

TAKEOVER ATTEMPTS, ECONOMIC WELFARE,
AND THE ROLE OF OUTSIDE DIRECTORS

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Abstract

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The implications for takeover activity of certain types of capital market imperfections are examined. Management, "knowledgeable outsiders" and "uninformed investors" are assumed to differ in the extent to which they have access to the total information potentially available at a given point in time. More information means less dispersion in the subjective probability distribution of future cash flows and a lower required risk premium.

Stockholders also differ with respect to their investment horizons and tend to be myopic beyond their own horizon. While they may estimate the expected value of earnings and dividends within their horizon quite accurately (relative to the full-information estimate), they have little information regarding events beyond that horizon and may tend to underestimate the long-term trend in periods when this is steeper than the trend within the relevant horizon. This tendency, in conjunction with the inverse relationship of the required risk premium to information access, implies that in such periods market participants will generally underprice stock relative to its fundamental value as defined in terms of an infinite horizon and maximum information. Unless those with the most information and the longest horizons dominate trading, stocks will be undervalued in the market.

If market price remains below fundamental value for any significant period, a profit opportunity is created for any "knowledgeable outsider" with sufficient information to perceive the discrepancy. The welfare implications of takeover bids motivated solely by such a discrepancy are investigated. Also investigated is the dilemma of outside directors when faced with a takeover bid above market price but below what they perceive as long-term value. Acceptance of these terms may well benefit stockholders with short horizons, while damaging those with longer horizons.

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Jean A. Crockett*

I. Introduction

The studies of mergers and acquisitions in the 1980s, and in particular the discussions of welfare implications, have largely assumed that takeovers are motivated by the potential impact on the fundamental value of the firms involved (essentially defined as a discounted flow of future dividends). This is too narrow a framework to deal adequately with the variety of cases that have been observed. Theoretical analyses have generally failed to take account of this variety, and empirical studies have suffered from the indiscriminate pooling of observations that represent quite different events.

One obvious explanation of takeover activity is that the assets of the firms involved are expected to generate a larger stream of earnings and dividends under a single management than the total that would be generated by the firms operating individually. The dominant theoretical model assumes this motivation. This model is consistent with the presumption that capital markets are efficient: stock prices always reflect fundamental value and, so long as firms are subject to the discipline of capital markets, managers will have strong incentives to be efficient and new funds will flow to those best able to make profitable use of them. In this world the rise in stock price associated with a takeover reflects and measures the creation of fundamental value.

*I am indebted to my colleagues Edward S. Herman, Morris Mendelson and Robert Mundheim for helpful comments. Any remaining errors are my own.

Alternatively, if we allow for temporary deviations of stock price from long-run value, then profit opportunities will be created when stocks are undervalued in the market. In this situation, a takeover may generate private gain with no increase -- or even a decrease -- in economic efficiency. It is argued in this paper that takeover attempts motivated by the undervaluation of stock were potentially an important factor in the merger and acquisition activity of the 1980s; and a theoretical framework is developed for analyzing such cases. The implications, both for shareholders and for the overall economy, are quite different from those of the standard model.

In the next section we review the generally beneficial welfare effects of takeover activity motivated by an expected increase in fundamental value. In section III we develop a framework for analyzing the quite different case in which any profit potential arises from undervaluation of the stock. While operational efficiency is not improved by takeover in such cases, it has still been argued that the economy benefits because price is moved closer to a level justified by earnings potential and more accurate pricing increases the efficiency of the capital market in allocating real resources to their most profitable use. Section IV considers the impact on stockholders of takeover attempts and defenses and the dilemma of directors in attempting to protect shareholder interests. Section V summarizes the analysis and indicates directions for further research.

II. Takeovers Motivated by a Potential Increase in Fundamental Value

There are a number of ways in which fundamental value may be enhanced by a takeover. Ineffective management may be replaced by one more competent either in organizing current production or in directing the resultant cash flow to its optimal use. Synergies may result from combining the assets and

operations of the acquirer and the acquired. The increase in leverage that is a common feature of takeovers may provide a tax advantage.

In evaluating the efficiency gain in such cases, transition costs -- which may be substantial in the event of a hostile attempt -- must be taken into account; and it must be kept in mind that aggregate social costs may exceed the private costs to the acquiring firms. During the takeover process a number of factors operate to reduce the target firm's profitability. The attention of management is bound to be distracted from normal business operations, perhaps for many months. Uncertainty may disrupt morale; key personnel may be lost, as those best able to find satisfactory positions elsewhere choose to do so; long run plans may remain in abeyance.¹ These costs of disruption are borne whether or not the takeover attempt is successful and represent a deadweight loss that should be considered in any evaluation of the overall impact of merger and acquisition activity on the economy. Still further damage occurs if the target firm leverages itself unduly as a takeover defense or sells off assets cheaply for uses in which their long-run value is lower than it would be if they were retained.

A successful acquirer must undertake learning costs associated with firm-specific information, as well as organizational costs. These are likely to be substantial when the two firms are in different industries. A management style that is effective in one industry (e.g., oil) may be inappropriate in another (e.g., retailing).

Takeovers in which the replacement of ineffective management is the operative consideration are likely to be resisted and hence to involve heavy transition costs. Such cases could in principle be identified by such a priori criteria as inferior earnings growth relative to competitors or loss of market share. There is a strong presumption that in these cases successful

takeovers benefit the economy, so long as the acquirer estimates accurately the net benefits (after transition costs) that can be achieved by the new management. But acquirers are not themselves exempt from incompetence or from the temptation to increase the asset base they control by making low-return investments rather than paying out dividends or repurchasing shares.² Nor, with incomplete information, are they exempt from miscalculation. If the economic benefits that can be achieved are overestimated, both the acquirer's shareholders and the economy may suffer, although the target's shareholders are still likely to gain. When the takeover attempt is unsuccessful, everyone loses, unless perhaps management is stimulated to take some significantly beneficial action.

Overall, hostile takeovers of poorly managed companies probably benefit the economy, although the net gains -- after allowing for transition costs, miscalculations by acquirers, and failed attempts -- are likely to be much smaller than the gross gains from improved management that are realized in those cases where improvement occurs.

More strongly positive results may be expected when synergistic potential exists. In that case, a merger or takeover is much more likely to be friendly, avoiding many of the deadweight costs of a hostile attempt. Synergy may arise from complementarities in assets, operations or product lines. A firm with strong cash flow or good access to capital markets may bring synergies to a firm with investment opportunities that outstrip its financing capabilities. A firm with a strong marketing network may bring synergies to a firm with a strong product line. A firm with tax losses may bring (temporary) synergies to a profitable firm. Economies of scale in production or distribution may exist. In an industry like pharmaceuticals -- where new product development is very expensive, successful products are likely to be a

small proportion of those explored, and patents are short-lived relative to development time -- the pooling of research and development programs should reduce risk by increasing the probability that successful products will emerge on a fairly regular basis.

Apart from antitrust problems, mergers and acquisitions in which synergistic potential is the motivating force should have unambiguously favorable effects on the economy, at least if the deadweight costs associated with a hostile takeover can be avoided.

There is a third, less obvious way in which the fundamental value of the firms involved may be enhanced by a takeover. To the extent that debt is substituted for equity in the takeover process, taxes on a given stream of before-tax profits are reduced, increasing the potential for current and future dividends. The impact on shareholder value depends (1) on the distribution of the tax savings between bondholders and stockholders and (2) on the increase in the required risk premium for equity that may result from higher leverage.³ The division of any gain between the shareholders of the acquiring firm and those of the target firm depends, of course, on the takeover price.

In principle, any value-enhancing increase in leverage that arises from a takeover could have been achieved independently by the target's management; but management may operate with a longer time horizon than some would-be acquirers. A degree of leverage that may be attractive under a six-month or one-year time horizon may involve unacceptable risk under a five- or ten-year horizon, which is likely to include one or more cyclical downturns and perhaps other types of unfavorable events that occur with relatively low frequency.⁴

When we look at the impact on the economy as a whole, the increment in after-tax earnings for the surviving firm must be offset against the loss to

the Treasury and ultimately the taxpayers. The effect is primarily an income transfer hard to justify on equity grounds. Furthermore, it is possible that the overall economy will suffer if the higher leverage leads to a higher rate of bankruptcies or serious financial difficulties in the next recession. In this case there will be further redistributive effects, with the benefit to those who engineered the takeover and got out with short-term gains coming at the expense of employees, of subsequent purchasers of equity, and perhaps of bondholders.

Even if tax savings increase fundamental value for shareholders of the firms involved, it is hard to see how the interests of the overall economy are served. The efficiency of financial markets may be improved to the extent that an unsatisfied demand exists for the high risk/high yield bonds and highly leveraged stock generated by a takeover. Such unsatisfied demand might well occur if some investors (because they believe they can get out quickly in the event of trouble) prefer a higher degree of risk than management (because it cannot get out so quickly) is prepared to undertake. In theory an improvement in capital market efficiency should lead to improved allocation of real resources, increasing productivity. Jensen [1986] makes a further argument for efficiency gains on the grounds that the need to meet large interest payments will stimulate management to reduce waste. However, in the present case any such gain entails both fiscal costs and, very possibly, real damage to the long-run productivity of excessively leveraged firms. The interests of the stockholders involved appear to be largely adverse to those of the rest of the economy. The problem in this case lies in a fiscal structure that creates incentives for tax-based takeovers. Such a tax structure is distortionary, leading to a higher degree of leverage than would otherwise be optimal.

III. Takeovers Motivated by Market Undervaluation

The focus of the present paper is on cases in which the potential acquirer brings nothing to the table in terms of fundamental value but correctly perceives that the stock is undervalued in the market. In this case management, which also perceives the stock as undervalued, is likely to resist the takeover attempt in good faith, with all the associated deadweight costs.⁵

A strong case can be made that stocks were generally underpriced in the late 1970s and early 1980s. Stock prices, which had more or less kept pace with the growth in after-tax corporate profits from 1955 to 1969, were essentially flat from 1969 to 1979, while profits grew substantially.⁶ The discrepancy is most clearly apparent after 1974. (See Chart 1.) Thus by the end of the 1970s earnings were valued at a substantially lower multiple than in the 1955-69 period. This conclusion is reinforced if profits are measured without inventory valuation and capital consumption adjustments, which investors cannot conveniently make on an individual firm basis.

Secondly, dividend yields (for the Standard and Poor's 500) exceeded 5 percent for the period 1978-83, averaging 5.4 percent. These are the only instances in the last 35 years of yields above 5 percent.

Thirdly, the ratio of market value to the reproduction cost of assets was extraordinarily low in this period. This, in particular, made it less expensive for a firm to expand by absorbing another firm in the same industry than by purchasing new plant and equipment.⁷ Expansion by acquisition was attractive, not only because it was cheap in this period, but also because it avoids an increase in industry-wide capacity, which might put downward pressure on prices.

The reasons for the abnormally low valuation of earnings, dividends and assets that characterized this period are not entirely clear. Obviously the

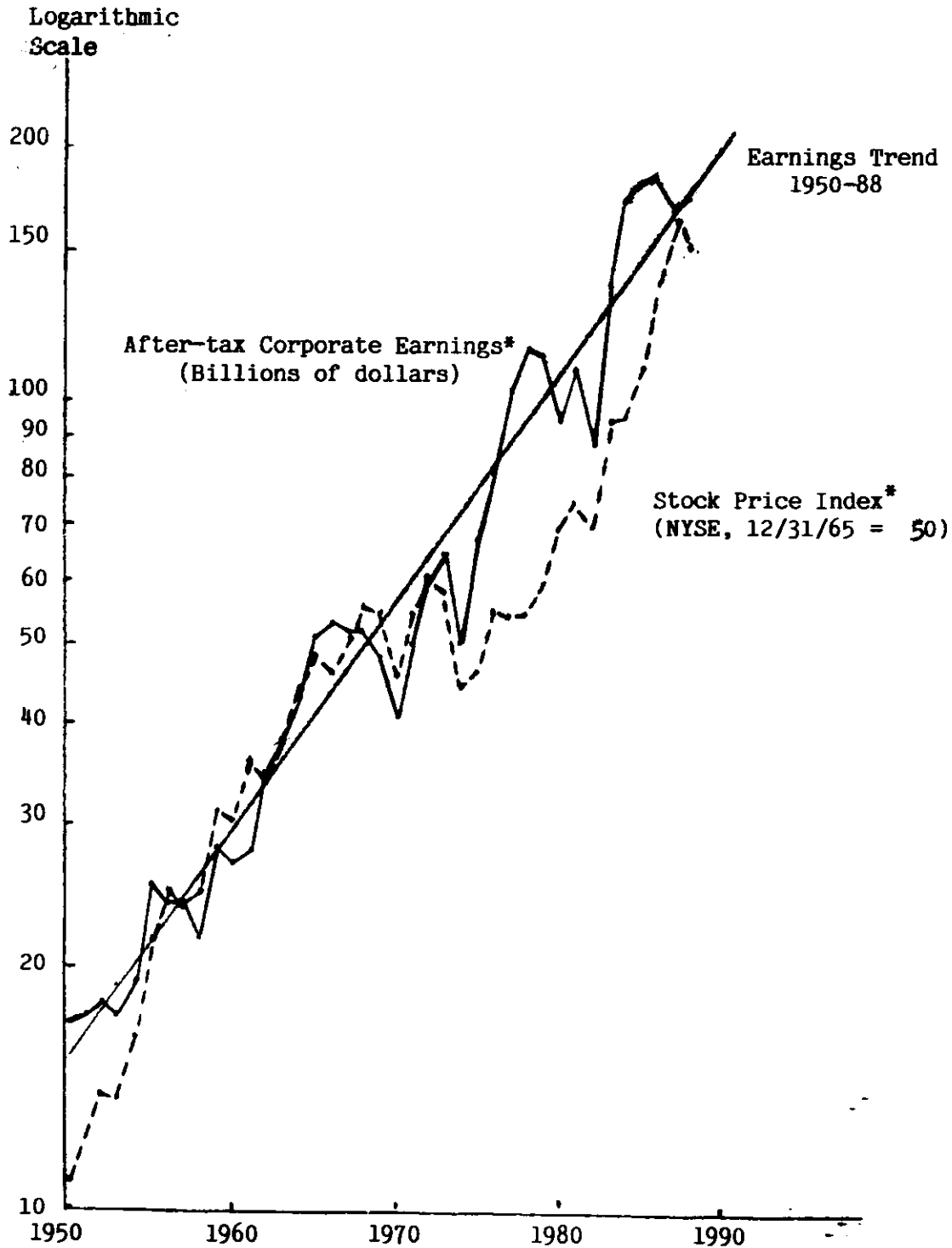
extraordinarily high interest rates played a role. It may also be that the acceleration of inflation and the slowing of productivity growth in the 1970s produced an environment of economic uncertainty toward the end of the decade in which abnormally high risk premia were demanded by stockholders and/or long-term earnings and dividend growth were seriously underestimated. The growing availability and acceptance of money market mutual funds as an attractive investment alternative in a period of rising interest rates may also have been a factor. A fourth factor may have been the increasing weight in the market of institutional investors, which are likely to have relatively short time horizons.⁸ It is clear from the chart that after 1978 short-run prospects for earnings growth were not good for several years.

Our framework of analysis is based on the following three assumptions:

1. Information about the earnings prospects of individual firms is not homogeneously distributed.⁹ Management has by far the best information, especially as regards long-term growth. By comparison, the average stockholder in the firm has relatively little information (and the average investor who is not a stockholder even less). In an intermediate position there is a group of "knowledgeable outsiders," with the facilities and the motivation to acquire considerably more information than is generally available without cost. This group might include other firms in the same industry, financial analysts and investment advisors, investment bankers, and most significantly potential acquirers.

2. While investment advisors may evaluate risk in terms of the historical variance of earnings or the historical covariance of return with the market as a whole, the firm's management is more likely to evaluate it in terms of the dispersion of a subjective probability distribution of expected earnings or rate of return. The same is probably true of potential acquirers

CHART 1. CORPORATE EARNINGS AND STOCK PRICES
1950-1988



* After inventory valuation and capital consumption adjustments.
** Average of daily figures.

and even of individual stockholders, to the extent that they have any basis for formulating expectations beyond the purely historical. Each interested party formulates his subjective probability distribution on the basis of his own information. Presumably, the less the information, the greater the dispersion of the subjective distribution and the greater the perceived risk. See Chart 2.

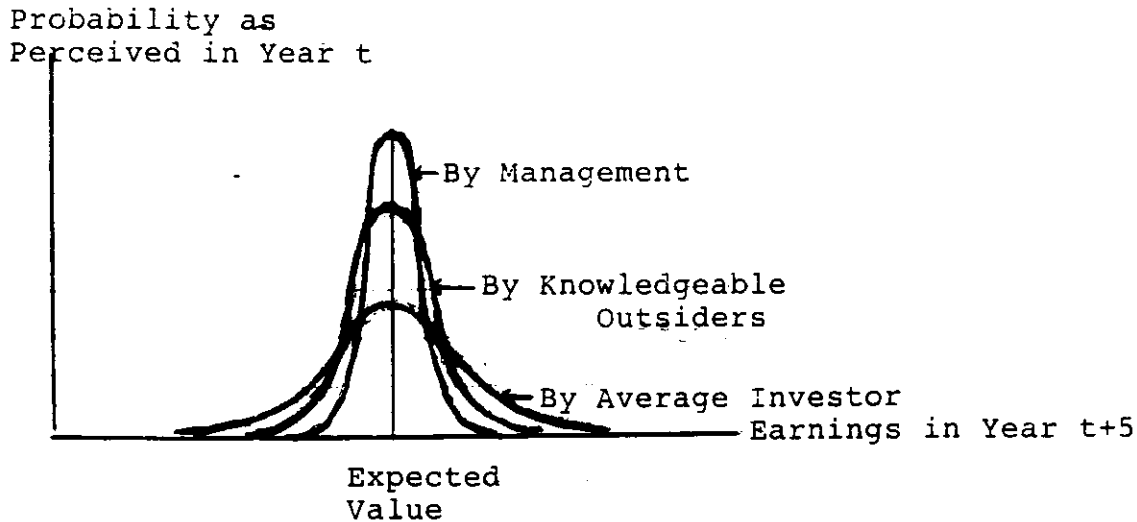


CHART 2. SUBJECTIVE PROBABILITY DISTRIBUTIONS

3. Different stockholders have different investment horizons--some fairly long-term, some (e.g., arbitrageurs) very short-run. This means that shareholders' interests may diverge in certain situations. It is a fair bet that management will feel greater responsibility toward the buy-and-hold investor in its stock than toward the arbitrageur. Management, at least in nonfinancial enterprises, tends to have a fairly long horizon because the value of its investment in firm-specific knowledge and skills depends on the firm's profitability over a substantial period of time.¹⁰ It may also have

relatively high risk aversion (with particular concern for the left-hand tail of the distribution). As suggested earlier, the firm's managers stand to lose more than most stockholders from unfavorable outcomes and they are less able to protect themselves by getting out quickly. Thus the natural interests of management (and of employees generally) are more in line with those of long-term investors than those of short-term investors.

This creates an agency problem in the relationship of management to the short-term investors. The dissatisfaction of such investors may have been a factor contributing to the takeover activity of the 1980s. Their interests might be well served by an opportunity to sell out at a price above the (depressed) market level, even though well below long-term value, making it feasible for an acquirer to buy in at what appears from a long-term perspective to be a bargain. The causation runs both ways. Takeover speculation, whether generated by the financial press or by an actual 13-D filing, tends to exacerbate the agency problem to the extent that it leads to the acquisition of substantial amounts of stock by arbitrageurs. In the context of public policy the relevant question is whether the interests of short-term investors or those of long-term investors are more consonant with the well being of the overall economy.

From the above assumptions -- heterogeneous information, risk premia dependent on the amount of information possessed, and differences in time horizons -- two inferences follow. First, different parties may quite rationally arrive at different valuations for the same stock, because time horizons differ and because different levels of information produce different risk premia, causing future cash flows to be discounted at different rates. Differences in the expected value of earnings and dividends may also occur, but are not crucial to the argument here.

Fundamental value is ordinarily defined in terms of a very long or infinite horizon; and this is appropriate from the perspective of the overall economy. If V_0 denotes fundamental value at time 0, then

$$(1) \quad V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+i)^{t-1}},$$

where D_t is the expected value of dividends in period t and i is the rate of return required on an investment of given risk. Future dividends depend in turn on future earnings,¹¹ while the discount rate reflects the dispersion of possible outcomes under the maximum information available at time zero.¹² It therefore represents the lowest possible discount rate applicable to a (rational) individual investor.

Let us now examine the valuation problem from the perspective of individual investors, who do not ordinarily think in terms of an infinite horizon. A rational investor with horizon N will base his evaluation on the relationship

$$(2) \quad V_0^N = \sum_{t=1}^N \frac{D_t}{(1+i)^{t-1}} + \frac{E_N}{(1+i)^N} \left(\frac{P}{E}\right)_N,$$

where the last term on the right is the present value of expected terminal price, with E_N representing expected earnings (after corporate taxes) in period N and $(P/E)_N$ the earnings multiplier expected to prevail at that time (given expected earnings).

The discount rate in (2) will be inversely related to the amount of information available to the evaluator. With more information, one can set a narrower confidence interval within which the outcome is expected to fall. Rationally this should lead to a lower risk premium (for any given level of risk aversion) and the application of a smaller discount rate in computing the present value of expected earnings or dividends. In general, the discount

rate will be relatively small for insiders, somewhat larger for knowledgeable outsiders, and still larger for the average market participant. This means that, other things equal, management will place a higher value on the stock than outsiders; and it may go a long way toward explaining why so many managers are so reluctant to go to the equity market except when price/-earnings ratios are unusually high.

The value assigned to the terminal price/earnings ratio might plausibly be an historical average for the firm or industry or (for short horizons) something intermediate between this and the current multiplier.¹³ There is, of course, one particular value of $(P/E)_N$ for each investor which would equate V_0^N to fundamental value; and some theoretical analyses implicitly assume that this will be the value chosen. Such a choice is wildly improbable for an individual investor since it would require information he is unlikely to have relating to events far beyond his own horizon and since, under rationality, he will apply a larger discount factor than in (1) if his information is less than the maximum available. Even the assumption that the equality of V_0^N to V_0 holds in some average sense seems unduly restrictive. We consider the implications of a model in which expectations of terminal price generally fail to make full adjustment for differentials between the within-horizon earnings trend and the very long-term, full-information trend.

Since the growth path of earnings and dividends may well vary over different horizons, different investors may derive different valuations from (2) even if each correctly perceives the trend over his own horizon.¹⁴ Within each horizon valuations differ depending on the risk premia required, which depend in turn on the amount of information available to the individual. Not only do investors differ among themselves on valuation, a result which is amply demonstrated by the fact that trading occurs and which is shown here to

be consistent with rationality, but also it follows that most or all of their valuations differ from fundamental value. Even in the unlikely event that on average they correctly estimate the full-information expectations regarding the infinite dividend path in (1) and thus the full-information price expected to prevail at their horizon, they will require a larger risk premium than in (1) because information, at least for outsiders, is less than the maximum available and the perceived dispersion of outcomes around expected value is correspondingly greater.

Since the demand function for corporate stock depends on investors' valuations and these are not in general equal to fundamental value and since market price is determined by the intersection of total demand with a supply function that can be considered fixed at a given point in time, it follows that market price does not necessarily represent fundamental value at all times. Although price may still show a strong functional dependence on value in the long run, short-run discrepancies exist in all probability and may in fact be substantial.

This is the second inference we draw from the assumptions with which we began. In particular, if stockholders with relatively short horizons dominated trading in the late 1970s and if they correctly predicted the generally unfavorable earnings trend that prevailed over the next several years, then stock prices would be expected to fall short of fundamental value based on a very long horizon, not only for many individual issues but for the market as a whole.

The conclusion that price may differ from fundamental value for significant periods of time is consistent with the beliefs of many corporate managers and many investment analysts. However, it directly contradicts the efficient markets hypothesis, which depends for its theoretical base on a much

more restrictive set of assumptions than are used here and for its primary empirical support on evidence that market prices adjust quickly to changes in generally available information. Such evidence does not address the question of the persistent pricing errors that potentially result from the information gap between insiders and other market participants or from prospective discrepancies between short-term and long-term performance.

Discrepancies between market price and underlying long-run value are particularly important for present purposes, because such a discrepancy creates a profit opportunity for "knowledgeable outsiders." In circumstances where stocks are underpriced, takeover specialists can capture for themselves some substantial part of the excess of fundamental over market value by offering a price significantly above market and, if successful in acquiring control, selling off pieces of the target to other firms which are willing to pay something close to fundamental value, as perceived by highly knowledgeable parties with long horizons.¹⁵ The ultimate purchasers may be firms in the same industry which find it more advantageous to expand their own capacity in this way than through the purchase of new plant and equipment. If they pay less than fundamental value, they receive a value transfer from long-term investors in the target firms (as do the initial acquirers in any case). Alternatively the purchasers of some pieces may be firms in other industries which have large cash flow relative to the supply of attractive investment opportunities in their own business and which do not wish to pay out the difference as dividends because of the tax consequences to their stockholders (and/or for less acceptable reasons related to management's desire to retain control over a large asset base).

We wish to consider here takeovers which are profitable to the initiator only because market price, based on information generally available, is below

long-run value as determined by the greater information and relatively long time horizons of ultimate purchasers.¹⁶ Operational efficiency is not increased and in a hostile takeover will be diminished by deadweight transition costs. The only possible benefit, from the perspective of the overall economy, is that the efficiency of financial markets in allocating funds to their most profitable real use will be improved, and this is unconvincing for the early 1980s. While there is a general presumption that allocational efficiency is enhanced by anything that moves market prices closer to underlying value, it is hard to see the benefit of adjusting a few prices in an environment in which most stocks remain underpriced. The effect is to increase the distortion in relative prices as measures of fundamental value. While the first-best solution is clearly to move all prices up to fundamental value, it is not clear that the second-best is to move some subgroup close to underlying value while a major proportion remain well below.

Since the disruptive effects of takeover activity are a clear negative, reducing the productivity of the target firm, it must be judged that takeovers of this type are not in the general economic interest. There may be an additional loss of economic efficiency if the acquirer's management miscalculates or acts in a self-interested way. (See footnote 2.)

A further development in takeover strategy occurs once the market has become sensitized to the profit potential of investing in likely takeover targets and a group of specialists willing to provide high-risk short-term financing for takeover attempts has emerged. At that point a financial entrepreneur, simply by acquiring a significant holding in a company, can generate takeover speculation and thereby push up the stock price and achieve a short-term capital gain even in the absence of any serious intention to

acquire the firm or any real financial capability to do so. Such an entrepreneur may achieve a profit under various scenarios:¹⁷

- He may obtain greenmail by selling out to the target firm at a price above market. It is worth something to the firm to end the disruption and adverse effects on morale that occur when a company is "in play" over a period of time. The directors may feel justified in paying a price above market so long as it is below what they perceive to be fundamental value, using the time horizon and discount factor they consider appropriate. The payment of greenmail raises serious questions of equity because the firm offers one stockholder or group of stockholders, whose activities are perceived as detrimental to the firm, an option not available to the rest. Nevertheless it is one device whereby financial players have benefited historically.
- A second scenario involves skillful use of the financial press to "hype" takeover speculation to the point where the initiators can sell out at a substantial gain. Essentially this exploits investors who are deceived into believing that the takeover intentions of the raider are serious.
- A third scenario, clearly the most attractive to a raider, develops when the possibility of a successful tender becomes sufficiently credible to force the target firm to look for a "white knight" -- that is, to arrange a friendly takeover by a firm that does have a serious long-term economic interest in acquiring the target and has the clear financial capability to do so.

What are the economic welfare implications of these scenarios? An increase in economic efficiency can occur only if a "white knight" emerges who can provide either operational synergies or superior management.¹⁸ In all other cases productivity is reduced by deadweight costs with no favorable

offset. Note that a white knight scenario does not guarantee efficiency gains, since the simple opportunity to acquire assets at a price below replacement cost may provide sufficient motivation for a friendly acquisition. In case of greenmail, the target firm's initial stockholders suffer not only the costs of disruption but a transfer of value to the raider. In case the raider, judging that a white knight is not going to emerge, simply sells out at the higher price generated by takeover speculation, it may be the arbitrageurs who suffer, along with long-term investors who hung on to their stock. Perhaps the worst case is one in which a raider, by miscalculation, ends up with an acquisition he never seriously intended to make and has no competence to manage effectively.

From a policy perspective, it seems clearly correct to discourage greenmail on both equity and efficiency grounds. Furthermore, actions tending to generate takeover speculation, such as statements to the press of takeover intentions by a party without adequate financing in place, come perilously close to price manipulation, especially when combined with large, roughly simultaneous purchases and sales of the stock. Perhaps consideration should be given to tax policies that would limit the capital gains from such operations or to legal remedies whereby the company could capture such gains in recompense for costs imposed, either directly or indirectly (through disruption of normal operations).

IV. The Role of Outside Directors

By law the outside directors of a target firm are concerned, not with questions of overall economic efficiency, but with the interests of the firm's shareholders, although in some states they are permitted to consider also the interests of employees and other constituencies.¹⁹ In cases where a proposed takeover promises to enhance fundamental value, the primary responsibility of

the director is to ensure that the stockholders they represent share in the value increment to the extent possible. Takeover defenses are useful insofar as they give directors more time and more leverage to negotiate with a hostile acquirer on behalf of the shareholders, who are not likely to be well enough organized to bargain effectively on their own behalf. Defenses capable of blocking or seriously delaying takeovers of this type are not in the shareholders' interest.

In cases where the potential acquirer makes no contribution to fundamental value, but offers a price intermediate between fundamental value (as perceived by the directors) and the current market, the problem is more difficult because the interests of stockholders with short horizons will be in conflict with those of long-term investors. The former will obtain a better short-term return than otherwise, if the takeover is successful, while the latter will suffer some transfer of value to the initial acquirer and/or the ultimate purchaser. The directors are in a better position than an individual shareholder to judge how large this transfer may be.

In cases of this type the interests of the potential acquirer are almost necessarily adverse to those of the initial stockholders. The excess of fundamental value over market price is given and the acquirer wants to capture as much of this as possible. The more he succeeds in capturing for himself, the less is left for the initial stockholders, who have little bargaining power in dealing with him individually.

Some protection can be offered to the shareholders by a fair price provision in the corporate charter. This essentially requires the acquirer to pay the same price for all outstanding shares and it enables a shareholder who is not satisfied with the price initially offered to hold out for more without

fear of ending up as a minority stockholder forced to accept a still lower price.

Stronger protection can be provided by a shareholder rights plan or "poison pill." These rights make it much more expensive to implement a takeover without the consent of the incumbent directors, who if they approve a takeover bid may redeem the rights at low cost within a short period after a triggering event and thus eliminate the excess cost.²⁰ The power of the directors to redeem the rights creates a considerable incentive for a would-be acquirer to negotiate with the board rather than offering a take-it-or-leave-it proposition to the individual shareholders. If a change in control is determined to be desirable, directors will be ensured the time and opportunity to bargain for the best price available either from the initial bidder or from a third party. The directors cannot ultimately block a takeover attempt, since the would-be acquirer can still gain control in a proxy fight. Unless the "poison pill" is reinforced by staggered terms for directors, this should not impose excessive delay or an excessive increase in transition costs. Since there may well be a divergence of interest between stockholders with different investment horizons, there is an argument on equity grounds for requiring that the question be submitted to a vote.

The "poison pill" does mean that directors will have the opportunity to shop for a better offer. The simple existence of this opportunity makes shareholders less willing to accept an initial offer and forces the would-be acquirer to offer a better price than otherwise in order to obtain control. This, of course, reduces the expected profit to the acquirer and may discourage takeover attempts in cases where the spread between market price and underlying value is relatively small. Since the social costs of takeover activity exceed the private costs to the acquirer and since any potential

gains to short-term investors are likely to be at the expense of those with longer horizons, it is not clear that such an effect is undesirable.

"Poison pills" can, unfortunately, be used for the undesirable purpose of entrenching incompetent management. Like nuclear energy and many other things, they have the potential for both good and evil. How they will be used depends critically on the quality and independence of the outside directors and the proportion of the board they constitute. It is the responsibility of these directors both to see that management is well paid for effective performance and to see that management does not enrich itself at the expense of the stockholders. Much of the argument against "poison pills" appears to depend on the presumption either that outside directors are too few in number to exercise effective control or that they are more likely than not to fail in their fiduciary duties.

The final verdict on "poison pills" depends on a judgment as to the relative importance of cases in which they may do harm and cases in which they may do good. In how many cases does the potential exist for enhancing economic efficiency by a hostile takeover?²¹ In what proportion of these would takeover attempts be discouraged by the need either to negotiate directly with the board of directors or to undertake the additional risk and cost of a proxy contest? What is the value of the efficiency gain forgone? In how many cases does a "poison pill" enable the directors to obtain a larger share of fundamental value for the initial shareholders, either by defeating an offer far below fundamental value or by negotiating a higher premium in a successful offer? What is the amount of the increment? Current empirical research gives conflicting and largely indirect evidence on these issues.

What practical guidance does the analytical framework developed here provide for a director faced with a tender offer above market but below the

long-term value as perceived by parties more knowledgeable than the general public? As previously discussed, the directors face a dilemma because different stockholders have different horizons. A price that benefits investors with short horizons (because it provides an opportunity to obtain an immediate capital gain) may hurt other shareholders because it is well below underlying value as calculated in terms of their relatively long horizon. Conscientious directors do not want to be in the business of redistributing wealth from one group of stockholders to another. Furthermore, directors do not know what the time horizons of the shareholders are (although they may guess that those financial institutions that emphasize short-term management performance probably have relatively short investment horizons).

For a given horizon, say 5 years, outside directors have a reasonable basis for estimating fundamental value. They will probably have a 5-year earnings forecast from management which they may then adjust for any optimistic bias they have observed in the past, obtaining the adjusted values $\hat{E}_1, \hat{E}_2, \dots, \hat{E}_5$. They can then estimate dividends over the next five years, $\hat{D}_1, \hat{D}_2, \dots, \hat{D}_5$, on the basis of historical dividend policy and they can estimate capital gains to current stockholders from the expected value of earnings five years from now, \hat{E}_5 , and an appropriate earnings multiple, \hat{K} . If the price/earnings ratio is currently abnormally low, the directors may reasonably assume some recovery toward a more normal level by the end of 5 years. Fundamental value, V_0 , may then be calculated from (2) for an investor with a fairly long horizon:

$$V_0 = \sum_{t=1}^5 \frac{\hat{D}_t}{(1+i)^t} + \frac{\hat{K}\hat{E}_5}{(1+i)^5}.$$

A problem arises in determining the correct value to use for the discount rate, i . In practice, directors probably use their own required rate of

return and this gives an accurate estimate of the value they would rationally place on their own stock with such an horizon. However, it may overstate underlying value as perceived by an individual investor with the same time horizon because the directors, having substantially more information and thus a more compact subjective probability distribution than the average stockholder, may well require a smaller risk premium. Nevertheless, decisions based on the directors' own evaluation meet the standard of what a prudent man would do in the conduct of his own business.

In order to take account of investors with shorter perspectives, the calculation might be repeated for other time horizons -- say one, two, three, and four years.²² When the bidder brings nothing to the table in the way of fundamental value, an offer -- if it is to be both profitable and successful -- is likely to fall between the valuation at one year and that at 5 years. Only if the tender price is consistently above or consistently below the director's estimated value at all horizons is there an unambiguous solution. Otherwise the dilemma remains of whether and how to redistribute welfare among shareholders with differing time horizons. Neither the law nor the theoretical analyses of academicians offer much guidance in such cases. In practice the director is likely to resist the offer unless the price remains attractive at a relatively long horizon, in part because he does not want to take responsibility for injuring long-term investors and in part because he gives some consideration to the interest of employees. In any case he will wish to be in a position to negotiate a price that will benefit as high a proportion of stockholders as possible.

IV. Summary and Conclusions

We would draw three types of conclusions from the above analysis, relating to (1) the impact of takeovers, and in particular hostile attempts,

on overall economic welfare; (2) the costs and benefits of "poison pills"; and (3) the implications of our analysis for empirical studies of these questions.

1. Benefits to the overall economy can occur only when operational synergies or improvements in management are achieved through a successful takeover or when an unsuccessful attempt stimulates the management to beneficial action. The claim is not persuasive that takeover activity in general, by moving stock prices closer to underlying value, necessarily serves to improve the efficiency of financial markets in allocating resources. In the case of friendly mergers or takeovers there is a presumption that synergies are perceived to exist and that the economy is likely to benefit. With respect to hostile tenders, however, the efficiency gains in successful cases must be netted against deadweight costs that occur whether or not the takeover attempt is successful and against the efficiency losses that may arise from miscalculation or incompetence on the part of an acquirer.

This raises an important question as to whether hostile attempts should be treated differently from uncontested offers. Takeovers are most likely to be hostile in two situations: (1) where management is ineffective (either in current operations or in utilizing cash flow to maximize value) and outside directors are either unwilling or unable to correct the situation; or (2) where the takeover attempt is motivated solely by the underpricing of stock relative to its long-term value as perceived by knowledgeable parties. We have argued that in the second case an arbitrary redistribution of wealth is likely to occur with a probable loss in terms of economic efficiency, except in the lucky event that a white knight, sought out by a target firm in response to a hostile tender, happens to provide synergies or superior management. The problem is how to discourage hostile attempts of the second kind without losing the important potential for benefit in the first case.

2) "Poison pills" can be examined in this context. The interests of the bidder are adverse to those of other stockholders as regards the way in which the discrepancy between market price and long-term value (or the increment in fundamental value) is shared. The initial shareholders are at a substantial disadvantage in the negotiation if they deal directly and individually with the bidder. Furthermore, since the interests of short-term investors may diverge from those of long-term investors it seems only fair to put the matter to a vote. "Poison pills" serve the interests of equity by giving the potential acquirer an incentive to negotiate with the directors, and, failing agreement, by forcing him to undertake a proxy contest. The cost is that one control against ineffective management is reduced to the extent that the resulting increase in cost and risk discourages efficiency-promoting takeover attempts that would otherwise have been made. This damage can be limited so long as takeover defenses, while delaying a takeover so that the directors have an adequate opportunity to bargain for the best possible price, do not add excessively to its ultimate cost. It seems clear that this is the criterion on which "poison pill" and other types of takeover defenses should be judged. But it also seem clear that a hostile takeover is a very clumsy, expensive and uncertain device for insuring that managers perform efficiently. It is basically the function of outside directors to discipline management. They are more likely to do this well if their stockholdings are large relative to their annual cash compensation, if they have substantial reputations of their own to protect, and if they are in a position to exercise real control over the decision-making apparatus. Direct access to outside accountants and legal counsel are a necessary but not sufficient condition for such control.

3) Empirical studies which attempt to measure the impact of takeovers on subsequent profitability (and thus by implication on economic welfare) are inefficient if they lump together cases in which favorable effects can be expected on theoretical grounds with cases in which no such theoretical ground exists. A finding that some favorable effect occurs for the sample as a whole may be entirely due to a subgroup of cases, essentially those in which synergies exist or incumbent management is ineffective. This may lead to a false conclusion that takeovers are generally beneficial to the economy and that takeover defenses should be weakened or eliminated.

It should be possible to identify situations in which an improvement in fundamental value is at least plausible on a priori grounds. This is the case for friendly takeovers, for acquisitions by a white knight, and for hostile bids by firms in the same or closely related industries. The case is strengthened if the target firm has consistently shown low earnings growth or low return on assets relative to its industry or a loss of market share. Ex post information on whether or not acquisitions were subsequently spun off might also be relevant.

It would then be useful to compare the subgroup of takeover attempts meeting of one or more of the above criteria with the remainder of the sample, both in terms of number of cases and in terms of subsequent profitability. The residual subgroup might be further broken down between financial and nonfinancial acquirers. It might even be possible to distinguish financial players with serious intentions from those who simply intend to run up the price by generating takeover speculation. When potential acquirers are of the latter type, it is particularly likely that private gain will be at the expense of overall economic welfare. Relevant criteria for discriminating between the two types of financial players would be whether or not the

financing capability for a takeover is really there, whether large offsetting transactions in the stock are undertaken, and what type of publicity emerges. Presumably a serious player does not want to stimulate any more takeover speculation than is unavoidable until he makes his move for control, while one who simply wants to get out with a short-run capital gain has precisely the opposite motivation.

Empirical studies to date have not provided a convincing answer as to the impact of hostile takeover activity on overall economic welfare. The only true test is to compare earnings for the acquired entity before acquisition and after, where accounting data permit post-merger measurement. This is particularly difficult when the target is broken up and sold to different firms. In any case, a variety of other factors potentially affecting earnings must be held constant and there is a danger that the data may be distorted by the acquiring firms' practices with respect to transfer pricing and the allocation of overhead. Earnings comparisons should be based on more than one year -- say 3 to 5 years. Where accounting data do not permit the measurement of post-merger earnings of the target, the surviving firm may be compared with the sum of earnings for the pre-merger entities (after controlling for industry performance). This works best when the target represents a substantial fraction of the surviving firm. It works badly in the case of bust-ups.

For policy purposes, it is crucial to determine not only the direction and size of the earnings effect, but also whether there are differences between different types of merger activity: contested versus friendly takeovers; hostile takeovers with and without a white knight outcome; financial versus nonfinancial bidders; acquisitions of firms in the same industry versus other acquisitions.

With respect to the effect on shareholders, the size of the premium offered is the obvious measure, but not a very satisfactory one for investors with long horizons. The outcome for them depends on the relationship of the offer price, not to initial market price, but to underlying long-run value. This underlying value cannot be measured accurately, but might be approximated by observing subsequent industry performance over the next 3 to 5 years and assuming that the target firm would have maintained its past performance relative to the industry as a whole.

Different studies have come to different conclusions; and these generally tend to support the authors' different preconceptions. Better answers can come only from better empirical analysis. We have argued here that a broad conceptual framework -- one which recognizes the possibility of private gain without any gain in economic efficiency and of different effects on long and short-term investors -- is needed in order to deal appropriately with the variety of events observed.

Footnotes

¹These problems remain and may be exacerbated in the post-merger environment. Price Pritchett [1985] of the management consulting firm Pritchett and Associates comments that "Talent leaves first in the aftermath of hostile acquisitions, and these organizational refugees may leave behind only a shell of a management team and a work force plagued by resentment and uncertainty," (page 31); also "With self-preservation becoming a more paramount concern in the minds of employees, they become less willing to make decisions or take risks," (page 48); also "Post-merger studies frequently find that tasks or projects requiring mutual effort and team play have bogged down in organizational politics," (page 50).

²M. Jensen [1986] has pointed out that large free cash flows can lead to self-interested investment decisions by management. This applies to acquirers as well as potential targets. Acquisitions in a different industry are particularly suspect.

³The repurchase of X dollars worth of corporate stock financed by an equal dollar amount of debt increases the earnings available to the remaining shareholders (after corporate tax) by $i_e X$, where i_e is the required rate of return on equity, and decreases the earnings available to this group by $i_b X(1-t)$ where i_b is the yield on the bonds sold and t is the corporate tax rate. Earnings per share rise if $i_b < i_e/(1-t)$. A rise in market value may also occur if the percent increase in required return on equity is less than that experienced on earnings per share. Auerbach and Reishus [1988] find that the increase in leverage was very small for their pre-1983 sample of 318 mergers and acquisitions. While debt increased considerably, so did the market value of equity. Herman and Lowenstein [1987], on the other hand, find a sharp decline in coverage of fixed charges for successful bidders in a sample of 56 hostile takeovers in the 1978-83 period.

⁴It is also possible in a period like the late 1970s and early 1980s that management failed to take account of the transfer of value from bondholders to stockholders resulting from inflation, and thus permitted leverage to fall below its optimal level. See Feldstein [1983].

⁵Browne and Rosengren [1987] provide support for the proposition that management is more likely to contest an offer when the market's valuation of earnings and assets is relatively low. They compare target firms in contested tender offers with other acquisition targets for a sample of 129 takeover attempts in 1985 and find that earnings, cash flow and book value of assets were all valued at lower multiples in the contested cases than for uncontested cases or for the sample as a whole (Table 6). Furthermore, for each of the three years 1983-85, the average premium offered was higher for successful contested tender offers than for uncontested offers or for mergers and offers

other than tenders and was much higher than for unsuccessful contested tenders (Table 4).

⁶This is true whether we look at the New York Stock Exchange Index or the Standard and Poor's 500. Profits are aggregate data after inventory valuation and capital consumption adjustments.

⁷It should be noted that physical assets are likely to become more valuable to an acquirer than to the target firm as the result of a period of high inflation. The nominal value of the assets rises above the depreciated value based on original cost, offering the acquirer the tax advantage of larger depreciation allowances. See Feldstein [1983].

⁸Considerable emphasis is apparently placed on short-term performance in evaluating and rewarding fund managers.

⁹These informational differences will be relevant for market behavior so long as the signalling implicit in the trading of those most knowledgeable fails to fully disclose their view of fundamental value to the general market. We assume that officers and directors, the most knowledgeable parties, are limited in their purchase of their own stock by considerations of portfolio diversification and/or by the risks of excessive personal leverage.

¹⁰The exception is when management compensation is strongly tied to current performance.

¹¹For illustrative purposes, we might approximate the dividend path for the market as a whole by assuming that dividend expectations are proportional to normalized earnings as represented by the 40-year trend in Chart 1 or some other smoothing technique.

¹²The discount rate also reflects risk aversion, which for convenience of exposition we assume to be the same for all investors.

¹³In cases where takeover speculation exists, this speculation may dominate other considerations as a determinant of expectations about terminal price for short horizons.

¹⁴Note from Chart 1, that, even if we exclude from consideration years of sharp cyclical decline like 1958, 1974, and 1982, the short-run earnings trend for the economy as a whole is far below the long-term trend in periods like 1955-61, 1966-71 and 1978-81, while the reverse is true in 1961-66, 1971-78 and 1981-86. Terminal price is likely to be underestimated when the trend within the investors horizon is relatively flat.

¹⁵Such parties do not necessarily arrive at precisely the value specified in (1) but they approximate it more closely than other market participants. For purposes of exposition we treat their evaluation as equivalent to fundamental value.

¹⁶Cases may occur in which the breakup of a firm provides the ultimate purchaser with an asset he can use more profitably than the target firm. In such cases the conclusions are the same as in Section II above.

¹⁷The options are neatly explored by Edward J. Epstein in an article in Manhattan, Inc., entitled "The Win - Win Game" (January, 1989).

¹⁸As argued above, the putative allocational benefits of an activity that moves prices closer to fundamental value are unconvincing for the merger boom of the 1980s.

¹⁹The economic justification for permitting consideration of employees is that when they acquire job-specific skills, they are making their own investment in the firm. Such investment in human capital, while it may or may not meet the legal definition of property, should be encouraged because it contributes to the firm's profitability and to overall economic efficiency.

²⁰A variant of the "poison pill" in which incumbent directors lack the power to redeem the rights seems clearly undesirable since it would block or seriously discourage takeovers with the potential to increase economic efficiency.

²¹DuBoff and Herman [1989] summarize the evidence from a number of sources that conglomerate mergers in the 1960s probably did not produce overall efficiency gains: (1) acquired firms tended to be more profitable before the merger than comparable firms in the same industry and than their acquirers; (2) a high proportion of the firms acquired were subsequently divested; and (3) large manufacturing firms acquired in conglomerate mergers experienced subsequent losses in market share. The first finding argues against efficiency improvement through better management; the second argues against synergy; and the third against both. Herman and Lowenstein [1987] show that for a sample of 56 hostile takeovers initiated in 1978-83, the pre-bid performance of targets was better than that of acquirers in terms of return on total capital and also, on a weighted basis, in terms of return on equity. Furthermore, the successful bidders in takeovers initiated after 1980 suffered sharp post-takeover declines in return on equity.

²²Longer time horizons could also be considered, but predictions, even if based on the maximum information currently available, become highly tentative beyond five years.

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