

Some Puzzles

Stock Splits

When stock splits are announced, stock prices go up by 2-3 percent. Some of this is explained by the fact that stock splits are often accompanied by an increase in dividends. But even accounting for this, stock splits are a value increasing event, and they should not be.

The Dividend Puzzle

Dividends are even more of a puzzle than stock splits. Dividends are costly to investors. Dividends are double taxed. That is, the profits are taxed at the corporate level and the dividend receipts are taxed again at the individual level. Debt is different in this regard. Interest payments on debt are deductible from corporate income. The question is, then, why do companies pay dividends?

The alternative to dividends is to retain the earnings and put it in interest bearing accounts, say, government bonds. The value of the stock then includes the value of these savings accounts. Investors holding the stock can “collect” the accumulated dividends by selling their shares of the stock.

Agency cost offers an explanation of why this does not happen. Investors cannot be confident that managers will not use the funds for some project that gives perks to them but does little to increase the value of the company. Dividends force companies to pay out at least some of the cash flow of the company to the stockholders. While stockholders do not want all of the cash flows paid out because of the tax implications, they do want a warning signal of income shortfalls that may be the consequence of agency costs.

The evidence suggests that stock price falls when firms miss a dividend payment by more than the discounted value of the payment. Dividend capture is the stock price reaction on dividend day. What we observe is that dividends seem more important than a simple accounting of their value. Dividends act as a kind of signal of managerial performance and a measure of the extent of agency cost of the company. A dividend increase leads to a stock market increase that is larger than the dividend increase. This presumably is reflecting less potential waste by management.

Another alternative is making stock repurchases. This allows the shareholders to choose between participating in the disbursement or holding the stock till it has a higher value. This is not affected by the tax liability.

Stock price performance when new stock is issued.

Historically, companies that issue equity experience stock price declines at the announcement. (This is true over 80% of the time.) This is a signal to shareholders that assets of the firm are overvalued at the current stock price. The price declines as investors attempt to assess the hidden meaning of the stock price offer. This means that the existing stockholders are being made worse off. (Some 7% of the time, the stock price decline times the outstanding shares is larger than the

value of the new equity raised, so that the entire equity value of the company falls.) Myers and Majluf argue that managers have inside information available about the value of the company that outsiders can't have (asymmetric information). The stock price is noisy and does not perfectly reflect the information available to managers. If the stock price is lower than it should be based on full information, then the managers will not issue new stock acting in the best interests of the current stockholders. In that world, if managers have new investment opportunities, they have to finance it through retained earnings or riskless debt issues. If stock is trading above what it should be, they will issue new stock in an attempt to capitalize on the abnormally and inefficiently higher price to benefit current shareholders. This is an agency costless environment. Investors recognize that if managers offer stock, the price is too high. It is a signal. In this sense, a stock offer will result in stock price declines as investors attempt to assess the hidden meaning of the stock offer. Why this occurs and why managers engage in seasoned equity issues is not clear.

The same experience occurs when companies engage in mergers. When one company acquires another by means of a stock swap, the acquiring company's stock price declines by around 2% compared to a similar merger where the target company's stock is purchased with cash. Again, new equity issues, even where the new stock is used to buy assets in place, seem to hurt old shareholders. The price at which a stock trades does not perfectly reflect the value of the firm. If a stock is trading lower than the value, management will not issue new stock because that will dilute the shareholder value. If stock is trading above the firm value then management will be willing to issue new stock in an attempt to capitalize on the abnormal high price to the benefit of the current shareholders. Thus, the stock price declines and it should be interpreted as a revision of value of old assets plus the profitability of the new organization. This argument has never been seriously tested. The value of assets in place should decline after a merger and there should be improvement in new assets.

In the summer of 1991, Time-Warner made a rights offering in which a block of stock was to be auctioned to existing shareholders according to a sliding scale between \$63 and \$105 per share. Before the rights offering, Time's stock price was \$117. It fell to \$95 at the announcement and slipped even further as the offering was debated. Over the past decade, Time has made a number of bad acquisitions. Three or four years ago it acquired Warner Communications in an effort to fight off a hostile takeover by Paramount Communications. What is the explanation of the behavior of the managers of Time-Warner?

In the spring of 1992, General Motors announced that it planned to issue new equity. Upon the announcement, GM's stock, which was trading at \$50, fell by \$2.50. Analysts said that investors feared dilution. Exactly what is meant by "dilution" is not clear. The value of the old shares is not diluted inasmuch as the buyers of the new shares must pay the old shareholders (by putting money in the company coffers) to have a claim on the assets of the company. That is, if the money paid by the new shareholders was immediately and directly paid out to the old shareholders, the current stock price would not change (except for the brokerage fees associated with the new stock issue and these would not be significantly different than would be associated with the normal sale of stock).

Stock splits are a kind of dilution effect. The ownership claims to the old shares are cut up into smaller pieces. However, the stock price performance of splitting companies is dramatically different from that of rights issuing companies. Splitting firms experience a 3%-6% stock price appreciation at the announcement of the split. (Sometimes the split is an announcement of a dividends increase because the firm leaves the dividends per share the same and increases the number of shares held by each investor. However, even beyond this, splitting companies show abnormal returns at announcement.) The difference between splits and new issues is that no new investment is placed into the company. Why should the absence of new investment increase stock price when new investment drives it down?

IPO's (initial public offerings) experience the same effect as seasoned issues. While there is less of a bench mark to gage the value of the company before the stock issue because there is no direct market evidence, the sale price of the equity issue is always less than the audited cash flows of the business.

Capital Structure

The financial structure of corporations is divided, in gross terms, between debt and equity. There are hybrids like convertible debt and preferred stock but the basic format is fixed claims (debt) and residual claims (equity). Franco Modigliani and Merton Miller (1956) demonstrated that there is no financial advantage of debt or equity. Debt may have tax savings but in general equilibrium these will not affect the marginal firm. M&M did not consider agency costs. The agency cost arguments say that there is a divergence of interest between stockholders and managers. Because of this, the choice of capital structure may impact managerial decision making and hence corporate performance.

Debt can be a method of managerial control. It can operate by allowing for larger managerial claims in residual profits and can be a mechanism for paying out residual cash flows. Jensen proposes that free cash flow is easily wasted by management. The managers can pay out the cash flow to stockholders by a stock recap. The company borrows a bunch of money and with the money raised by the sale of debt pays a special dividend. The cash flow from assets in place is used to pay off the debt and the managerial performance is bonded.

Debt is said to have potential for better monitoring and encouraging managers to work harder. These revolve around the Business Judgment Rule. Debt holders have legal powers in the event of default that stockholders do not have. When the company misses a payment, management can be unseated by a minority of the debt holders legally. Debt allows for an initiation of an independent audit. In this sense, the optimal Debt/Equity ratio is such that where bankruptcy costs are low or the benefits of debt are high, there is a lot of debt. Where there is a lot of debt, managers will act more closely in the interests of the stockholders.

The Costs and Benefits of Leverage

Costs: Bankruptcy Behavior (bet-the-ranch); Underinvestment; Direct Bankruptcy Costs (lawyer fees and the like); Indirect Bankruptcy Costs (consumer reluctance- loss in consumer goodwill if

the company is expected to go out of business. Warranties are worthless so consumers will want to pay less.)

Benefits: Larger managerial claims (Jensen & Meckling); Less free cash flow; Better monitoring; Managers work harder. Benefits all derive from the threat of bankruptcy. Bankruptcy threatens managers. *Business judgment rule*: The court has consistently held that stockholders cannot replace managers through the courts because of bad decisions. However, in bankruptcy stockholders can join with debt holders to replace managers.

Benefits of debt in reducing agency costs are revealed in quality of managerial decisions and their impact on the wealth of stockholders. Costs are embedded in stock price when capital structure is chosen. Stock price reaction to announcement of managerial decisions is test of agency cost hypotheses.

A Story

Anecdotal evidence supports these arguments. Firms often issue debt to finance special dividends. A debt-financed special dividend pays future cash flows to the stockholders and imposes high costs on management if the firm fails to achieve those income goals. In this way managers bond themselves to a future course of action. Similarly, hostile takeover attempts often result in the target company restructuring as a smaller operation with a substantial increase in debt. Successful takeovers are often accomplished with a leverage increasing restructuring. But more interestingly, even unsuccessful takeover attempts are typically associated with leverage increases by the target firm. The theories mentioned above argue that increases in debt reduce managerial abilities to waste the assets of the firm and predict that increased leverage is the expected market equilibrium when agency costs dominate the formula.

Goodyear Tire & Rubber Co. is an example. In 1983 Goodyear diversified into the petroleum industry, a move that the stock market judged harshly (see Mitchell and Lehn, 1990). Three years later, Sir James Goldsmith attempted to purchase Goodyear with the expressed intention of selling off Goodyear's assets unrelated to its main line of business. Goodyear successfully fought off Goldsmith's bid, but it did so largely by incurring a substantial amount of debt in the process. The debt obligations forced Goodyear to sell its non-tire and rubber operations. Even after reducing debt with proceeds from these sales, the company was left as a much more highly levered company than before Goldsmith's takeover attempt. Whereas Goodyear's debt-equity ratio before the takeover attempt averaged 0.35, it jumped to roughly 1.00 and has not fallen below that level since the restructuring took place. At issue is what impact this heavy debt burden has on Goodyear management. The debt-monitoring theories say that it makes managers work harder to maximize the cash flows of the existing capital and to find new positive NPV projects. Casual evidence concerning Goodyear supports this view.

While Goodyear has not made any diversifying acquisitions since Goldsmith's takeover attempt, it has expended more dollars on its core business. During March 1988, Goodyear disclosed a plan to build a radial-tire plant, costing up to \$500 million. This new plant would be Goodyear's first major expansion since Goldsmith's takeover attempt. Goodyear's stock price increased over 4 percent at

the announcement. Our argument is that its increased debt burden is the reason behind its change in strategy and the market's assessment of its strategy.

Test of the Debt Monitoring Hypothesis

Tests of the hypothesis come from Maloney, McCormick, & Mitchell: Look at merger and acquisition announcements.¹ First two samples are broad based. The results are that more highly levered companies perform better. The most powerful possible objection to results is that the only thing that is going on is that “Better managers can borrow more money.”² To test this, we look at set of 44 companies that undertake restructuring towards more debt without managerial turnover. In this sample, pre-restructuring performance is bad and post restructuring performance is good. Hence, support for the conclusion that debt improves managerial decision making.

Implication of findings: Magnitude of the effect is small. *D/E* ratio increase from .5 to 1.5 only increases acquisition performance by .7 percent. However, increase from .5 to 20.5 would increase performance by 14%. *D/E* in range of .5 to 1.5 is normal; 20.5 is extreme. The point is that the costs of debt are substantial. While debt can improve decision making, ways around its costs must be found.

Measurement of Costs and Benefits:

- Benefits of debt in reducing agency costs are revealed in quality of managerial decisions and their impact on the wealth of stockholders.
- Costs are embedded in stock price when capital structure is chosen.
- Stock price reaction to announcement of managerial decisions is test of agency cost hypotheses. Resolution of uncertainty in announcement stock price reaction.

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- The results are that more highly levered companies perform better. Long-Term Debt/Equity prior to announcement of acquisition or merger. This is true both for gross *D/E*, net of market, and industry adjusted. Hold constant method of purchase (Myers and Majluf) and, in second sample, the holdings of stock by insiders. Estimation problems.

Alternative Explanations

- Risk Aversion—highly leveraged firms are scared. They require a higher “hurdle” rate for the projects they choose. Implication is that they will do less acquiring. Facts are that they do more.
- Signaling

¹ Maloney, Michael T., Robert E. McCormick, and Mark Mitchell, "Managerial Decision Making and Capital Structure," *Journal of Business*, 1993.

² Other explanations that are considered are: Risk Aversion; Signaling; Financial Information; Wealth Transfers from Bondholders; Leveraged Returns; Capital Asset Pricing Contradictions; and Tax Shields.

- Transfers from Bondholders—big returns to highly leveraged firms come at the expense of bondholders. However, highly leveraged firms are more likely to experience bond rating upgrades following acquisitions.
- Leveraged Returns—argument is that high leverage definitionally implies high equity returns. This is not exactly correct. High leverage will definitionally imply high variance in equity returns. Good acquisitions should show higher equity returns and bad decisions larger negative returns. Fact is that among the set of negative acquisition returns, high leverage reduces the losses.
- Tax Shields
- The most powerful possible objection to results is that the only thing that is going on is that "Better managers can borrow more money."

Effects of Restructuring

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