

STOCK PRICES
AND SOCIAL WEALTH

Lynn A. Stout

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Abstract

A rise in the price of a company's stock is commonly believed to signal an equivalent rise in both the value of the company, and in aggregate social wealth. This belief can be traced to three influential ideas in modern finance: the Efficient Capital Market Hypothesis (ECMH); the Capital Asset Pricing Model (CAPM); and what might be called the principal-agent or shareholder primacy model of the firm. In the decades since these ideas were first developed, scholars have produced an extensive body of theoretical and empirical work that revises, extends, and in some cases challenges them. This article reviews some of that work and concludes that the relationship between stock prices and social wealth is far more indirect and complex than generally understood, even if investors are assumed to be rational. It offers examples of a variety of situations in which stock prices predictably will fail to capture corporate value, and suggests a research agenda for developing more accurate means of measuring the corporate sector's capacity to generate social wealth.

* Professor of Law, Georgetown University Law Center; Visiting Professor, Harvard Law School.

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Introduction

What is a public corporation worth? According to increasing numbers of academics, policymakers, and businesspeople, the best place to look for an answer is the market price of the firm's stock. If the price of the company's shares rises, the firm's value (and with it, aggregate social wealth) are assumed to have increased. Conversely, if stock price falls, both company's value and net social wealth are thought to have declined.

Rising stock prices undoubtably increase the wealth of the lucky shareholders who manage to "buy low and sell high." But the more interesting question -- and the one I address in this paper -- is whether the same can be assumed to be true either for the shareholders who chose *not* to sell, or for the broader society. On first inspection, the notion that a stock's price accurately reflects the value of the underlying company appears to enjoy strong support from economic theory and especially from three pillars of modern corporate finance: the Efficient Capital Markets Hypothesis (ECMH); the Capital Asset Pricing Model (CAPM); and what might be called the "shareholder primacy" model of the firm. Taken together, these three ideas produce the prediction that a change in the price of a company's equity shares mirrors an equivalent

change in the value of the company.¹ Hence the claim that a rising stock price signals an equivalent increase in social wealth.

In this article I reexamine that claim. The idea that stock prices accurately measure corporate value has always coexisted uneasily with a darker view that sees the stock market as disconnected from the real economy.² Recent events have fed skepticism about how strong the relationship between stock market prices and social wealth really is.³ Even among finance theorists, it has become fashionable to suggest that prices may be influenced by investor irrationality and cognitive defects.⁴

¹ In brief, the ECMH predicts that market prices incorporate new information relevant to stock values very quickly, see text accompanying notes 10-16, *infra*; the CAPM predicts that those prices reflect investors' rational estimates of future risks and returns, see text accompanying notes 37-38, *infra*; and the shareholder primacy model holds that shareholders are the sole residual claimants in the firm, so that an increase (or decrease) in the value of the company manifests itself as an identical increase (or decrease) in the value of the shareholders' interest, see text accompanying note 57, *infra*.

² See, e.g., John M. Keynes, *The General Theory of Employment, Interest, and Money* 156 (1936) (describing market as a "beauty contest" in which investors seek to identify not the best stock, but the stock that appears best to others).

³ Recent dramatic swings in market prices have lead business leaders and the financial press to question whether market prices are determined by investors' rational estimates of companies' likely future earnings, or by psychological factors such as fear, greed, and "irrational exuberance." Greg Ip, *Market on a High Wire*, *Wall St. J.*, January 18, 2000, at C1.

⁴ See Eugene F. Fama, *Market Efficiency, Long-Term Returns, and Behavioral Finance*, 49 *J. Fin. Econ.* 283 (1998) (surveying and discussing studies); Alon Brav & J. D. Heaton, *Competing Theories of Financial Anomalies* (manuscript on file with the author) (surveying and discussing various papers on behavioral finance); see, e.g., Robert J. Shiller, *Irrational Exuberance* (2000); Andrei Shleifer, *Inefficient Markets: An Introduction to Behavioral Finance* (2000). A particularly provocative example of this approach can be found in the hypothesis that the recent rise in the stock market can be traced to the widespread use of antidepressants like Prozac and Zoloft. See Richard Teitelbaum, *Investing Diary: A Psychiatric Theory on Irrational Exuberance*, *N. Y. Times*, March 5, 2000, at C7.

There may be much to learn from such behavioral theories of stock prices. But before we abandon economic analysis in favor of putting the stock market on the psychiatrist's couch, I believe we ought to re-examine economic theory to see if we can squeeze more out of it. Like all theories, the ECMH, CAPM, and shareholder primacy model of the firm are simplifications of a complex reality. In the years since they were first developed, a new generation of economists, finance theorists, and legal scholars has produced an extensive body of literature that revises, extends, and elaborates upon them. Unlike "modern" finance theory (meaning the original and highly-simplified versions of the ECMH, CAPM, and shareholder primacy model first developed by pioneering theorists in the 1950s, '60s, and '70s), this "postmodern" work suggests that the relationship between stock prices and social wealth may be far more indirect and complex.

That possibility carries important consequences not just for theorists, but also for lawmakers, businesspeople, investors, and society as a whole. The notion that a stock's price accurately measures the value of the underlying company has influenced the evolution of business law and scholarship in a number of important areas.⁵ Chief among these are our basic beliefs about how we should measure and promote good corporate governance. On first inspection, stock prices appear to offer an easy way to measure a corporation's capacity to generate wealth for shareholders and the larger society. As a result, academics and policymakers

⁵ For example, the idea that stock market prices accurately reflect the value of large corporations provided the foundation for the Securities and Exchange Commission's adoption of the integrated disclosure system, see Lynn A. Stout, *Are Takeover Premiums Really Premiums? Market Price, Fair Value and Corporate Law*, 99 *Yale L. J.* 1235, 1237 & n. 17, 1293-95 (1990) (discussing integrated disclosure), as well as the passage by a number of state legislatures (including Delaware's) of "stock market exceptions" to traditional shareholder appraisal rights, See Peter V. Letsou, *The Role of Appraisal in Corporate Law*, 39 *Boston. Col. L. Rev.* 1121 (1998); Robert B. Thompson, *Exit, Liquidity, and Majority Rule: Appraisal's Role in Corporate Law*, 84 *Geo. L. J.* 1(1995).

frequently gauge the wisdom of changes in corporate law and policy by looking to whether such changes tend to increase or decrease share prices.⁶ Similarly, the claim that stocks accurately measure corporate value — a claim supposedly derived from economic theory — has led many business leaders and corporate scholars today subscribe to a “shareholder primacy norm” that declares that corporate managers should keep their eyes firmly fixed on the overriding goal of maximizing the market value of the firm’s shares.⁷ Thus it has become commonplace for firms to compensate officers and directors primarily through options and stock-based compensation schemes in the effort to properly “incentivize them,” and for commentators to applaud such arrangements on the grounds they promote economic efficiency.⁸

But if stock prices do not in fact accurately measure corporations’ capacity to generate social wealth, a single-minded focus on maximizing share price may lead to significant inefficiencies and misallocations. Thus it seems worthwhile to investigate more carefully the relationship between stock prices and social wealth.⁹ I do so below in the light of several recent

⁶ See, e.g., text accompanying notes 30-32, *infra* (describing event studies).

⁷ See text accompanying notes 57, 66 *infra* (describing shareholder primacy as “orthodox” view).

⁸ See, e.g., James E. Heard, *Executive Compensation: Perspective of the Institutional Investor*, 63 *U. Cin. L. Rev.* 749 (1995) (arguing that stock-based incentive compensation plans align shareholder and manager interests); see generally Randall S. Thomas & Kenneth J. Martin, *The Effect of Shareholder Proposals on Executive Compensation*, 67 *U. Cin. L. Rev.* 1021 (1999).

⁹ It is well understood that a stock price increase may not signal increased social wealth when a firm makes false disclosures, or improves its profit line by breaking contracts or violating the law in a fashion that imposes external costs on others (e.g., polluting). In this article, however, I consider the possibility that there can be a disconnect between price changes and changes in firm value even when the firm keeps its contracts and is otherwise law-abiding.

developments in economic thinking about corporations and stock prices. In particular, I reexamine the standard ECMH, CAPM, and shareholder primacy models, and consider how plausible modifications to each of these theories change their predictions in important ways. In the process I hope to demonstrate that if we are willing to let things get just a bit more complicated, economic analysis still has much to offer in our inquiry into the both workings of the stock market, and the best way to measure the economic contributions of public corporations. But it also gives reason to question the strength of the relationship between stock prices and social wealth.

1. The Efficient Capital Markets Hypothesis

To understand the limits of the claim that stock prices reflect social value, it is necessary to examine the theoretical foundations of that claim. Let us begin with the Efficient Capital Market Hypothesis (ECMH).

The ECMH is perhaps best understood as an empirical claim about the speed with which market prices adjust to new information.¹⁰ A market is said to be “efficient” with regard to a particular piece of new information if prices adjust so quickly to that information that it is impossible for the average investor to profit from trading on it. For example, the investor who decides to sell in response to an announcement of a decline in corporate earnings will find that by the time she has called her broker, the market price of her stock has already declined. Similarly,

¹⁰ Perhaps the classic legal article discussing the ECMH is Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 *Va. L. Rev.* 549 (1984). See also Richard A. Brealey & Stewart C. Myers, *Principles of Corporate Finance* 349-376 (6th ed., 1990); Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 *J. Fin.* 383 (1970).

an investor who wants to buy on good news discovers that by the time she places her order, the market price has already risen. The net result is that it is impossible for the average investor to “beat the market” by trading on publicly-available information.¹¹

Put more formally, a market is said to be efficient with regard to some particular bit of information if stock prices would not be changed by revealing that information to all investors.¹² In other words, market prices behave as if all investors already “know” the information. This formulation highlights an underlying puzzle of market efficiency. Information like other resources is costly, and the cost of acquiring a particular type of information may vary substantially from investor to investor. Even when a particular piece of data is technically in the public domain, it seems likely that in many cases it would only be obtained (or analyzed) by a subset of all investors. In other words, the fact that information may be “public” does not necessarily imply that all investors are actually aware of it. So how can the market act as if they were?

A number of explanations have been offered for how information known to only a small subset of investors may be fully incorporated into market prices.¹³ As a general rule, these

¹¹ The discussion that follows focuses on the standard claim that the stock market is efficient with regard to information that is technically available to the public, even though it may be expensive or inconvenient to obtain, and even though it may be difficult for the lay investor to decipher. Among theorists this is commonly known as “semi-strong” market efficiency. See Fama, *supra* note 10; Brealey & Myers, *supra* note 10, at 358. “Strong” market efficiency is the more-controversial claim is that the market also fully incorporates proprietary corporate information that is not available to the public, such as news of confidential merger negotiations. *Id.*

¹² Burton G. Malkiel, *Is the Stock Market Efficient?* 243 *Sci.* 1313, 1314 (1989); Gilson & Kraakman, *supra* note 10, at 557-58.

¹³ See Gilson & Kraakman, *supra* note 10, at 568-588 (reviewing theories).

explanations focus on the idea that the information gets into price through the trading activities of the informed subset. For example, if the informed subset buys large quantities, their transactions may drive prices upward through “price pressure.”¹⁴ Alternately, other, less-well-informed investors may be able to extract information about the appropriate market price from the informed subset’s transactions through “price decoding” and “trade decoding.”¹⁵ Either way, market efficiency depends on the arbitrage trading of a minority of investors to drive prices to appropriate levels.¹⁶

In the years following the development of the ECMH the theory has been subject to extensive empirical testing. Researchers have analyzed how quickly market prices respond to public announcements of stock splits, dividend changes, and corporate mergers. And they have found that prices appear to respond to such information almost immediately, with most of the change occurring within hours or even minutes of the announcement.¹⁷ The steady accretion of such evidence led finance theorists at one point to view the ECMH as empirical fact. As

¹⁴ Gilson & Kraakman, *supra* note 10, at 570 n. 67. This intuitively attractive idea is actually quite controversial, as it presumes that the demand curve for stocks is downward-sloping rather than horizontal, inconsistent with the standard CAPM. See text accompanying notes 37-43, *infra*.

¹⁵ Gilson & Kraakman, *supra* note 10, at 570 n. 67.

¹⁶ It should be noted that arbitrage trading cannot be expected to produce perfectly correct prices. Some degree of mispricing must persist in the market, or arbitrageurs would have no incentive to incur the costs associated with identifying and trading mispriced securities. Thus we should expect “an efficient amount of inefficiency” in the market. See generally Sanford Grossman & Joseph Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 *Am. Econ. Rev.* 393, 395 (1980). However, in a liquid market where transactions costs are small, this should produce only slight deviations between price and value.

¹⁷ See Brealey & Myers, *supra* note 10, at 358-360 (describing studies); Gilson & Kraakman, *supra* note 10, at 555-57 (same).

Professor Jensen put it in 1978, “there is no other proposition in economics which has more empirical evidence supporting it than the efficient markets hypothesis.”¹⁸

But let us consider for a moment the *kind* of information researchers initially used to test the efficient market hypothesis. Merger announcements and public reports of stock splits are both widely disseminated and relatively easy for investors to understand. What happens when new information becomes available, but investors must invest substantial time, trouble, or money to get it? What happens when the information is technical and difficult to understand? Do prices still change within hours or minutes?¹⁹

Recent studies suggest that the answer to this last question may be “no”.²⁰ Many types of information that are highly relevant to assessing the economic health of firms appear to be incorporated into stock prices far more slowly and incompletely than the conventional view of market efficiency would suggest. Consider a recent study by Professors Chang and Suk of market reactions to the *Wall Street Journal*’s weekly “Insider Trading Spotlight” column.²¹ Section 16 of Securities Exchange Act of 1934 requires a corporate officer, director, or large shareholder who buys or sells shares in her own company to report such “insider trading” to the

¹⁸ Michael Jensen, Some Anomalous Evidence Regarding Market Efficiency, 6 J. Fin. Econ. 95, 95 (1978).

¹⁹ As Professors Gilson and Kraakman have noted, one of the critical questions to be answered in assessing market efficiency is “[h]ow long does it take?” Gilson & Kraakman, *supra* note 10, at 560 (emphasis in original).

²⁰ See Brealey & Myers, *supra* note 10, at 363-365 (discussing studies).

²¹ Saeyoung Chang & David Y. Suk, Stock Prices and the Secondary Dissemination of Information: The Wall Street Journal’s “Insider Trading Spotlight” Column, 33 Fin. Rev. 115 (1998).

Securities Exchange Commission (SEC), where the report becomes available to the public.²² The market follows Section 16 reports closely, because corporate insiders are thought to have access to valuable information and knowledge about the firm which is not available to the public and so is not already reflected in market prices.²³ The filing of a Section 16 report for a particular firm's stock is accordingly usually followed by an appropriate price change (that is, a price rise on news that insiders are buying, and a price decline on news that insiders are selling). In effect, a Section 16 filing seems to convert formerly "private" information into "public" information that is rapidly incorporated into market price.

But how rapidly? Although the SEC generally makes Section 16 filings available to the public on same day they are received, to read them an interested investor must go to the SEC's reading room or subscribe to an online service.²⁴ Alternatively, if the investor is willing to wait a few days, she can get the same information by buying a *Wall Street Journal* for 75 cents and reading the weekly "Insider Trading Spotlight" column. Chang and Suk examined price changes in stocks on which insiders had filed Section 16 reports, focusing on two different time periods. First they looked at price changes on the day the reports were initially filed at the SEC. Then they looked at price changes on the day the reports were republished in the *Wall Street Journal* (on average, ten days later). Remarkably, they found significant price changes on both dates.²⁵

²² See generally Thomas Lee Hazen, *The Law of Securities Regulation* 626-654 (2d ed., 1990).

²³ See note 11, *supra* (strong versus semi-strong market efficiency).

²⁴ Chang & Suk, *supra* note 21, at 115-117.

²⁵ *Id.*

This finding strongly suggests that the market's initial response to the Section 16 filings was incomplete and/or delayed.²⁶

A related example of the apparently incomplete and delayed response of market prices to new information may be found in the widely-studied phenomenon of “post-earnings-announcement-drift.” A number of researchers have found that when a corporation announces an unanticipated increase in earnings, this announcement will tend to be followed by abnormal positive returns in the firm's stock over the next several months. Conversely, corporations that announce bad earnings news see abnormal negative returns over an extended period.²⁷ Finance theorists have puzzled over these results. Some have concluded that drift is evidence that the initial price response to the new earnings information is incomplete and that the full implications of the new earnings information are digested by the market far more slowly than previously suspected.²⁸

What accounts for such a delayed and incomplete market response? One obvious possibility is that the arbitrage trading thought to drive market efficiency may in fact have far more limited power to move prices than previously believed. Put differently, when a particular piece of information first becomes “available” to the public, positive and differential information

²⁶ See Chang & Suk, *supra* note 21, at 124 (concluding that “it may well be that if the initial disclosure ... is not widely disseminated to the investing public, the secondary dissemination of the information can effect stock prices ...”).

²⁷ See Victor L. Bernard & Jacob K. Thomas, *Post-Earnings-Announcement Drift: Delayed Price Response or Risk Premium?* 27 *J. Accounting Research* 1, 5 (1989) (reviewing studies); see generally Brealey & Myers, *supra* note 10, at 364-365.

²⁸ Bernard & Thomas, *supra* note 27, at 4-5. An alternative explanation for post-earnings-announcement drift is that the Capital Asset Pricing Model used to calculate abnormal returns is either incomplete or misspecified. *Id.* at 5 (studying and rejecting this explanation).

costs often ensure that it is actually acquired and understood by only a minority of investors. Other investors remain unaware of it. And (here we depart from the conventional view) these unaware investors have a significant “dampening” influence on aware investors’ ability to change prices by trading.²⁹

This possibility suggests a picture of market efficiency quite different from the standard one. The conventional view of market efficiency see the process of information adjustment as binary, like flipping a switch. Information is either public or private, either “in” or “out” of the market price. But the flow of information into prices may more closely resemble the flow of a fluid into a vessel. How full the vessel gets, and how quickly, depends on both the diameter of the channel through which the fluid flows (how widely the information is disseminated) and the viscosity of the liquid (how complex, technical, or difficult to understand the information may be). Thus information which is easy to understand and which is trumpeted in the business media (for example, merger announcements or news of a stock split) may indeed be incorporated into market prices almost instantaneously. But information that is “public” but difficult to get hold of, or information that is complex or requires a specialist’s knowledge, may take weeks or months to change prices. Indeed it may never be fully incorporated at all.

This view of market efficiency as an incremental rather than a binary process offers a number of important lessons for our understanding of good corporate governance. Some of these lessons are of interest primarily for academics. For example, it has become a popular practice among corporate scholars in recent year to try to measure the desirability of changes in corporate

²⁹ This possibility raises the following puzzle: how can a single market price exist when investors who are relying on differing information subsets have differing views of appropriate market prices? I consider this question in detail in Part II, *infra*.

practice or legal rules by looking to see whether such developments increase or decrease share prices. Such “event studies” frequently find that an apparently important change in corporate law or practice -- an unanticipated Delaware Supreme Court opinion, a firm’s announcement of its plans to reincorporate in another state, or a state’s adoption of an “antitakeover” statute -- have no statistically significant effect on market prices.³⁰ From this, it can be tempting to conclude that the relevant event did not change the value of the underlying firm.

Event studies can be criticized for a variety of reasons.³¹ But an incremental model of market efficiency suggests we should be particularly reluctant to draw conclusions from event studies that fail (as many do) to find any statistically significant price response to a proposed change in corporate law or structure. Perhaps the market failed to react because the proposed change neither increased nor decreased the value of the firm. But perhaps investors simply didn’t bother to invest the resources necessary to detect, or understand the implications of, the event

³⁰ See, e.g., Elliott J. Weiss & Lawrence J. White, *Of Econometrics and Corporate Law: A Study of Investors’ Reactions to “Changes” in Corporate Law*, 75 *Calif. L. Rev.* 551 (1987) (testing market reaction to unanticipated Delaware Supreme Court decisions, and finding none); Peter Dodd and Richard Leftwich, *The Market for Corporate Charters: “Unhealthy Competition” versus Federal Regulation*, 53 *J. Bus.* 259 (1980) (finding no market reaction to corporate decision to reincorporate in Delaware); Roberta Romano, *the Political Economy of Takeover Statutes*, 73 *Va. L. Rev.* 111, 181-185 (1987) (testing for market reaction to legislative adoption of antitakeover statutes and finding none); see also David Tabak & Frederick Dunbar, *Materiality and Magnitude: Event Studies in the Courtroom* (unpublished manuscript on file with the author, available on SSRN) (arguing for greater use of event studies in litigation).

³¹ For example, it may be uncertain when a planned change in corporate law or practice first becomes known to the public. Romano, *supra* note 30, at 182 (discussing problem in context of antitakeover statutes); John C. Coates, *The Contestability of Corporate Control: A Critique of Scientific Evidence on Takeover Defenses*, (unpublished manuscript on file with the author, available on SSRN) (discussing problem in context of corporate decision to adopt poison pill).

being studied. In other words, false negatives are likely to be an endemic problem in event studies.³²

Other lessons can be drawn from the incremental model that may be of particular value to policymakers. Consider, for example, what the incremental view of market efficiency implies about accounting treatments. Business and accounting professionals frequently talk and act as if publicly-announced changes in accounting treatments influence stock prices, even though the economic reality of the firm is unchanged and even though this should be obvious to an informed observer. Thus corporate executives practice the art of “earnings management,” while the SEC tries to reign them in.³³ Similarly, in recent years many firms have sought to use pooling of interests rather than purchase accounting in corporate mergers, while the Financial Accounting Standards Board has responded with a proposal to eliminate pooling of interests.³⁴

³² This observation does not imply that event studies are valueless. To the contrary, a finding of a statistically significant market response may be strong evidence that the event in question has indeed changed investors’ views of the value of their equity interest in the underlying firm. But see text accompanying notes 44-50, *supra* (describing situations in which prices might change even if value of underlying firm remains constant). But the failure to detect a market response may tell researchers little or nothing.

³³ See Paul K. Chaney & Craig M. Lewis, *Earnings Management and Firm Valuation Under Assymmetric Information*, 1 *J. Corp. Fin.* 319 (1995) (describing widely-held belief that corporate officers manage earnings); Chairman Arthur Levitt, *Remarks at the NYU Center for Law and Business* (September 28, 1998) (transcript on file with author) (announcing SEC initiative to curb perceived growing problem of earnings management). An example of the power -- and danger -- of earnings management can be found in the case of Microstrategy, Inc. On March 20, 2000, Microstrategy lost over 60 percent of its market value on reports of restated earnings due to changes in the way it booked revenues from large contracts. Nick Wingfield & Paul Beckett, *Microstrategy, Results Restated, Is Macroloser*, *Wall St. J.*, March 21, 2000, at B1.

³⁴ See Robert Tie, *The Battle over Pooling of Interests*, 188 *J. Accountancy* 14 (1999) (describing common belief that pooling of interests produces higher stock prices and FASB proposal to require purchase accounting).

Academics may be tempted to sniff at these battles on the theory that in an efficient market, such “window dressing” is ineffective and should not be cause for concern. An incremental model of market efficiency suggests, however, that the managers and regulators may well be right. If large numbers of investors are unwilling to invest the effort necessary to understand and follow accounting conventions, and if the opinions of these ignorant investors influence market prices, window dressing can work. Correspondingly, regulatory attempts to limit window dressing can help promote more informative stock prices.

More broadly, an incremental model of market efficiency raises the disturbing possibility that our accounting and disclosure systems have failed to keep pace with our technology, and that as a result stock prices may be even poorer measures of corporate performance in the “New Economy” than they were in the old. The reason has to do with the likelihood that present accounting systems are particularly poor at quantifying (and the market as a consequence especially slow to recognize and respond to) certain types of information that have become quite important in valuing companies. In particular, it may be difficult for the market to digest theoretically “available” information about intangible assets such as intellectual property, customer loyalty, or employee human capital.³⁵ And such intangibles make up an ever-greater

³⁵ It should be noted that corporate insiders can exploit this possibility. Consider the hypothetical case of a bank that has for years enjoyed a quality labor force and great customer loyalty. Now suppose the bank’s managers start firing employees and cutting back on customer service in order to raise reported net earnings. This strategy may significantly boost stock price for some time, because investors can easily see and understand the reported increase in accounting net income but find it more difficult to detect eroding employee and customer loyalty. And while the firm may suffer in the long run, managers may profit if they have been paid in stock options or are planning to retire or change jobs in the near future. Business commentators have expressed concern about the growing incidence of such “corporate liposuction.” See Louis Lavelle, ‘Corporate Liposuction’ Can Have Nasty Side Effect, *Bus. Wk.*, July 17, 2000, at 74 (discussing problem and reporting results of study that found that of 50 large companies that used

portion of firm value. As recently as 1978, the book value of the property, plant and equipment of publicly traded corporations in the U.S. accounted for 83% of the market value of firms' outstanding debt and equity. By 1997, this figure had dropped to less than one third.³⁶ Without the benefit of good accounting measures, how can investors value the other two-thirds? The incremental model of market efficiency suggests: not well.

II. The Capital Asset Pricing Model

As discussed above, substantial empirical evidence suggests that some types of information are incorporated into market prices only slowly and incompletely. But suppose this were not true. Suppose instead the evidence unreservedly supported the claim that market prices react to new information (to the extent they react at all) virtually instantaneously. Can we assume if the market responds *quickly* to new developments, that it also reacts *accurately*?

Taken alone, the ECMH speaks only to the speed with which prices change in response to new information. It says nothing about the accuracy of the result as a reflection of the discounted present value of firms' future earnings. In order to advance from the notion that stock markets react quickly to information to the claim that stock prices are accurate, we need to add a

cost-cutting strategies to raise reported earnings at least five times faster than sales, forty-three suffered significant downturn in earnings growth within three years; noting that managers nevertheless may be tempted to "go for the quick hit" because of "[p]ressure from Wall Street to make the quarterly numbers . . . and the desire to boost the value of the stock and options that make up an increasingly large portion of their compensation packages."

³⁶ Margaret M. Blair & Thomas A. Kochan, *The New Relationship: Human Capital in the American Corporation 2* (Brookings 2000).

second theoretical concept: the Capital Asset Pricing Model (CAPM).³⁷ The CAPM posits that investors value securities according to only two criteria: expected return, and expected nondiversifiable (or market) risk.³⁸ Because investors like returns but dislike risk, there is an inverse relationship between the two. Moreover, this relationship is linear. As the market risk associated with a particular security increases, the expected return investors demand before they are willing to hold that security increases in direct proportion.

When the CAPM is combined with the ECMH, the two theories on first inspection appear to produce a prediction that stocks with identical estimated levels of market risk should trade at prices that imply identical expected rates of return. After all, if this were not true, it would be public information that one was a bargain relative to the other, and traders would quickly arbitrage the difference away. Hence the notion that the market price of a stock reflects the best possible estimate of its “fundamental value” given the available information.

But a careful re-examination of the CAPM reveals that this conclusion verges on a tautology. The pioneering theorists who first developed the CAPM began their work with the express assumption that all investors share homogenous expectations regarding the likely future returns and risks associated with securities. In other words, they assumed *that all investors*

³⁷ See Brealey & Myers, *supra* note 10, at 195-203.

³⁸ Finance theorists refer to variations in returns as “risk”. Some sources of risk are unique to particular corporations. Thus airline company stocks are likely to fall when fuel prices are high, while the prices of oil firms rise. Because investors can eliminate such “firm-specific” risk by simply holding a diversified portfolio, they do not demand additional returns in order to hold stocks that have a high firm specific risk. However there are some sources of risk due to macroeconomic factors that effect all stocks in the same way. Diversification cannot eliminate such “market” risk. Therefore, investors demand a higher return before they are interested in buying stock of a company with a high degree of market risk.

agree.³⁹ This simplifying assumption may be harmless when using CAPM to describe the individual investor's attitude towards risk and return. But when CAPM is used, explicitly or implicitly, to argue that the market prices securities accurately, the reasoning becomes circular. After all, if investors make identical estimates of securities' future risks and returns, it is inevitable that the market should mirror this "best" estimate because there is only *one* estimate — the estimate of the homogenous investor.

What happens to the CAPM if we assume, more plausibly, that investors hold disagreeing opinions about the likely future risks and returns of stocks? On first inspection, disagreement appears to make a market price impossible. (Consider a highly simplified market with only two disagreeing investors, a bull and a bear. No equilibrium price would exist because the bull and bear would place infinite bets against each other.) But if we assume some form of market incompleteness -- for example, investor risk aversion or short sales restrictions -- an equilibrium

³⁹ See William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 *J. Fin.* 425, 427 (1964); John Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47 *Rev. Econ. & Stat.* 13, 14 (1965). Interestingly, Sharpe and Lintner both subsequently published work on asset pricing under conditions of investor heterogeneity. See William F. Sharpe, *Portfolio Theory and Capital Markets* 104-113 (1970) (chapter entitled "Disagreement")(hereinafter *Disagreement*); John Lintner, *The Aggregation of Investor's Diverse Judgments and Preferences in Purely Competitive Securities Markets*, 4 *J. Fin. & Quant. Analysis* 347 (1969)(hereinafter *Diverse Judgements*). Jack Treynor is a third individual often credited with developing the CAPM, although his article on the subject is not published. Brealey & Myers, *supra* note 10, at 195 n.10. Treynor's recent work also considers the role of heterogeneous expectations in markets. See, e.g., Jack Treynor, *Bulls, Bears and Market Bubbles*, 54 *Fin. Analysts J.* 69 (1998).

emerges.⁴⁰ And the nature of that equilibrium offers a wide variety of explanations for otherwise-puzzling market phenomena.

In illustration, consider a relatively simple variant of the CAPM that incorporates realistic assumptions of investor disagreement, risk aversion, and limitations on “short sales.”⁴¹ When investors disagree in their valuations of particular stocks, they prefer to buy stocks they believe are underpriced and avoid stocks they perceive as overpriced. Thus particular securities tend to be held by those individuals who subjectively place the highest value on them. Indeed, if investors were not risk averse, the entire stock of a firm’s shares might end up in the hands of the single individual who subjectively valued the stock most highly.

⁴⁰ For discussions of how equilibrium prices can be set under conditions of uncertainty, see, e.g, Sharpe, Disagreement, *supra* note 39; Lintner, Diverse Judgments, *supra* note 39; Treynor, *supra* note 39; Edward R. Miller, Risk, Uncertainty, and Divergence of Opinion, 32 *J. Fin. Econ.* 1151 (1977); Joseph T. Williams, Capital Asset Prices with Heterogeneous Beliefs, 5 *J. Fin. Econ.* 219 (1977); Robert Jarrow, Heterogeneous Expectations, Restrictions on Short Sales, and Equilibrium Asset Prices, 35 *J. Fin.* 1105 (1980); Joram Mayshar, On Divergence of Opinion and Imperfections In Capital Markets, 73 *Am. Econ. Rev.* 114 (1983); Ramon Rabinovich and Joel Owen, Non-Homogeneous Expectations and Information in the Capital Asset Pricing Model, 33 *J. Fin.* 575 (1979); Hal R. Varian, Divergence of Opinion in Complete Markets: A Note, 40 *J. Fin.* 309 (1985); see also Stout, *supra* note 5; Lynn A. Stout, How Efficient Markets Undervalue Stocks: CAPM and ECMH Under Conditions of Uncertainty and Disagreement, 19 *Cardozo L. Rev.* 475 (1997); and Richard A. Booth, Discounts and Other Mysteries of Corporate Finance, 79 *Cal. L. Rev.* 1053 (1991).

⁴¹ “Short selling” is the practice of selling a borrowed security in the hope that the price will soon fall and the seller will be able to repurchase the security more cheaply in the market when the time comes to return it to its original owner. Short selling thus amounts to a bearish bet on a price decline. Short sellers generally face a variety of significant legal and practical obstacles. For example, it is often difficult to find an investor who is willing to lend the security they want to short, and exchange rules generally require short contracts to expire within six months. See Lynn A. Stout, *Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives*, 48 *Duke L. J.* 701, 729-30, 757 (discussing obstacles to short selling). Readers who have any doubt about the practical effect of such problems can simply ask themselves: how much of my personal portfolio is in short positions?

But risk aversion limits an investor's willingness to put all of her wealth into a single asset, because this strategy requires her to bear market risk she could avoid by holding a more-diversified portfolio. Thus risk aversion will often lead an investor to stop buying a particular security even though she still believes it to be underpriced. What might induce her to buy more? Lowering the price, which creates a subjective "risk premium" to compensate her for the increased market risk she must suffer if she increases her holdings. And lowering the price may also make the stock attractive to other, relatively less-optimistic investors. Thus even at a very high price, a firm may be able to sell a small amount of stock to a small number of relatively optimistic investors. But if the firm wants to sell more shares it must lower the price. This increases demand for the stock both because less-optimistic individuals who do not already own it become interested and decide to buy, and because the existing, more-optimistic but risk-averse shareholders will be willing to purchase more shares.

The net result is a classic, downward-sloping demand function for any particular company's stock. Although this notion might seem plausible (even obvious) to nonexperts, it was once quite controversial among financial economists. The controversy stemmed from the fact that the standard CAPM, when combined with efficient market theory, predicted that all stocks should be accurately priced and no stock should be a bargain relative to any other. Thus all stocks should be perfect substitutes and the demand curve for stocks should be correspondingly flat. Raising the price above the level set by an efficient market would cause investors to refuse to purchase any shares at all, while lowering the price below market would create infinite demand.

But it is important to recognize that the prediction of a perfectly flat demand function is an artifact of the CAPM's underlying assumption of investor homogeneity. As theorists in recent years have produced a large and growing literature on heterogeneous-expectations-based asset pricing models, the theoretical fragility of the prediction of perfectly flat demand has become more apparent.⁴² Equally important, empirical studies have found that the demand curves for stocks do in fact slope downwards.⁴³

That reality in turn carries a number of useful lessons. One of the most important of these has to do with the possibility that, if investors have heterogeneous expectations, *the market price of a stock may change for a variety of reasons unrelated to any change in the value of the underlying business*. For example, a corporation that issues additional shares is likely to find (other things being equal) that the net result is a decline in the market price of those shares. This is because issuing new shares increases the supply available to the market, effectively requiring the firm to "work its way down" the downward-sloping investor demand function.⁴⁴ Conversely, restricting supply -- perhaps through a corporate repurchase program -- tends to raise prices.⁴⁵

⁴² See sources cited supra note 40.

⁴³ See, e.g., Laurie Simon Bagwell, Dutch Auction Repurchases: An Analysis of Shareholder Heterogeneity, 47 J. Fin. 71 (1992); Andrei Shleifer, Do Demand Curves for Stocks Slope down?, 41 J. Fin. 579 (1989); Aditya Kaul, Vikas Mehrotra & Randall Morck, Demand Curves for Stocks Do Slope Down: New Evidence from an Index Weights Adjustment (1999) (manuscript on file with the author).

⁴⁴ INSERT FIGURE 1. Line D shows a downward sloping demand function for a particular company's stock. Other things being equal, if the company issues additional shares and shifts the supply function from S1 to S2, the market price for marginal shares will shift downward from P1 to P2.

⁴⁵ A related insight has to do with the significance of corporate takeovers. In a typical takeover, the bidding firm pays a significant premium (50 percent or more is not unusual) over

A second external event that can shift market price without changing the underlying economic value of the firm is a change in the number of potential investors. For example, increasing the size of the overall pool of investors from which a firm's shareholders are drawn is likely to also produce a rise in the market price of its shares. This is because increasing the total pool of investors is also likely to increase pool of "super-optimists" who are willing to purchase the firm's stock at prices the average member of the pool would regard as ridiculously high. And adding more super-optimists at the top of the demand function (as well as more pessimists at the bottom and more average investors in the middle) shifts the demand curve outward, driving prices up.⁴⁶ A similar result may follow from an overall increase in investor wealth.

the original prevailing market price for the target shares. Most theorists have concluded that takeover premiums are evidence that acquiring firms expect to substantially improve the economic performance of the target companies, so that takeovers promote economic efficiency. See, e.g. Frank Easterbrook & Daniel Fischel, *The Proper Role of a Target's Management in Responding to a Tender Offer*, 94 Harv. L. Rev. 1161, 1173-74 (1981); Bernard Black and Joseph Grundfest, *Shareholder Gains from Takeovers and Restructurings between 1981 and 1986: \$162 Billion Is a Lot of Money*, 1 Cont. Bank J. Applied Corp. Fin. 5 (1988) (arguing that premiums indicate takeovers increase shareholder wealth by amount of the premium). This optimistic view runs aground on accounting evidence that takeover targets tend to become neither more nor less profitable after being acquired. See Stout, *supra* note 5, at 1262 (reviewing and discussing accounting evidence). Moreover, there remains the puzzle of why, if takeovers create such gains, these gains accrue only to the *target* shareholders.

A heterogenous expectations asset pricing model offers an easy and elegant explanation for takeover premiums, because it suggest they are artifacts of downward sloping demand curves. An investor who only wants to purchase a single share in a particular company only needs to offer a price sufficient to satisfy the marginal, relatively pessimistic shareholder. But a takeover bidder who wants to purchase 51 percent or more of a target must inevitably "work his way up" a sloping demand function, paying ever higher prices to ever more optimistic shareholders. Downward-sloping demand thus explains both why bidders pay large premiums and why the price of the bidding company's stock remains relatively unchanged. But it also suggests that we should hesitate before we draw any conclusions, positive or negative, from the fact of premiums alone.

⁴⁶ INSERT FIGURE 2. Adding to the pool of available investors shifts the demand function outward from D1 to D2, moving the marginal market price up from P1 to P2.

A third example of a variable that can change market prices without changing the value of the underlying firm is *uncertainty*. To understand this point it is important to distinguish risk from uncertainty. “Risk” describes variations in outcome where the probabilities of those outcomes are perfectly known. A coin toss is risky because, although we do not know whether the coin will come up heads or tails, we know that the probability of either event is 50 percent. In contrast, “uncertainty” describes situations where outcome is variable and the probabilities of potential outcomes are not perfectly known. Stock prices are subject to both risk and uncertainty, and they may be subject to greater uncertainty in some time periods (e.g., during time of war or when technologies are rapidly shifting) than others.

Changing the level of uncertainty that applies to a particular firm or market can have a secondary effect on stock prices. This is because a high degree of uncertainty about the future tends to widen the dispersion of investors’ opinions. Where investors formerly held opinions ranging from pessimistic to optimistic, greater uncertainty now permits opinions ranging from *wildly* pessimistic to *wildly* optimistic.⁴⁷ However, so long as short sales are restricted, only the optimists influence the market price. The heterogeneous-expectations model of stock prices consequently predicts that (other things being equal) stocks of speculative firms whose futures are uncertain should trade at higher prices than the stocks of firms whose futures are more

⁴⁷ INSERT FIGURE 3. Increasing uncertainty increases the curvature of the demand function from D1 to D2. If the supply of available shares is relatively limited, so that the supply function tends to intersect the demand function in the upper regions of the demand curve, increasing the curvature of the demand curve will tend to increase market price. In Figure 3, price would move upward from P1 to P2.

predictable.⁴⁸ Similarly, an increase in overall economic uncertainty can produce an increase in stock prices even when the average investor's opinion of the market's value is unchanged.

These observations suggest an intriguing alternative explanation for the stock market's recent strong performance, an explanation has nothing to do with changes in corporate efficiency or investor rationality.⁴⁹ In brief, the development of the Internet and other new technologies is forcing firms to evolve at the most fundamental level. In many cases, this evolution can be expected to increase corporate profits, explaining some of the recent run-ups in stock prices. But the sudden appearance of a new, information-based economy has also made it far harder for investors to predict any single firm's future. Corporate America must evolve, but in what direction, and to whose benefit? Business firms -- especially start-ups and firms in the information technology industry -- are now operating in an economic environment that is far more uncertain than that of even a few years ago. If investors disagree and short sales are restricted, the predictable result of this increase in uncertainty is an increase in stock prices -- especially for start-ups and information technology firms.⁵⁰

⁴⁸ This possibility can explain the otherwise-puzzling empirical finding that firms characterized by very high levels of market risk actually produce lower earnings. See Miller, *supra* note 50, at 1155 (describing studies). Such a finding is clearly contrary to the conventional CAPM, but is consistent with the heterogeneous expectations approach if risk and uncertainty are correlated.

⁴⁹ From January 1, 1995 to December 31, 1999, the market value of all equities held by U.S. investors rose from less than \$8.5 trillion to nearly \$20 trillion. Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States*, September 15, 2000, at 90, Table L.213.

⁵⁰ Other factors the heterogeneous expectations model suggests could play a part in a market run up would be a sudden influx of new investors in the market, or an increase in the wealth investors had available for investment: either could raise prices by shifting the demand curves for stocks outward. See text accompanying note 46, *supra*. Of course, the process can

As this example suggests, a heterogeneous-expectations-based approach to asset pricing offers insights into a number of market mysteries. But it also carries disturbing implications about current trends in corporate governance, especially the way we judge and compensate corporate managers. It has become common practice in recent years for corporations to compensate officers and directors with stock and stock options in the attempt to “bond” their interests more closely to shareholders’. Modifying the CAPM to account for investor heterogeneity reveals such bonds are extremely loose.⁵¹ Directors and officers who want to raise stock prices can always try the old-fashioned strategy of managing the firm more effectively and increasing expected future earnings. But there are alternative strategies for raising price that are simpler and more reliable. For example, the corporation could embark on a share repurchase program or reverse tender offer that reduces the supply of the firm’s stock available to investors, and so raises price not by increasing the company’s value but by taking shares out of the hands of the least-optimistic members of the relatively-optimistic subset of investors who hold shares.⁵² The net result is that stock-based compensation packages “incentivize” officers and directors not

work in reverse, something that may not bode well for retiring baby boomers.

⁵¹ It should be noted that even under the standard CAPM, there is reason to question the value of stock-based compensation schemes. Usually no single officer or director has control over the firm’s fate, and freerider effects accordingly preclude such arrangements from perfectly tying officers’ and directors’ interests to those of shareholders. Stock options pose still more traps for the unwary. Options can be repriced, may encourage excessive risk-taking, may lose all incentive effect if too far out of the money, and may dilute existing shareholders’ interests in a fashion that does not appear on the company’s books. See generally Todd Perry and Marc Zenner, *CEO Compensation in the 1990's: Shareholder Alignment or Shareholder Expropriation?*, 35 *Wake Forest L. Rev.* 123, 142-144 (2000).

⁵² There is evidence this is commonly done. See Jesse M. Fried, *Insider Signaling and Insider Trading with Repurchase Tender Offers*, *U. Chi. L. Rev.* (forthcoming 2000)

to manage the *firm* well, but to manage the *stock price* well.⁵³ And heterogeneous expectations asset pricing models teach us these two are not one thing.

At the same time, however, the heterogeneous expectations approach also offers insights into where we should look to gauge managers' performance, if not at (or only at) stock prices. To understand why, it is important to recognize that the concept of subject disagreement raises the interesting question: when investors hold different opinions about the likely risks and returns of particular stocks, how are we to know who is right and who is wrong? If individuals' estimation errors were randomly distributed, perhaps we could assume that the average of all investors' valuations captures the economic reality of the firm more accurately than any single investor's subjective valuation does.⁵⁴ But there seems little reason to believe errors are randomly distributed. To the contrary, individuals who can access information relevant to judging corporate value more cheaply and easily -- for example, corporate executives, investment banks, auditing accountants, and professional analysts -- likely make systematically superior

⁵³ This is only one of the many ways corporate managers can manipulate stock prices under conditions of investor heterogeneity. For example, managers might raise stock prices through general public relations and advertising campaigns designed to shift the demand curve outward by increasing the pool of potential investors who are aware of the firm. Alternatively, managers might try to raise stock prices by increasing the dispersion of investor opinion: for example, an "old economy" firm whose future is relatively certain might seek to expand into or acquire a "new economy" business whose future is highly uncertain. More subtly, a conglomerate might seek to raise its aggregate market capitalization by spinning off a division or creating "tracking stock." If diversification tends to reduce subjective shareholder disagreement along with industry specific risk (while a shareholder might be wildly optimistic about one of the firm's lines of business, he or she is unlikely to be wildly optimistic about them all), such strategies can perhaps offset a natural tendency of conglomeration to decrease stock price.

⁵⁴ It should be noted that for most stocks, investors who want to go short face significantly more obstacles than investors who want to go long. As a result it is not the *average* investor but the relatively optimistic *marginal* investor who chooses to hold a firm's stock, who is likely to set the market price for the firm's shares.

estimates when compared to the less-informed lay investors who also participate in the market for the firm's shares and, as a result, influence market prices.⁵⁵ Of course, these individuals often have incentives to withhold or distort their views. But if we want to create a reliable measure of wealth generation within the firm, we might do well to focus on realigning those incentives, as well as on the market prices set by the marginal investor.

III. The Shareholder Primacy Model of the Firm

Thus far I have focused on why we should hesitate before assuming that stock market prices incorporate information about the corporation's ability to generate wealth either quickly, or accurately. But underlying the discussion has been an implicit assumption that an increase in corporate profits (earnings net of expenses such as wages or interest payments to creditors) represents an increase in social welfare. That assumption in turn can be traced to the third essential link in the chain of argument supporting the claim that stock prices measure social wealth: what I shall refer to as the "shareholder primacy" model of the firm.

In brief, the shareholder primacy model views the shareholders in a corporation as the "owners" of the firm, owners who hire corporate directors and officers as agents to run the business on their behalf. Put more formally, the shareholders are the firm's "residual claimants." Other groups may contribute resources to and extract benefits from the corporation. For example, bondholders may invest financial capital and receive interest payments, while managers and rank-and-file employees invest human capital and receive wages. But the shareholder

⁵⁵ Even these individuals can probably only collect, digest, and comprehend a small portion of all publicly available information relevant to pricing a particular stock, much less the market as a whole.

primacy model views the rights of nonshareholders as determined solely by their explicit contracts with the firm. Their claims are fixed; every penny of profit the firm earns over that fixed amount belongs to the shareholders.

The shareholder primacy model has at least two important implications. The first is that nonshareholder participants in corporations should get only the benefits they are entitled to under the explicit contracts they negotiate with the firm. Assuming these contractual obligations are met, economic efficiency demands that corporate officers and directors thereafter seek to serve only the shareholders' interests. The second implication is that an increase in the value of the shareholders' equity interest necessarily reflects an increase in the total value of the firm.⁵⁶ Thus, when the shareholder primacy model is combined with the CAPM and efficient market theory, the result is a prediction that both shareholders' interests and society's are best served when managers seek to maximize stock price.

The shareholder primacy norm has had a tremendous influence on modern thinking about corporations.⁵⁷ But it is in tension with a competing view, sometimes referred to as the

⁵⁶ Again, this assumes all contractual obligations have been met, and that the corporation is otherwise law abiding.

⁵⁷ See Thomas A. Smith, *The Efficient Norm for Corporate Law: A Neo Traditional Interpretation of Fiduciary Duty*, 98 *Mich. L. Rev.* 214 (1999); see also D. Gordon Smith, *The Shareholder Primacy Norm*, 23 *J. Corp. L.* 277 (1998). See, e.g. Easterbrook & Fischel, *supra* note 45; Bernard Black & Reinier Kraakman, *A Self-Enforcing Model of Corporate Law*, 109 *Harv. L. Rev.* 1911, 1921 (1996) (arguing that maximizing company's value to investors is principal goal of corporate law); William Cary & Melvin Eisenberg, *Corporations: Cases and Materials* 213-220 (7th edition 1995) (discussing manager's obligation to run the firm for the shareholder's benefit); Lewis Solomon et. al., *Corporations: Law and Policy* 348 (4th edition 1998) (discussing shareholders as the firms ultimate "owners").

“stakeholder” model.⁵⁸ The stakeholder approach posits that shareholders are not the only important group that has a stake in, and expects to reap the benefits from the success of, the firm. Indeed, proper corporate governance requires managers to run firms with an eye not only toward increasing shareholders’ wealth, but also toward serving the interests of bondholders, managers, employees, and other “stakeholders.”⁵⁹

Although the stakeholder model is often slighted in economic accounts of the corporation,⁶⁰ it rests on a solid foundation of economic theory. In particular, it is widely recognized even among scholars who adhere to the shareholder primacy model that transactions costs can make it too expensive for nonshareholder groups that invest resources and have an interest in corporate production to draft explicit contracts that adequately protect those investments and interests. Thus bondholders, managers, and employees often rely on “implicit” contracts with the firm: legally unenforceable understandings that under some circumstance, they will receive benefits over and above the amounts they are entitled to under their explicit contracts.

⁵⁸ The notion that the firm “belongs” to the shareholders dates back to at least to the days Berle and Means. See Adolph A. Berle, Jr. & Gardiner C. Means, *The Modern Corporation and Private Property* (1932). In the same year, however, E. Merrick Dodd argued that corporations should be run not just to benefit the shareholders, but the larger society. See E. Merrick Dodd, Jr., *For Whom Are Corporate Managers Trustees?*, 45 *Harv. L. Rev.* 1145 (1932).

⁵⁹ Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 *Va. L. Rev.* 247, 253 & n.16 (describing stakeholder view and citing articles); see, e.g., Margaret M. Blair, *Ownership and Control: Rethinking Corporate Governance for the Twenty First Century* (1996).

⁶⁰ See, e.g., Frank H. Easterbrook & Daniel Fischel, *The Economic Structure of Corporate Law* 68 (1991); Jonathan R. Macey, *An Economic Analysis of the Various Rationales for Making Shareholders the Exclusive Beneficiaries of Corporate Fiduciary Duties*, 21 *Stetson L. Rev.* 23, 26-29 (1991).

Consider the classic example of the relationship between the corporation and its employees. To do their jobs well, employees must often invest in firm-specific human capital: knowledge, skills, and relationships that have a significantly greater value to the firm than to other potential employers. Because employees cannot take their firm-specific human capital investments with them when they change jobs, they will not earn a return on those investments (and so have no incentive to make them) unless their employers compensate them for investing. Yet it is difficult for a corporation to accurately detect, measure, and reward human capital investments as they are made. Instead, the firm must wait to observe and reward the ultimate increase in employee performance that results. Thus there is an implicit understanding in many employment relationships that if the business does well, employee loyalty and competence will be rewarded by pay raises above and beyond the wage the employee originally negotiated. But this understanding is rarely reduced to an explicit contract because the uncertainty and opacity of the business environment make it impossible for courts, as outside observers, to reliably detect or punish “violations” of such implicit contracts.⁶¹

If employees, bondholders, and other groups in fact enter such implicit contracts with corporations, the notion that shareholders are the only residual claimants in the firm becomes untenable. To the contrary, a wide variety of groups may be “residual claimants” in the sense

⁶¹ The idea that participants in a firm rely on such implicit contracts naturally raises the question: if they are not enforced in the courts, how are they enforced? See generally Edward B. Rock & Michael Wachter, *Waiting for the Omelet to Set: Match-Specific Assets and Minority Oppression in Close Corporations*, 24 *J. Corp. L.* 913 (1999) (discussing role of reputation in enforcing implicit agreements); Margaret M. Blair & Lynn A. Stout, *Trust, Trustworthiness, and the Behavioral Foundations of Corporate Law* (forthcoming *U. Pa. L. Rev.*) (discussing role of internalized trust in enforcing implicit agreements); Blair & Stout, *supra* note 59 (discussing problem in public corporation context and mediating role of board of directors).

that they reasonably expect that if the firm prospers they will share in that prosperity, over and above the benefits they are entitled to according to their explicit contracts.⁶² And if this is so, the assumption that an increase in the value of the shareholders' equity necessarily reflects an increase in the value of the firm — rather than, say, a wealth transfer from employees or bondholders — also crumbles.

Consider the example of a firm where employees have been induced to make significant investments in firm-specific human capital through a legally-unenforceable but generally understood corporate policy that if they do a good job and the firm prospers, they will receive regular pay increases. Now suppose that after the employees have incurred the sunk cost of making firm-specific investments, the firm reneges on the deal and refuses to increase their wages. The net result is that the firm's reported profits increase (and with it, the value of the shareholders' equity). But that increase has come from the employees' pockets.

⁶² The idea that nonshareholder groups often benefit from a firm's success beyond their contractual rights finds support not only in transaction costs economics, but also in corporate law. As a legal matter control over the assets of the corporation — and control over the firm's outputs — rests in the hands of the board of directors. Both in theory and in practice, shareholder control over the board is remarkably limited. See Blair & Stout, *supra* note 59, at 290-319 (discussing limitations on shareholder's power to control directors). As a result the board of directors enjoys considerable freedom to use the firm's assets and profits not to pay dividends but instead to increase employees salaries, build empires for managers, and pursue policies that benefit creditors at shareholders' expense. The net result is that, whether or not nonshareholders enjoy extracontractual benefits in theory, in practice they clearly do. See, e.g., Ellen E. Schultz & Matt Murray, *Amid Protests, GE Will Boost Pension Checks*, *Wall St. J.*, April 18, 2000, at A3 (reporting that following demonstrations by retired employees, General Electric announced pension increase of 15 to 35 percent for employees who retired before 1986).

To understand the potential practical importance of such wealth transfers, consider the following example.⁶³ Suppose a firm has annual sales of \$60 and that its only expense is annual wages totaling \$50. Thus net earnings are \$10 annually. Assume these earnings are distributed in full each year to the shareholders in the form of a dividend and that the market capitalization of the firm's stock is \$200, implying a P/E ratio of 20 to 1 (rather conservative by today's standards). Finally, assume that the employees of the firm are being "overpaid" by 10 percent, in the sense that the firm could exploit their sunk-cost investments in firm-specific human capital by lowering its total annual wages to \$45, and still pay them more than they would likely receive from alternative employers to whom their firm-specific investments are worthless. If the management decides to eliminate this "overpayment" and cut wages by a total of 10 percent (\$5), net earnings -- and dividends -- will increase *50 percent*. This apparently tremendous increase in returns to shareholders reflects not better management, but a simple wealth transfer from one group of corporate participants to another.

As this example illustrates, when labor costs are high relative to net earnings, even a modest change in wages can have a disproportionate effect on corporate net earnings. And as an empirical matter, corporations' labor costs generally far exceed their profits.⁶⁴ That corporate managers may be tempted to improve earnings by shifting wealth from employees, creditors, or

⁶³ This example is derived from a similar example presented in a classic article by Andrei Shleifer and Lawrence Summers. See Andre Shleifer & Lawrence H. Summers, *Breach of Trust in Hostile Takeovers*, In *Corporate Takeovers: Causes and Consequences* 33, 36 (Alan J. Auerbach, ed.)(1988).

⁶⁴ See Shleifer & Summers, *supra* note 63, at 36.

other stakeholders to shareholders, rather than by running the firm more efficiently, thus may be a very real scenario.⁶⁵

And it is a scenario that casts doubt on the modern belief — “now the orthodox view among corporate law scholars” — that economic efficiency necessarily supports the shareholder primacy norm.⁶⁶ To the contrary, social wealth is maximized when managers run the firm so as to maximize the sum of the wealth of *all* its residual claimants. This group may include not just shareholders but also bondholders, managers, rank-and-file employees, even customers.

This last observation suggests a more-nuanced model of the corporation, a model in which the “principals” in the firm include not just shareholders, but also other groups that enter implicit contracts and have residual claims.⁶⁷ This modified version of the firm offers to clear one of the most tangled thickets in corporate law: the question of to whom, exactly, do the directors of the firm owe their fiduciary duties?

⁶⁵ See Shleifer & Summers, *supra* note 63, at 36 (observing that “very small differences in firms’ success in extracting rents from workers and other corporate stakeholders are likely to be much more important” in determining market value of the shareholders’ stock than differences managerial efficiency).

⁶⁶ Thomas A. Smith, *The Efficient Norm for Corporate Law: A Neotraditional Interpretation of Fiduciary Duty*, 98 *Mich. L. Rev.* 214 (1999); see also Henry Hansmann and Reinier Kraakman, *The End of History in Corporate Law*, *Geo. L. Rev.* (forthcoming 2000); D. Gordon Smith, *The Shareholder Primacy Norm*, 23 *J. Corp. L.* 277 (1998). See, e.g. Easterbrook and Fischel, *supra* note 45; Bernard Black and Reinier Kraakman, *A Self-Enforcing Model of Corporate Law*, 109 *Harv. L. Rev.* 1911, 1921 (1996) (arguing that maximizing company’s value to investors is the principal goal of corporate law).

⁶⁷ This idea has been explored in various forms by a number of scholars. See, e.g., Blair, *Ownership and Control*, *supra* note 59; Blair & Stout, *supra* note 59; Bruce Chapman, *Trust, Economic Rationality, and the Corporate Fiduciary Obligation*, 43 *U. Toronto L. J.* 547 (1993); Shleifer & Summers, *supra* note 63; Smith, *supra* note 66; and Steven M. H. Wallman, *The Proper Interpretation of Corporate Constituency Statutes and Formulation of Directors’ Duties*, 21 *Stetson L. Rev.* 163 (1991).

Although the shareholder primacy norm may be the “orthodox” view among legal scholars, it is important to note that *corporate law itself* does not impose a shareholder primacy constraint on the directors of public corporations.⁶⁸ To the contrary, case law usually describes directors’ duties as owed “to the corporation and its shareholders,” a compound phrase that implies the two nouns are not synonymous.⁶⁹ Moreover, absent self-dealing directors are insulated from any realistic threat of liability to shareholders by the business judgment rule. The end result is that directors of public corporations enjoy tremendous legal discretion to use firm funds to do almost anything except line their own pockets. They are free to pay dividends, but they are also free to increase employees’ salaries, provide additional protection to bondholders, or protect management’s empire — even when the shareholders object.⁷⁰

Once we recognize that shareholders may not be the firm’s only residual claimants, this legal tolerance for director “faithlessness” to shareholders is no longer clearly a bad thing. Indeed, corporate scholars in recent years have produced a growing body of work that examines how the legal directive that directors should seek to serve the interests of “the corporation” — a

⁶⁸ Blair & Stout, *supra* note 59, at 290-319.

⁶⁹ See, e.g., *Smith v. Van Gorkum*, 488 A.2d 858, 872 (Del. 1985) (“in carrying out their managerial roles, directors are charged with an unyielding fiduciary duty to the corporation and its shareholders”).

⁷⁰ Of course, directors are constrained to some extent by the possibilities that the shareholders might mount a proxy battle to throw them out of office, or a takeover bidder might appear on the horizon. Capital markets also may curb somewhat directors’ power to shunt corporate resources to nonshareholder interests, at least in firms that intent to issue equity in the near future. Such concerns seem likely to exert only a distant influence on most boards, however. For example, the ongoing debate between corporate observers who believe that directors are pawns of management, and those who think directors live in dread of a takeover and so kowtow to shareholders’ interests, provides indirect evidence that most boards are in fact free to favor either group, and that both are as a practical matter residual claimants.

directive that makes no sense under a shareholder primacy model that treats the shareholders as the firm's sole residual claimants — becomes economically coherent if we conceive the “corporation” as a joint welfare function of *all* its contributing participants.⁷¹ As this work makes clear, economic analysis does not inexorably demand shareholder primacy. Quite the opposite: requiring corporate officers and directors to maximize the value of the shareholders' equity interest may sometimes be inefficient.

This emerging view offers notable positive insights into the causes and consequences of a variety of important issues in corporate governance by suggesting how legal and market developments that appear to increase shareholders' wealth sometimes do so at other groups' expense. Consider, for example, the phenomena of takeover premiums. In the typical corporate takeovers or management buyout, the acquirer pays a significant premium -- often 30 percent or more -- over the earlier market price for the target's shares. These premiums are often cited as evidence that the acquiring firm expects to substantially improve the economic performance of the target, and that takeovers and buyouts accordingly promote economic efficiency.⁷² It should be noted that if the demand curve for a target company's stock is downward-sloping, as discussed in Part II, premiums may be nothing more than a natural consequence of the fact that a bidder

⁷¹ See Blair & Stout, *supra* note 59; see also Mitu Gulati, William Klein, and Eric Zolt, *Connected Contracts*, U. C. L. A. Law Rev. (forthcoming 2000). The idea that directors should serve the interests of the various stakeholders that participate in the firm naturally raises the question of why we should expect them to do a good job. See Blair & Stout, *supra* note 59, at 315-319 (addressing question); see also Blair & Stout, *Trust, Trustworthiness*, *supra* note 61.

⁷² See, e.g. Easterbrook & Fischel, *supra* note 45, at 1173-74; Bernard Black & Joseph Grundfest, *Shareholder Gains from Takeovers and Restructurings between 1981 and 1986: \$162 Billion is a Lot of Money*, *One Continental Bank J. Applied Corp. Fin.* 5 (1988) (arguing that premiums indicate takeovers increase shareholder wealth by amount of the premium).

who wants to purchase a large block of shares must “work her way up” a sloping demand function, paying ever-higher prices to the ever more-optimistic remaining shareholders.⁷³ Thus the size of premium paid may grossly overstate the gains to target shareholders. But abandoning the shareholder primacy model of the firm undermines the supposed evidentiary value of takeover premiums still further by suggesting how in some cases, even these gains may reflect nothing more than wealth transfers from employees or bondholders.⁷⁴

More broadly, recognizing that employees may be residual claimants suggests an alternative and somewhat disturbing interpretation of certain events during the 1980s and 1990s. During this period, the U.S. corporate sector experienced a wave of downsizings and restructurings that some have credited with reviving economic growth.⁷⁵ Yet as a result, subgroups of the workforce -- in particular, middle-aged males -- experienced a nearly 30% decline in average job tenure, along with accompanying decreases in expected lifetime earnings.⁷⁶ This development can perhaps be viewed an appropriate corporate response to technological shifts that changed the nature of efficient economic production. But once we recognize employees as potential residual claimants, it also becomes plausible that this efficient

⁷³ See supra note 45 and accompanying text.

⁷⁴ This argument is developed at greater length in Blair, supra note 59, and Shleifer & Summers, supra note 63.

⁷⁵ See Blair & Kochan, supra note 36, at 2.

⁷⁶ See Blair & Kochan, supra note 36, at 3-4 (citing findings that restructuring reduced average job tenure for mature male works from 25 to 35 percent, and that laid-off workers with six or more years job tenure saw decreases in lifetime earnings averaging in excess of \$100,000).

reallocation of corporate resources also provided the occasion for a massive wealth transfer from employees to shareholders.

In raising this possibility I do not mean to imply that stock price gains are always, or even often, accompanied by losses to employees or other corporate stakeholders. Takeovers, restructurings, and changes in corporate “culture” are complex empirical phenomena, and a good deal more work must be done before we can draw conclusions even in individual cases. Rather, my point is that more work *is* needed. Once we abandon the shareholder primacy model, we simply cannot tell *a priori* whether and to what extent a gain in the value of shareholders’ equity reflects an increase in the value of underlying firms, or a decrease in the wealth and wellbeing of other stakeholders.

Conclusion

Scholars, policymakers, and investors often talk and act as if a rise in the market price for a firm’s stock evidences an equivalent increase in the value of the firm itself. This assumption rests on three influential economic concepts: the Efficient Capital Markets Hypothesis, the Capital Asset Pricing Model, and the shareholder primacy model of the firm.

A closer inspection of each of these theoretical concepts reveals that the idea that stock prices measure social wealth rests on very shaky foundations indeed. Modest and plausible changes in the assumptions underlying any one of the three threatens to sever the link between stock prices and corporate value. We can no longer assume that stock market prices are accurate measures of social wealth. Indeed, we cannot even assume that *changes* in stock prices are accurate signals of *changes* in wealth.

The notion that stock prices accurately reflect social value consequently may be a dangerously misleading heuristic. True, a solid understanding the corporate sector's capacity to generate social wealth is a matter of vital interest not just to scholars but also to business leaders, policymakers, and (of course) investors. Without a sound measure of that capacity, we cannot reliably observe or promote good corporate governance. But in our haste to find answers we can go dangerously astray if we look only to stock prices.

Where, then, should we look? Even as "postmodern" economic analysis highlights the weakness of the conventional ECMH/CAPM/shareholder primacy approach, it suggests a research agenda for the future. That agenda builds on three important insights. First, while market prices respond very quickly to some kinds of information, other kinds of information — including information that is complex, technical, or not widely distributed -- may be absorbed into price far more slowly and incompletely. As a result we may be able to significantly improve the accuracy of market prices by developing accounting and disclosure systems that make such information both more available to, and more digestible by, large numbers of investors. Second, it is important to bear in mind that in any case, if demand curves for stock slope downwards, the market price for marginal shares will reflect only the opinion of the marginal (and often relatively uninformed) investor. Expert valuations as a result may often provide more reliable measures of corporate worth. Third, in measuring firms' capacity to generate wealth, we must account not just for gains to shareholder, but also for possible gains (or losses) to other residual claimants. These would include most obviously managers, employees, and creditors.

The task of developing a sound means of measuring firms' contributions to social wealth is obviously complex and difficult. But the job seems well worth undertaking. The economic

value of publicly-held U.S. firms may be significantly more -- or less -- than their present market capitalization of nearly \$20,000,000,000.⁷⁷ But at that order of magnitude, it pays to find out how much more or less.

⁷⁷ See note 49, *supra*. The market capitalization of outstanding equity is calculated by multiplying the market price for a single share of a company's stock, by the total number of shares outstanding.