Market Manipulation and Corporate Finance: A New Perspective

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- United States equity and Treasury markets have often been cited in the academic literature as examples of perfectly competitive markets involving numerous buyers and sellers acting as price-takers. Recent academic research, however, has focused on instances where this paradigm fails to hold. In contrast, a copious literature already exists concerning market manipulations in futures markets, which are alleged to be rife with such occurrences. Regulations have since evolved in futures markets to prevent such abuses of market power. Current academic research is now investigating other instances of market manipulation in U.S. equity and Treasury markets and outside the traditional scope of futures markets.

The purpose of the present work is twofold: (i) to review this expanding market manipulation literature and study its implications for financial management, and (ii) to understand corporate finance from a new perspective. This new perspective is obtained by viewing the corporation as an entity participating in financial markets, i.e., as an active, strategic trader manipulating the market to its shareholders' advantage. In addition, the corporation is also viewed as taking certain actions to prevent its shares from being manipulated by others. The insights generated by viewing the corporation in this dual capacity are used to explain many of the phenomena occurring daily in the corporate world.

The first section defines manipulation in general and as applied in particular contexts in financial markets. It contains a categorization scheme for manipulations, and a discussion of various incidents of manipulation in securities markets. The section concludes with a statement concerning our assumptions about the corporation. Section II
analyzes the role of the corporation as a manipulator in financial markets. Section III provides new insights into corporate financial management by viewing the corporation as a minimizer of manipulation of its shares by others. Section IV summarizes the views presented herein and concludes the paper.

I. Market Manipulation — A Preamble

A. Definition of Manipulation

The term “manipulation” has been variously used over the years in the context of financial market regulation. Congress has passed regulations to curtail certain trading practices deemed to be manipulative. For example, the Senate Committee stated in its report on the [Securities] Exchange Act [of 1934] that

The purpose of the act is . . . to purge the securities exchange of these practices which have prevented them from fulfilling their primary function of furnishing open markets for securities where supply and demand may fully meet at prices uninfluenced by manipulation or control. (As quoted in Goldstein, Ackerson, and Novack [25].)

Easterbrook [18] equates “monopoly” in the futures market with “manipulation” and classifies them as a species of fraud.1 Fischel and Ross [20] conclude:

Manipulation is a fundamental concern of the regulation of financial markets. But manipulation is not defined in any of the regulatory statutes and, despite much academic and judicial commentary, no satisfactory definition of the term has been offered. In fact, no objective definition of the term exists.2

These authors almost assume away the concept of manipulation as it may exist in the real world.3

In this paper, we look at the term “manipulation” from a different perspective. The Oxford English Dictionary [43, definition 3.a] defines “manipulate” as “to manage by dexterous contrivance or influence; especially to treat unfairly or insidiously for one’s own advantage.” “Manage by dexterous contrivance or influence” captures the essence of the term “manipulation” as defined in the context of this paper.

Anderson [4] writes:

If we apply a dictionary definition of manipulation to futures markets, we would say it involves cleverly influencing futures prices. This very vague usage does make clear, however that for a manipulation to occur someone (perhaps a group of firms) must have the power to influence market prices.

According to Anderson’s classification, models of Anderson and Sundaresan [6], and Newberry [42] are models of manipulation where perfect information is assumed and “no particular cleverness is involved; a producer is simply dominant, and he exploits this advantage as best he can.” Anderson also states:

Cleverness and power come together in the usage of Chichilnisky [16] who, following the literature on non-cooperative games with imperfect information, considers a market manipulation to be the strategic use of information or market signals. [Italics added]

Jarrow [30] uses the concept of a large trader, one whose trades influence price, as a manipulator. Even without proprietary information, these traders can sometimes manipulate prices to their advantage and generate profits at no risk. The works cited in this subsection define manipulation in a vein similar to our definition.

B. A Categorization Scheme for Manipulation

Allen and Gale [2] classify market manipulations into three categories:

(i) Action-based manipulation: Manipulation based on actions that change the actual or perceived value of the assets of the firm;

1Easterbrook identifies two types of fraud in the context of futures markets: (i) “position fraud,” which “is the unexpected assembly or maintenance of a large position on one side of the market,” and (ii) “ownership fraud,” which “entails owning both futures contracts and the underlying commodity.” These types of manipulations (or frauds) involve “implicit or explicit misrepresentation of the size of one’s position in relation to the rest of the open interest.” Secrecy is important in both these cases as the manipulator charges a premium price in the market.

2Fischel and Ross [20] combine the various definitions of manipulation given by courts and commentators and conclude: “... conduct is manipulative if it is designed to (i) interfere with the free play of supply and demand; (ii) induce people to trade; or (iii) force a security price to an artificial level.” They argue that none of these characteristics leads to a clear definition of what constitutes a market manipulation.

3For example, Easterbrook [18] argues that for some futures contracts it is impossible to build a “large” position in relation to the open interest and deliverable supply. He cites a futures contract covering Treasury securities of a particular maturity: “No one could corner the supply of them.” Fischel and Ross opine that manipulating futures on Treasury securities “is not likely to be possible.” However, disclosures in August 1991 and subsequent inquiries revealed many instances of “short cornering” and “market manipulating squeezes” in the Treasury securities futures market (see the United States Government “Joint Report on the Securities Market” [50] and “Statement of Salomon Inc.” [47] for details and Chatterjee and Jarrow [14] for an analytical model of such market manipulations).
(ii) **Information-based manipulation**: Manipulation based on releasing inside information or spreading false rumors; and

(iii) **Trade-based manipulation**: Manipulation due to buying or selling securities, without taking any actions to alter the value of the firm or to release false information which changes its value.

The Securities Exchange Act of 1934 outlawed many instances within the first two categories of manipulation. Such manipulative actions are often categorized as fraud. Manipulations of these two kinds can happen when the manipulator camouflages his actions with less innocuous deeds or projects a false image to the other market participants.

Trade-based manipulation is the all-encompassing category into which all other types of manipulation fall. It includes manipulations involving initial sales (i.e., “going short”) and subsequent buys (i.e., covering the “short position”) (see, for example, the paper by Gerard and Nanda [23], where a manipulator with positive information about the stock sells prior to a seasoned equity offering in order to benefit from the induced discounts available at the offering). It also includes manipulations involving markets separated spatially or intertemporally but financially linked (see, for example, the paper by Kumar and Seppi [33], where an uninformed manipulator establishes a long futures position in a cash-settled contract and then aggressively bids up the spot price leading to a net gain). The distinctions between these three different categories of manipulation may sometimes blur, but they are nonetheless useful for our purposes.

### C. Instances of Market Manipulation

There have been numerous instances in financial history where even well-functioning and highly developed securities markets have not been spared the long arm of manipulation (as defined above). Incidents of market manipulation include the collapse of a gold corner on Black Friday, September 24, 1869 (see Stedman [48]), corners of the Northern Pacific Railroad in 1901 (see Wyckoff [53]), Stultz Motor Company in 1920 (see Brooks [13]), and the Radio Corporation of America in 1928 (see Thomas [49]). Corners in the tin market during the periods 1981-1982 and 1984-1985 (see Bailey and Ng [8], and Anderson and Gilbert [5]) and the silver market from 1979-1980 (see Fortune, [22]) resulted in the collapse or “distress” of these markets. In the more recent Salomon Brothers scandal in the U.S. Treasury securities market [47], Salomon allegedly bid up the price of two-year notes, resulting in a corner of the primary market and a subsequent short-squeeze in the secondary when-issued and repos markets.

International securities markets also have their colorful stories to tell about manipulation (see the Economist, [19]). When Japanese bank share prices slid by 31% between March 31 and April 9, 1992, most of the short-sellers benefiting from the price decline were suspected to be non-Japanese securities firms. A concerted effort by the Japanese finance ministry and a major financial newspaper to discourage Japanese institutional investors from lending shares to short-sellers (with the intention of reducing shortselling price pressures), unintentionally led to even more dramatic results. Institutions began demanding back the shares they had lent out. The excess demand for shares by short-sellers amounted to a near-squeeze as they covered their positions at inflated prices.

### D. Assumptions About the Corporation and Its Organizational Structure

As a basis for our subsequent arguments, we set forth the following three postulates concerning corporate behavior. We take these three premises as the foundation upon which our subsequent analysis is built.

(i) **The corporation is assumed to maximize the wealth of shareholders who are price-takers.** We define “price-takers” to be informed or uninformed (noise) traders who trade without taking into account the price impact of their trades. This excludes, for example, the strategic informed traders of Kyle [34]. Alternatively stated, this is equivalent to the statement that the corporation should maximize its share price. This assumption is a refinement of the standard one; see Brealey and Myers [12] or Ross, Westerfield, and Jaffe [46].

(ii) **No agency problems are assumed to exist between the price-taking shareholders and the management of the firm.** Agency problems are an added complication which need to be studied at a later date. As a first approximation, the standard theory is applied directly without modification for the implications of agency costs on manipulation. The

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4Jensen and Meckling [32] define “an agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent.” If both parties are utility maximizers, it is unlikely that the agent will always act in the best interests of the principal. This divergence gives rise to “agency costs.”
relaxation of this assumption awaits subsequent research.

(iii) The corporation is assumed to be a large enough entity to influence the prices of its bonds and equity. Hence, it is a "manipulator" in the sense of manipulation, as defined in the discussion of Section I.A. This assumption seems reasonable and should cause little concern.

An implication of the first postulate is that the corporation tries to prevent its shares from being manipulated by others. The reasoning is straightforward. Manipulation of its shares by others causes price-taking shareholders to lose wealth by selling at prices which are too low, or buying at prices which are too high.

II. The Corporation as a Manipulator

A. Introduction

We start this section by combining our three basic hypotheses into the following proposition: The corporation acts as a "manipulator" of its share price in financial markets and attempts to maximize the price-taking shareholders' wealth.

Following Jarrow [30], a distinction needs to be made between paper wealth and real wealth. Paper wealth of a shareholder's holdings refers to their value at the prevailing market price. This is common practice in financial risk management and goes by the name "marking-to-market." Accountants use this procedure in market value accounting. Real wealth, in contrast, refers to the value of the shareholder's holdings after he liquidates his position.

In a liquid market like the NYSE or NASDAQ, it is reasonable to assume that small trades can be executed at the prevailing market price, i.e., without adversely affecting prices. Ignoring the bid-ask spread, this is the price at which small traders (price-takers) can buy or sell small amounts of the corporation's stock at any time. In such a situation, the paper wealth of a price-taker is equal to real wealth. Small traders correspond to the proverbial liquidity traders ("noise traders") in the market microstructure literature.

If the shares of the corporation are widely distributed among numerous small shareholders who trade for liquidity reasons (the "noise traders"), it is optimal for the corporation to ensure that the paper wealth of the corporation stays high. In this case, small shareholders stay satisfied as they can sell (or value) their shares at high prices. This idea is slightly different from Jarrow [30], where, in a different setting, maximizing real wealth is the goal of individual traders. In that case, real wealth was the key to the analysis of a large trader's holdings.

The above proposition can now be used to study corporate finance theory from a new perspective. The new perspective views corporate finance theory under the more general umbrella of market manipulation.

B. Action-Based Manipulation

As a direct consequence of the first proposition, the corporation can be viewed as an action-based manipulator. The actions the corporation undertakes involve its real investment decisions, i.e., taking on all projects with positive net present value. Such capital budgeting decisions, in an efficient market, obviously enhance the value of the shares in investors' eyes. Consequently, the paper value of the corporation's shares is maximized.

The corporation also undertakes financial restructuring decisions like the choice of debt/equity ratios and dividend decisions. Modigliani and Miller [39] have proven that capital structure is irrelevant in a perfect capital market. Miller and Modigliani [37] have similarly shown that dividend policy does not affect firm value. But, imperfections do exist in the financial markets. For example, differential tax treatment of dividends and capital gains affects the choice of capital structure through its effect on firm value. Bankruptcy costs generated by cash flow constraints due to high-dividend payouts or interest costs provide a rationale for the firm to choose these variables so as to minimize the real costs and maximize share prices. For a review of such theories, see Brealey and Myers [12] or Ross, Westerfield, and Jaffe [46].

C. Information-Based Manipulation

As another direct consequence of the first proposition, the corporation can be viewed as an information-based manipulator. The information it controls flows from its production and investment decisions.

This perspective subsumes the signalling theories from corporate finance under the manipulations literature. Ross [45] develops a model where manager-insiders are identified with the corporation and possess inside information. The model demonstrates that with appropriate managerial incentives, financial structure signals information to the market. The corporation's value rises with the choice of a high debt/equity ratio, as it increases the market's perception of its value. Leland and Pyle [35] present a model

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where the value of the corporation increases with an increase in the shares of the firm held by an informed entrepreneur, as higher holdings signal higher project quality. Bhattacharya [10] shows that in a world of imperfect information, even if dividends are taxed at higher rates than capital gains, firms pay dividends to signal higher expected cash flows. Although differential tax rates incur a signalling cost, firms nonetheless pay dividends to signal information and thereby maximize the firm’s share price. Similarly, Miller and Rock [38] show that in the presence of asymmetric information, high dividends signal information about a firm’s high expected earnings through its interaction with the firm’s dividend/financing/investment decisions.

Alternative asymmetric information models also are included under this categorization. For example, in Myers and Majluf [40], management acting in the interest of “passive old stockholders” use more debt compared to equity when positive net present value (NPV) project opportunities arise. Management refuses to issue new equities at a “bargain price” to outsiders, even at the cost of giving up some positive NPV projects. All such behavior on the part of corporate management can be viewed as information-based manipulation.

D. Size-Based or Trade-Based Manipulation

Lastly, again from the first proposition, the corporation can be viewed as a trade-based manipulator, trading its equity and debt to maximize share price. This perspective includes, under market manipulation, the remaining corporate finance theories.

Corporations buy and sell huge amounts of their financial securities in the marketplace. Researchers have investigated the timing of such issues and have found that (i) the managers target a certain debt-equity mix and issue new shares or bonds depending on its relative scarcity in the capital structure; and (ii) the managers try to time the offering of such securities — more stocks are issued (“offerings”) when the share prices are historically high and more stocks are bought back (“retirements”) when the share prices are perceived to be low. Brealey and Myers [12] question the rationale behind such patterns of behavior and conclude that such zero NPV transactions are meaningless in an efficient market. However, our perspective explains such behavior — the corporation tries to maximize its paper wealth by not deviating from the average (avoiding punishment through lack of investor support in the future) and also by buying and selling shares in a fashion that is expected to maximize the share price.6

“‘Market completeness’ by issuance of corporate securities” is another example of trade-based manipulation.7 Green and Jarrow [27] show that, in certain cases, a firm can complete the market for contingencies associated with its payoffs by issuing additional liabilities. Markets are incomplete in their model, with equity and only one class of bonds trading. Yet, the introduction of additional classes of subordinated debt completes the market. Such market-completing liabilities are consistent with maximizing the value of shareholders’ paper wealth, see Green [26].

E. Summary

This section has argued that the existing non-agency-based corporate finance theories can be explained via the concept of the corporation acting as a manipulator in the financial markets — implementing certain actions, using private information, and exploiting the size of its transactions to maximize share value. Although this section did not generate any new theories, it does provide a new perspective on the existing literature.

III. Manipulation of Corporation Shares by Others

A. Introduction

As argued in Section I, a direct consequence of the first premise of price-taking shareholder wealth maximization is our second proposition: The corporation should act to minimize the manipulation of its share price by others. This proposition provides new insights into corporate financial management and this perspective unifies much of the burgeoning market manipulation literature under a common framework.

B. Action-Based Manipulation

As a direct consequence of this second proposition, the corporation should minimize action-based manipulation by others.

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6 In selling shares when its value is historically high and increasing, the management encashes an asset when its value is perceived to be high; in buying back shares when its value is historically low, the management reduces a liability when its value is perceived to be low — both actions are expected to enhance the price-taking shareholders’ paper wealth.

7 A market is said to be complete when the marketed assets span all the contingent claims that could be written on them (see Green and Jarrow [27]). Simply stated, in a complete market there are contingent claims to insure against all possible states of nature.
Some recent papers have models explaining how a corporation’s shares can be manipulated via actions of others. Vila [51] presents an example of action-based manipulation where an “outside” trader’s (or takeover specialist’s) purchase of a stock before a takeover bid increases the value of the corporation. Even if the outsider does not enter and a takeover is not forthcoming, a manipulator, disguised as the outsider, can mislead the market into thinking that a takeover is forthcoming by his trades. He buys and then moves out in time with profits obtained from the resulting appreciation in the share price. The profitability of such strategies hinges on the fact that the manipulator is able to credibly pool his trades with the outsider’s trades.

Bagnoli and Lipman [7] develop a similar model in which a large trader announces a takeover bid to manipulate the target corporation’s stock price. Vila’s [51] model has no such announcement. The bidder-manipulator mimics a serious bidder by taking a substantial position in the stock. The manipulator then sells his position and drops his takeover bid. Such actions may be profitable because the market cannot tell if the bid is serious. Hence, the market price of the target corporation’s stock rises with the manipulator’s purchase.8

In both these models, manipulation of a corporation’s shares leads to a loss of paper wealth by shareholders who bought at inflated prices, prior to the stock price being restored to its fair value. It is natural that a corporation in conjunction with the price-taking shareholders would attempt to prevent such manipulative practices. It is no surprise that regulators in the U.S. have drafted laws, like disclosure requirements, which favor the small shareholders and make it difficult to acquire corporations. In addition, this perspective gives additional justification for standard management takeover defenses such as expensive courtroom battles, the super-majority amendment, targeted repurchases, exclusionary self-tender offers, and poison pills (see Chapter 29 of Ross, Westerfield, and Jaffe [46] for more detailed explanations).

In an interesting twist, Fishman and Hagerty [21] examine manipulation which occurs with the mandatory disclosure (or post-announcement) requirement for insiders as found in the Securities Exchange Act. In summary, Fishman and Hagerty find that an uninformed insider can take advantage of the market’s inability to infer the information content of his disclosed trade. For example, having no information, he discloses his sale, and the market price drops. The market price drops because it believes he may be informed. The uninformed insider then buys back his shares at the lower price. An interesting result is that if disclosure is voluntary, the same insiders would choose not to disclose.

Disclosure laws in the U.S. apply to all managers and directors of the firm (corporate insiders) and investors who have a substantial stake in the firm’s outstanding shares (large shareholders). Our standing assumption that the corporation maximizes share price precludes such manipulative behavior on the part of the corporate insiders. However, in our context, large shareholders, who face similar mandatory disclosure requirements, stand to reap the benefits of such manipulative strategies.

There are two approaches suggested by Fishman and Hagerty [21] to circumvent this form of manipulation. If disclosure is mandatory, the “short-swing profit” rule which requires corporate insiders to give up profits from short-term trading profits (buy and sell strategies) should be applied to all traders who face disclosure requirements. The second approach suggests removing the mandatory disclosure requirement since voluntary disclosure is generally not forthcoming. An alternative approach is to require insiders to pre-announce (or pre-disclose) all their trades so that prices can instantaneously respond to insiders’ trades, be it manipulative or information-based (see the next section). In the context of the Vila [51] and Bagnoli and Lipman [7] models, any of the three approaches discussed above would make it difficult for outsiders to mischievously indulge in manipulatory tactics associated with corporate takeovers.

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8Legal scholars like Easterbrook, Fischel, and Ross have argued that such manipulative actions don’t work due to instantaneous price responses. Economists like Jarrow, Allen, and Gorton disagree and have modeled delayed price response.
Unlike bear raids, trading pools have the advantage of avoiding a corner since settlements are made in cash rather than shares.

In Benabou and Laroque’s model [9], possessors of privileged information can manipulate the market through strategically distorted announcements. Insiders, market gurus and journalists may possess valuable private information. They can manipulate stock prices, however, through misleading announcements or forecasts, claiming it as an honest error or a disagreement in judgement.

The corporation can take a number of steps to minimize information-based manipulation by others. The corporation should release information in a timely fashion, publicly announcing both good and bad news in a symmetric manner. Honesty is the best policy in this context. When the firm can credibly convince the market of its “true” value, manipulable information-based signals become redundant. Such systematic release of information to all market participants will also prevent an accrual of informational advantage to market gurus and insiders. This will reduce the chances of manipulation of the corporation’s share as in Vila [51] and Benabou and Laroque [9]. A less intuitive but more provocative means of making prices more informative is to allow free, unrestricted competition between symmetrically informed insiders, i.e., allowing insiders to trade on their privileged information (see Holden and Subrahmanyam [29]).

Secondly, the corporation can carefully control policy variables such that they cannot be manipulated by others. For example, slowly changing dividend payout ratios and debt/equity levels would be difficult to manipulate. This may provide a theoretical justification for the standard practice of smoothing dividends across time (see Lintner [36]). A related issue in corporate finance is to understand which policy variables should be used as signals, and why. To act as a signal, the policy variable must typically exhibit a cost which increases with quality. But, many policy variables have this characteristic. Perhaps a way to distinguish among these otherwise equivalent signals is to select those with minimum manipulation potential. This is an area for future research.

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9A trading pool involves a group of investors acting in concert who buy some shares of the stock, spread favorable rumors about the corporation, trade among themselves (wash sales) to create an upward trend, and liquidate their holdings at a profit. Such actions were prevalent during 1920s. Penny stocks are especially susceptible to this type of manipulation.

10Jarrow defines a market manipulating trading strategy as a zero initial wealth self-financing trading strategy which guarantees at liquidation nonnegative real wealth for sure, and strictly positive real wealth with positive probability.

11According to Jarrow’s [30] classification, an “actual corner” happens when the speculator controls more than the actual supply of the securities, whereas a “technical corner” takes place when the speculator’s (manipulator’s) holdings exceed the floating supply, i.e., those shares available for sale. A “short squeeze” takes place when the speculator calls in the short sellers to return securities they have sold short.

12The speculator may use his market power to create a price trend by trading a number of times on one side of the market. Then the speculator can profit from this trend by trading against it before the trend collapses.

D. Size-Based Manipulation

Finally, the second proposition also implies that the corporation should minimize trade-based manipulation by others.

Trade-based manipulation is a broad category which includes all the remaining types of manipulation. A number of papers have generated insights on how large trader(s) may manipulate a corporation’s shares and give rise to situations like cornering, short squeezes, etc.

Hart [28] studies market manipulation in an infinite-horizon, deterministic, and stationary economy where the net demand function of nonmanipulators is exogenously specified to be a function of the past price series. A sufficient condition for a non-price-taking manipulator to make profits is for the economy to be explosive. He defines the economy to be explosive if prices can increase or decrease in an unbounded fashion. Under certain linearity restrictions, this condition is also necessary.

Jarrow [30], in a generalization and extension of Hart [28], analyzes size-based manipulation in a stochastic framework. In his model, a large trader (speculator) trades in a stock and money market account. Jarrow assumes that the market for the stock is frictionless, arbitrage-free, and its price is an increasing function in the large trader’s holdings. When there are time asymmetries in the sensitivity of his holdings on prices, Jarrow demonstrates the existence of market manipulating trading strategies like a market corner and short squeeze, or trend creation and trading against it. In a companion paper, Jarrow [31] extends the model to include a redundant derivative security, for example, a European-type call option or a forward contract on the stock. The introduction of this derivative security gives rise to additional market manipulating trading strategies of the nature described above. In the case of a market corner and squeeze, the derivative security en-
ables the speculator to avoid the "number of shares outstanding" constraint. Such manipulation occurred in the U.S. Treasury securities market. Steinhardt Partners and Caxton Corporation, acting in concert, bought $8 billion each of the $12 billion April 1991 two-year Treasury notes issue (see *Wall Street Journal* [52]). They did this by buying $6.5 billion worth of securities in the when-issued market and more notes in the resale market. Subsequently, they made the securities unavailable to the market by parking them with institutions "unfriendly" to Wall Street firms. After cornering the market, they squeezed the "shorts" by charging a premium price.

Salomon Brothers admission of submission of false bids and other wrong doings in the U.S. Treasury securities market gives an example of market manipulation of the type discussed in the two papers of Jarrow [30] and [31]. In the May 1991 auction, Salomon ended up controlling 94% of the auctioned securities through a long position in the when-issued market and aggressive bidding in the Treasury auction of two-year notes (see *New York Times* [41]). Subsequently, Salomon charged a premium price for those securities from the short sellers. Chatterjee and Jarrow [14] develop an equilibrium model of the U.S. Treasury securities market where such manipulations take place even with all agents behaving rationally.

Corporations often express concern that issuing options against their shares may have negative consequences, such as those introduced by cross-market manipulation. A possible approach to exclude these forms of manipulation is to require cash-settled delivery. In this case, cornering the shares is impossible, as the settlement price depends only on the "unsqueezed" price of the security. An alternative, but less plausible, approach, is to place a joint position limit constraint on traders. This special restriction should take into account the total shares of the actual and synthetic security owned by traders.

In a paper which extends Jarrow's [30] model, Cherian and Kuriyan [15] investigate the possibility of an uninformed manipulator making riskless profits when he mimics informed traders in an economy. The price process in this economy is rationally set to be a function of the net order flow processed by the market maker, as opposed to the large trader's holdings over time, as in Jarrow [30]. This paper concludes that unbounded manipulation with rational agents is ruled out, because the rational agents' actions imply that the price response function is symmetric across time. Manipulation can occur, however, in the presence of irrational agents.

Unlike the symmetric price response assumption of many market manipulation models (Kyle [34], Glosten and Milgrom [24], and Easley and O'Hara [17]) and the policy papers (Easterbrook [18], Albrecht [1], and Fischel and Ross [20]), there may arise asymmetric price responses due to the different nature of trades and the different motivations behind it. Allen and Gorton [3] argue that while sellers generally sell immediately due to urgent cash needs, it is difficult to see why traders have pressing needs to immediately buy securities. Instead, they choose to buy at times when they can minimize their losses to insiders, e.g., immediately following earnings or other important announcements when "there is a lower probability of informed insiders profiting at their expense." This leads to asymmetries in the supply/demand for shares and the existence of market manipulative trading strategies. Allen and Gorton [3] demonstrate how such an asymmetric price response assumption can generate profitable manipulation in a standard model like Glosten and Milgrom [24]. In their model, a strategic but uninformed noise trader repeatedly buys stock, causing a relatively large effect on prices. He then sells, having relatively little effect on prices due to the presence of asymmetric noise traders.

Gerard and Nanda [23] give a related example of size-based manipulation. In their model, strategic informed traders attempt to manipulate offering prices by selling short a corporation's shares prior to a *seasoned equity offering*, which is expected to temporarily decrease the stock price. The traders will then cover their short positions through share purchases at a reduced price in the seasoned equity offering. The discount available at the offering is a function of the "winner's curse" problem faced by new-issue investors (see Rock [44]). Hence, the aggressive short-selling of shares in the pre-issue market exacerbates the magnitude of the discount, allowing the manipulators to cover their positions profitably. An obvious approach to circumventing manipulation related to seasoned equity

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13When-issued trading is a special kind of forward trading allowed by the U.S. Treasury on newly announced debt. The securities trade on a when-issued basis starting at the time of the Treasury's announcement of the size and the terms and conditions of the sale of a new debt, through the Treasury auction itself, fill the settlement date of the newly auctioned securities. Delivery of the when-issued securities must take place at the time of the settlement (see Chatterjea and Jarrow [14]).

14For the most part, the literature treats liquidity traders (noise traders) as symmetric, that is, equally likely to be buyers as sellers. Consequently, ask and bid price will move by the same amount due to a buy or a sell of a given size by the liquidity trader.
offerings is to prevent the short sellers from covering their short positions with stocks purchased in the offering. As Gerard and Nanda [23] discuss, this is the spirit of Rule 10b-21 adopted by the National Association of Securities Dealers, Inc. However, Gerard and Nanda also point out that competition between pre-issue short sellers tends to make markets more informative. Hence, increasing the cost of manipulation may reduce the benefit of multiple manipulators entering the pre-issue market.

These negative consequences due to asymmetries in the demand/supply for a firm’s shares suggest some new insights for financial management. Indeed, the corporation, to minimize manipulation of its shares by others, benefits from smoothing its demand for equities across time. This implies, for example, that smoothed dividend streams, low debt-equity ratios, and bank lines of credit have benefits not previously recognized in the literature. This new perspective may aid our understanding of the proper inter-temporal pattern for a firm’s liability structure. This, however, awaits subsequent research.

E. Summary

Corporations may take a number of steps to minimize manipulation of their shares by others. These include defensive mechanisms to explicitly discourage action-based manipulation; informationally efficient procedures to make the corporations’ shares less susceptible to information-based manipulation by insiders; and advocating institutional and market-based safeguards against trade-based manipulation. This new perspective opens up a new arena for future academic investigation.

IV. Summary and Conclusions

Securities markets have been cited in the literature as examples of perfectly competitive markets involving many buyers and sellers acting as price-takers. Recent research has focused on many instances of failure of this paradigm. This paper summarizes the current literature on market manipulations, particularly in the context of corporate finance, and studies its implications for financial management. The corporation is viewed as a “manipulator” in its bond and equity markets. The paper also examines possible actions undertaken by the corporation to prevent its shares from being manipulated by others. Using the concept of manipulation, a new perspective of corporate finance is developed which explains many existing corporate practices and integrates the burgeoning literature of market manipulations in the context of corporate finance.

References

47. Salomon Inc., "Statement of Salomon Inc.," Submitted in Conjunction with the Testimony of Warren E. Buffett, Chairman and Chief Executive Officer of Salomon Inc., Before the Securities Subcommittee, Committee on Banking, Housing, and Urban Affairs, United States Senate, September 1991.

1994 ANNUAL MEETING
SOUTHWESTERN FINANCE ASSOCIATION
MARCH 3-4, 1994
HYATT REGENCY, DALLAS, TEXAS

Deadline for Submission of Papers: Postmarked by September 1, 1993

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