

Agency Costs of Debt

Lenders, such as bondholders, and stockholders have an innate conflict of interest. Lenders want the firm to invest in safe projects so that a steady stream of cash flows is available to service bonds. Stockholders, on the other hand, want the firm to take some risks and be innovative. If risky projects fail, the stockholders default on the debt and walk away. They have "limited liability." If risky projects succeed, the stockholders pay the fixed interest and principal to the lenders and keep the remaining cash flows.

This conflict between bondholders and stockholders is referred to as the agency problem of debt. The present value of expected future costs related to this conflict are called agency costs of debt. The stockholders bear the agency costs of debt because they are the owners of the firm. Rational bondholders are aware of such conflicts and build the agency costs into the required rate of return on debt. For example, if a firm is expected to switch from a safe to a risky project after raising capital through a bond issuance, then the interest rate on the bonds will reflect this expectation. In Chapter 17, "selfish investment strategy I" describes this situation. "Selfish strategies II & III describe additional types of agency problems of debt.

Please reference Lecture Slides 12 - 18 for further information and numerical illustrations on the three types of agency conflicts associated with debt financing. **Risk incentive** (Strategy I) that is motivated by the asymmetric payoff structure for equity, which increases the incentive to take on projects that have large possible payoffs, even if the probability of the payoff is small (Slides 14 & 15). The **Underinvestment** problem (Strategy II) is about rejecting positive NPV projects that do not benefit stockholders. Unless a project generates sufficient cash flow to cover any existing shortfall, as well as a payoff for stockholders, the added cost is not worth it despite its positive NPV (Slides 16 & 17). **Milking the Properties** (Strategy III) is the extreme case that management could pay out cash as dividends prior to debt coming due; however, this is likely controlled by protective covenants (Slide 18).

Stockholders can reduce agency costs by including protective covenants in debt agreements. These contractual provisions prohibit managers, who are acting for the stockholders, from taking certain actions. Or they may require managers to maintain specific ratios or levels of liquid assets. The former are negative covenants (i.e., what NOT to do) and the latter are positive covenants (i.e., what to do). For example, managers may be prohibited from issuing additional debt at the same level of priority. Or they may be required to maintain the interest coverage ratio at 2.5 times or higher. Protective covenants reduce interest costs and make it easier for the firm to raise debt capital. A downside is that they

reduce manager flexibility. Hence, there are costs associated with using protective covenants to mitigate agency conflicts.

Think about the **static tradeoff model** again. Agency costs of debt can be added to bankruptcy costs. Both agency costs of debt and bankruptcy costs increase as debt level increases. Both of these factors affect firm value in the opposite direction of the interest tax shield. In other words, both agency costs and bankruptcy (or financial distress) costs offset the benefits of debt financing, leading to an optimal capital structure, i.e., an optimal level of debt financing that maximizes firm value.

At this point you may be wondering about practical issues, such as how do managers find the exact debt level that maximizes firm value. Unfortunately, the static tradeoff model does not provide us with an exact optimal debt level. Bankruptcy and agency costs cannot be precisely measured. The model illustrates key factors and important consideration related to how capital structure affects firm value. It shows us that without the interest tax shield and agency and bankruptcy costs, capital structure is irrelevant to firm value. It also illustrates the direction of the effects of the interest tax shield and agency and bankruptcy costs.

When it comes to setting a target debt level most managers appear to consider the level and volatility of the firm's operating income, the need for additional capital to fund new projects, the need for financial flexibility (to fund unexpected opportunities, for example), the firm's credit rating, and the typical debt level within the firm's industry. Besides, practicing financial managers think along the line of a target range of debt levels instead of a precise point once they take into consideration of the transaction (flotation) costs of frequent security issuance.