requirement of proving that damage component."

In light of the *Bank of America* decision, one might conclude that compound interest, which "treats [each] dollar as a dollar," should be applied on all

damages awards, not just those involving financial institutions and money-based contracts. Historically this has not been the case. Should there, however, be different treatments for interest awards stemming from the breach of money-based contracts versus other commercial contracts - e.g. the failure to buy or sell contracted products and services, product liability, patent infringement, etc.? After all, just as the breach of contract deprived Bank of America of unpaid amounts and the consequent opportunity to earn compound interest, doesn't a manufacturer, for example, suffer the same deprivation when a customer breaches a purchase commitment? The manufacturer also lost similar opportunities to invest unpaid amounts for a compound return: it could have paid down debts to reduce interest payments, or reinvested in its own operations, or distributed a dividend to shareholders, or simply invested in a T-bill.

Courts of Justice Act

In Ontario, the *Courts of Justice Act* (CJA) states that a party entitled to a damages award is also entitled to pre-judgment interest at a stipulated single, constant rate that is tied to the bank rate (s. 128(1)). However, interest is calculated on a simple basis by virtue of s. 128(4)(b) which disallows interest on interest i.e. compounding. But, s. 130(1) gives the court discretion to disallow interest, vary the interest rate or vary the term depending on circumstances of the case, changes in market rates, or other factors (s. 130(2)). Further, ss. 128(4)(g) and 129(5) recognize that interest can be awarded under another right, such as equity or common law.

Practical Realities

In calculating compound interest to reflect the time value of money, consideration should also be given to the effect of taxes and other interest rate and period issues.

As an example, under the Ontario CJA rules, the total award on a \$100 judgment made 10 years after the breach at an assumed prejudgment interest rate of 10 per cent would be \$200 (\$100 plus 10 years simple interest of \$10 per year). Assuming a 40 per cent tax rate, this award would be taxed in the plaintiff's hands in the current year to net \$120.

Alternatively, if interest was awarded on a compound basis, the total award would be \$259, or

30 per cent higher (\$100 plus 10 years compound interest of \$159) or \$155 after taxes.

However, the defendant may argue that the purpose of a damages award is to put the plaintiff in the same monetary position as it would have been but for the breach, as stated in *Irvington Holdings Ltd. v. Black (Ont. 1987)*. Therefore, in the above example, the plaintiff would have been taxed on the \$100 in the year of the breach. In addition, interest earned thereafter would have compounded after taxes for a resulting amount of only \$107 (\$100 less 40 per cent tax, compounded at 10 per cent less 40 per cent tax). This after-tax \$107 would need to be grossed-up to a pre-tax amount of \$179 to reflect that the plaintiff would be taxed on the award in the current year. Conversely, the plaintiff would claim for its own internal return, not the bank rate-based PJI rate, in order to make it whole. In that case, the damages amount at an assumed 18 per cent rate would be \$279 before taxes and \$167 after taxes.

If we depart from the CJA's single-rate, simple-interest calculation to a truer measure of economic reality namely, compounded after-tax cash flows, there are numerous additional issues to be considered:

1. What interest rate? CJA rate(s), other market-based rates, plaintiff's investment rate(s), or defendant's debt rate(s)?
2. What tax rate? Marginal or effective, historical or current?
3. How often to compound? Annually, semi-annually, or monthly?
4. When are cash-flows earned? Beginning, mid-point, or end of year?

Obviously, these considerations become amplified as the size of the damages award and/or the length of the pre-judgment period increases. In fact, an interest award can easily equal or exceed the underlying damages award itself.

It is interesting to note the U.S. patent infringement case of *Polaroid Corporation v. Eastman Kodak Company* 16 U.S.P.Q. 2d 1481

(D. Mass. 1990), which resulted in an award of US\$873 million to the plaintiff. In *Polaroid*, the pre- and post-judgment interest award was US\$435 million, being half the total award. The judge heard many opinions and arguments regarding rates, compounding, and taxes and ruled as follows:

The evidence on the plaintiff's possible investment rate was sparse and, therefore, he set interest at the T-bill rate (the lowest rate advanced);

- Interest was compounded monthly, and
- Computations were determined on a pre-tax basis because the defendant's arguments for an after-tax basis were considered speculative and without convincing precedent.

Conclusion

After considering the numerous complex issues at play in the simple versus compound interest debate, perhaps the beauty of the simple interest rules of the CJA lies in its simplicity and certainty of calculation. On the other hand, large and complex damages cases will often warrant the added economic refinement of compound interest calculations inclusive of tax and other considerations. One thing is certain though: the Supreme Court of Canada's decision in *Bank of America* will likely focus more attention on the calculation of prejudgment interest.

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BY ROBERT F. BRUNER

Does M&A Pay? A Survey of Evidence for the Decision-Maker

Editors's Note

"The following article provides very useful insights for practitioners. It is, however, a very long article and the decision was made by the editorial committee to exclude the extensive exhibits in the printing. The exhibits are available from the CICBV office upon request"

In the wake of the largest M&A wave in history, it is appropriate to assess the evidence on the profitability of this activity. One popular view is that merger activity is highly unprofitable. Does research sustain this view? This paper reflects on what it means for M&A to "pay" and summarizes the evidence from 14 informal surveys and 100 scientific studies from 1971 to 2001. The review comments on various research approaches, and highlights findings for the broad activity as well as niches of special note. The mass of research suggests that target shareholders earn sizable positive market-returns, that bidders (with interesting exceptions) earn zero adjusted returns, and that bidders and targets combined earn positive adjusted returns. On balance, one should conclude that M&A does pay. But the broad dispersion of findings around a zero return to buyers suggests that executives should approach this activity with caution.

I. Introduction

The profitability of merger and acquisition (M&A) activity has generated a small mountain of research over the past 30 years. With each passing decade, more scientific evidence emerges, permitting us to sharpen our conclusions. It is appropriate to consider the latest findings along with earlier studies to synthesize some insights from the literature. Reviews of the scientific evidence were published in 1979, 1983, 1987, and 1992. In the wake of the largest merger wave in history, spanning the years 1992-2000, a fresh review of the findings seems appropriate. The 14 informal surveys and 100 scientific studies summarized in here include the classic most-cited research, and some of the newer and notable work.

A review of the evidence is also warranted by the view, grown popular in circles of executives, consultants, and journalists, that M&A destroys value. Consider some statements culled from a recent work by consultants in M&A:

[T]he sobering reality is that only about 20 percent of all mergers really succeed. Most mergers typically erode shareholder wealth...the cold, hard reality that most mergers fail to achieve any real financial returns...very high rate of merger failure...rampant merger failure...¹

A manager should find these assertions alarming. But the findings of a broad range of scientific studies are not consistent with the language quoted here if one uses definitions of "success" and "failure" rooted in economics, and tested using conventional statistical methods. One possible reason for the disparity between popular perception and scientific findings is confusion about what it means for an investment "to pay."

In this review I use a very specific benchmark for measuring performance: investors' required returns, commonly defined as the return investors could have earned on other investment opportunities of similar risk. Against this benchmark, we can define three possible outcomes:

- **Value conserved.** Here, investment returns equal the required returns. Shareholders get just what they required. The investment has a net present value of zero; it breaks even in present value terms. This does not indicate an investment failure. If the investor requires a return of 15 percent, and gets it, his or her invested wealth will double in five years. Under this scenario, wealth will grow at the rate the investor requires. Economically speaking, the investor earns "normal" returns. The investor should be satisfied.

- **Value created.** This occurs where the returns on the investment exceed the returns required. This investment bears a positive net present value; the investor's wealth grew higher than was required. The investor must be very happy. Given competition in markets, it is difficult to earn "supernormal" returns, and very difficult to earn them on a sustained basis over time.
- **Value destroyed.** In this case, investment returns are less than required. The investor could have done better investing in another opportunity of similar risk. The investor is justifiably unhappy here.

Notions of success or failure should be linked to these measurable economic outcomes. In economic terms, an investment is "successful" if it does anything other than destroy value.

Why should we focus so narrowly on economics? Many managers describe a complex set of motives for acquisitions—shouldn't the benefit of M&A activity be benchmarked against all of these? The use of broader benchmarks is debatable for at least two reasons. First, the managers' motives may be inappropriate, or the managers themselves foolhardy. One hears of M&A deals that are struck for vague strategic benefits, the creation of special capabilities, the achievement of competitive scale, or because two organizations or CEOs are especially friendly. But the only way one can prove that these are actually beneficial is by measuring the economic outcomes rigorously. Second, special deal-specific definitions of success limit generalizing from the research findings. Enhancing the welfare of shareholders is a fundamental and common objective of all firms—indeed, in the United States, corporate directors are required to implement policies consistent with shareholder welfare, usually synonymous with creating value. Fortunately, benchmarking against value creation does permit generalizations to be drawn. Indeed, the definition of M&A success and its drivers

is a fertile area for further research. I pursue a narrow question here in hope of saying something meaningful about M&A activity.

There are two primary parties to an M&A transaction: the buyer and the seller of the target company. In addition, there are numerous ancillary economic interests in the deal, those of advisors, creditors, suppliers, customers, employees, communities, governments, and so on. This survey will focus mainly on the consequences for the shareholders of the two primary parties. This is not to deny the relevance of other interests, but to acknowledge the fiduciary responsibility of boards of directors to their shareholders (above all others). The possible transfer of wealth among shareholders and other groups in a deal is a very interesting topic, on which there is little rigorous research. Of course, private and social values can diverge, as the "problem of the commons" illustrates.² M&A activity may affect a variety of influences on the common good, including industry concentration and monopolies, international competitiveness, productivity growth, and technology transfer. The research literature on these aspects, however, parallels the more narrow discussion here about shareholder welfare. For brevity, therefore, the discussion here does not survey the impact on other stakeholders.

II. Measurement of M&A profitability

Our ability to say anything meaningful about the profitability of M&A depends critically on our confidence in the methods and measures from which we extract insights. Research offers four approaches to measure M&A profitability.

- **Event studies.** These examine the abnormal returns to shareholders in the period surrounding the announcement of a transaction. The raw return for one day is simply the change in share price and any dividends paid, divided by the closing share price the day before. *The abnormal return* is simply the raw return less a benchmark of what investors required that day – typically, the benchmark is the return dictated by the capital asset pricing model (CAPM) or quite simply the return on a large market index, such as the

S&P500. These studies are regarded to be *forward-looking* on the assumption that share prices are simply the present value of expected future cash flows to shareholders. Since the 1970s, these studies have arguably dominated the field.³

- **Accounting studies.** These examine the reported financial results (i.e., accounting statements) of acquirers before, and after, acquisitions to see how financial performance changed. The focus of these studies ranges across net income, return on equity or assets, EPS, leverage, and liquidity of the firm. The best studies are structured as matched-sample comparisons, matching acquirers with non-acquirers based on industry and size of firm. In these studies, the question is whether the acquirers outperformed their nonacquirer peers.
- **Surveys of executives.** Simply asking managers whether an acquisition created value seems like an obvious course. These present a sample of executives with a standardized questionnaire, and aggregate across the results to yield generalizations from the sample.
- **Clinical studies.** These focus on one transaction or on a small sample in great depth, usually deriving insights from field interviews with executives and knowledgeable observers. This is inductive research. By drilling down into the detail and factual background of a deal, the researchers often induce new insights.

Exhibit 1 summarizes the approach, strengths, and weaknesses of each research method. Plainly, no research approach is fault-free, though some command more respect of scientific researchers than others. The task must be to look for patterns of confirmation across approaches and studies much like one sees an image in a mosaic of stones.

If "scientific inquiry" means anything, it is to frame a hypothesis and test it rigorously against the possibility that the result is merely due to chance. Strictly speaking, one never proves the hypothesis, one only disproves the "null hypothesis" that the phenomenon is due to chance. The event studies

and accounting studies are excellent examples of the scientific method applied to social phenomena. Surveys and clinical studies are usually not tests of hypotheses; they aim to describe, rather than test. The key test by which an event study or accounting study proves its finding is with the "t-statistic." The derivation and history of this statistic are beyond the scope of this discussion. But the novice in this field must note that the t-statistic indicates the probability that the result was due to chance--the higher the t value, the lower the probability of a chance occurrence.⁴ By informal convention, many financial economists look for t-values in excess of 2.0, generally indicating significance at the 2.5 percent level, (i.e., "there is a 2.5 percent probability that the result was due to chance.") There is, however, nothing magical about the 2.5 percent level of significance; a chance of 5 percent ($t=1.67$) is still relatively rare. Statistical studies never prove a phenomenon with certainty; at best we can say that a result is probably not due to chance.

A final comment: statistical significance is not the same as economic materiality. To say that M&A transactions create or destroy value on average, one needs not only the proof of significance (i.e., that the result is not due to chance) but also materiality, that the wealth effect is something that shareholders or society should worry about. Many of the significant abnormal returns reported in event studies are as low as one or two percent--one might ask whether this is enough to care about? The answer is emphatically "yes." Usually these returns occur over a few days. Abnormal returns of this magnitude in a short period of time are enough to cause concern or elation among institutions or other sophisticated investors whose performance in turn can be greatly affected by these kinds of events. One also needs to compare apples to apples: the M&A event returns must be *annualized* to compare them to other rates of return that investors experience. For instance, a one

percent abnormal positive return to announcements by buyers that occurs over a week should be annualized by compounding one percent across 52 weeks to yield a 68 percent annualized gain.⁵ This is merely theoretical: reinvestment risk will frustrate attempts to invest in a way that reliably yields a 68 percent abnormal return each year. But in order to make fair comparisons of the materiality of M&A activity with other investing activity by corporations and institutions, it is necessary to adjust for differences in time frame.

III. Findings based on the analysis of market-based returns to shareholders.

Event studies yield insights about market-based returns to target firm shareholders, buyers, and a combination of both.

A. Returns to target firms

Target firm shareholders enjoy returns that are significantly and materially positive.

Exhibit 2 summarizes the findings of 21 studies, which reveal returns that are material and significant, despite variations in time period, type of deal (merger vs. tender offer), and observation period. Two surveys conclude that target shareholders receive average abnormal returns in the 20-30 percent range⁶. In short, the M&A transaction delivers a premium return to target firm shareholders.

B. Returns to buyer firms

The pattern of findings about market-based returns to buyer firms' shareholders is more problematical. **Exhibit 3** summarizes the findings of 41 studies.

- 20 studies report negative returns with 13 of the 20 significantly negative. The negative returns vary between one and three percent. 24 studies report positive returns – 17 of these report significantly positive returns. In short, the findings are distributed rather evenly: one-third (13) show value destruction; one-third show value conservation (14); and one-third show value creation (17).

- 11 studies consider returns well *after* the consummation of the transaction. Eight studies report negative and significant returns. Caves (1989) infers that these findings are due to “second thoughts” by bidders' shareholders, and/or the release of new information about the deal. But interpretation of longer-run returns following the transaction is complicated by possibly confounding events that have nothing to do with the transaction.
- The studies show a slight tendency for returns to decline over time: returns appear to be higher (more positive) in the 1960s and 1970s than in the 1980s and 1990s, except for deals in technology and banking, where returns to bidders increase in the 1990s.⁷
- When the welfare of all security holders in the buyer firm are considered, two studies suggest that the value of the buyer firm increases by a statistically significant amount.⁸ This suggests that the research focus on common stock may ignore other important gains to investors.

One must conclude that in the aggregate, abnormal (or market-adjusted) returns to buyer shareholders from M&A activity are essentially zero. A reasonable conclusion from these studies is that buyers essentially break even (i.e., that acquisitions tend to offer zero net present values, or equivalently, that investors earn their required return.)

Any inferences about the typical returns to buyers based on returns must grapple with the difficult issue of the size difference between buyers and targets. Buyers are typically much larger than targets. Thus, even if the dollar gains from merger were divided equally between the two sides, the percentage gain to the buyer's shareholders would be smaller than to the target's. Asquith, Bruner and Mullins (1983) reported results consistent with the size effect. For instance, in mergers where the target's market value was equal to 10 percent or more of the buyer's market value, the return to the buyer was 4.1 percent ($t=4.42$). But where the target's value was less than 10 percent, the return to the buyer was only 1.7 percent.

C. Returns to buyer and target firms combined

Findings of positive abnormal returns to the seller and breakeven returns to the buyer raise the question of net economic gain from this event. The challenge here stems from the size difference between buyer and target: typically the buyer is substantially larger. Hence, a large percentage gain to the target shareholders could be more than offset by a small percentage loss to the buyer shareholders. A number of studies have examined this by forming a portfolio of the buyer and target firms and examining either their weighted average returns (weighted by the relative sizes of the two firms) or by examining the absolute dollar value of returns. **Exhibit 4** reports the findings of 20 studies. Almost all of the studies report positive combined returns, with 11 of the 20 being significantly positive. The findings in Exhibit 4 suggest that M&A does pay the investors in the combined buyer and target firms.

IV. Findings based on the analysis of reported financial performance

A second important stream of research on M&A returns is found in 13 studies of profit margins, growth rates, and returns on assets, capital, and equity, summarized in **Exhibit 5**. Scanning the column of results yields the observation that two studies report significantly negative performance post-acquisition, three report significantly positive performance, and the rest are in the non-significant middle ground. Four studies illuminate interesting aspects of post-acquisition performance.

Geoffrey Meeks (1977) explored the gains from merger for a sample of transactions in the United Kingdom between 1964 and 1971. This study draws upon a relatively large sample (233 observations), and tests the change in profitability following the merger. Meeks looks at the change in return on assets⁹ (ROA) compared to the change in ROA for the buyer's industry. His chief finding is excerpted in **Exhibit 6**. Meeks' findings reveal a decline in ROA for acquirers following the transaction, with performance reaching the nadir five years after. For nearly two-thirds of acquirers,

performance is below the standard of the industry. He concludes that the mergers in his sample suffered a "mild decline in profitability" (p. 25).

Mueller (1980) edited a collection of studies of M&A profitability across seven nations (Belgium, German, France, Netherlands, Sweden, U.K., and U.S.) All the studies applied standard tests and data criteria and therefore afford an unusually rich cross-border comparison of results across parts of Europe and the U.S. The research tested theories about changes in size, risk, leverage and profitability. Profitability was measured three ways: (a) profit divided by equity; (b) profit divided by assets, and (c) profit divided by sales. The changes in profitability for an acquirer (measured as the difference between the post-acquisition performance, and the average profitability for five years before the transaction) were compared to similar measures for two benchmark groups: (i) firms matched on the basis of size and industry and who made no acquisitions, and (ii) a general sample of firms that neither made acquisitions nor were acquired during the observation period. Consistent with Meeks' finding, Mueller's work finds that acquirers are significantly larger than targets, acquirers have been growing faster than their peers and than their targets, and are more highly leveraged than targets and peers. Regarding profitability, acquirers show no significant differences – the specific data for the U.S. are generally representative of the findings across many nations. **Exhibit 7** gives an excerpt of these findings.

The main observation from Mueller's findings is that acquirers reported worse returns in the years after acquisition than their non-acquiring counterparts – but *not significantly so*. The most strongly negative results are shown in the right-hand column of Exhibit 7, notably in the low percentage of the sample that offered a positive comparison. Commenting on the results for all seven countries, Mueller wrote,

No consistent pattern of either improved or deteriorated profitability can therefore be

claimed across the seven countries. Mergers would appear to result in a slight improvement here, a slight worsening of performance there. If a generalization is to be drawn, it would have to be that mergers have but modest effects, up or down, on the profitability of the merging firms in the three to five years following merger. Any economic efficiency gains from the mergers would appear to be small, judging from these statistics, as would any market power increases. (page 306).

Ravenscraft and Scherer (1987) studied 471 acquirers between 1950 and 1977. The novelty in this study was the reliance of the researchers upon a special line-of-business database maintained by the Federal Trade Commission that would permit greater definition of control groups than in previous studies, and more careful assessment of asset values and the impact of accounting method choices. The drawback to the line-of-business focus is that acquisition synergies might occur in other areas of the acquiring firm, and therefore might be missed by this study. Also, the comparison in post merger years is undermined by misalignment with the merger year.¹⁰ The researchers considered the ratio of operating income to assets. Strengthening the analysis are controls for industry effects, accounting method choices, and market shares. Their principal finding is that profitability is one to two percentage points less for acquirers than for control firms – these differences are statistically significant. Purchase accounting and the entry into new (i.e., diversifying lines of business) are associated with material and significant decreases in profitability.

Healy, Palepu, and Ruback (1992) studied the post-acquisition accounting data for the 50 largest U.S. mergers between 1979 and mid-1984, and use industry performance as a benchmark against which acquirers' performance may be tested. Asset productivity improves significantly for these firms following acquisition, which contributes to higher operating cash flow returns relative to their non-acquiring peers. Acquirers

maintain their rates of capital expenditure and R&D relative to their industries, suggesting that the improved performance is not at the expense of fundamental investment in the business. Most importantly, the announcement returns on stock for the merging firms is significantly associated with the improvement in post-merger operating performance, suggesting that anticipated gains drive the share prices at announcement.

V. Findings about the drivers of profitability

The studies yield a number of interesting insights about the determinants of M&A profitability.

- **Diversification destroys value. Focus conserves it.** Berger and Ofek (1995) found an average loss in value from diversification of between 13 and 15 percent. The degree of relatedness between the businesses of the buyer and seller is positively associated with returns.¹¹ Intuitively, this makes sense if synergies or savings arise from the economics of the two firms. In particular, conglomerate deals (i.e., deals between firms with unrelated lines of business) are associated with the poorest returns. Diversifying (unrelated) mergers tend to be associated with worse performance than related mergers. Maquieira et al. (1998) found negative, but insignificant returns to buyers in conglomerate deals; in contrast, they found positive and significant returns to buyers in non-conglomerate deals. In a study of bank mergers, DeLong (2001) found that mergers that focus both activity and geography enhance buyer's share value by 2.0 to 3.0 percent more than other types of mergers.
- **Expected synergies are important drivers of the wealth creation through merger.** Houston, James and Ryngaert (2001) studied the association of forecasted cost savings and revenue enhancements in bank mergers and found a significant relationship between the present value of these benefits, and the announcement day returns. The market appears to discount the value of these benefits, however, and applies a greater discount to revenue-enhancing synergies, and a smaller discount to cost-reduction synergies.

- **Value acquiring pays, glamour acquiring does not.** Rau and Vermaelen (1998) found that post-acquisition under-performance by buyers was associated with “glamour” acquirers (companies with high book-to-market value ratios). Value-oriented buyers (low book-to-market ratios) outperform glamour buyers. Value acquirers earn significant normal returns of 8% in mergers, and 16% in tender offers, while glamour acquirers earn a significant -17% in mergers and insignificant +4% in tender offers.
- **M&A to build market power does not pay.** Studies by Ravenscraft and Scherer (1987), Mueller (1985), and Eckbo (1992) reveal that efforts to enhance market position through M&A yield no better performance, and sometimes worse. Studies by Stillman (1983) and Eckbo (1983) find that share price movements of competitive rivals of the buyer do not conform to increases in market power by buyers. It suggests that the sources of gains from M&A do not derive from anticompetitive combination of firms.
- **Paying with stock is costly; paying with cash is neutral.** Asquith, Bruner and Mullins (1987), Huang and Walkling (1987), Travlos (1987) and Yook (2000) found that stock-based deals are associated with significantly negative returns at deal announcements, whereas cash deals are zero or slightly positive. This finding is consistent with theories that managers time the issuance of shares of stock to occur at the high point in the cycle of the company’s fortunes, or in the stock market cycle. Thus, the announcement of the payment with shares (like an announcement of an offering of seasoned stock) could be taken as a signal that managers believe the firm’s shares are overpriced.
- **M&A regulation is costly to investors.** Weir (1983) and Eckbo (1983) find evidence suggesting that Federal Trade Commission antitrust actions benefit competitive rivals of the buyer and target. Jarrell and Bradley (1980) and Asquith, Bruner and Mullins (1983) find that returns to merging firms were significantly higher before than after implementation of the Williams Amendment in October 1969. Schipper and Thompson (1983) consider four regulatory changes between 1968 and 1970, and found wealth-reducing effects associated with increased regulation.
- **M&A to use excess cash generally destroys value except when redeployed profitably.** Cash-rich firms have a choice of returning the cash to investors through dividends, or reinvesting it through such activities as M&A. Studies¹² report value destruction by the announcement of M&A transactions by firms with excess cash. However, Bruner (1988) reports that the pairing of slack-poor and slack-rich firms creates value. Before merger, buyers have more cash and lower debt ratios than nonacquirers. And the return to the buyers’ shareholders increases with the change in the buyer’s debt ratio due to the merger.
- **Tender offers create value for bidders.** Mergers are typically friendly affairs, negotiated between the top management of buyer and target firms. Tender offers are structured as take-it-or-leave-it proposals, directly to the target firm shareholders. Quite often, tender offers are unfriendly. Research suggests that bypassing the target firm’s management, and appealing directly to target shareholders can pay. Several studies report larger announcement returns to bidders in tender offers, as compared with friendly negotiated transactions.¹³ These findings are consistent with the view that unwanted suitors are entrepreneurs who have uncovered special value-creating insights about the target firm. By making an unsolicited bid, the buyer seeks to retain value for itself, rather than give it up in a negotiation.
- **When managers have more at stake, more value is created.** Studies suggest that returns to buyer firm shareholders are associated with larger equity interests by managers and employees.¹⁴ In assessing the pattern of performance associated with deal characteristics, Healey, Palepu and Ruback (1997) concluded “while takeovers were usually break-even investments, the

profitability of individual transactions varied widely...the transactions characteristics *that were under management control* substantially influenced the ultimate payoffs from takeovers.”¹⁵ A related finding is that LBOs create value for buyers. The sources of these returns are not only from tax savings due to debt and depreciation shields, but also significantly from efficiencies and greater operational improvements implemented after the LBO. In LBOs, managers tend to have a significant portion of their net worth committed to the success of the transaction. **Exhibit 8** summarizes the findings of several studies about LBOs and reveals that cash flow increases, and capital spending declines materially in the years following the transaction.

- **The initiation of M&A programs is associated with creation of value for buyers.** Asquith, Bruner and Mullins (1983), Gregory (1997), and Schipper and Thompson (1983) report that when firms announce they are undertaking a series of acquisitions in pursuit of some strategic objectives, their share price rises significantly. That these kinds of announcements should create value suggests that M&A generally creates value, and that the announcement is taken as a serious signal of value creation.

VI. Findings from surveys of executives

The findings of scholars in large-sample surveys are supplemented by studies by scholars and practitioners who study smaller samples and typically draw some or all of their findings from questions of managers directly. Ingham, Kran and Lovestam (1992) surveyed chief executive officers in 146 large firms in the United Kingdom. Of them, 77 percent believed that profitability increased in the short run after merger; 68 percent believed that the improved profitability lasted for the long run.

Surveys by practitioners are often rather casually reported, limiting our ability to replicate the study and understand the

methodological strengths and weaknesses. For this reason, scholars tend to give practitioner surveys rather less attention. Nevertheless, a sample of these surveys is reported here for the sake of comparison with the scholarly studies. It is interesting to consider whether managers tell us something different from the large-sample scientific studies.

The absence of statistical tests in these surveys limits the assertions one can make, but a qualitative review of results offers results surprisingly similar to the scientific studies. **Exhibit 9** tabulates the results of 13 studies. Six of the 13 studies suggest negative results. The remainder seem neutral or positive. The similarity between these findings, and the findings from the scholarly studies is striking. In the bulk of deals, it appears that investments in acquisitions at least pay their cost of capital. To explore some of the problems of stability in executive surveys about M&A, I polled 50 business executives via the Internet. As with other surveys of this type, no effort was made to ensure representativeness, or reduce bias, thus limiting our ability to generalize the results to all executives or all M&A deals. Nevertheless, the findings offer important insights about M&A profitability.

First, the survey considered all respondents, and asked their opinion about the percent of all M&A deals that create value and meet their strategic objectives. The resulting distributions of opinion were quite wide. But on average, the respondents said that only 37 percent of deals create value for the buyers. Even worse, the sample believes that only 21 percent of the deals achieve the buyers' strategic goals. These findings are similar to results of other surveys of executives.

Next, the survey focused only on those respondents who had been personally involved in one or more M&A transactions, and asked them to comment on their own deals. In essence, this created a sub-sample of possibly better-informed respondents. For this subset, the results reversed themselves:

- 58% of the informed respondents believe their own M&A deals created value; 51% believe their deals achieved their strategic goals. In contrast, only 23% believed their deals did not create value; 31% believed their deals did not achieve their strategic

goals. The remaining respondents either did not know the results of their deals, or concluded the results were mixed.

- The strength of the respondents' view about all M&A was inversely related to their view of their own deals: the better they felt about their own deals, the more they condemned M&A results in general. On the measure of value creation of deals (own deals vs. all deals), the responses were correlated -42%, a strongly negative degree of association for work in social science. But on the dimension of meeting strategic objectives, the correlation was even more negative, -72%.

This survey illustrates the important influence of one's frame of reference on survey responses. Facts and opinions differ. Where the respondents were better-informed (e.g., their own deals, with first-hand information), M&A seems to pay. But for the broader judgment, the respondents fall back on a very different opinion. There is one other explanation for the disparate findings: for reasons of ego executives tell the world nicer things about their own deals than about the deals of others. Either way, one's frame of reference (shaped by information or ego) shapes a very different and more optimistic view about M&A profitability.

VII. Findings from clinical studies

Clinical studies of M&A cases offer insights into the possible origins of the returns experience for outliers. Here are conclusions from six of these studies.

- ATT/NCR. Lys and Vincent (1995) examined the 1991 acquisition of NCR Corporation by AT&T. This acquisition decreased the wealth of AT&T shareholders by between \$3.9 billion and \$6.5 billion. They offered three explanations consistent with these results. The first was a set of managerial objectives that were not consistent with maximizing shareholder wealth. The second was managerial overconfidence, or hubris. And the third was "escalation of commitments," a psychological phenomenon that spurs decision makers to move forward despite information to the contrary.
- Renault/Volvo. Bruner (1999) examined the failed attempt to merge AB Volvo with Renault in 1993. The attempt temporarily erased 22 percent of Volvo's market value before Volvo's board of directors withdrew from the deal. The study suggests that the value destruction was associated with disbelief in merger synergies, and with the transfer of control to Renault.
- Leveraged buyout of Revco D.S. Bruner and Eades (1992) and Wruck (1991) studied the bankruptcy of one of the largest leveraged buyouts in the retailing industry, that of Revco Drug Stores. The failure was associated with overpayment, the use of extremely high debt financing, and the arguably self-serving behavior of management.
- Cooper Industries' Acquisition of Cameron Iron Works, and Premark's acquisition of Florida Tile. Kaplan, Mitchell, and Wruck (1997) studied two acquisitions that experienced very different stock market reactions to their announcements (one positive, and the other negative). Interviews after the fact revealed that neither acquisition succeeded in creating value. Causes were inappropriate incentives, incomplete knowledge of the target, and the imposition of inappropriate organizational designs on the target.
- Campeau's Acquisition of Federated. Kaplan (1989) found that the value of Federated's assets increased under Campeau's ownership up to the point of bankruptcy filing. He does not identify the source of value creation, but suggests cost cuts, sale of underutilized assets, and tax benefits.
- Dupont's Takeover of Conoco. Ruback (1982) assessed the net value creation to the shareholders of the buyer and target jointly. Whereas shareholders of the target (Conoco) received gains of \$3.2 billion, shareholders of DuPont sustained losses of \$800 million. Therefore, the net value created in the deal was \$2.4 billion. Ruback explored various possible explanations for the net gain, and was unable to identify a specific source. The study highlights the difficulty facing all researchers in explaining wealth creation

or destruction in individual deals.

Clinical studies illuminate possible drivers of returns from acquisition. These and other studies have emphasized the role of strategic, financial and organizational issues.

VIII. Conclusions of reviewers through time

Several scholars have considered the findings of scientific studies over the years, conducting an exercise much as here. How have they viewed the data?

- **Dennis Mueller, (1979).** In testimony before the U.S. Senate, Mueller said, “And the predominant conclusion, what it comes to, from looking at this literature, is that the firms themselves are performing no better on average than they would have been in the absence of the mergers, and the stockholders who hold shares in those firms are doing no better than if they had shares in a firm that wasn’t.”¹⁶
- **Michael Jensen and Richard Ruback (1983).** Based on an analysis of 16 studies, the authors concluded that the return to bidders in successful mergers was zero, and in successful takeovers was +4.0%. They wrote, “The evidence indicates that corporate takeovers generate positive gains, that target firm shareholders benefit, and that bidding firm shareholders do not lose.”¹⁷
- **Murray Weidenbaum and Stephen Vogt (1987).** Based on an analysis of 10 studies, the authors wrote, “We conclude that, based on historical data, negative returns to shareholders for acquisitions are more prevalent than the prevailing folklore on the subject admits. Clearly, there are winners and losers in the takeover game. Most studies confirm that, in general, target firm shareholders are winners. The evidence presented here indicates that, on average, acquiring firm shareholders are not as fortunate. At best, these shareholders are no worse off, but often they lose during acquisitions.”¹⁸
- **Deepak Datta, George Pinches, and V.K. Narayanan (1992).** The authors considered 41 studies, and concluded that bidders earn a return of less than one-half of one percent. They wrote, “The synthesis of ex ante event studies presented in this paper provides robust evidence that, on average, shareholders of bidding or acquiring firms do not realize significant returns from mergers and acquisitions.”¹⁹

IX. Viewing the whole mosaic: some conclusions

What should a practical person conclude from this discussion? Arguably, the data support a range of views.

- **Does pay.** This answer is certainly justified for shareholders of target firms. Also, studies of targets and buyers combined seem to suggest these transactions create some joint value. But for bidders alone, there is no clear value creation in the sense of earning returns significantly in excess of the opportunity cost of capital – only 20-30% of all transactions seem to do so.
- **Doesn’t pay.** This is true if you focus only on bidders, and define “pay” as creating material and significant abnormal value – this line of reasoning is behind statements that 60-70% of all M&A transactions “fail.” But economics teaches that investors should be satisfied if they earn returns just equal to their cost of the lost opportunity (i.e., their required return). Therefore, the popular definition of failure is extreme. The reality is that 60-70% of all M&A transactions are associated with financial performance that at least compensates investors for their opportunity cost – against this standard it appears that buyers typically get at least what they deserve.
- **It depends.** True, from the perspective of Section V, which describes determinants of higher and lower M&A profitability. Value is created by focus, relatedness, and adherence to strategy. Diversification (especially conglomerate), size maximization, empire building, and hubris destroy value. The implication of this is that good deals are not

achieved by pricing alone: strategy and skills of post-merger integration matter immensely. Some rich insights can be derived from an examination of types of deals. The key implication of these insights is that managers can make choices that materially influence the profitability of M&A. Cleverness gets its due. So does stupidity.

- **We don't know.** True from the perspective of Section II, which discussed how research strictly only rejects null hypotheses, and never confirms alternative hypotheses. One can only test for the association of M&A with profitability, never causation. Like intellectual Tic Tac Toe, you only prove anything by eliminating all the alternatives. Even after many studies, we may not have exhausted the alternative explanations. It is hard to warm up to this view. While one admires its rigor and skepticism, surely the mass of tests tells us at least something about tendencies.
- **All the above.** Apparently true. Each of the preceding positions has at least one leg (if not two) to stand on. While this position may be honest, this alternative gives equal weight to the various arguments, and is not very satisfying to the practical person who must decide. You must have a view.
- **None of the above.** Perhaps the cacophony of conflicting studies leads one to pure agnosticism. Such a conclusion is harsh, and hardly the foundation for an executive who must lead an enterprise in the hurly-burly of business life.

My reading of the studies leads me to choose “Yes, but...” I take the economists’ perspective that an investment is deemed to “pay” if it earns at least the opportunity cost of capital. Abstracting from the studies, the majority of transactions meets this test. But the buyer in M&A transactions must prepare to be disappointed. It is also true that most transactions are associated with results that are hardly consistent with optimistic expectations. Synergies, efficiencies, and value-creating growth seem hard to obtain. It is in this sense that deal doers’ reach exceeds their grasp.

Based on the mass of research, my advice to the business practitioner is to be coldly realistic about

the benefits of acquisition. Structure your deals very carefully. Particularly avoid overpaying. Work very hard to achieve the economic gains you hypothesized. Take nothing for granted. M&A is no money machine, and may well not offer the major career-building event you wanted. The only solace is that one could say the same about virtually any other form of corporate investment: on balance, your shareholders will earn a going rate of return on M&A activity. Given the uncertainties in M&A as elsewhere, one must remember the ancient advice, *caveat emptor* (buyer beware.)

Footnotes

1. Grubb and Lamb (2000), pages 9, 10, 12, and 14.
2. In England, the village commons was a field jointly used by villagers to graze their animals. Because the field was, in effect, held by all, no one individually looked out for the welfare of the social good. The problem of the commons was to prevent behavior (such as overgrazing by selfish villagers) that would harm the welfare of all.
3. In a memorable comment, Caves (1989) wrote, "This technique was a genuine innovation-theoretically well grounded, cheap to execute and able to evade the problem of holding constant other factors that plague ex post studies of mergers' effects. A better product, available at a lower price, naturally swept the intellectual marketplace." (Page 151.)
4. Tests of significance also depend on sample size. The t values discussed here implicitly assume relatively large samples of observations, such as more than 100.
5. $(1.01)^{52} = 1.678$.
6. Jensen and Ruback (1983) associate a 30 percent gain with a change in control by tender offer, and a 20 percent gain for mergers. Datta et al. conclude that target shareholders receive a 21.8% return.
7. Bradley, Desai and Kim (1988) report that average announcement returns to bidders fell from 4.1 percent in the 1963 to 1968 period, to -2.9 percent in the 1981-1984 period.
8. See Dennis and McConnell (1986). Also, Maquieira, Megginson and Nail (1998) report, "Apart from bidding firm stockholders in conglomerate mergers, all major classes of debt and equity securityholders of both bidders and targets either break even or experience significant wealth gains." (page 30).
9. Meeks defines return on assets as pre-tax profits (after depreciation, but before tax) divided by the average of beginning and ending assets for the year. The key metric was $R_{change} = R_{After} - R_{Before}$ where R_{After} and R_{Before} were measures of performance relative to the weighted average of returns of the buyer's and target's industries.
10. Ravenscraft and Scherer examine the performance between 1974 and 1977 of mergers that occurred from 1950 to 1977. In other words, the period under observation was not the same number of years after merger from one observation to the next.
11. See studies by Rumelt (1974), Comment and Jarrell (1995), Healy, Palepu and Ruback (1992 and 1997), Macquieira, Megginson, and Nail (1998), Meeks (1977), Wansley et alia (1983), Megginson, Morgan and Nail (2000), Singh and Montgomery (1987) and Walker (2000). See also Weston, and Mansinghka (1971) and Weston, Smith and Schrieves (1972) for classic early studies of conglomerate performance.
12. See Servaes, Lang, Stultz, and Walking (1991), Harford (1999), and Jensen (1986).
13. Jensen and Ruback (1983) give a survey of of returns in contested and friendly deals. Numerous studies report positive significant returns to bidders in hostile transactions: Gregory (1997), Loughran and Vjih (1997), Rau and Vermaelen (1998), Lang, Stultz and Walking (1989), and Jarrell and Poulsen (1989). On the other hand, Healey, Palepu and Ruback (1997) found that hostile deals were associated with insignificant improvements in cash flow returns, owing possibly to the payment of higher acquisition premiums.
14. Agrawal and Mandelker (1987) found that lower equity investment by managers in their own firms was associated with higher propensity to undertake variance-reducing acquisitions. You et al (1986) found that announcement returns to bidders were lower (i.e., more negative), the lower the managers' equity stake in the buyer firm.
15. Page 55, italics added.
16. Dennis Mueller, (1979) page 307.
17. Jensen and Ruback (1983) page 5.
18. Weidenbaum and Vogt (1987) page 166.
19. Datta, Pinches, and Narayanan (1992) page 13.

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