MUNDY ASSOCIATES LLC
SUITE 200, WATERMARK TOWER
1109 FIRST AVENUE
SEATTLE, WASHINGTON 98101
PHONE 206-623-2935 FAX 206-623-2985
HTTP://WWW.MUNDYASSOC.COM

Lost Profits and Damages from an Economists Point of View

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Presented by:

John A. Kilpatrick

Good afternoon. The title of my address is, unfortunately, a bit of a misnomer. Unfortunately, when people put on programs like these, they need a nice, succinct topic well in advance of the actual writing of the speech. I believe I provided them with this topic sometime during the late 1980's.

My colleague, David Linnhoff, was in Korea, representing the American real estate appraisal community, presenting the keynote address in commemoration of the establishment of the Korean Appraisal Standards. The title of his talk was "Global Warming: Emerging International Valuation and Consulting Opportunities". I re-read his speech the other day, and could not actually find the phrase "Global Warming" mentioned even once.

Don't get me wrong. David presented an excellent talk, as I will today. However, much like David's talk, mine today grew in the writing, and will deviate somewhat from the planned topic. Nonetheless, I'm absolutely sure you'll all be truly delighted, and will quote me profusely to your friends and colleagues in the very near future.

Also, before our good meeting planners start popping their blood pressure pills and Malox, please note that I WILL talk about "Lost Profits and Damages from an Economist's Point of View" sometime this afternoon. However, much like the recent annual report I received from a small company of which I own an even smaller piece, the heart of the matter – the statement of net income – is buried somewhere near the bottom of page 27.

Instead, to get to that (and I might mention that the small company in question was quite profitable this past year, it's stock actually went up in value, and indeed I managed to buy that stock at a surprisingly low price), but before we get to my assigned topic, there are is a whole lot of ground we need to cover – definitions and the like.

What, for example, is an economist? A few months ago, I was in Los Angeles addressing a group of attorneys on a similar subject. I opened by telling them that an economist is a person who is good with numbers but doesn't have the vivid "people skills" of a CPA. Somehow, I think a more rigorous definition is probably in order today.

To give you a bit of a peek into what lies ahead in the next hour, let's also ask the question, what is the difference between economics and accounting? Where does the line of demarcation lie between two surprisingly closely related, and often misconstrued professions?

Once we answer those questions, we can then look at our core question, not just from an economists perspective but from the joint perspective of economists and accountants, and show how the "whole" created when these two professions work together can be, and almost certainly will be, greater than the sum of the parts.

But first, what is an economist? Typical definitions generally focus on what economists do, rather than what we "are". There are relatively few actual practicing professional economists

in the U.S. – only about as many as there are students in a medium sized university[1]. Nonetheless, economists wield a disproportionate influence on daily life in not only America, but the world. One reads daily about price changes, expectations of business investment, pronouncements of the President's Council of Economic Advisors, and every cough and hic-cup by the Alan Greenspan, the Chairman of the FED, and one realizes that as professions come and go, this rather poorly dressed group of overly pompous people seem to have a rather neat corner on undue influence.

Recently, I was in New York City attending an address given by Stanley Fischer, the Chief Economist, and at the time acting director of the World Bank. As luck and meeting planning would have it, I was seated next to the reporter from the Wall Street Journal, a newspaper I hold in the highest regard for the simple reason that they consistently manage to spell my name correctly. (In the course of a long and sometimes rugged life, one learns the value of things like this.) The head table, at which I was not seated but which I faced directly, had a number of luminaries, many of whom were recent Nobel Laureates. I'd put the average age at the head table at somewhere around seventy, although eighty wouldn't have surprised me. Now, there's an important subtext to this – the University of Chicago "owns" the Nobel Prize in Economics in much the same way UCLA owned the NCAA basketball championships back when I was a kid. If a year comes along when an economist from somewhere OTHER than Chicago snatches the Nobel Prize, rumor has it Chicago immediately offers him a job. The reporter turned to me and asked if there was any reason for the seating arrangement. I quipped, "Yes, the Chicago economists are on one side and the Harvard economists are on the other, so

[1] Much of this "definition" section is adapted from Chapter 1, "An Overview of the Profession", contained in Norton, John, The World of the Economist (Columbia, South Carolina: U. of South Carolina Press, 1973).

that fist fights won't break out during the meal." Fortunately, the Journal saw fit not to quote me THAT time.

You see, economists are at something of a disadvantage to accountants. You all – and I mean you in the room who are accountants by trade and training – you all generally adhere to a set of accounting "standards" – GAAP and such and so-forth, and so while there is reasonable debate in the accounting profession about what those standards should be, there is little if any doubt as to what the current set of standards are, comparatively speaking. Economists, on the other hand, rarely agree on anything. Our favorite sport is arguing, and our second favorite sport is scotch. (Don't think scotch is a sport? Just ask two economists. One will agree. The other will feel actually physically compelled to disagree. A four hour, totally extemporaneous argument, complete with footnotes, matrix algebra, and a bit of stochastic calculus, will immediately follow. In the end, they will co-author and publish two papers on the subject.)

By the way, it's often said that economics is the only profession in which two people can both win the Nobel Prize for saying exactly the opposite thing. This paradox is not only true, it actually only tells half the story. Economics is the only profession in which two people can actually SHARE a Nobel Prize for saying exactly the opposite thing. Specifically, Gunnar Myrdal and Friedrich August Von Hayek shared the 1974 prize for their rather conflicting yet pioneering work in the theory of money and economic fluctuations.

Indeed, as a profession we're so efficient that to find two conflicting theories, you often only need one economist to work both sides of the table. For example, consider the story of the economic forecaster was known to have a horseshoe prominently displayed above the door frame of his office. Asked what it was for, he replied that it was a good luck charm that helped his

forecasts. But do you believe in that superstition? he was asked, and he said, "Of course not!" But then why do you keep it? "Well," he said, "it works whether you believe in it or not."[2]

There's also a mis-nomer that economics, as a profession, is somewhat older than accounting. This is only partially true. The earliest writing which can be called "economic theory" was by Adam Smith, in his landmark, Wealth of Nations. Note, however, that Smith, and most 18th and 19th century economists, were either theologians or philosophers. The concept of studying economics for the sake of "economics" had to wait until the 20th century. If you re-read Keynes's General Theory, published not even 70 years ago, probably the most pivotal and important "economic" exposition of all time, you will be hard pressed to define it as a work of economic thought. For example, in the entire book, there are only a few equations – and these are fairly simple ones, such as his definition of personal income (consumption + investment) and his definition of the money supply. There are no graphs. There is, however, a rather delightful poem in the last chapter, taken from Bernard Mandeville's seventeenth century epic poem, Fable of the Bees, concluding as Mandeville does, with the allegorical moral:

> Bare virtue can't make nations live
> In splendor. They that would review
> A Golden Age, must be as free,
> For acorns as for Honesty.

From this, we learn two things. First, economists have no taste whatsoever in poetry. Second, and more importantly, economists well into the 20th century looked at the intertwining of economic activity and moral or ethical activity as one in the same. Nations dabbled in the

[2] This story is attributed to the noted physicist, Neils Bohr.

workings of the economy ONLY because failure to do so would undermine the moral character of the people.

Now, this broad generalization overlooks the eventually highly influential work being done by people who would eventually be thought of as economists in the 19th and early 20th centuries. These varied from David Ricardo, who showed why capitalism and free trade works so well, all the way over to Karl Marx, who postulated exactly the opposite. In the middle there were excellent technicians like the Frenchman Henri Walras and the German Von Thunan who were interested in why certain prices erupted in certain markets and not in others.

None the less, in my somewhat peculiar vision of things, economics and accounting emerged from the pre-World War II era as important and indeed vital professions for precisely opposite reasons. Sometime in the 1930's, as a result of Keynes writing and other historical influences, the governments of the U.S. and Great Britain came to realize that the inner workings of the economy were a matter of continuous and intense government concern. Simultaneously, and as a result of identically the same historical influences, the governments of the U.S. and Great Britain came to much the opposite conclusion about the practice of accounting – that the establishment of accounting and auditing standards were in fact NOT a matter of government concern, save for the minimal threshold obligations placed on publicly traded companies.

Note that I mentioned Great Britain in this. Our cousins across the Atlantic have a very special place in the pantheon of economic thought. Not withstanding much of the excellent work done by Leontiev and the afore mentioned Walras and Von Thunan, it is simply a truism that until very recently, all of the best trained minds in economic thought came from Great Britain.

Certainly, almost everything noteworthy written in economics prior to, say, 1960, was written in between cricket matches.

Part of this owes itself to a rather odd historical paradox. Prior to, say, the 19th Century, the "wealth of a nation" was dependent on her prowess at warfare. However, the early economists theorized that this wealth could also be maximized through optimization of mercantile organizational structures. Indeed, this placed the great armies and navies of the colonizing nations in the place NOT of securing the nations wealth (thru conquest and discovery of gold, in the Conquistador fashion) but as protectors of the sea routes for the well organized colony enterprises (in the fashion of the British East India company). The paradox, of course, lies in the fact that it was Britain, a nation long known for it's prowess on the battlefield and it's almost overwhelmingly ascendant navy, which first conceived of this. Hence, they had a double whammy going – a powerful armed force supplementing a superior economic strategy. In a fair world, a country that never quite got it's act together on the battlefield, like Portugal or Holland, would have been the source of the economic superiority. However, like Johnny Carson once said, if life was fair, Elvis would still be alive and all of the impersonators would be dead.

None-the-less, it was Merry Old England that conceived of the coupling of economic optimization of organizational structures with a powerful army and navy. A quick review of late 19th century world maps shows that they nearly conquered the entire world with this prowess. I dare say had it not been for the unfortunate intervention of World War One and World War Two, we'd all be speaking English today.

Don't laugh. I spend the biggest part of my day attempting to read what you folks pass off as "writing". Please don't attempt to classify it as "English Composition".

So, we now have apparently defined economists as existing somewhere in the public policy realm. If that was all we did, then we would be political scientists and be forced to wear truly bad suits all the time. But, in fact, the secret lies in the economists' fascination with what you may call "statistics".

Now, when the typical college undergraduate hears the word "statistics" he somehow thinks "mathematics" and avoids the subject like the plague. Indeed, stats at most universities is taught in math departments for much the same reason that "business writing" is taught in English Departments. Most economists are, surprisingly, pretty good writers. However, actually spending time teaching writing would be pretty boring, right? So we leave it up to writing instructors over in the English Lit department. They are generally thankful for the work. The same is true with statistics. It may surprise you to know that modern statistics owes it's origins not to mathematicians but to the colleges of agriculture, wonderfully well funded as a result of the Morrell act and generally politically popular in the late 19th and early 20th centuries. Indeed, if you go to the back of any standard statistics book and look at the various tables there, you'll see copyrights from historic "ag" schools like Purdue and Ohio State. Not surprisingly, many of these schools also produced many of the early and excellent work in technical economic analysis. Not withstanding the important place Harvard and Stanford have in American economic thought, I remind you that the Nobel Prize has ALMOST been permanently retired in that great packing-house city of America, Chicago.

We could spend a day or more just doing an overview of the integration of statistics and economics. Indeed, it would be an important day, since statistical inference is at the core of how economists look at things. Nonetheless, we don't even have the time today for even a cursory

overview, so I will instead quote from another writer named Manderville, in this case the utterly fictitious writer, K.A.C. Manderville, which is a pen-name for Maurice Kendall, the co-author of the highly popular 1967 text Advanced Theory of Statistics[3]. He, in turn, cites this as being a quote from the equally fictitious romance novel, "The Undoing of Lamia Gurdleneck". His bit of subterfuge, by the way, is translated wholly and with a straight face onto the dedication page of the highly regarded M.I.T. text, A Guide to Econometrics by Peter Kennedy[4], where I first had the chance to read it. I will share it with you, verbatim.

"You haven't told me yet," said Lady Nuttal, "what it is your fiancé does for a living."

"He's a statistician," replied Lamia, with an annoying sense of being on the defensive.

Lady Nuttal was obviously taken aback. It had not occurred to her that statisticians entered into normal social relationships. The species, she would have surmised, was perpetuated in some collateral manner, like mules.

"But Aunt Sara, it's a very interesting profession," said Lamia warmly.

"I don't doubt it," said her aunt, who obviously doubted it very much. "To express anything important in mere figures is so plainly impossible that there must be endless scope for well-paid advice on the how to do it. But don't you think that life with a statistician would be rather, shall we say, humdrum?"

Lamia was silent. She felt reluctant to discuss the surprising depth of emotional possibility which she had discovered below Edward's numerical veneer.

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[3] Kendall, Maurice and Alan Stuart, Advanced Theory of Statistics 2nd (Hafner: 1967).
[4] Kennedy, Peter, A Guide to Econometrics 2nd (Boston: MIT Press, 1989)

"It's not the figures themselves," she said finally. "It's what you do with them that matters."

So indeed, economists would generally place ourselves in the realm of quantitative analysis, somewhere in the sphere normally occupied by statisticians and mathematicians. To summarize, I might quote from the preface to Paul Krugman's popular 1994 book, Peddling Prosperity: Economic Sense and Nonsense in the Age of Diminished Expectations: "An Indian-born economist once explained his personal theory of reincarnation to his graduate economics class. "If you are a good economist, a virtuous economist," he said, "you are reborn as a physicist. But if you are an evil, wicked economist, you are reborn as a sociologist."

Which brings us to the issue of where the dividing line lies between accounting and economics. Indeed, is there a dividing line, or is there something more or less interesting between these two professions.

To answer this, let's first ask the question, what happens when accountants and economists go to war? Here in the U.S., these sorts of internecine conflicts are generally well contained and rarely make the papers. In other countries, however, just the opposite is true.

Take, for example, a recent article appearing in the Sydney Morning Herald, from Sydney, Australia. It seems that the government of our friends "down under" can't decide if economists or accountants should rule the budget battles. In the spirit of the great compromises which make modern democracies work, they've split the baby down the middle, letting economists do some of the heavy lifting and letting accountants do some other chores. In a

business, this sort of division of labor would be coordinated at some level. However, let's never confuse government with business[5].

In short, as summarized by the Sydney Morning Herald, "They don't speak the same language, but the shifty accountants are winning hands down." The Australian government now has two bases of accounting – cash (preferred by economists) versus accrual (the choice of accountants the world over). Further compounding the problem, they also have two different and conflicting accounting standards – the Australian Bureau of Government Finance Statistics versus Australian Accounting Standard No. 31. Now, some simple math would produce four possible permutations of these. Somehow, our creative Aussie friends have managed five, which I will list but not even attempt to define: What they call the "old headline", the underlying cash budget balances, the operating result, the net operating balance, and the fiscal balance.

The fiscal balance, which is the generally preferred 'bottom line', is calculated using the Government Finance Statistics standards, but the government's tables of revenues and expenses, which are supposed to match this bottom line, are – can you guess this without me saying it? – calculated using Australian Accounting Standard No. 31. So, in the words of the Sydney Morning Herald, reconciliation tables have multiplied like weeds. The article goes on to cite the major confusion at the department level, causing some whole government divisions to establish operating budgets wholly separate from the one being debated in the Australian parliament. Fiscal chaos not only reigns, its reign is fairly well uncontested.

Now, a personal aside. I have a very good friend who is a very good banker, an executive vice president of a very large bank headquartered in Charlotte, North Carolina, which

[5] Gittings, Ross, "So Much for Budget Honesty", Sydney Morning Herald, May 15, 2000.

shall remain nameless for reasons which will soon become obvious. My friend wasn't always a banker. He actually started out life as an investigative reporter for the Miami Herald. His work there was quite good, and he was nominated twice for a Pulitzer Prize. How he became a banker is in itself a fascinating story, but well beyond the scope of our little chat today. One afternoon, while sitting on his back porch and consuming all of his spare chardonnays, I asked him what caused otherwise apparently talented young people to major in Journalism. Without pause, he immediately replied, "Because there's no math requirement."

The good journalists in Sydney have, you see, totally missed the point. It's as plain as day that the underlying purpose of all of this silliness is to create meaningful and reasonably well paying jobs for accountants and economists in the employ of the Australian government. I guess the banks are all being run by lawyers down there.

How then do we differentiate what economists do from what accountants do? One way might be a set of normative definitions – looking at various aspects of financial matters and then listing the differences in perspective. In one of his tutorials for his Intermediate Microeconomics Course at Illinois State University, Professor Mark Walbert discusses the differing approaches to the concept of costs[6]. For economists and accountants alike, this is a matter of no small concern, since determining an appropriate definition of costs is implicit to valuing a firm, making production and managerial decisions, optimizing the timing and amount of tax payments, and correctly and fully reporting the well being of the firm to the various stakeholders, such as shareholders and debt claimants.

[6] www.econ.listu.edu/Mark_Walbert/eco240

Professor Walbert tells us that accountants are retrospective. They are trained to look at explicit costs, costs involving direct, out-of-pocket payments for wages, salaries, property rentals, etc. Economists, on the other hand, are trained to look at opportunity costs – the value of something in its next best use. To economists, all costs are opportunity costs. Wages, while an explicit cost, must be at least as high as the opportunity cost of purchasing labor in a competitive market. But in addition to explicit costs, economists consider it just as important to look at the opportunity cost of the owners implicit salary (what the owner could make using his or her skills in their next best use), and the opportunity cost of using up capital equipment (actual depreciation, rather than a formulaic abstract such as sum-of-the-years digits or straight line).

The importance of this difference in perspective can be illustrated by looking at something we call sunk costs – which is one category of explicit costs. A sunk cost is an expenditure that has already been made and cannot be recovered. From a retrospective point of view, the cost of all inputs must be taken into consideration when making production decisions, for example. But from an economists perspective, if a purchased input has no alternative uses, then it has no opportunity cost. That expenditure is "water under the bridge" and should not be considered when making production decisions.

This is not to say that there isn't a fundamental linkage between accounting and economics. In the foregoing example we contrasted the goals of cost accounting with the goals of managerial economics. Tthe acclaimed Nobel Laureate Robert Jensen reminds us that cost accounting had its germination in industrial economics[7]. However, for the most part, the aims and goals of economists within a firm seem regularly to be at odds, as summarized by Mike

[7] Jensen, Robert E., "Academic Versus Practitioner Research in Accounting", the Saxe Lecture in Accounting, City University of New York, April 1, 1982.

Lucas in his recent article in the journal Management Accounting titled "The Pricing Decision: Economists Versus Accountants[8]. Noted accounting Professors Donald Kieso, Jerry Weygandt, and Terry Warfield point out, in the most recent edition of their text Intermediate Accounting that "Profit measures made by accountants may have little usefulness to economists."[9] Indeed, economists are far more interested in cash flow issues while accountants demonstrate a fondness for accrual accounting and the historical costs which lie therein. From an economists perspective – and that's the only one I have – a measure of profit or loss produced by an accountant seems overly stylized and choreographed, following the rubrics of various agreed-upon standards which have overly legalistic definitions. Out of fairness, I rather guess that accountants treat economists estimates with even greater disdain, considering that our profession, if you will allow us to call it that, has correspondingly few, if any, structures and rules.

Exploration of these differences is no mere internecine turf warfare. All joking aside, a substantial amount of public interest is caught up in these definitions. I'll reach outside of the realm of our discussions today for just one example, then I'll bring us back home for a more salient example.

The National Center for Education Statistics is the primary federal agency for collecting and analyzing data related to education, both in the U.S. and globally. In 1999, they sponsored a working paper by Jay Chambers titled "Resources in Education: From Accounting to the Resource Cost Model". Mr. Chambers report focused on two approaches to the measurement of resources in education: an accounting approach and what he calls a "resource based approach".

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[8] Lucas, Mike, "The Pricing Decision: Economists Versus Accountants", Management Accounting 77, June, 1999, 34-35.
[9] Kieso, Donald, Jerry Weygandt, and Terry Warfield, Intermediate Accounting 10th (New York: Wiley, 2000) Chap. 4.

In his words, "The comparison of..." these two "...explores the differences in the way accountants and economists view the concepts of costs and expenditure.[10]"

On the more practical side – at least practical to us in this room – over in Boston, Massachusetts they have a law school called Harvard. Every spring, Professors Howell Jackson, Louis Kaplow, Steven Shavell, and Kip Viscusi, teach a course titled "Analytical Methods for Lawyers: Business, Economics, and Statistics." It consists of seven modules. I won't bore you with a description of all of them, save for one. Module Number Seven is titled "Accounting Concepts". I'll read from the overview of that module. "Definitions of basic terms of accounting, how to read balance sheets, accounting reality versus economic reality.

Accounting "reality" versus economic "reality". Hmmm.....

Are there really two realities? Are the professors at Harvard correct? Or is Mr. Chambers, writing for the National Center for Educational Statistics correct when he talks about differences in the way we "view" things? Do any of you remember the old adage about the various blind men trying to describe an elephant? One feels the tail, and thinks the elephant is shaped not unlike a snake. Another feels an ear, and considers that elephants must be flying creatures. One more feels the trunk, and surmises that the elephant is something like a giraffe.

This analogy falls apart, because neither accountants nor economists are blind. What we ARE, however, is trained to look at things quite differently – to take the different views, as Chambers would put it.

It's important to note that neither of these views is incorrect. Indeed, both views are very correct, given the specifics of the situation. Let's consider, for a moment, the typical business. It

[10] Chambers, Jay G., "Resources in Education: From Accounting to the Resource Cost Model Approach", (National Center for Education Statistics Working Paper No. 199916, June 16, 1999.

has shareholders and creditors, managers and employees, it both manufactures and sells something and then pays the proceeds of that enterprise out to the various claimants. Whatever is left at the end belongs to the shareholders, save for a portion remitted to the government as income taxes. Periodically, it changes it's focus a bit, shifting to changing market realities and new manufacturing technologies.

Does this firm need an accountant or an economist? I would suggest both, but at different times and for different reasons. The accountant? Learned and schooled in reporting the results of operations, in navigating the myriad rules of tax reporting, and in properly providing necessary information to all of the decision makers. I can tell you, as an economist, I have no particular fascination for doing any of that. At this level, by the way, fascination is critically important. When we're talking about complex issues – with complex analysis and onerous analytical processes – you really do need to engage the services of someone with a fascination for what he or she is doing. That is critically important. The last thing in the world you need, in the middle of, say, a lawsuit, is a bored economist.

Going back to our business example for a moment, consider the periodic updates to either the sales activity or the manufacturing strategy. Rarely do these decisions get made in a universe of perfect knowns and well characterized unknowns. Instead, these decisions are usually made in a stochastic environment, characterized by statistical inference and probabilistic outcomes. This is the environment in which the economist works best – taking the historical information, coupling that with appropriate inferential processes, and forecasting the most probable outcomes.

Now, consider if you will this whole field we often call "forensic economics" or "forensic accounting". Where do the two professions interact? It has been my experience that

the accountants usually come in first, and perform what I might refer to as the "financial characterization" of the landscape.

Let me give you an example involving the recent case of the dissolution of a trust. In this particular matter, the trust was never constructed with dissolution in mind. I know, I know, I know. Let's don't EVEN begin castigating the client for this lack of foresight. Let's all admit right now that the simple expedient of inventing a cheap, efficient, and reliable time machine would put nearly all of us in this room out of work – or at least obligate us to do honest, manual labor for a living. As I've said repeatedly, I have four children to feed and educate, and a fairly large chunk of Bellevue Mall to support, so let's don't EVEN go there.

In this particular case, I was called in first to basically establish the rules of engagement. Specifically, how would we ex-post reconstruct, with a compelling and convincing argument, what should have been provided for ex-ante. Given that the stakes in this case were huge – let's say about a billion dollars or so in total assets – I could not take the simple expedient of simply testifying as to how I would have advised these clients in the beginning had I been called in at that time. It was necessary to gather sufficient and compelling market evidence to show that similar trusts divided up the assets among varying classes of claimants in similar trusts were treated in similar fashion.

Compounding this was the fact – and here's where it gets interesting – that profits from similar trusts are generally divided among various classes of claimants in varying proportions according to the type of underlying transaction. In other words, profits from SOME ventures are shared in one way, losses on OTHER ventures are shared in other ways, etc., etc. This meant that someone – an accountant, naturally – had to reconstruct the individual transactions which

occurred over a long span of time and then apply valuation methodologies which I determined from analyzing similar market situations.

Note the division of labor. The accountant established the basis for matter, and the economist estimated how best to divide this basis. In King Solomon's day, the accountant would have weighed the baby and the economist would have advised on exactly where the midpoint of the baby was located.

The accountants job, in this case, was clearly introspective and retrospective, looking at the specifics of information from within the trust itself. The economist, on the other hand, is more interested in inferences which can be drawn from market data outside the firm. Clearly, the accountant is trained and experienced to deal with those "intra-firm" issues, possessing insight and experience the economist doesn't pretend to have. The economist, on the other hand, looks constantly at the surrounding economic landscape, and is familiar with the data sources, the methodologies for drawing inferences from those data sources, and the pitfalls which lie in the dark corners.

As an example, consider the recent case concerning Microsoft – as case in which I was not directly involved and therefore am not privy to all of the facts. As such, and as an economist, I therefore feel overwhelmingly compelled to render a professional opinion in that case whether invited or not. However, I'll limit the scope of my unpaid analysis to a very simple valuation question. If we were to order a split-up of Microsoft, how much money would we be talking about? There is, of course, a temptation to calculate the value of Microsoft on the basis of its closing stock price from yesterday, and I've endeavored to do just that.

However, note if you will that Microsoft trades on NASDAQ, which has a bid-ask quote system. Hence, at the end of the day, do we use the bid price, the ask price, or the last trade price? To be charitable, Microsoft has the thinnest possible bid-ask spread – one cent per share. However, Microsoft also has 5.335 Billion shares outstanding as of their last report. Naturally, this number was wrong the very next day, but let's go with it for the sake of argument. Thus, the "wiggle room", if you will, is one cent times 5.335 billion shares, or fifty-three and a third million dollars.

Now, can I see a show of hands for a moment. How many of you in this room consider fifty-three million dollars to be trivial?

I thought so. Hence, the room for error in a matter such as this is huge. By the way, the last time I checked (which was Wednesday of this week), Microsoft had a 52-week trading range from $40.25 to $96.50. Thus, depending on which day in the past year we chose to value Microsoft's equity (and we're not EVEN considering other claimants here, like debt holders), we would have a margin of error of slightly over $300 Billion dollars.

At the most recent price of Microsoft – let's call it seventy one dollars per share -- the firm is arguably worth $378 Billion. Note for a moment that the aggregate value of the equity interests today is only twenty-six percent higher than the margin of error we discussed a minute ago.

Leaving that aside though, is $378 billion really the aggregate value of the equity? Or what DOES it represent, other than the mathematical product of the number of shares outstanding times Wednesday's trading price? Consider if you will that some – indeed, many – "dot-coms" on the NASDAQ are presently trading for less than the aggregate value of their cash

on hand. In other words, if we could go into the NASDAQ and buy up one of these dot-coms for the aggregate market price of the outstanding shares, this afternoon, the cash in the checking account would cover our acquisition costs BEFORE Dean Witter sent us a settlement statement demanding payment for the trade, three business days from now. There would be cash left over for us to keep. Whatever else we find there – computers, office furniture, slightly used B.M.W.'s, would be toys we could distribute to our kids. How do we reconcile THAT paradox? What is "market value" in the face of seemingly negative ongoing enterprise value? These, by the way, are not merely theoretical questions. Nearly every case I am involved in – and at any point in time, I have 30 or 40 on desk – nearly every case I am involved in concerns a dispute over value, where simple market evidence does not tell a clear or compelling story about the true value of the assets in question.

I have frequently commented, and I will comment again today – my phone NEVER rings for anything normal.

But rarely are the issues even this straight-forward. Consider a simple contract dispute – I've been involved in several identical to this in recent years. Party "A" does something or fails to do something causing party "B" a delay in consummating a deal. Party "B" complains, naturally, claiming some lost profit. Party "A" responds by saying, "Hey, you eventually got your profit, so where's the beef?" The "beef" as it were is the lost opportunity cost associated with the delay in receiving the revenues. The role of the accountant, in this case, is again to measure the basis for the loss – the actual amounts to be received. The economist estimates the timing of those forecasted receipts and the appropriate risk-delineated rates-of-return applied to those receipts to determine the loss to Party "B".

Consider, if you will, a recent case involving an anti-trust matter, specifically restraint of trade. Corporation "A" has been accused of establishing barriers to entry into its market, preventing Upstart Corporation "B" from enjoying the fruits of their labors. The details of the case are inconsequential to this talk. The matter at hand, however, was the interaction of the accountant and the economist in developing an estimate of the damages suffered by Corporation "B". As with many small, upstart corporations, B's bookkeeping practices were not the best in the world. The accountants task was to pick thru the haystack and find the requisite needles which would explain, clearly, just what they DID do. The economists task was to sift thru the market evidence to determine what they COULD HAVE done in the absence of the alleged barriers. It is important to note that only by working together could the accountant and economist develop a cogent set of estimates which were useful in litigation. Note that in the absence of coordination and commonality of purpose, the litigators in this case would be left with the same mess as the Australian government – revenues and expenses that don't balance to the stated totals, incongruent methods and measurement, and inconsistent patterns of growth and funding.

So, it appears we again have accountants reviewing introspective data, while economists review extra-firm or market data. Strictly from a data gathering and simple synopsis or summary statistics perspective, this rudimentary line of demarcation may be sufficient for most forensic analysis cases.

However, the line gets deeper, I think, when we look at the more complex analytical methodologies. In my own perspective, accountants are far more talented at methodical research. For example, the audit process, with its attendant bank reconciliation, inventory

counts, and endless columns of figures is probably well beyond the patience and attention span of the average economist. Indeed, I'm rather sure that the average economist is thoroughly incapable of balancing his or her own checkbook. I can only do my own checkbook with the aid of a Pentium III computer, 128 megs of ram, and some sophisticated software. I also have the expedient of overdraft protection in the case of a hard-drive crash.

Case in point -- the following is an absolutely true story, but the names have been changed to protect the guilty. I was giving a talk in Washington, DC, recently at the National Association of Homebuilders headquarters. The audience consisted almost totally of university economists and policy wonks. At the end of the first day, the chief economist for a leading housing related corporation – I won't mention which one – invited about a dozen of us who were on the program out for dinner. We went to an absolutely wonderful Moroccan restaurant – one of the real "hot" in places where lobbyists take senators and shmooze them into voting one way or another. At the end of the evening, the check came – with tip, eleven hundred dollars. The chief economist in question, a man of excellent integrity, well published in our field, and possessing a nearly unlimited expense account, handed over your friend and mine, Mr. American Express card.

Now, I don't know the exact Moroccan phrase for "we don't take credit cards", but somehow it was conveyed to the Chief Economist that this fancy, Washington DC restaurant, catering to the "power dinner" crowd, only took cash.

You have never seen a funnier sight than a dozen half-drunk economists trying to divide up an eleven-hundred dollar dinner tab. A simple listing of the firms and universities represented at that dinner would undermine the entire economic system of the free world, and potentially

cause a severe devaluation of the dollar on the currency exchange markets. Sufficient to say, I was left without cab fare hunting for an ATM machine at 11:00 at night in downtown D.C.

Clearly, bank reconciliation is not within the economists bag of methodological tricks. However, we are, collectively, absolute wizards at regression analysis. Indeed, the core competency of an economist is quantitative analysis, utilizing cross-sectional and time-series measures to arrive at relationships in data.

Case in point. Assume for a minute that a business has suffered a loss in a particular product line. Some things can be easily measured, such as material costs, labor costs, and overhead application. However, do any of these bear a relationship to the loss in that particular product line?

It sounds trivial, but in fact it rarely is. Businesses are generally quite adept at adapting to changing conditions, usually in very short order. Material costs going up? Change the formulation. Labor costs rising? Become more machine intensive. Often, in litigation, it's necessary to show that certain factors are statistically related to one another, and by means which are generally accepted in the salient field of study. Simple "eye-ball" relationships don't work, especially not in litigation. Appropriate statistical tests are generally required.

I am often called by attorneys in class action suits to deal with economic demography issues. Specifically, does a particular class of individuals have a sufficient degree of economic commonality with respect to an alleged matter to be considered as a class by the courts? This sort of analysis, by the way, is appropriate for both sides in a litigation. We are more often than not called on by plaintiffs attorneys. It's surprising how often the defense attempts to rebut

economic arguments with legal ones. Rare is the judge who fails to see thru this, and in the absence of a sufficient rebuttal opinion, the court rarely has a choice but to certify the class.

Data analysis, correlation statistics....have we left anything out? How about causality? Just because event "A" is highly correlated with disputed outcome "B" does not create a necessary or sufficient condition for "A" to be deemed the cause of "B". Indeed, this sort of statistical correlation, in the wrong hands, can help us demonstrate with a high degree of confidence that increases in the rainfall level in Kansas "causes" an increase in the birthrate of kangaroos in Australia. Or is it the other way around? Without an appropriate causality study, you have an equally compelling argument in favor of either. Hence, if party "A" allows something to happen which allegedly causes a harmful event to befall to party "B", in the absence of a causality study, there is an equally compelling argument that the failure of party "B" to forestall the harmful event indeed caused the event involving party "A".

I was called into a dispute recently – unfortunately too late in the game to properly advise the clients. I was, indeed, being asked to help pick up the pieces and stop the money hemorrhage. Let me describe the salient issues of the case. Mr. Landlord was the owner of a retail site with a vacant parcel and had been approached by Tenant, Incorporated, with the notion of building a custom-designed building and leasing it to Tenant for 20 years. Tenant was creditworthy and a well-known retail chain. Tenant would have been a welcomed addition to the property. Unfortunately, unbeknownst to Landlord, Tenant was having some major internal management problems, and was getting ready to shut down the division in question. (By the way, before I go any further, don't look at my case load and try to guess who this or any other

client might be. For every case I've discussed here, I could have drawn on five similar ones. This particular case, despite one or two peculiarities, is all too common an occurrence.)

The retail site in question was located in a North American city where getting a building permit is nearly impossible. Dealing with that city's government is a Kafka-esque nightmare of proportions unheard-of in nearly any other American city of comparable size. For purposes of this discussion, we'll give that city the fictitious name of "Seattle".

The construction of this building drug on forever, and during that period the Tenant closed shop, cancelled the lease, and shut down the division. In binding arbitration, the arbitrator determined that Landlord was indeed in default on the lease, and owed Tenant a very large sum of money. The amount of that money was to be determined in a subsequent arbitration, but was clearly going to potentially be in the millions of dollars, given the way the first arbitrator structured the first decision. Then, and ONLY THEN, was I hired in the case.

Now, during the analysis of the leases, the normal rates of return due to landlords, the normal and expected costs of constructing the building, the anticipated economic life of the proposed improvements, etc., etc., I felt compelled to ask one simple question which had yet to be explained to me. If, indeed, the tenant was going to end up paying the landlord some money, why then was the name of the case "Tenant versus Landlord"? The attorney who hired me, who also was not on the case during the liability phase, explained that the landlord had been happy to simply drop the whole thing, write it off as a bad experience, and go on and develop the site for another tenant. However, it was the TENANT who originally filed suit, hoping to recover the lost deposit on the lease. How much, I asked, was the deposit in question? Oh, about $60,000, not including legal fees.

Oh, I said. The tenant filed suit for $60,000 minus legal fees (which in King County would be something in the neighborhood of $59,950), and ended up losing a potential judgment in the millions? Ahem. I judiciously asked, doesn't the tenant feel stupid now? The attorney replied, the tenant doesn't feel stupid. The tenant's entire in-house general counsel staff was fired over this, as was the outside counsel. Ahhhh…..I see.

Causality. Sometimes the economics of a situation are clear and compelling. Get an economist. Do a reality check on these issues. I cannot tell you how often I see cases with this same lack of ex-ante analysis.

But causality is not just an analytical issues. Often the task at hand is taking complex issues and translating them into English. Let me give an example. I was recently approached by one of the local television stations to be their consulting economist – not on the air, mind you, but to their advertising clients. As a "service" to their clients, they wanted to do a periodic briefing on the economy of the Puget Sound region.

Now, collectively, marketing types make journalists look like math wizards. As a result, I decided to focus my talk NOT on quantitative measures, such as job growth, employment, and the like. Instead, knowing that these folks were buffeted on a daily basis with facts, figures, and analyses, I spent my time explaining WHY these things occur. How does employment at Microsoft translate into housing on the Samammish Plateau? Why are paper incomes in this area so huge yet there is so little accumulation of investment capital here? Why does Boeing do what it does? To an economist, these things are relatively self evident, and often we fail to explain them in a clear and compelling fashion.

Data gathering and analysis.

Statistical Inference

Causality.

These are the key issues which involve the Economist in a Lost Profits and Damages issue. What I've tried to do today is outline three things. First, what an economist does, separate and apart from what an accountant does, in matters such as these. Second, I've tried to show the special tools and techniques an economist uses to analyze these cases. Finally, I've hopefully been able to illustrate all of this with some actual examples from our case load which will give you insight into what we do.

I'd like to close with a couple of case-management observations. Attorneys, faced with the need to maintain a tight budget on cases, are often faced with the question, "why hire two experts when one will do?" Accountants, similarly, may be asking, "why bring in an economist when I can learn this stuff and do both parts of the analysis?"

I'd answer both of these by citing the Law of Comparative Advantage, developed by the great economist David Ricardo back in the 19th century. It's actually something of a paradox, and in fact we present it to freshman economics students just because it's such a powerfully instructive tool into the subtle insights of economic analysis.

Consider, if you will, Great Britain at the height of it's world dominance. As a country, it was full of very talented people and, interestingly enough, very productive farmland. It still is today, by the way. Now, consider tiny Belgium, just across the channel. Assume for a moment that there are two and only two products which both England and Belgium produce for potential export – wool and mutton chops. Britain is highly advanced at both of these, but is SLIGHTLY more efficient at producing mutton chops than it is at producing wool. Belgium is inferior to

Britain in the production of both of these products, but between the two products is slightly more efficient at wool production.

The "rookie" response – the one you get from freshman economics students before you explain the paradox to them – is that Britain should produce both for it's own internal consumption, export whatever they don't consume and simply ignore Belgium.

However, the Law of Comparative Advantage shows us that the real answer to the problem is for Britain to focus ALL of it's energy on mutton chops and for Belgium to focus ALL of it's energy on wool production, and for the two countries to trade with one another. Quantitatively, not only to both countries end up better off than they would otherwise have been, but the total production of the two countries is actually maximized that way.

Now, not withstanding the incontrovertible implications for NAFTA and the WTO, the implications for accountants and attorneys is simple. By economists doing what we do best, and by accountants doing what THEY do best, not only are we mutually more efficient, but the client (not only the attorney but also the ATTORNEY's client) ends up better off than he or she would otherwise have been.

Thank you, and I'm now open to questions.