A PRELIMINARY EMPIRICAL INVESTIGATION
OF ALLOCATIONAL VERSUS ACQUISITIONAL Mergers

Prepared as the final report for the Federal Trade Commission under FTC Contract L0638, "The Impact of Public Policy and Expectations on Firms of Differing Size"

by

Edwin Burmeister
Commonwealth Professor of Economics, University of Virginia, and Visiting Professor of Economics, University of Chicago

and

Kent D. Wall
Associate Professor of Systems Engineering, University of Virginia

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1. **Introduction**

Economic analysis of mergers and acquisitions is on the frontier of current research. Despite the extensive literature, as exemplified by the summary in Section 5, very little rigorous theoretical work has been done, and much of the existing empirical work is without a solid theoretical foundation.

The basic difficulty is that decisions to merge with, or to acquire, another firm involve expectations of future economic events *given the information available at the time the decision is being made*. Subsequent events provide new information, but that information is relevant only insofar as it enables us to evaluate whether or not the original decision was "correct" in an economic sense. To reach such an evaluation using *ex post* data necessarily entails certain assumptions; clearly, one can never ascertain "what someone was thinking at an earlier time" without postulating some structure about the decision-making process.

Our work builds upon some very recent theoretical advances made about merger-acquisition activity. Certain assumptions, as discussed in Sections 2 and 3, enable us to use *ex post* data to classify each merger-acquisition as either *allocational* (socially desirable) or *acquisitional* (socially undesirable), as these terms are defined in the next section. However, this classification is sensitive to assumptions, and therefore further work would be necessary to justify these assumptions—or to modify them—before our classifications will be accepted as unqualified evidence.
The results reported in Section 4, therefore, must be regarded as tentative. They constitute a first step in a continuing research project, and future refinements in our theoretical and empirical procedures are likely to produce some alterations in the classifications. Nevertheless, we have identified cases which are robust with respect to some assumptions--cases which remain in the same classification despite a wide range of differing assumptions. We believe that these are cases which merit closer examination to determine whether or not a further relaxation of assumptions will alter the conclusions.

Accordingly, the procedures used to classify merger-acquisition cases in this report are only a first step in a proper economic evaluation. Moreover, our procedures can and should be refined; we focus on this problem in our current research.

We believe that the usefulness of the classifications reported here is that they could serve as a useful filter to identify those mergers and acquisitions which should be scrutinized further. It is evident that the volume of merger-acquisition activity precludes the possibility of an in-depth analysis of every case. Our classification method yields one systematic method for selecting cases for additional study. While this filter mechanism can be improved and we are currently attempting to do so, we believe it to be preferable to an arbitrary selection or to a selection procedure which is not systematic. However, we emphasize that our current classifications should not be viewed as any more than a filter. If that filter is used to identify cases for further study, it is imperative that this additional analysis include numerous
factors which we have ignored. In particular, a proper evaluation of any merger-acquisition case must include an analysis of other legal, economic, and public interest aspects.
2. Theoretical Foundations

Following the theoretical work of Grossman and Hart [1980], we define two classes of mergers-acquisitions:

An allocational takeover is one for which resources are transferred to achieve more efficient utilization.

An acquisitional takeover is one which does not entail a more efficient utilization of resources, but rather is purely redistributive.

Allocational takeovers are socially beneficial judged on the basis of efficient resource utilization. It must be recognized, however, that a particular allocational takeover might be viewed as undesirable on other grounds, such as the creation of monopoly power. Our concern here is limited to questions involving the efficient distribution of economic resources, and allocational takeovers by definition result in a more efficient utilization. Examples of allocational takeovers might include horizontal or vertical integrations, displacements of inefficient management, and situations in which an acquiring firm is better able to utilize resources because of superior information.

Acquisitional takeovers are not socially beneficial because they do not allocate resources more efficiently; they are costly and hence use up resources. Moreover, because acquisitional takeovers are always a threat, new corporations have a lower expected rate of return than they otherwise would, and this distortion is a potential cause of underinvestment in new corporations. One cause of acquisitional takeovers is incomplete or inaccurate shareholder information. If shareholders base their valuation
of the firm upon the incomplete or inaccurate information, the firm may be
undervalued by the market. For example, a firm with an inefficient utiliza-
tion of resources should be valued as if there were a positive probability
that the resources would be reallocated efficiently, but shareholders may
not possess enough information to make this evaluation properly; the firm
might thus be undervalued by the market.

Let \( V_0 \) denote the true pre-announcement value of the acquired firm.
Halpern [1973] has shown that share prices begin to reflect a pending
merger about six to eight months before the announcement date. Consequently,
letting \( t_0 \) denote the announcement date of a merger-acquisition, we use
the date \( t_0 \) minus six months \( (t_0 - 6) \) to estimate the pre-announcement
value of the acquired firm, and this estimate of \( V_0 \) is denoted by
\( V_{t_0-6} \). Similarly, we shall use the market value four months prior to
the announcement date, denoted by \( V_{t_0-4} \), as an alternate measure of \( V_0 \),
the true pre-announcement value of the acquired firm. The use of these
two alternative estimates will be discussed below.

At time \( t_0 \), when the announcement of the merger-acquisition is
made, new information is available to the public, and the market value of
the firm is \( V_{t_0} \). Note that the market value \( V_{t_0} \) encompasses the know-
ledge revealed by the announcement of a takeover attempt.

Let \( V \) denote the true value of the acquired firm with new manage-
ment. This true value of the acquired firm to the acquiring firm is an
unobserved variable. We have developed a new methodology for estimating
unobserved variables which is discussed in Section 6 below. However,
implementation of this new procedure was impossible within the time span
allocated for this preliminary investigation. Accordingly, for the
purposes of this report, we shall use preliminary estimates of $V$, to be discussed below. For the purposes of the subsequent discussion, we will suppose that the pre-announcement value of the firm, $V_0$, and the unobserved variable $V$ are both known exactly.

We now define two important concepts:

An unambiguously successful bid is one which succeeds both when it is expected to fail and when it is expected to succeed.

The exclusion factor is the amount of value which the acquiring firm is able to retain for itself and which is not received by the shareholders of the acquired firm.

Grossman and Hart [1980] prove that two inequalities must hold if a takeover attempt is to be unambiguously successful:

(A) $P \geq V_0$

and

(B) $P \geq V - \delta$

where $\delta$ denotes the exclusion factor defined above and where $P$ denotes the price of the bid.

The proof may be sketched briefly. Suppose (B) is false: if (B) is false, shareholders of the target firm will not tender their shares if they believe the bid will succeed. They will not tender at this time because they expect to receive the value $V - \delta$, which is more than the price of the bid, $P$, under the assumption that (B) is false.

On the other hand, suppose it is believed that the bid will fail and that (A) is false. Under these circumstances, shareholders expect the
value $V_0 > P$, if they expect the bid to fail, and thus they will not tender their shares.

The fact that both (A) and (B) must hold if a bid is to succeed when it is expected to succeed or when it is expected to fail enables calculation of the minimum price necessary for an unambiguously successful bid, denoted by $\hat{P}$:

$$\hat{P} = \max(V_0, V - \phi) .$$

Clearly $\hat{P}$ may depend upon the size of the exclusion factor, $\phi$, and in the next section we will discuss how we obtain an estimate of $\hat{P}$ using an estimate of the exclusion factor.

Takeover bids are classified into three categories according to the following criteria:

(I) A bid is purely acquisitional if $V - C < V_0$, where $C$ denotes the cost to the acquiring firm of making the bid.

(II) A bid is purely allocational if $\hat{P} \geq V_0$.

(III) A bid which is not (A) or (B).

Those takeover bids which are classified as purely acquisitional are of special interest. In these cases the value of the acquired firm, net of the cost of making the bid, is less than the pre-announcement value of the acquired firm. Assuming that the values have been measured correctly and that increased values reflect more efficient utilization of economic resources, it follows that purely acquisitional takeovers are socially undesirable on efficiency grounds.

In order to arrive at a preliminary list of acquisitional mergers, it is necessary to restrict our sample to cases for which it is possible
to make estimates of the unobserved variable $V$. Our sample has been restricted to only cases where:

(i) the cost, $C$, is known,

(ii) the bid is a cash offer, $1/$

and

(iii) the tender offer is for 100% of the shares.

As already noted, in future work we will employ a statistical technique for arriving at estimates of the unobserved variable $V$. One difficulty is that the acquiring firm may possess inside information (i.e., information which is not available to the public) about the true value of the target firm under new management. $2/$ However, the work of Halpern [1973] clearly suggests that the public is aware of a possible bid well in advance of the announcement date, $t_0$. Thus the observed value at time $t_0$, $V_{t_0}$, must reflect a re-evaluation by the market based upon the information revealed by the fact that the firm is a merger candidate. Let the value to the acquiring firm due to nonpublic information be denoted by

$$V_I = V - V_{t_0}$$

Similarly, let the value of nonpublic information not reflected in the pre-announcement value of the target firm be given by

$$V_I = V_0 - V_{t_0-6}$$

If the value of both types of nonpublic information do not depend upon circumstances unique to a particular acquiring firm, one would expect that on average

$$V_I = V_I$$

Suppose the latter is correct; then if
\( V_{t_0} - C < V_{t_0-6} \)

holds, it is also true that

\( V_{t_0} + V_I - C < V_{t_0-6} + V_I \),

or

\( V - C < V_0 \).

Accordingly, as a preliminary strong criterion for the classification of acquisitional mergers, we use

\( V_{t_0} - C < V_{t_0-6} \).

An analogous weak criterion is

\( V_{t_0-1} - C < V_{t_0-4} \).

The rationale for using the terms "strong" and "weak" is that in cases with rising values due to the dissemination of information over time,

\( V_{t_0-1} < V_{t_0} \) and \( V_{t_0-6} < V_{t_0-4} \)

so that the strong criterion implies the weak criterion. The observed variables thus are \( V_{t_0}, V_{t_0-1}, V_{t_0-4}, V_{t_0-6}, C, \) and \( P \). In the next section we shall discuss monthly averages and stock market index adjustments for these variables.

Finally, an unjustified premium is defined by

\[ U = \frac{P - \hat{P}}{P} \]

The minimum unjustified premium is
\[ U_{\min} = \frac{P - \hat{P}_{\max}}{P}, \]

where

\[ \hat{P}_{\max} = \max(V_0, V_{-\phi_{\min}}). \]

The details of this estimation will be described in the next section.
3. Computational Procedures

Implementation of the theory described in the previous section requires the development of a suitable data sample and numerical values for $v_{t_0}$, $v_{t_0-1}$, $v_{t_0-4}$, $v_{t_0-6}$, and $t_{\text{min}}$.

The data sample must satisfy the three requirements listed in the previous section to be deemed suitable:

(i) the cost of making the bid, $C$, is known;

(ii) the bid is a cash offer;

and

(iii) the tender offer is for 100% of the shares outstanding.

Of an original sample of 92 mergers spanning the period 1975-1979, only 46 have readily available information concerning the bid cost. Of these 46, only 34 cases are found to satisfy the cash offer and 100% shares tendered requirements. Thus, the sample is reduced to nearly one third of its original size. The 34 cases which form the sample are summarized in Table I. The announcement dates still are seen to span the period 1975-1979.

The determination of appropriate numerical values for the valuation variables involves two main considerations. The first is selection of estimators for the determination of valuations. The second is selection of appropriate adjustment techniques to compensate for distortions that might be introduced by market-wide trends (see, for example, Mandelker [1974]) and by inflation. The estimation of the valuation variables is
described below and provides a good preliminary estimate for each variable. It is based on trading day price data over periods not necessarily coincident with calendar months. Daily market price indexes are available so that adjustments for market effects on a daily basis are easily accomplished. Aggregate inflation indexes are available, however, only on a calendar monthly basis. Adjusting daily data using monthly inflation indexes is complex and thus avoided. If the period over which equity price data is used can be kept relatively short, then inflationary effects can be ignored (at least in a preliminary analysis); the need for inflationary adjustment in this study appears minor since our longest time horizon is six months. Future research will investigate the possible sensitivity of our results to inflation.

Numerical values for $V_{t_0}$, $V_{t_0-1}$, $V_{t_0-4}$, and $V_{t_0-6}$ are obtained for each acquired firm in the sample by constructing a twenty working-day average of the market price per share, and then multiplying this average share price by the shares outstanding over that period. Thus, for $V_{t_0}$, an average is computed using closing share prices in the relevant market over the twenty trading days immediately prior to the announcement date. This average price is then multiplied by the shares outstanding over that period to obtain the valuation.\(^3\)

Exactly the same procedure is used for $V_{t_{c-1}}$, except that closing prices are averaged over the period from twenty-one trading days prior to announcement through forty trading days prior to announcement. Likewise, $V_{t_0-4}$ and $V_{t_0-6}$ utilize closing prices over the periods
eighty-one trading days prior to announcement through one hundred trading days prior to announcement, and one hundred twenty-one days prior to announcement through the one hundred fortieth trading day prior to announcement.

In using twenty-day averages, an attempt is made at screening out the day-to-day fluctuations in price. This is necessary to prevent distortion of the results arising from market reaction to information irrelevant to the correct relative valuation of the target firm. Our selection of a twenty trading day span is the result of a trade-off between use of a sufficiently long period to achieve a smoothing effect and a sufficiently short period to maximize sensitivity to those factors affecting valuation in anticipation of a tender offer. For example, using a hundred-day average would screen out almost all daily price fluctuations and respond to only long-term trends. On the other hand, however, such an average would be dominated by price information too far removed from the time period in which the merger/tender offer phenomena effects reveal themselves.

Future research will investigate the robustness of our results to this estimation procedure, and the selection of the averaging interval in particular.

The determination of the minimum exclusion factor follows from the theory described in Crossman and Hart [1980]. In particular, they show that \( \phi > c \). Thus a lower bound on the exclusion factor is simply the bid cost, and gives a good estimate of \( \phi_{\min} \) in computing \( \bar{p}_{\max} \).
Adjustment for overall stock market price trends is accomplished as follows: Using the exact same twenty trading day periods as involved in the computation of the valuation variables, twenty-day averages of the relevant market price indexes are computed for each case. Denoting these as $I_{t_0}$, $I_{t_0-1}$, $I_{t_0-4}$, $I_{t_0-6}$, each valuation variable is market adjusted relative to the announcement date by multiplying the valuation by a ratio of average price indexes. Thus, $V_{t_0-6}$ is replaced by $V_{t_0-6} \times \frac{I_{t_0}}{I_{t_0-6}}$. Similarly, $V_{t_0-4}$ is multiplied by $\frac{I_{t_0}}{I_{t_0-4}}$, $V_{t_0-1}$ is multiplied by $\frac{I_{t_0}}{I_{t_0-1}}$, while $V_{t_0}$ remains unchanged.
4. Tabulation of Results

The results obtained from application of the empirical tests to our sample are presented in the form of five tables.

The first results pertain to merger/acquisition classification under the strong test with no adjustment for market fluctuations. These are presented in Table 2. Of the thirty-four cases in our sample, ten are classified as purely acquisitional with unjustified premiums, expressed as a percentage of the offer price, ranging from as low as 23.6% to as high as 53.4%.

Results using the weak test and no market adjustment are presented in Table 3. There are now eighteen purely acquisitional cases, almost double the strong test. Percentage unjustified premiums range from a low of 19.1% to a high of 55.3%. The "weakness" of the test is evident from its willingness to admit more cases into the purely acquisitional classification.

Table 4 presents the strong test classification when all valuation data is subject to the relevant aggregate market index adjustment. Eleven cases, one more than with unadjusted data, now are classed as purely acquisitional. Comparison with Table 2 demonstrates that the composition of the purely acquisitional classification has changed slightly with two cases changing from purely allocational to purely acquisitional and one case changing from purely acquisitional to purely allocational.

Table 5 gives the weak test classification with market adjusted data. Again there are eighteen purely acquisitional classifications. The composition is altered, however, with four cases switching from their previous
classifications in Table 3. Percentage unjustified premiums now range between 12.3% and 56%.

Finally, Table 6 summarizes those classifications which exhibit a certain kind of "robustness." Specifically, all cases classified as purely acquisitional, whether unadjusted or market adjusted, are included in Table 6.
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<sup>a/</sup> A = Purely acquisitional  
<sup>b/</sup> B = Purely allocational  
<sup>c/</sup> All values in $1,000.  
<sup>c/</sup> Defined as $100x(r - r_{max})/r$.  
<sup>c/</sup> Percentage Minimum.
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<sup>a/</sup> A = Purely acquisitional  
B = Purely allocational  

<sup>b/</sup> All values in $1,000.  

<sup>c/</sup> Defined as $100 \times (P - \hat{P}_{\text{max}}) / P$. 
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<sup>a/</sup> A = Purely acquisitional  
B = Purely allocational

<sup>b/</sup> All values in $1,000.

<sup>c/</sup> Defined as $100x(P - \hat{f}_{max})/P$. 

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<sup>a/</sup> A = Purely acquisitional  
B = Purely allocational

<sup>b/</sup> All values in $1,000.

<sup>c/</sup> Defined as $100 \times (\hat{p} - \hat{p}_{max})/\hat{p}$. 

TABLE 5: WEAK TEST WITH ADJUSTMENT (CONTINUED)
## 5. Literature Survey

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### Introduction

This section contains abstracts of published research papers dealing with the general problems of the investment decision, expectations, and business acquisitions. We have divided the abstracts into three categories—a somewhat difficult chore, as the applicable literature did not always seem to fit into our classifications. Part I includes those papers which focus on "The Role of Expectations in the Investment Decision." Part II summarizes those papers which deal with "Expectations, the Availability of Information, and Business Acquisitions," while papers which examine "Unjustified Premiums in Business Acquisitions" are included in Part III.
PART 1

THE ROLE OF EXPECTATIONS IN THE INVESTMENT DECISION
PART 1

THE ROLE OF EXPECTATIONS IN THE INVESTMENT DECISION


Description

The authors list concerns and considerations to investigate before buying a small company. Some of the topics are as follows:

Investigation and evaluation;
Risk versus information;
History of business;
Product or service;
Financial statements:
   a) cash on hand,
   b) accounts owed to the company,
   c) inventory,
   d) equipment and its depreciation,
   e) amount owed to creditors,
   f) long term debt,
   g) amount invested by current owners;
Actual financing:
   a) trade credits,
   b) bank loans,
   c) factoring of accounts receivable,
   d) loans against inventory,
   e) leasing of fiscal assets,
   f) venture capital,
   g) insurance companies.
h) offering securities to the public,
i) small-business administration;
Fixed costs and required volume;
Product pricing;
Valuation.

Conclusions

Risk cannot be avoided, but information can reduce risk and make better decisions possible.


Description

An attempt is made to incorporate the impact of uncertainty on the firm's investment behavior. The more variable expected demand is, the more hesitant the response of optimal capital stock will be.

This paper also builds on the idea that if a firm operates within a framework of uncertainty, it appropriately views its demand as consisting of permanent and transitory elements, and the transitory components may be impossible to forecast. If this is so, investment estimating equations that use actual demand, actual prices, etc., as independent variables are subject to inherent biases in errors-in-variables formulations. These biases should help to explain the observed elasticity of capital stock with respect to output in distributed lag accelerator regressions. This paper makes permanent demand the relative concept for entrepreneurial decisions on investment.
Assumptions

1. Entrepreneur's response to a change is hesitant.

2. The entrepreneur balances the opportunity loss that is risked by making a wrong decision on capital stock, against the opportunity loss made operating on the high short-run cost curve.

3. Fixed system of cost curves.

4. If actual sales are used as an independent variable in an investment equation then you have errors-in-variables.

5. Investment depends on changes in permanent demand.

Conclusions

1. The entrepreneur faced with uncertainty will tend to adjust only if these changes appear to be permanent.

2. Sales expectations have some role in explaining investment over and above that provided by actual current and logged changes.


Description

This article shows previous theory on the value of a firm during unanticipated inflation to be incomplete. Bradford shows that if the nominal income, and/or maturity and/or market discount prices on monetary assets differ, then the equity of net debtor firms will decrease and that of net creditors may increase, contradicting the wealth redistribution hypothesis.
Conclusions

1. The loss or gain to the common equity of the firm depends on the nominal return, the required return, and the maturity distribution of monetary items as well as the magnitude of monetary items (managerial implications).

2. Firms may protect themselves from inflation by adjusting the risk-return characteristics and maturity of monetary assets and liabilities as well as by adjusting the magnitude of assets and liabilities they hold.

* * *


Description

In this study, the effects of several tax proposals are simulated with the 1975 Data Resources Inc. (DRI) quarterly econometric model of the U.S. to answer the following questions:

1. Would a business tax reform promote capital formation, improve corporate sector liquidity and ease the financing of fixed investment?

2. If Congress liberalizes corporate taxes would business fixed investment and the availability of cost bonds be affected significantly?

3. Would changes in taxes enhance credit worthiness and the ability of corporations to issue new common stock?

4. What are the policy alternatives to tax reform?

The article considers the following changes in policy:

a) An increase on the investment tax credit of durables from 10% to 12%.
b) A two stage reduction in the tax rate on corporate profits from 46% to 42%.

c) The institution of an inflation allowance depreciation.

Conclusions

1. Additional business tax reform would increase capital formation and corporate liquidity.

2. A more effective strategy (than tax incentives) would be to raise aggregate demand and reduce unemployment. The authors call for a more liberal monetary policy from the Fed.

3. Advocation of the use of general macro-policy to "spur" growth of output.


Description

This paper presents an equilibrium capital asset pricing model that considers uncertain inflation, assuming a specific preference structure for investors.

Assumptions

1. Existence of a perfectly competitive capital market with no transaction costs, no taxes, and the investors are price-takers.

2. Investors have homogeneous expectations with respect to the future rates of return on risky securities and the rate of inflation.

3. Investors are risk averse, and are single period expected utility of real terminal wealth maximizers.
Conclusions

Uncertain inflation affects the cost of a project through the market price of risk and the systematic risk of the project, thus affecting the firm's investment decision. The leverage factor affects the premium for a firm's financial risk through the components of variable and inflationary risks.

* * *


Assumptions

The Treasury should strive to tax depreciation in line with economic depreciations, to achieve tax equity and neutrality.

Description

This study attempts to estimate economic depreciation from behavior of actual capital expenditures in different industries. The model of investment behavior allows for alternative assumptions in regard to service lives and capacity depreciation patterns. The model relates net investment to past changes in the desired (optimal) capital stock.

Conclusions

1. Real service lives of structures are substantially longer than those used for tax purposes.

2. Geometric decay of productive capacity is a fallacy. Equipment loses capacity as it ages (though not at a geometric rate), but structures do not.

3. Current tax regulations are generous for structural depreciation and accurate with equipment depreciation.

* * *
Corcoran, P.J. "Inflation, Taxes, and Corporate Investment Incentives."

Description

Expected profitability of a capital asset is measured by the ratio of the expected net earnings stream over the cost of purchasing that asset. Corcoran calls this measure the "rate of return." He measures expected earnings with current earnings instead of an expected earning series. Corcoran cites the difficulty of accurately constructing earning expectations for business people.

Given this measure (rate of return), Corcoran assumes that the larger the spread between the rate of return and the average yield (cost of floating new securities on the debt and equity markets), the more incentive for business to expand existing facilities. This yield required in the cost of equity markets is referred to as "cost of capital" and if rate of return-cost of capital is large, then expansion/acquisition is desirable.


Description

This paper analyzes investment decisions that can be made in a modular form. It is motivated by the empirical observation that managements are particularly worried about "downside" risk. With a sequential approach this risk is minimized. And investment in a module produces information as well as profits or losses. In the model presented a larger investment produced more information in addition to larger profits or losses. Costs
for changing the level of the investment from period to period are introduced. The optimal sequential investment policy is studied for a two-period problem. Conditions are presented under which no investment, a partial investment, or a full investment in the first period is optimal.

Assumptions

1. Probability distribution of profits depends on an unknown parameter.
2. Parameter does not change over time.
3. The profits in the modules are independent given this parameter.

Conclusions

The article identifies the condition under which:

1. Some investment is optimal when a sequential approach is followed but no investment would be made under a non-sequential approach.
2. Partial investment is optimal when a sequential approach is followed but a full investment would be made under a non-sequential approach.

This ability to invest sequentially allows avoidance of large potentially unprofitable commitments.


Description

This study provides a realistic framework for financial managers to use in making joint capital budgeting and financing decisions which maximize shareholder wealth. The study develops an interdependent model capable of making simultaneous, optimal capital budgeting and financing decisions within the context of a capital asset pricing model framework.
Conclusion

The need for simultaneous treatment of a firm's capital budgeting and financing decisions has been discussed and it is concluded that there are no available satisfactory solutions to the problem.

* * *


Description

This paper studies the long-run impact of fiscal policies on inflation and capital formation. The analysis uses an expanded monetary growth model in which the government finances its deficit by issuing both money and interest-bearing debt.

One major focus of the paper is the effect of a permanent increase in the government's real deficit in a fully employed economy. The analysis shows that a greater deficit must increase inflation, reduce capital formation, or both. With U.S. tax rules and the prevailing monetary and debt-management policies, a greater deficit is likely to cause both more inflation and lower capital intensity.

The second purpose of the paper is to analyze the effect of an exogenous increase in the saving rate and the possibility of "excessive saving" that arises when the yield on capital becomes so low that individuals prefer to hold government bonds rather than the more risky claims to real capital. Under some such conditions, an increase in saving could cause unemployment. The analysis shows that this problem can be avoided, however, by reducing the tax on capital income (or, in some cases, by an increased deficit that absorbs some but not all of the higher savings rate). In
short, by using fiscal incentives as well as monetary accommodation, an increased saving rate can be converted to greater capital intensity.


Description

This paper presents a detailed examination of the effect of inflation on the taxation of capital used in the nonfinancial sector of the U.S. economy. In contrast to previous studies of the relation between inflation and corporate tax burdens, not only is the tax paid by the corporations themselves considered, but also the tax paid by the individuals and institutions that provide capital to the corporate sector.

According to the calculations, the effect of inflation with the existing tax laws was to raise the 1977 tax burden on corporate sector capital income by more than $32 billion, an amount equal to 69% of the real after tax capital income of the nonfinancial corporate sector (including dividends, retained earnings and real interest). This extra tax raised the total effective tax rate from 43% to 66% of capital income in the nonfinancial corporate sector.

A separate analysis for each of 20 manufacturing industries shows substantial variation among these industries in the relative importance of this increased taxation. Inflation therefore can distort the allocation of capital among industries as well as the total volume of corporate capital formation.
The paper considers the role of corporate debt in detail. Inflation distorts taxation by allowing corporations to deduct nominal interest payments that exceed real interest but then taxes lenders on their nominal receipts. The analysis shows that the additional taxes paid by lenders exceed the tax saving by corporate borrowers. Since the difference between the relevant tax rates of borrowers and lenders is quite small, the mis-measurement of interest income and expenses can be ignored without seriously distorting the evaluation of the overall effect of inflation on the taxation of corporate sector capital.


Description

This paper has the following objectives:

1. To illustrate the fact that portfolio optimization on the basis of the kind of selection criteria does not necessarily imply anything about investment performance.

2. To demonstrate that the model used by Farrar to assess the portfolio selection of mutual funds has been misinterpreted and has no implications for the performance of mutual funds.

3. To point out the implications of various measures of investment performance in the light of different investment objectives and opportunities.

4. To point out that the Markowitz-type model may be self-defeating if future estimates of average return and risk are based simply on past values of these variables.
5. To present in terms of alternative models new substantive tests on the performance of the common stock section of mutual fund portfolios which do not allow explicitly for two dimensions of performance (average realized return and risk, measured by the dispersion of return around the average).

Conclusions

The objectives were established, and one additional conclusion is drawn: that there is still no evidence that mutual funds performance is any better than that realizable by random or mechanical selection of stock issues.


Description

This paper deals with a valuation model which involves both the expected flow of dividends and the price at which one expects to sell the share of stock at the end of the horizon period. The current price share of a company is equal to the value of this share as given by the valuation model.

Conclusions

The dividend and earning coefficients cannot be interpreted as market weights whether earnings do or do not follow a random walk, or whether dividends do or do not contain additional information. The analysis also shows that a regression of price on dividends and retained earnings per share will lead to different coefficients on the two variables.

**Description**

Definition -- a decision is irreversible if it reduces the long term variety of choices that would be possible in the future.

The problem of sequential decision under irreversibility and uncertainty where uncertainty is measured by the information structure is considered.

**Assumption**

1. The information structure is simultaneously fixed and has memory.

**Conclusions**

Using the above information structure and replacing the initial random problem, it is concluded that even a risk-neutral decision maker facing a binary alternative will choose the irreversible decision more often than he should.


**Description**

This is an attempt to explain inflationary tax losses, develop simple formulas for these losses, and relate them to managerial issues.

**Assumptions**

1. Monetary items such as receivables and debt are ignored.
2. Price level increases linearly.
3. Purchase and sales occur at a constant rate.
4. Revenues and costs appreciate at the same rate.
5. All taxes are paid continuously.
Conclusions

1. Inflated corporate profits tend to disguise tax losses.

2. To eliminate inflationary tax losses some kind of indexing of production costs should be used for tax purposes. The author suggests General Price level adjustments (GPL) for depreciable assets and/or LIFO for inventories.

* * *


Description

This paper models the differential wealth transfer effects of inflation on a firm and tests hypotheses concerning their impact on stock prices.

Conclusions

The results are consistent with the hypothesis that inflation affects stock prices through additional tax burdens borne by firms. These tax effects vary widely across firms due to different degrees of understanding, depreciation charges, and the cost of inventory withdrawal.

No support has been found for the transference of wealth from creditors to debtors, and it is shown that the main effect of inflation on corporations is a wealth transfer, through the tax system from business to government.

* * *

Houthakker, Hendrik S. "Growth and Inflation: Analysis by Industry."


Description

Never very robust, the Phillips Curve has recently been so weak that
the doctors disagree on whether it is still alive. Yet it continues to dominate thinking on inflation even by those who reject most of neo-Keynesian macroeconomics. The widespread belief that only a slowdown in economic activity will reduce inflation implicitly accepts the concept of a Phillips Curve despite its failing econometric support.

The aim of this paper is not to determine whether the Phillips Curve as an aggregate phenomenon is merely comatose or actually dead. Instead, the analysis investigates whether a Phillips-type relation exists on a disaggregated level, specifically the two-digit industry level for the entire U.S. economy.

The essence of the Phillips relation is a positive association between changes in real output and changes in price. This means that on balance, shifts in demand outweigh shifts in supply. Conceivably a positive association could be found in the aggregate, although not present in any particular industry, but that would raise serious questions about the microeconomic foundations of the Phillips Curve.

It will be shown that on the industrial level changes in output are indeed associated with changes in price, but that the correlation is overwhelmingly negative, both within and across industries. Supply shifts, therefore, appear to be dominant. Some calculations are presented on why this may be, but the larger implications for the aggregate Phillips Curve (if there ever was one) and for inflation policy are outside the scope of this paper. As a byproduct, however, some insights into the performance of different industries will emerge.

**Description**

This analysis suggests that a cycle of accelerating, then decelerating inflation rates causes a cycle in stock prices. The higher the acceleration of inflation, the more stocks go down in value due to increased interest rates. Stocks represent equity in corporations and therefore the ownership of real assets can eventually be expected to compensate for inflation through increased earnings and dividends.

**Conclusions**

Stocks are a good long-term hedge against inflation. Accelerating inflation, on the other hand, is difficult to protect against.


**Description**

This report describes new information as unexpected information. It is concerned with testing to see if unexpected information and the accompanying revision of probability beliefs will have a measurable effect on stock prices.

**Assumptions**

1. Extrapolated earnings in the twenty-first quarter based on the seasonally adjusted trend of earnings for the preceding twenty quarters can be used as a proxy for expected earnings.

2. "Unexpected" earnings will be those earnings actually reported in the twenty-first quarter minus the extrapolated earnings for that quarter.
3. Use 3 month holding period returns (HPR) to measure stock price changes.

4. Unexpected earnings (2) are deflated by the standard error of estimate to get "Standardized Unexpected Earnings" (SUE), and high SUE stocks are assumed to produce a higher HPR than lower SUE stocks.

Conclusions

Excess HPR's are significantly related to unexpected earnings. Adjustment to unexpected earnings is slow probably because the unexpected earnings themselves are significantly serially correlated.

* * *


Description

This paper deals with research efforts on the private shareholder use and understanding of available financial information in England and Wales. It considers whether or not the individual shareholder thoroughly reads annual financial reports, and, if so, his understanding of those reports in terms of accounting and reporting practices. Shareholders surveyed were those of medium-sized companies.

Conclusions

1. Those who read financial reports thoroughly examine other sources of information as well (in contrast to the less interested).

2. Those respondents who read reports thoroughly believe they understand them and that they are useful to their investment decisions.

3. Those who read reports have a better understanding of reporting
procedures.

4. Those with formal accounting or financial training are most likely to read thoroughly and understand fully the annual report.

* * *


Description

This paper deals with the problem of selecting optimal security portfolios by risk-averse investors who have the alternative of investing in risk-free securities with a positive return and can sell short if they wish. The paper considers some of the implications on the capital budgeting decisions of a company whose stock is traded in the market.

Conclusions

Separation Theorem: the optimal proportionate composition of the stock (risk-asset) portfolio is independent of the ratio of the gross investment in stocks to the total net investment.

Corollary

Any investor whose choices maximize the expectation of any particular utility function will make identical decisions regarding the proportionate composition of their stock portfolio.

* * *


Description

This article is a response to an earlier article offered by Jensen.
Jensen's article claims:

a. As a group, mutual funds' performance is neutral when all the operating expenses and brokerage commissions are added to the returns.

b. Therefore, funds spent to forecast security prices do not yield higher portfolio returns than those randomly picked.

c. Jensen thinks this evidence supports "strong" market efficiency.

Hain's response:

1. Jensen's methodology understates mutual funds' rates of return (and therefore, the measures of excess return).

2. Jensen introduces unnecessary measurement error into the analysis by assuming that systemic risk is stationary over time (for the mutual funds).

Conclusions

Gross return results (Hain) do not support Jensen's "strong" form of market efficiency. A large majority of the mutual funds, after adding back operating expenses, shows sizable excess returns— an untenable result if you are assuming strong market efficiency.


Description

This paper attempts to sharpen and extend some of the conclusions made by William Sharpe and to demonstrate, by means of a slightly modified version of his model, some of the implications for the analysis of the firms optimal investment and financing decisions. The model is formally a model of pure exchange, and there are two types of exchange objects, bonds and
company ordinary shares.

Conclusions

The analysis appears sufficient to demonstrate both the usefulness and the necessity of tying the theory of market adjustment in with the analysis of firm decision making. Furthermore, the model indicates that with a market for shares, investors are able to diversify to the extent that the socially optimal risk level is attained and the only barriers to a socially optimal risk level are imperfections in the stock market.


Description

This paper addresses the issue of whether value maximization decisions are optimal ones, or whether there exist decisions different from those of maximization that are unanimously preferred. Nielsen contends that this is due to the difference between perfect and imperfect markets.

Assumptions

1. The state of the world in the second period is unknown in the first period.

2. Consumers don't agree on probability assessments and these preferences might be state independent.

3. Each consumer can use his assets for consumption or supply part of his assets to the firm against claims on the output of the firm.

4. Firms demand the commodity to produce their output.
5. Consumers adhere to Savage axioms and maximize their expected utility of present and future consumption.

Conclusions

Value maximization decisions are Pareto optimal and unanimously preferred if the market is perfectly competitive. It is not possible in general to derive unanimously preferred decisions outside perfectly competitive markets.

*       *


Description

This paper analyzes the firm's investment and financing decisions under the assumptions that shareholders have limited liability for the firm's debt and that interest on debt is tax deductible. It uses Merton's model for the valuation of consolidated bonds to illustrate problems involved in a firm's investment and financing decisions when default is a possibility.

Conclusions

A firm cannot consider its investment and financing decisions independently, even when interest payments on debt are not tax deductible. It is possible that the risk characteristics of a capital investment project and the method by which it is financed can affect the value of a firm's existing debt, and as a result, cause the firm's equity to change in the opposite direction.

Once the effects of default risk are considered, a firm should attempt to pay as high a dividend as its creditors will allow in order to avoid the possibility that today's earnings might end up in creditors' hands.
It also appears that the negative effect of a merger is inconsequential when compared to the potential tax benefits made available by the merged firm's increased debt capacity.

* * *


Description/Conclusion

A proposition is derived and shown to imply that diversification considerations are irrelevant to the firm investment decision. This proposition depends in no way upon any particular asset-valuation equations and is found to hold as long as markets are perfect. It further implies that firm diversification is irrelevant to merger policy just as it is to the more usual form of investment.

In section II of the article, corporate taxes are introduced and although the first proposition does not hold in this case, a second is derived which implies that diversification has no proposed role in firm planning.

In section III, the mechanism of arbitrage is discussed, and it is concluded that markets must be imperfect in some way if the arbitrage mechanism is to fail and the propositions not to hold.

* * *


Description

This is an analysis of the common stock systemic risk measure of investment risk, and corporate bonds as a measure of investment risk. The
article shows a relationship between the two modes of measurement.

**Assumptions**

1. All investors are single-period, risk averse expected utility maximizers.
2. Investors have homogeneous expectations for return on securities.
3. Investors' perceptions about the securities can be summarized by the probability distribution of a securities return.
4. Investors may lend or borrow as much as they want, risk-free.
5. No transaction costs or taxes, securities are divisible.

**Conclusions**

Common stock systemic risk and bond ratings are found to be consistent across firms examined. However, statistically significant results are found only between relatively extreme values.

* * *


**Description**

This model aids in the investigation of the effects of investment incentives and expenditures on medium-sized firms (a medium-sized firm is described as having its decisions made by a managerial coalition rather than one small decision maker or a large bureaucratic structure). The model handles three types of managerial objectives:

1. Profit maximization divided by growth for firm;
2. Maximization of net returns consistent with profit maximization;
3. Under-investment with a preference for greater liquidity.

The model is essentially representing an investment decision as a choice
between using funds to acquire fixed assets or outlaying them on non-investment uses. The model has two components—tradeoff function and managerial utility function. Tradeoff is between investment and other outlays, investment being determined by the relation between the cost of funds and the expected rate of return on capital. Managerial utility function comes from indifference curves.

Assumptions

1. Investment takes place because of the potential flow of returns which is secured from the asset purchased.
2. Returns are equally distributed over time (on the asset).

Conclusions

1. To increase investment outlays, firms' aspiration levels should be raised.
2. There is no pattern of investment behavior, and a minority of firms have either very different perceptions of their circumstances, or their decision structures are very different.
3. Most firm decisions can be characterized as risk averse with a cautious attitude towards expansion.
4. Investment incentives will produce desired results only when recipient firms are profit maximizers.


Description

This paper offers a solution to forming the neoclassical firm's
objective function under uncertainty, and the derivation of investment and
tax factor inputs from the maximization of the objective function. The second
part of the paper treats optimal investment, labor input and production
policies with the Linter-Massin-Sharpe valuation equation and goes further
to evaluate the model under uncertainty.

Assumptions

1. A perfect market exists for borrowing and lending.
2. All investors have a one-period horizon.
3. All investors have identical estimates of expected returns and
   variance for each opportunity. The exponent of e is negative without
   uncertainty.
4. The models are in a world where financial decisions are irrelevant
to the maximization of the firm's value.

Conclusions

Results suggest the feasibility of an empirical test on the topic of
the effects of uncertainty on corporate investment and production decisions.

Sundem, G.L. "Evaluating Capital Budgeting Models in Simulated Environments."
The Journal of Finance (September 1975).

Description

This paper addresses the relative expected benefit from various models
by assessing the performance of six capital budgeting models in simulated
environments. The performance of each model in 16 different environments
is examined, and a time state of preference (TSP) is used to provide the
market values for each proposed capital budgeting project in the simulated
circumstances.
Conclusions

1. High levels of performance of the variability of returns models exist.

2. Low levels of performance of the net present value model in highly uncertain environments exist.

3. There is a lack of a decline in performance level of the payback model between medium and uncertain environments.

4. The conclusions are dependent on the simulated environment of the TSP and the environmental parameters that were chosen.


Description

The paper begins with a comprehensive empirical analysis of the performance of conglomerate firms. A number of measures are employed paralleling the performance measures presuming to reflect the interests of managers and individual stockholders as well as institutional investors.

Conclusions

1. Conglomerate firms outperform samples of other firms or broader groups of firms on all of the growth measures.

2. The earnings performance measured by the ratio of net income to net worth is somewhat higher for conglomerate firms, but the difference is not drastically significant.

3. It appears that an important economic function of conglomerate firms has been in raising the profitability of firms with depressed earnings to the industry average.
PART 2

EXPECTATIONS, THE AVAILABILITY OF INFORMATION, AND

BUSINESS ACQUISITIONS
PART 2
EXPECTATIONS, THE AVAILABILITY OF INFORMATION, AND
BUSINESS ACQUISITIONS


Description

This article shows that an adjustment for price fluctuations due to
expectations (of takeover) in the steady growth valuation model yields a
formula for price which incorporates this variable. Expressions for the
price of shares are developed for two situations, one with no possibility
of takeover and the other with positive takeover potential.

Assumptions

1. Demand curves for corporate securities are downward sloping.

2. The bidder must offer a premium on the market price of the victims'
shares to induce the requisite sales of intra-marginal holdings.

Conclusions

The magnitude of the differential produced by the data is surprisingly
large, since it implies that approximately 15% of the market value of the
representative firm is accounted for by the takeover factor. This suggests
that in the United Kingdom, at least, the takeover factor is a quantitatively
important determinant of share prices and is deserving of more attention
than it has hitherto received in theoretical and empirical work on share
valuation.

Arrow, Kenneth J. "Vertical Integration and Communication." Bell Journal
of Economics (Spring 1975), pp. 173-183.
Description

The possible motives for vertical integration are discussed, and the role of uncertainty in the supply of the upstream goods and the need for information by the downstream firms are emphasized. Although the initial conditions will be of the sort we usually associate with perfect competition, it is shown that imperfect competition is the necessary outcome.

Conclusions

If there is no vertical integration to begin with, a downstream firm will have an incentive to buy one or more upstream firms because this improves the forecast of the spot price of upstream products and therefore the ability to choose the level of capital. There is, however, no incentive to acquire the upstream firm for any other reasons. There will always be an incentive for each downstream firm to acquire more upstream firms to improve its forecasting. Hence, no competitive equilibrium with many firms can survive.

* * *


Description

This paper takes into account the non-quantitative elements of the stock market reaction to mergers by considering the following:

1. The components of price as seen by analysts, salespeople, portfolio managers, and arbitraguers.

2. The criteria which they consider important in this decision.
3. The way in which they are influenced by "background radiation."

It is an empirical survey.

Assumptions

Background factors:
The investor's perception of:
1. state of the company,
2. state of the industry,
3. state of the stock market.

Conclusions

This paper might provide some help in terms of problem description, but it is of no analytical consequence.


Description

The authors have provided the reader with acquisition candidate companies that demonstrate high sales growth, above average profitability, strong market positions and favorable environmental and regulatory outlooks, together with information on their market prices, book values, recent earnings growth histories and ownership and control. The companies come from the following areas: coal production, energy conservation, chemical industry, communications, electronics, environmental and fire protection, medical instruments, and financial services.

Screening factors:

Investment merit:
Earning growth vs. P/E predictability;
Rate of return on capital;
Stock price vs. book value of total net assets;
Net current value of discounted cost flow;
Liquidity.

Ease of Control:

Current management;
Sleepy management or disgruntled stockholders;
Float and marketability toward takeover;
Disparity between current market price and indicated tender offer or terms of acquisition;
Market value.

Conclusions

Why are certain stocks attractive to a corporate investor at a substantial premium over the market value?

1. Growth oriented firms are less risk averse than the typical institutional investor. Also, these firms are attracted to the availability of viable plant and equipment at a fraction of its replacement cost.

2. Time horizon corporations are willing to apply in discounting the projected future streams of cash a time horizon which is longer than that of other investors.

3. The nonequilibrium nature of acquisitions is also attractive. Through changes in management, efficiency improvements, and capital structure, the earning potential of the acquired firm may be improved.

Description

The paper is on the logistics of appraising and acquiring companies.

The finding process:

Acquisitions fall into two groups, namely,

1. Vertical and horizontal integration,

2. Diversification.

The appraising process:

A need to develop commercial logic, i.e., what is our objective? Corporate strategy needs to be agreed on and a market profile prepared (shopping list stage).

The next step is to examine the rate of return on the purchase price to ensure that it does exceed the acquiring company's cost of capital.

Cost of capital is the weighted average cost of equity capital after tax.

The economics of the company acquired are determined by the acquisition cost and the estimated cash flows before financing charges, but after tax.

Conclusions

Factors which help to make acquisitions a success:

1. A well defined strategy;

2. Market potential;

3. Market leadership;

4. Up to date assets;

5. Avoidance of forced bids.
Actual acquisition requires the psychology of persuading the owners and the management of the target company to sell.

* * *


**Description**

This paper analyzes asset trading in a world of sequential information arrival. It examines the many possible incomplete equilibria between the initial and final equilibria where individuals have identical information sets in the equilibrium adjustment process. The model uses probability theory to express the expected number of trades generated by a new piece of information.

**Assumptions**

1. Sequential information arrival.

2. Magnitude and direction of demand curves are known, only the order of shifting is unknown.

3. The expected number of trades
   a. is related to the absolute value of price changes;
   b. depends on the number of individuals in the market;
   c. depends on the number of shares of the asset;
   d. depends on the strength of the new information;
   e. depends on the percentage of people who react by shifting their demand curves upward.

4. Only one piece of information arrives during a trading period.

5. Traders receive information one at a time and shift their demand curve immediately.
6. No cost for information, transactions, or taxes.

7. Each asset has a fixed supply.

8. All traders have homogeneous demand curves with identical slopes and intercepts.

9. No technical trading is allowed.

Conclusions

The expected number of trades is a logarithmically increasing function of the number of traders and the strength of new information. Assuming a symmetric distribution of optimists, the model predicts a positive correlation between the absolute value of price changes and volume, and increasing positive skewness in the distribution of volume, and increasing positive skewness as a function of the strength of new information.


Description

This article suggests approaches to:

1. Methods for the owner in determining the value of his enterprise.

2. Ways for the buyer to arrive at the price willing to be paid for an acquisition.

The author has called these approaches acquisition costing.

Assumptions

Personal motivation, geography, public image, tax effects, governmental and regulator effects are ignored.

Seller's standpoint determinants:

1. Seller's absolute minimum price;
2. seller's upper limit;
3. seller's opening price.

Similarly, buyer's standpoint:
1. buyer's adjusted (reasonable) minimum price;
2. buyer's upper limit;
3. buyer's offering price.

This article describes how to establish the above figures, mostly through accounting procedures.

Firth, H. "The Information Content of Large Investment Holdings." The Journal of Finance (December 1975).

Description

This paper studies empirically the impact of the announcement of 10% having been made in quoted companies. (In accordance with Section 33 of the Companies Act of 1967, when an investor purchases 10% of a firm's equity shares, he must notify that company within 14 days of the occurrence.) It examines the impact of the building up of stakes on share prices, the initial reaction of investors, and whether or not the information content has been correctly appraised by the market.

Conclusions

1. The stock market attaches positive values to announcements.
2. Immediate increase of 3.3%.
3. No profitable trading rules based on the announcements can be discerned.
4. The announcements do have an information content and this is efficiency incorporated into share prices.
Frei, R.R. "Tax Problems in Corporate Acquisitions Other than Reorganizations -- From the Seller's Point of View." Taxes -- the Tax Magazine (December 1974).

Description

This article considers the federal income tax aspects of the sale of a business. There are two ways to effect this sale: sale of stock, or the sale of assets. One goal of the seller is to make the sale in such a way that it produces only one tax and not two.

Assumptions

1. The buyers and sellers are corporations.
2. The seller is not an 80% owned subsidiary.


Description

This article argues that the lack of capital is causing mergers. Gilligan cites the historical tendency to seek the shelter of a financially stronger management "umbrella" in times of recession. Of 550 stocks surveyed (by a major business publication) only 215 were selling equal to or better than their market value. As a group, they could only supply 78% of the capital for their growth needs. As a group, they could only supply 78% of the capital for their growth needs. Over 50% of 1976 mergers were for cash. 1975 saw mergers affect 2,300 companies with a total value of $12 billion.

Description

This paper explores aspects of information and production and capital market efficiency. It also investigates the extent to which portfolios can earn "abnormal" returns, the role of financial statement analysis, and the role of regulating the disclosures of firms.

Section I

The relationship between the market for information and the capital market is examined. A variety of issues that arise when the market for information is given explicit consideration is also explored. Further sections examine some existing evidence on abnormal returns.

Assumptions

1. Homogeneous expectations exist;
2. Market agents having the same information agree on the assessed distribution functions of returns on assets;
3. All agents act as price takers in a frictionless capital market;
4. Equilibrium in the capital market is established via a process of tâtonnement with recontracting.

Conclusions

Many assertions about what capital market efficiency implies about superior portfolio performance and the allocation of resources to information production appear to be misleading. Failure to consider the market for information may induce unwarranted inferences about the capital market. Also, by itself, the notion of capital market efficiency does not provide a basis for understanding the connection between a potential source of
information and capital market equilibrium.


Description

This paper discusses some of the theories, methodologies, and techniques used in establishing the value of the firm. The asset valuation techniques fall into two categories: Individual Asset Valuation and Enterprise Valuation.

"Individual Asset Valuation Techniques"

The authors describe three ways to value fixed assets, market comparability; income, i.e., the capitalization of anticipated net income; and replacement cost. The valuation of a process facility (e.g., dairy) is a little more difficult. In this they describe such valuation techniques as the ideal replacement (equivalent capacity at the lowest annual unit of labor) and reproduction costs.

The authors then address the valuing of identifiable intangibles such as patents, licenses, and contracts.

"Enterprise Valuation Techniques"

Here the authors are concerned with the techniques of valuing the going business enterprise--determining how the future supply/demand relationship of the firm's products will be changing over time, and relating this to future profitability.

Various methods to value the entire enterprise are grouped into one of three approaches:

1. Value of the underlying assets approach;
2. discounted cash flow approach;
3. market comparable approach.


Description

This paper considers two types of related firms, producers of goods who have no monopsony power over input suppliers and monopolist input suppliers. The two theorems which will here be deduced are:

1. The price charged by the monopolistic supplier of an input is not affected by the market structure in the market for the final good.
2. Merger or collusion between the input supplier and the final good producers brings about lower prices, greater output and sales, and greater profits to the merged or colluding firms, a welfare gain.

Conclusions

The comparative profitability of merged firms with that of individual monopolists it completely given by the demand condition \( f(q) \) and maximum profits obtained, if and only if marginal revenue is equated with the lowest obtainable marginal cost.

Aggregate outputs and profits increase and prices are lower when vertical mergers or some other rationalization processes take place between an input supplier and the users of the product.

Given a demand function for a good, one may determine successive derived demand functions of subsequent goods needed by the first good. Successively shrinking "correspondent" or marginal revenue costs result, providing the equilibrium applicable under the case of independent mono-
polistic firms.

The paper advocates merger as a source of increased efficiency in an imperfectly competitive market.


Description

This paper analyzes a market with n-types of informed traders. It examines the generation of the price system as an aggregation of different information.

Assumptions

There are two types of assets: risky (with a yield of $P_1$) and non-risky. Assume also that the $i$-th trader observes $y_i = P_1 + \epsilon_i$ where $\epsilon$ is a noise term, obscuring the true value of $P_1$. The current equilibrium price is $P_0(y_1, y_2, y_3, \ldots)$.

Informationally efficient price systems aggregate diverse information perfectly, thus eliminating the private incentive for collecting information. $P_0(y_1, y_2, y_3, \ldots)$ is a sufficient statistic for the unknown $P_1$.

Conclusions

In an economy with complete markets, the price system generates efficient allocations. But this price system is only stable enough to maintain if it is noisy enough for traders who collect information to hide that information from other traders.

**Description**

This paper attempts to resolve two issues:

1. In a competitive market without transaction costs, it is not clear whether merger can produce benefits to shareholders by reducing the probability of bankruptcy.

2. No explanation has been developed for the relationship between firm value and the consequences of a conglomerate merger if the transaction costs of bankruptcy are positive.

**Assumptions**

Section I - zero bankruptcy transaction costs and no corporate taxes.

Section II - same as I but with corporate taxes.

Section III - positive transaction costs of bankruptcy.

**Conclusions**

1. Under costless bankruptcy, in the absence of leverage changes, the conglomerate merger does not affect aggregate value. Equity, however, is likely to decline with the merger unless the merged firm can recall debt without penalty.

2. Varying leverage, the decline of equity value may be offset (in a world of taxes) by increased debt financing; this depends on the relative strength of the two.

3. If bankruptcy transaction costs are included, the effect of the merger of firm value depends on the nature of the costs, probability of their occurrence, and the manner in which investors value risky streams.

Description

The purpose of this article is to investigate whether the method of accounting for mergers affects the stock prices of the acquiring firm. Many believe that companies using the pooling of interests method in a merger with positive good will enjoy higher stock prices because of the higher earnings they report when using this method.

Conclusions

Through analysis of a sample pooling of interest mergers in the 1954-1964 period, there is found to be no abnormal price movements in the period surrounding the merger of the earnings announcements immediately after the merger. Conversely, some evidence of high stock prices in the period preceding a merger for a much smaller sample of companies using the purchase method is found. The conclusion is that the pooling of interests method does not lead to abnormal stock pricing behavior for acquiring firms.

* * *


Description

This paper represents an extension of the application of the capital asset pricing model to conglomerate merger activity. Attention centers on that portion of the total of a securities return which is due to variations
in the market return that cannot be diversified away.

Conclusions

The results of a short-term quantitative analysis show that systematic risk behavior tends to be responsive in varying degrees to major conglomerate merger activity. In contrast, the results of the comparative long-term analysis suggest that the differential effect of conglomerate merger activity on systematic risk are more of a marginal or limited nature.


Description

This study assesses the joint and individual effects of published earnings-per-share numbers, dividend-per-share numbers and analysts' forecasts of earnings-per-share on security returns.

Assumptions

1. Each variable is publicly accessible.

2. Cumulative Average Residual (CAR) is used as a measure of the above. It is a random variable measuring the capital market's aggregate response to information from joint or individual sources. It can be interpreted as an operational measure of association between information and security returns.

3. The capital market is new information efficient.

Conclusions

1. The aggregate capital market responds and anticipates (as measured by CAR) information conveyed by earnings-per-share, dividends-per-share, and
forecasts of earnings-per-share.

2. The capital market participants rely on a broad information set, but the aggregate capital market distinguishes appropriately between contradictory and noncontradictory signals.

Unambiguous signals may be associated with relatively homogeneous probability revisions by individuals of expected return.

* * *


**Description**

In this paper, a recently developed technique is employed to measure the effect that two widely adopted accounting changes have on stock prices of firms in many different industries. Both changes affect only the financial statements prepared for stockholders and have no effect on taxes, cash or any other real economic asset or liability of the firm.

**Conclusions**

The profitability of earnings manipulation has been found to be doubtful, since it has no statistically significantly discernible effect on security prices. Relying strictly on averages, however, one can conclude that security prices increase around the date when a firm announces earnings inflated by an accounting change. The effect appears to be temporary and in the present sample, firms that manipulate earnings seem to be performing poorly. If this is generally true, earnings manipulation once discovered is likely to have a depressing effect on market price because it conveys an unfavorable management view of a firm's economic condition.

* * *

**Description**

This paper relates to one of the main problems associated with negotiating a business combination, namely the determination of an appropriate stock-exchange ratio. The exchange ratio selected in order to effect a business combination may be expressed as the number of shares of the acquiring entity given in exchange for one share of the acquired entity and is of crucial significance in assessing the desirability of a business combination.

**Conclusions**

The model presented does not solve the exchange ratio problem of any specific business combination. It does, however, indicate the kinds of constraints which are operative in the exchange ratio selection process. In addition, it indicates the interval of exchange ratios which will enhance or at least not diminish the wealth positions of all parties to a proposed business combination.

* * *


**Description**

The purpose of this paper is to discuss whether it is possible for firms by merger to produce gains for their stockholders in the absence of any opportunistic operating efficiencies (to produce gains in wealth out of pure financial combinations of enterprises). If they can, and if it should occur that manufacturing, marketing or managerial savings can be
realizes as well, the merger will be that much more desirable.

Conclusions

If such financial benefits are to arise from a combination of enterprises the source must be either:

1. a form of market imperfection or disequilibrium which causes one of the merger partners to be temporarily undervalued, and which simultaneously allows the other partner to be first to identify and react to the error;

or

2. suboptimal capital structure design by the financial officers of at least one of the firms.


Description

The first part of this paper summarizes and contrasts the differing principal sources of investors' gains in each of our major merger movements. The following more theoretical section examines the potential gains in "pure" conglomerate mergers characteristic of the last decade.

Conclusions

Each of the major merger movements has had a different characteristic pattern of primary sources of investor gains. Even pure conglomeration leads to investor gains in perfect capital markets due to the following:

1. Reduction in lenders' risks of bankruptcy losses.

2. Scale diseconomies in credit investigations of smaller firms, and investor information.

3. Changes in investors' assessments of future prospects per share
share when P/E ratios differ.

Moreover, there are also gains in all equity cases of "pure" company diversification when different subsets of investors hold the stocks of the merging companies, and securities markets are otherwise perfect.

* * *


Description

The basic proposition advanced is that the control of corporations may constitute a valuable asset, that this asset exists independent of any interest in either economies of scale or monopoly profits, that an active market for corporate control exists, and that a great many mergers are probably the result of the successful workings of this special market.

Conclusions

Mergers in many instances seem to be the most efficient device for corporate takeovers. This points to serious problems with current anti-trust doctrine. The market for corporate control implies a number of important advantages which must be compared to those existing in present anti-trust enforcement, and it is concluded that statistical methods must be devised for distinguishing mergers motivated by a quest for monopoly profit from those merely trying to establish more efficient management in poorly run companies.

* * *

Description

This paper attempts to provide additional insight into the performance of conglomerate firms by examining both operating and market related characteristics. Samples of conglomerate and nonconglomerate firms are compared on the basis of operating profitability and traditional market-related characteristics, as well as within the framework of the capital asset pricing model.

Conclusions

The data presented suggests that while the conglomerate firms achieve a level of performance comparable to those considered nonconglomerate firms, their performance is not at all outstanding. Hence, conglomerate diversification may be an effective means for obtaining "defensive diversification" but it does not seem to be an effective vehicle for obtaining superior or outstanding investment performance.

* * *


Description

This paper presents the results of an examination of certain pre-merger financial characteristics of conglomerate companies as well as the companies they acquired. An analysis of the same characteristics for a sample of acquisitions completed by nonconglomerate firms is presented for comparative purposes.

Conclusions

One finding indicates that conglomerate firms acquire firms characterized by relatively higher levels of operating profitability. However, the firms acquired by conglomerates are no more profitable than firms
acquired by nonconglomerates. The same is true for the financial leverage measures of firms acquired by conglomerates and nonconglomerates. Other results suggest that both conglomerates and nonconglomerates probably practice differential price-earnings ratio strategies.

* * *

Morrison, W.L. "Tax Problems in Corporate Acquisitions -- From the Buyer's Point of View." Taxes -- The Tax Magazine (December 1974).

Description

This paper discusses the problems and opportunities of the Buyer in purchasing assets, purchasing stock, and indirectly acquiring assets by purchasing the Seller's stocks and then liquidating the acquired firm.

The transaction must consider the following:

1. Whether the purchase price exceeds the Seller's cost basis for its assets;

2. Whether the Seller has an operating loss carryover which would be lost upon liquidation;

3. The extent to which sale of the Seller's assets would result in recapture of depreciation and investment credits;

4. The net impact of the recognition of income under tax benefit;

5. Whether the Buyer has operating loss carry forwards;

6. Whether the Buyer's price for the acquisition can be allocated among the assets more favorably than that of the Seller (i.e., cost basis);

7. The risk that the Buyer will make a bargain purchase so that the cost basis of the Buyer in each asset is far less than that asset's fair value;

8. Whether the Seller has significant liabilities, the payment of
which would lead to tax deduction after the acquisition;

9. Whether the purchase price involves payment in installment rates or other securities of the Seller.

*  *


**Description**

Ng addresses the issue of authentic information in a pure exchange economy and specifies those conditions in which the release of authentic information would lead to an ex-ante Pareto-improvement when individuals' beliefs are heterogeneous.

**Assumptions**

1. Securities market is both perfect and competitive.
2. Individuals are assumed to be rational.
3. Individuals have identical tastes and endowments.

**Conclusions**

Authentic information after trading has taken place would make some people better off, but nobody worse off.

Authentic information before trade is advantageous only if prices do not change as a result of the information.

The set of converged heterogeneous beliefs which would lead to Pareto improvement in resource allocation tends to shrink as prior beliefs become less heterogeneous.

*  *
Description

This paper deals with five issues:

1. Which objective function one should use when considering mergers;
2. The effect of mergers on noncontractual corporate responsibilities, e.g., law suits and sales tax;
3. The impact of bankruptcy costs on merger profitability;
4. Consideration that income tax provides slight encouragement towards merger;
5. The fact that it is not true in general that conglomerate mergers are profitable because the debt capacity of the merged firm exceeds the debt capacity of unmerged firms.

A two-period state preference model is used. The objective function proposed has risky debt outstanding.

Assumptions

1. Corporate taxes.
2. Bankruptcy costs.
3. Noncontractual creditors.
4. Perfect securities market.

Conclusions

With the above assumptions, a merger of all equity firms cannot be profitable. For firms with both debt and equity outstanding, the tax structure encourages mergers. Mergers with firms that would have gone bankrupt are profitable assuming economies of scale with respect to bankruptcy costs. Also, in order to maximize shareholder wealth, the total value of the firm's outstanding debt plus equity will necessarily be maximized.

Description

The tender offer is one mechanism by which market forces can act so as to correct for suboptimal management policies. A model of the tender offer process is described briefly which uses a state preference model to develop a novel empirical technique. It is shown that, under certain conditions, observation of rates of return and risk measures lead to the estimation of ex-ante certainty equivalent transactions costs in tender offers.

Conclusions

These costs are then analyzed with the hope of inductively gaining an understanding of their behavior, and the results are consistent with the proposition that the Williams Amendment to the S.E.C. Act of 1968 had a substantial effect on costs in tender offers. (The overall picture is one of a significant increase in costs due to this piece of legislation.)

* * *


Description

This paper develops a state preference model of a tender offer and the risk adjusted transactions costs of the offer are shown to be the constraining mechanism. The model views the tender offer from the bidder's viewpoint and attempts to describe the situation facing the bidder at the point in time when they decide to make a tender offer for another firm. The model applies only to tender offers where the bidder believes that the management of the target firm is not wealth or profit maximizing.
Conclusions

It is shown that under certain conditions, observation of rates of return and measures of risk can lead to the estimation of the size of transactions costs. These costs are estimated using a sample of 95 tender offers that occurred in the U.S. between 1956 and 1970, and it is concluded that the substantial amount of activity not of a profit maximizing nature that is permitted by the threat of a takeover is so large that it inspires further research into managerial or behavior theories of the firm.


Description

Tender offers have become an increasingly important market mechanism for the transfer of corporate control, and since such offers provide a quick and efficient means by which new and possibly more efficient managers can obtain control of a corporation from less effective managers, any deterrence resulting from state securities statutes is a cause of concern. This paper provides empirical evidence on the existence and the magnitude of the deterrence effect of the 36 state laws on tender offer activity.

Conclusions

It was found that the state statutes increased the likelihood that tender offers would fail, and provided a measurable and statistically significant deterrent to tender offer activity. The longer the period that bidders are required to hold open an offer, the greater the number of tender offers deterred.

It is further concluded that the S.E.C. and the state legislatures have a powerful policy instrument at their disposal and, considering the economic
benefits resulting from tender offers and the apparent effects of changes in legislation on tender offer activity, this policy instrument should be used with care.


Description

This article is an attempt to use an explicit Bayesian estimation of asset demand of mutual savings banks and savings and loan associations as part of a larger effort to construct and estimate a model of financial markets using flow of funds data. The authors are searching for significant data to be used in large-scale financial models. They consider time series data to be inadequate and as leading to too many objectionable simplifications. They advocate using a priori data from such sources as: theoretical calculation, cross section studies, previous time series studies on different data, or practical experience. The Theil-Goldberger mixed estimation technique was used to combine the parameters with the data.

Conclusions

1. In the dynamic adjustment structure, use of a priori data removed most of the behavioral peculiarities implied by the least squares estimates.

2. In out-of-sample forecasting accuracy, the mixed estimates were roughly comparable to the least squares estimates for the savings and loan sector and superior for the mutual savings bank sector.

Description

This paper reviews two previous studies of the Capital Asset Pricing Model of conglomerate firms and presents new empirical data extending them.

Conclusions

1. The degree of diversification achieved by the conglomerates has been substantially smaller than that achieved by mutual funds.

2. The major objective of conglomerate mergers was not diversification in a risk-reducing sense alone.

3. Conglomerate firms provided the investor with portfolios that were inefficient in the sense that much unsystematic risk remained, and by including conglomerate firms in their investment portfolios, investors could reduce the remaining degree of unsystematic risk and improve their reward to risk ratios.


Description

This paper addresses the issue that internal organization may be substituted against the market in the event of market failure. It treats this internal organization issue as it relates to vertical integration in a systematic way.

Conclusions

While fulfilling the above objective, certain points must be noted:

1. The discussion of market failures may be complete in certain respects but for others a parallel treatment of the sources and consequences of the failures of internal organization as they relate to vertical
integration is needed.

2. The argument applies strictly to the vertical integration of production, although much of it may have equal relevance to backward vertical integration into raw materials and forward integration in distribution.

3. Nothing in the present analysis establishes that observed degrees of vertical integration are not excessive from a social welfare standpoint.
PART 3

UNJUSTIFIED PREMIUMS IN BUSINESS ACQUISITIONS
PART 3
UNJUSTIFIED PREMIUMS IN BUSINESS ACQUISITIONS


Description
Using the model of a firm in a perfect capital market, the authors show that conglomerate acquisitions and their associated finance decisions do not affect the objectives functions of value maximizing firms making acquisitions. It further addresses the issue of whether this irrelevance remains robust when one is in an international environment with 1) segmentation stemming from an absence of international portfolio investment by individual investors, and 2) exchange risk.

Assumption
A perfect market.

Conclusions
Homemade diversification can fully substitute for corporate diversification in a world with two internally perfect, national capital markets separated only by exchange risk.

This paper also shows that if the investor does not fully diversify ("segmentation") then the firm should do it for him.


Description
This study analyzes the importance of price-earnings differences between
firms as a motive for conglomerate merger. The motive of increased short-run wealth in the form of higher earnings per share and/or price per share is scrutinized from theoretical and empirical viewpoints.

Conclusions

The primary hypothesis evaluated is whether price/earnings differences between acquiring and acquired firms comprise an important motivation for merger.

The major conclusion is that price/earnings differentials were an important explanatory variable in the motivation of conglomerate merger over the period 1954-1969.


Description

The purposes of this paper are:

1. To provide an empirical examination of merger premiums in the context of the Larson and Gonedes model.

2. To provide some new empirical evidence on the effect merger premiums have on the wealth status of equity owners in both acquiring and acquired firms in the period of merger.

Conclusions

The single period wealth constraint of the L-G model is generally supported by the empirical data examined. Both parametric and nonparametric statistics reject the null-hypothesis of no difference in ex-ante and ex-post P/E ratios. However, both announcement and consummation effects produce wealth losses for one or both constituents for at least 40% of the mergers.
sampled. Consequently, the reliability of the L-G pricing model might be improved by 1) relaxation of the single period wealth constraints, and 2) respecification of the "rationality constraint" to include risk-return charges.


Description

This paper examines the risk and return of 205 large companies whose merger activities were challenged under the law between 1950 and 1972. The stock price and dividend records of these companies were examined for abnormal rate of return behavior before and after the issuance of Section 7 complaints. Impact of the diversification program is studied and comparisons are made to those returns realized by stockholders whose companies were not challenged.

Conclusions

Stockholders in large companies earned on the average 23% of abnormal returns over 8 years prior to antitrust complaints. The market adjusts stock returns downward 2% when an antitrust suit is filed against that firm. During remaining litigation and outcome, stockholders of the defending firms received average rate of return. It is also observed that companies whose merger activity did not attract antimerger complaints, experienced large abnormal gains prior to the mergers announcement. Those companies acquired were those with abnormal returns, suggesting mismanagement.

Description

Although the price system is conventionally praised as an efficient way of transmitting the information required to arrive at a Pareto optimal allocation of resources, the context in which the price system is usually discussed is not one in which the informational efficiency of the price system can be properly evaluated.

This paper attempts to remedy this deficiency and it is the intention of the authors to draw attention to some of the more fundamental implications of their approach and to use it to assess the meaning and validity of the efficient market hypothesis.

Conclusions

The analysis suggests that a decentralized economy is likely to be characterized by individuals having differential information, that the separation of information and allocative questions are inappropriate, and that alternative informational structures will be characterized by different real allocations.

*  *  *


Description

This paper deals with the premium received by both sides in a merger and demonstrates that earlier studies which deal with only the premium on exchange ratios obtained by the acquired company are subject to serious errors.
Conclusions

1. In estimating the gains and premiums obtained by companies in
mergers, the impact of the market must be removed because it causes
empirical estimates to be biased upwards.

2. In a merger, the mean adjusted gain to the larger company is
positive, and the total adjusted gain is divided evenly, on average.

3. Since there is abundant evidence that the securities markets are
efficient, we would expect the mean adjusted total gain to be close to
zero; however, when a merger is announced, there is a positive total adjusted
gain which reflects the markets re-evaluation of the company with the
new management.

* * *


Description

This paper attempts to determine if the union of two firms produces
effects different from those if both companies' shares were purchased in
portfolio form (2 + 2 ≠ 5). The focus here is on the risk attributes of
the distribution (of rate of return), and dollar benefits are not addressed.
The work follows Lev and Mandelker.

Assumption

The mergers examined are nonconglomerate.

Conclusions

There is little evidence of synergism in the survey.

**Description**

This study attempts to pinpoint some of the sources of the conflicting findings on the profitability of mergers, by comparing the investment performance and earnings per share growth of active acquirers to that of their respective industries.

**Conclusions**

1. The investment performance of heavily merging firms is generally worse than the average investment performance of firms in their respective industries.

2. Since all measures used result in "success distributions" which exhibit high relative variability, and since the stock price performance of acquiring firms is worse than their earnings per share performances, it would seem that mergers are a risky form of investment.

* * *


**Description**

This paper empirically studies the effects of mergers on the possible impairment of market competition and the long-term impact of mergers on the firms and stockholders involved.

**Assumptions**

1. Use of the "paired simple" technique.

2. The cross section sampled

   a. has to acquire a firm at least 10% of its own asset size;
b. financial data obtained through compustat and CRSP tapes for 5 years before the merger and one year after.

Conclusions

The five-year return to stockholders of acquiring firms is probably higher than those with comparable nonmerged firms (exact return is difficult to calculate). The impact of mergers on the firm's performance in the after years has no clear direction, and no discernable effect.

* * *


Description

This paper attempts to provide additional insight into the understanding of acquisition-related market price movements by examining a group of N.Y.S.E.-based companies engaging in large acquisitions during the 1960's. Emphasis is placed on:

1. Trend-adjusted stock-price movements before and after large acquisitions.

2. The relationship of recent merger trends and characteristics to the trend-adjusted stock price movements.

Conclusions

It is found that acquiring companies perform equal to or better than Standard and Poors Industrial index of 425 industrial companies. Furthermore, when a company acquires another company approaching its size, significant immediate growth in book values, earnings, and earnings-per-share can be created through the "pooling of interest" accounting method. In
addition to these financial effects, the potential impact of longer-run operating synergies would be expected to be greater in contrast to the acquiring of smaller companies. Finally, the publicity surrounding the merger of relatively large companies might lead to generally greater speculation and anticipation. These factors would seem to explain in part changes in the acquiring companies' stock prices.


This paper analyzes an economy in which agents differ in their ability and willingness to make economical decisions in the market place, and the problem of heterogeneity of consumer rationality is explored within the context of a simple model of costly information gathering.

This paper analyzes the industry equilibrium for an economy in which imperfectly informed consumers can only become perfectly informed at a cost. This leads to a monopolistically competitive equilibrium and generally to price dispersion as well, even though the commodity produced by each firm is identical.


Although the price effects of share sales have been debated at some
length, the elasticity of demand for a firm's shares can be determined only by empirical tests. This paper presents empirical tests of the predictions of each hypothesis and discusses the prediction of each hypothesis, the data used, and the empirical findings.

Conclusions

The empirical evidence suggests that price discounts are not necessary to sell new issues, and managers can concentrate on the investment worth of projects, without committing energies to evaluating the effects of selling quantities of stock on share prices. It is also apparent from the analysis that the distribution of a large block of a corporation's stock by a holding company will not have a long-run depressing effect on share prices.


Description

The purpose of this paper is to determine if mergers and acquisitions increase the return on investment of shareholders of acquiring firms. Following this, the merger return formula which was established is operationalized through the use of a common stock valuation model and empirical results are presented for a sample of mergers selected from the chemical industry.

Conclusions

While the sample is too small for inferences about mergers in general, the results indicate that the success or failure of the mergers is immediate and fairly constant, and that this merger evaluation technique can
be successfully employed.

*  


Description

This paper examines "The Report of the Special Study of the Securities Market" by M.H. Cohen. The Cohen study investigates the adequacy of the controls over the security markets now exercised by the S.E.C. and is itself symptomatic of the privileged atmosphere within which the S.E.C. dwells.

Conclusions

The Cohen Report makes poor use of both empirical evidence and economic theory, and its criticisms are founded upon prejudice and its reforms are directed by wishfulness. In the interest of full disclosure, the author states that academic scholars have not given the capital markets the attention they warrant by their importance and analytical fascination.

*  


Description

This paper deals with the ROI method of planning and control and demonstrates that defects in the application of the method which have been disclosed are not inherent in the method and in most part arise from the confusion of goals and processes.

Conclusions

Three major errors disclosed involve the following:

1. A static approach to planning and control.
2. The emphasis of classical management theory of a strict top-down planning approach in which the standards of performance are imposed from above.

3. The closed systems approach in which budgeting is carried out without effective integration with strategic or long-range planning.
6. Related Research on Expectations

The theory of mergers entails unobserved expectations in an essential manner. Accordingly, realistic work on merger-acquisition problems necessarily must (i) take into account the economic theory of how rationally formed expectations are formed over time, and (ii) involve statistical methods by which numerical estimates of unobserved expectations can be inferred from available data. The following two basic research papers, "On Some Conceptual Issues in Rational Expectations Modeling" [Edwin Burmeister, Journal of Money, Credit, and Banking, November 1980, part 2] and "Kalman Filtering Estimation of Unobserved Rational Expectations with an Application to the German Hyperinflation" [Edwin Burmeister and Kent D. Wall, presented at the Fourth World Congress of the Econometric Society, Aix-en-Provence, France, 28 August - 2 September, 1980], are addressed to (i) and (ii). Together they provide theoretical and statistical underpinnings for future work which explicitly introduces unobserved expectations into a theory of merger activity. The papers are presented here exactly as written.
7. Conclusions and Future Research

The preliminary work reported here demonstrates the potential feasibility of using economic theory and statistical techniques to identify in a systematic way those merger cases which may be tentatively judged as socially undesirable on the grounds that they create a less efficient allocation of scarce resources. However, our classification methods are based upon a variety of assumptions which might fail to hold, and therefore each case which we identify as potentially undesirable must be examined more closely. In particular, in addition to checking that our assumptions hold in each instance, it is necessary to invoke criteria which are outside the scope of the present study; for example, we have not examined whether or not socially undesirable monopoly power is a consequence of particular mergers. Likewise, there may exist mergers which we have not identified as undesirable according to our criteria and given our assumptions, but a particular case might in fact be judged undesirable either because our assumptions fail or because other evaluation criteria are invoked.

Our results, therefore, must be used with caution. The primary advantage of the approach we have taken is that it provides a systematic screen or filter so that those cases meriting a more complete analysis are not selected arbitrarily. Moreover, given the validity of the assumptions upon which our methodology is based, we are able to calculate percentage unjustified premiums which can serve as one rough quantitative measure of the extent to which resources have been inefficiently reallocated.

Much work remains to be done to render the methodology employed here
more relevant. In particular, this completed work has led to the development of a classification capability which may serve as one valuable tool for the formulation of public policy. There are, however, several areas in which this capability can be both strengthened and enhanced. The current methodology is based on a theory which employs several simplifying assumptions. By progressive relaxation of these assumptions and elaboration of the theory, an extended methodology will result. The defensibility of the conclusions drawn from application of this methodology would thereby be strengthened. Enhancement will be achieved by broadening the use of the methodology as an ex post analysis instrument capable of classifying past mergers in terms of their economic efficiency (and hence their social desirability). Further work is needed to relate the classification scheme to public policy instruments so that prospective mergers can be classified ex ante. This will permit a study on a "what if" basis. Policy implications can be examined through their impact on classifications (e.g., "Does a certain policy change shift mergers from the socially undesirable category (purely acquisitional) to the socially desirable category (purely allocational)?"). Such a capability will contribute greatly to an understanding of how public policy can affect capital markets.

Moreover, we now have a methodology which will enable us to examine whether or not certain policies designed to improve the economic efficiency of mergers have a differential impact that depends upon the size of either the acquired or acquiring firm. These techniques, therefore, will help to evaluate the effectiveness of measures to increase or maintain small business ownership.
Specific tasks associated with these goals follow. The first two task groups deal with strengthening and enhancing the existing methodology, while the third deals with an application to the differential impacts of firm size.

A. Methodological Extensions

1. The current theory on mergers and acquisitions is static, i.e., intertemporal aspects are ignored. Since most mergers/acquisitions require approximately a year from the time the market place begins to respond to information until actual consummation, a model is needed which admits a dynamic framework. Over such a protracted period in times of rapid inflation and general economic uncertainty, considerable dynamic effects must be expected.

2. The current theory involves various assumptions concerning the availability to the market of certain information, i.e.,
   (a) the status quo value of the target firm,
   (b) the distribution of parameters describing the management and industry of the target firm,
   (c) the exclusion factor,
   (d) the uncertainty of the general economic environment of the target firm, and
   (e) the minimum bid price for which a tender offer is unambiguously successful.

Further work is needed to investigate the relaxation of these simplifying assumptions by formulating alternative assumptions which are less restrictive in nature.
3. The expected value of the target firm to the acquiring firm is an unobserved variable. The Kalman filtering techniques, as exemplified by the basic research work reported in section 6 above, can be adapted to obtain better numerical estimates of these unobserved expected values. Future work will enable us to develop this approach with applications to mergers and acquisitions. Likewise, other unobserved variables, and in particular other relevant expectations, can be modeled and estimated in the same way.

4. Additional studies will be carried out to ascertain the robustness of any conclusions. Specifically, key specification parameters such as C or $\phi$, which may not be known with certainty, can be varied to study their effects on merger categorization.

5. Post-merger performance of the acquiring firms will be examined. This is necessary for a complete analysis of any unjustified premium. The current theory does not consider the role played by post-merger performance.

B. Methodological Enhancement

1. The methodology will be developed further to allow for an analysis of what factors play a major role in the classification of mergers. In particular, the research will focus upon the extent to which policy instruments play a role in the classification of mergers as purely allocational (and therefore socially desirable), versus purely acquisitional (and therefore socially detrimental).

2. These factors will be related to public policy instruments to determine how policy can affect merger classification. The im-
portant policy question of whether or not the effectiveness of such instruments varies with firm size will also be investigated.

3. The (ex post) analysis could be extended to construct ex ante policy analysis tools, thereby permitting analysis of pending mergers.

C. Empirical Research on the Role of Firm Size

1. A critical assessment of the literature on measures of firm size is needed in order to define the most appropriate measure for studies in relation to acquisitions and mergers. Initial consideration will be given to the work of Ben-Zion and Shalit [1975], Smythe et al. [1975], and Shalit and Sankar [1976].

2. Specific attention will be given to the investigation of a systematic relationship between merger classification and the size of either the acquired or the acquiring firm.

3. We will study the question of whether or not "unjustified premiums," viewed as an appropriate percentage, vary systematically with the size of either the acquired or acquiring firm. Furthermore, we will address the question of whether or not firms intentionally pay an "unjustified premium," and if so, whether firm size motivates this decision, or if not, what errors are involved in the decision-making process which causes "unjustified premiums."

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In conclusion, while our results appear promising, they only represent a beginning. The use of economic theory and statistical methods to analyze and evaluate merger activity is a subject yet in infancy.
Footnotes

1/ Exchanges of shares involve the problem of correctly evaluating the true value of the shares offered.

2/ In principle, such information can be inferred by studying post-merger performance; we leave this task for future work.

3/ Any variation over the averaging period in the number of shares outstanding was ignored, since in all cases where a variation existed, it never amounted to more than 1%. In such cases, the number of shares outstanding over the majority of the period was used.
References


