***CAPITAL STRUCTURE THEORIES***

*We would expect capital structures to vary considerably across industries. For example, pharmaceutical companies generally have very different capital structures than airline companies. Moreover, capital structures vary among firms within a given industry. What factors explain these differences? In an attempt to answer this question, academics and practitioners have developed a number of theories, and the theories have been subjected to many empirical tests. The following sections examine several of these theories.*

1. *Modigliani and miller theories 1 to 4 (Covered in prior chapter).*
2. *Signaling Theory*

*It was assumed by MM that investors have the same information about a firm’s prospects as its managers—this is called symmetric information. However, managers in fact often have better information than outside investors. This is called asymmetric information, and it has an important effect on the optimal capital structure. To see why, consider two situations, one in which the company’s managers know that its prospects are extremely positive (Firm P) and one in which the managers know that the future looks negative (Firm N). Suppose, for example, that Firm P’s R&D labs have just discovered a non-patentable cure for the common cold. They want to keep the new product a secret as long as possible to delay competitors’ entry into the market. New plants must be built to make the new product, so capital must be raised. How should Firm P’s management raise the needed capital? If it sells stock then, when profits from the new product start flowing in, the price of the stock would rise sharply and the purchasers of the new stock would make a bonanza. The current stockholders (including the managers) would also do well, but not as well as they would have done if the company had not sold stock before the price increased, because then they would not have had to share the benefits of the new product with the new stockholders. Therefore, we should expect a firm with very positive prospects to avoid selling stock and instead to raise required new capital by other means, including debt usage beyond the normal target capital structure. Now let’s consider Firm N. Suppose its managers have information that new orders are off sharply because a competitor has installed new technology that has improved its products’ quality. Firm N must upgrade its own facilities, at a high cost, just to maintain its current sales. As a result, its return on investment will fall (but not by as much as if it took no action, which would lead to a 100% loss through bankruptcy). How should Firm N raise the needed capital? Here the situation is just the reverse of that facing Firm P, which did not want to sell stock so as to avoid having to share the benefits of future developments. A firm with negative prospects would want to sell stock, which would mean bringing in new investors to share the losses! The conclusion from all this is that firms with extremely bright prospects prefer not to finance through new stock offerings, whereas firms with poor prospects like to finance with outside equity. How should you, as an investor, react to this conclusion? You ought to say: “If I see that a company plans to issue new stock, this should worry me because I know that management would not want to issue stock if future prospects looked good. However, management would want to issue stock if things looked bad. Therefore, I should lower my estimate of the firm’s value, other things held constant, if it plans to issue new stock.” If you gave this answer then your views are consistent with those of sophisticated portfolio managers. In a nutshell: The announcement of a stock offering is generally taken as a signal that the firm’s prospects as seen by its own management are not good; conversely, a debt offering is taken as a positive signal. Notice that Firm N’s managers cannot make a false signal to investors by mimicking Firm P and issuing debt. With its unfavorable future prospects, issuing debt could soon force Firm N into bankruptcy. Given the resulting damage to the personal wealth and reputations of N’s managers, they cannot afford to mimic Firm P. All of this suggests that when a firm announces a new stock offering, more often than not the price of its stock will decline. Empirical studies have shown that this is indeed true.*

1. *Reserve Borrowing Capacity*

*Because issuing stock sends a negative signal and tends to depress the stock price even if the company’s true prospects are bright, a company should try to maintain a reserve borrowing capacity so that debt can be used if an especially good investment opportunity comes along. This means that firms should, in normal times, use more equity and less debt than is suggested by the tax benefit–bankruptcy cost trade-off model.*

1. *The Pecking Order Hypothesis*

*The presence of flotation costs and asymmetric information may cause a firm to raise capital according to a pecking order. In this situation, a firm first raises capital internally by reinvesting its net income and selling its short-term marketable securities. When that supply of funds has been exhausted, the firm will issue debt and perhaps preferred stock. Only as a last resort will the firm issue common stock.*

1. *Using Debt Financing to Constrain Managers*

*Agency problems may arise if managers and shareholders have different objectives. Such conflicts are particularly likely when the firm’s managers have too much cash at their disposal (free cash flow). Managers often use excess cash to finance pet projects or for perquisites such as nicer offices, or corporate jets—none of which have much to do with maximizing stock prices. Even worse, managers might be tempted to pay too much for an acquisition, something that could cost shareholders hundreds of millions of Shillings. By contrast, managers with limited “excess cash flow” are less able to make wasteful expenditures. Firms can reduce excess cash flow in a variety of ways. One way is to funnel some of it back to shareholders through higher dividends or stock repurchases. Another alternative is to shift the capital structure toward more debt in the hope that higher debt service requirements will force managers to be more disciplined. If debt is not serviced as required then the firm will be forced into bankruptcy, in which case its managers would likely lose their jobs. Therefore, a manager is less likely to buy an expensive new corporate jet if the firm has large debt service requirements that could cost the manager his or her job. In short, high levels of debt bond the cash flow, since much of it is pre-committed to servicing the debt.*

*A leveraged buyout (LBO) is one way to bond cash flow. In an LBO, a large amount of debt and a small amount of cash are used to finance the purchase of a company’s shares, after which the firm “goes private.” The first wave of LBOs was in the mid-1980s; private equity funds led the buyouts of the late 1990s and early 2000s. Many of these LBOs were specifically designed to reduce corporate waste. As noted, high debt payments force managers to conserve cash by eliminating unnecessary expenditures.*

*Of course, increasing debt and reducing the available cash flow has its downside: It increases the risk of bankruptcy. Ben Bernanke, current (summer 2009) chairman of the Fed (the equivalent of the Central Bank in the USA), has argued that adding debt to a firm’s capital structure is like putting a dagger into the steering wheel of a car.18 The dagger—which points toward your stomach—motivates you to drive more carefully, but you may get stabbed if someone runs into you—even if you are being careful. The analogy applies to corporations in the following sense: Higher debt forces managers to be more careful with shareholders’ money, but even well-run firms could face bankruptcy (get stabbed) if some event beyond their control occurs: a war, an earthquake, a strike, or a recession. To complete the analogy, the capital structure decision comes down to deciding how long a dagger stockholder should use to keep managers in line.*

*Finally, too much debt may over constrain managers. A large portion of a manager’s personal wealth and reputation is tied to a single company, so managers are not well diversified. When faced with a positive-NPV project that is risky, a manager may decide that it’s not worth taking on the risk even though well-diversified stockholders would find the risk acceptable. As previously mentioned, this is an underinvestment problem. The more debt the firm has, the greater the likelihood of financial distress and thus the greater the likelihood that managers will forgo risky projects even if they have positive NPVs.*

***Estimating optimal capital structure***

*Managers should choose the capital structure that maximizes shareholders’ wealth. The basic approach is to consider a trial capital structure, based on the market values of the debt and equity, and then estimate the wealth of the shareholders under this capital structure. This approach is repeated until an optimal capital structure is identified. There are several steps in the analysis of each potential capital structure: (1) Estimate the interest rate the firm will pay. (2) Estimate the cost of equity. (3) Estimate the weighted average cost of capital. (4) Estimate the value of operations, which is the present value of free cash flows discounted by the new WACC. The objective is to find the amount of debt financing that maximizes the value of operations. As we will show, this is also the capital structure that maximizes shareholder wealth and the intrinsic stock price.*

*The Hamada equation specifies the effect of financial leverage on beta:*

*b = bU /[1 + (1 − T)(D/S)]*

*Here D is the market value of the debt and S is the market value of the equity. The Hamada equation shows how increases in the market value debt/equity ratio increase beta. Here bU is the firm’s unlevered beta coefficient—that is, the beta it would have if it had no debt. In that case, beta would depend entirely on business risk and thus be a measure of the firm’s “basic business risk.”*