
FRICTO Analysis: A Framework For Making Capital Structure And Financing Decisions

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This paper discusses FRICTO analysis, a framework for making debt-versus-equity decisions and comparing financing alternatives that takes into account risk, income, control, flexibility, timing, and other considerations. The paper includes a decision tree to help students and practitioners understand how the elements of FRICTO analysis can be incorporated into the decision-making process.

INTRODUCTION

In a seminal paper, Nobel Laureates Modigliani and Miller (1958) advanced the proposition that, based upon several simplifying assumptions, capital structure has no effect on the value of the firm. However, recognizing the impact of taxes, bankruptcy, agency costs, and asymmetric information, capital structure theory has evolved to acknowledge the real world -- that the use of debt does affect the value of the firm. Modern theories of capital structure can be classified into at least two categories: "static tradeoff models" and the "pecking order hypothesis."

Static tradeoff models imply an optimal debt-equity mix that is determined by a tradeoff between the benefits and costs of debt (e.g., balancing the tax and leverage advantages of debt against the risk of bankruptcy and agency costs). However, as argued by Myers (1998), although "the (static tradeoff) theory may sound right to financial economists, and business people will give it lip service if asked . . . it may be a weak guide to average behavior. It is not much help in understanding any given firm's decisions."

The pecking order hypothesis implies a hierarchy in raising funds, in which internal financing (retained earnings) is preferred to external financing and, if the firm obtains external financing, debt is preferred to equity. This empirically motivated hypothesis, which has been theoretically supported on the basis of asymmetric information by Myers and Majluf (1984), is consistent with Donaldson's (1961) observation that firms prefer internal financing and have an aversion to issuing common stock.²

In a survey of the chief financial officers of Fortune 500 companies in the United

States, Pinegar and Wilbricht (1989) found that the pecking order hypothesis is more descriptive of actual practice than maintaining a target capital structure. Further, 84.3 percent of the 176 respondents to their survey ranked internal equity (retained earnings) as their first choice of long-term financing, followed by debt and then new common stock. Moreover, the study found that capital structure policy is less binding than either the firm's investment decisions or dividend policy.

Since capital structure theory has not evolved to the point of providing a clear, unambiguous optimal debt-equity mix for a given firm, teachers of finance face the difficult challenge of presenting materials related to capital structure policy and financing types in ways that are, on the one hand, comprehensible to students and, on the other hand, relevant and descriptive of practices in the real world.

One popular analytical framework for teaching debt-versus-equity decisions and comparing financing alternatives is FRICTO analysis. Developed in the 1960's at the Harvard Business School, FRICTO analysis helps both students and practitioners systematically focus upon the various elements relevant to making financing decisions. Like static tradeoff models, FRICTO analysis involves tradeoffs that must be evaluated. As presented in this article, the FRICTO analysis framework is also consistent with the pecking order hypothesis.³ If a firm obtains external financing, the alternative that results in the highest earnings per share (usually debt) is preferred, unless other considerations such as risk, financial flexibility, or other factors suggest otherwise.

FRICTO ANALYSIS

The acronym "FRICTO" represents the following six elements that are relevant for financing decisions:⁴

Flexibility
Risk
Income
Control
Timing
Other

The elements of FRICTO analysis are as follows.

Flexibility

Flexibility refers to leaving the firm's financing options open. For example, if debt is issued in a given year, it may use up the firm's debt capacity, thus precluding debt as a financing option in future years to meet the firm's anticipated financing requirements.

Sometimes the need for additional capital in the future is for unforeseen reasons, such as a sudden investment opportunity or a financial crisis because of a severe economic downturn. Sometimes the need for additional capital in the future is foreseen, but other factors are not, such as the price of the firm's common stock. If in the future the firm needs to raise capital, but its stock price is depressed (perceived to be undervalued), the firm may have little choice but to issue common stock unless adequate debt capacity is "kept in reserve." This may explain why debt ratios sometimes appear to be lower than what may be considered to be optimal. Companies with highly volatile stock prices such as technology firms may hold debt capacity in reserve simply to avoid the unacceptable dilution that would result from issuing common stock during periods of low prices.

Risk

Risk pertains to the ability of the firm to meet its fixed financial obligations (e.g., interest, principal repayment, lease payments, and preferred dividends) even in adverse circumstances. The more volatile and uncertain a firm's operating cash flows, such as those of a semiconductor manufacturer, the more uncertainty there is about a firm's ability to meet its obligations and the less debt the firm can handle. Conversely, the more stable and certain a firm's cash flows, such as those of a regulated public utility or food producer, the more debt the firm can handle.

Income

Income refers to the impact of the different financing alternatives on returns to shareholders as measured by earnings per share (EPS) or return on equity (ROE). The financial leverage resulting from financing with debt usually (although not always) produces higher EPS and ROE than financing with common stock.

It should be emphasized that "income" in the context of FRICTO does not refer to total dollar net income. If the objective is to maximize total net income, common stock and preferred stock would always be preferred over debt, and lower interest rate debt (such as convertible debentures) would always be preferred over higher interest debt (such as straight debentures). Again, income in FRICTO refers to EPS or ROE.

Control

Control pertains to how different financing alternatives affect the ownership control of the firm. If management has voting control of the firm's common stock, it may choose debt over new common equity. Control can also refer to restrictions placed on the activities of the firm by restrictive covenants in loan agreements.

Voting control can be a particularly important factor affecting financing decisions

by small closely-held companies. However, it can sometimes be an important factor affecting financing decisions by large widely-held companies. For example, if a company's earnings are poor and a group of dissatisfied shareholders believes the company is being mismanaged, the shareholders may try to solicit proxies in an effort to replace management. In such cases, management may oppose a common stock offering because its power base would be diluted.

Timing

Timing focuses upon the current economic and capital market environment. For example, common stock may be the preferred financing alternative because of the perceived riskiness of issuing new debt, but not at the current low share price. In another situation, bonds may be the preferred financing alternative, but prevailing interest rates may be high.

Timing also can refer to the sequencing of financial alternatives (current and future) based upon expectations regarding the future capital market environment and the firm's performance. This can be an important consideration for rapidly growing companies. For such companies, the question is not whether common equity will be needed, but when. If there is reason for management to believe that the market price of the firm's common stock will rise in the future, it may prefer to issue debt now and defer issuing common stock until the market price rises (thus issuing fewer shares). Conversely, timing may lead management to issue equity now.

Inside information can play an important role here. For example, a pharmaceutical firm that expects a new drug to be approved may wait until after it is approved to issue common stock.

Other

"Other" refers to anything else related to a firm's unique situation and relevant to the financing decision. For example, how quickly are funds needed? Should the market for the firm's common stock be broadened? If bonds are issued, must they be subordinated? How will the firm's bond ratings be affected if new debt is issued. What is management's (and the Board's) attitude toward debt?

APPLYING FRICTO ANALYSIS

FRICTO analysis provides a framework to evaluate systematically the various factors and trade-offs that need to be considered when making financing decisions. It is also an effective teaching tool, especially when using the case method of instruction. Cases provide an organizational frame of reference and help students develop the analytical and

evaluative skills needed to handle unstructured problems and make situational decisions. They provide the background facts and data that students can organize into a systematic evaluation of financing alternatives using FRICTO analysis.

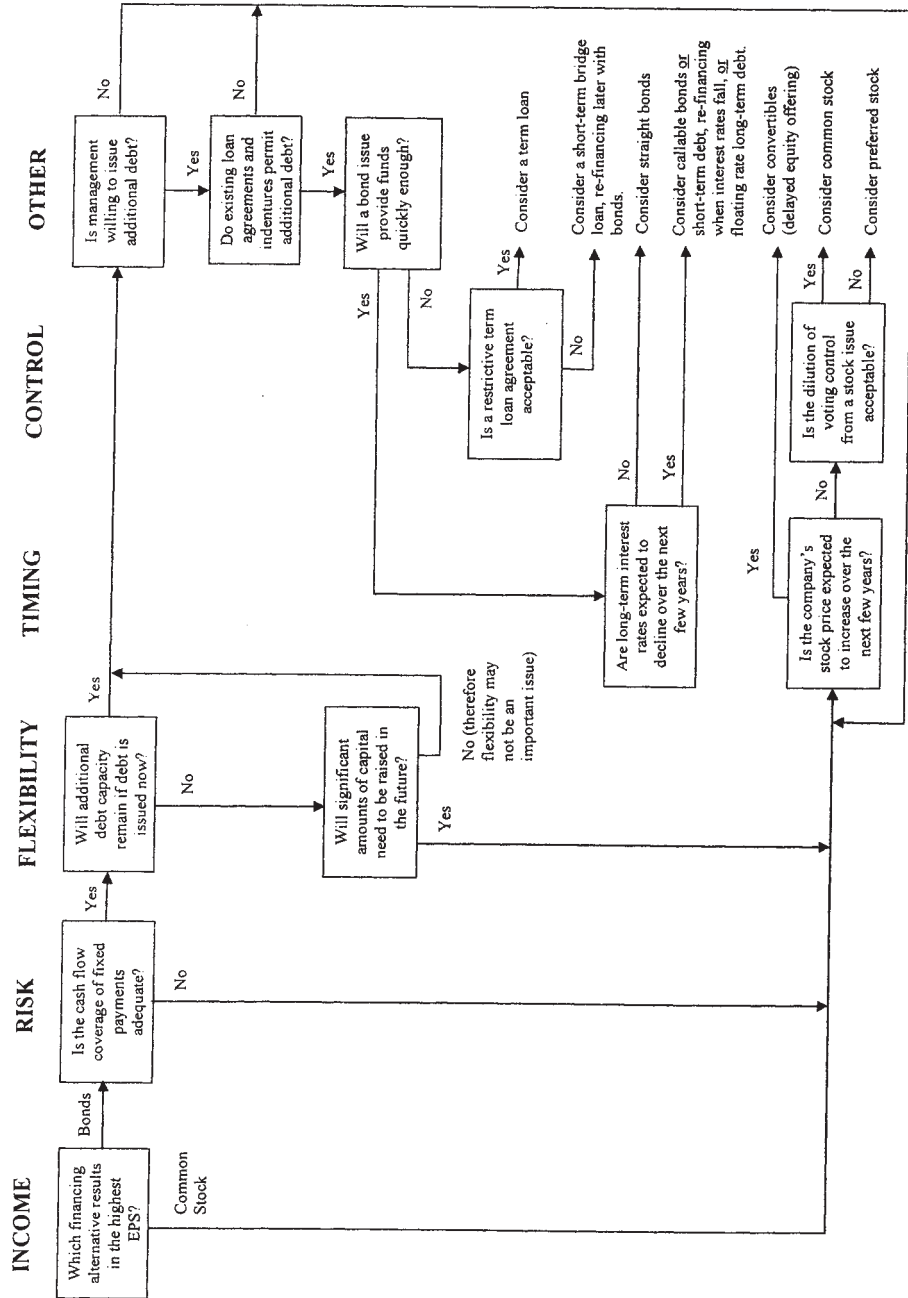
In the past, when we have presented FRICTO analysis to students in class and practicing managers in executive seminars, it has occurred to us that the analytical framework lends itself nicely to a decision tree. This led us to develop the diagram in Figure 1, which depicts the process of FRICTO analysis in a manner consistent with the foregoing discussion. This diagram is designed to present the elements of FRICTO analysis in a way that illustrates how they can be incorporated into the decision-making process. The diagram is certainly not intended to encompass all of the factors and details that must be addressed when making financing decisions. Such a diagram would be cumbersome, if not incomprehensible. Rather, it is intended as a basic illustration of how FRICTO analysis can be used to systematically make debt-versus-equity decisions and evaluate financing alternatives.

As previously mentioned, FRICTO analysis involves tradeoffs that must be identified and evaluated. In its bare essential form, FRICTO analysis involves the classic tradeoff in finance: a tradeoff between risk and income (return). Hence, the first two elements depicted in Figure 1 are income and risk. In a simple world (perhaps the one imagined by financial economists), firms choose either debt or equity. Because of financial leverage, debt is usually the financing alternative that results in the highest EPS and ROE. However, as the debt of a firm increases, so does the threat of financial distress and bankruptcy. Recognizing this tradeoff leads to one way to define optimal capital structure: maximize the level of debt (hence maximizing EPS and ROE), subject to maintaining reasonable levels of risk. Since "reasonable" is subjective in nature, the optimal tradeoff between income and risk ultimately depends upon the firm's (more specifically firm's owners') attitude toward risk.

Of course we don't live in a simple world with only two financing choices. It is in the more complicated real world that the other elements of FRICTO analysis enter into the decision. For example, the income-risk tradeoff may suggest that the firm issue common stock, but the timing may be unfavorable, or the resulting dilution in voting control may be unacceptable. This may lead to choosing convertibles or preferred stock. Perhaps the income-risk tradeoff is favorable to debt being issued, but long-term interest rates are high and expected to decline in the near future. This may suggest callable bonds, floating rate debt, or short-term debt, re-financing the latter when interest rates decline as expected. If a recurring need to obtain additional capital is expected in the future, it may be quite important to maintain financial flexibility (adequate reserve debt capacity).

The relative importance of each of the FRICTO elements varies according to the firm and its unique situation. When new common stock is issued, the control of the firm's existing owners is threatened. But, if the firm is widely held, this may not be an important consideration. Even if the firm is closely held, the need to raise equity capital

Figure 1. FRICTO Analysis: Decision Tree



may significantly outweigh any desires on the part of the existing owners to maintain voting control. If control were always essential in such situations, there would rarely be initial public offerings. Similarly, flexibility may not be an important issue if the firm doesn't expect to need additional external financing in the future.

Managerial compensation packages can also influence the income-risk trade-off. Managers whose compensation and bonuses are tied to EPS will weight income more heavily than the other factors.

While the FRICTO analysis framework is useful in identifying and evaluating the factors relevant to financing decisions, the process of evaluating the factors and inevitable trade-offs is ultimately subjective and situational. Although the decision tree depicted in Figure 1 is rather straightforward and may give the impression that FRICTO analysis is a mechanical process leading logically to clear financing choices, the application of FRICTO analysis to financial decision-making requires critical thinking and dealing with uncertainty. FRICTO analysis, while quite useful as a starting point, is a much more subjective than mechanical process.

CONCLUSION

For those of us who teach finance, as well as those who practice our discipline, it would be nice if the world were simpler and less uncertain, lending itself to a simple theory of capital structure that provides a basis for optimal financing decisions for every firm and financing situation. In the absence of such a world, FRICTO analysis helps students and practitioners systematically evaluate the variety of factors relevant to making capital structure and financing decisions.

ENDNOTES

¹ We greatly appreciate the thoughtful and helpful comments of Bill Sihler and an anonymous reviewer, as well as Skip McGoun and other participants of the Financial Education Association 2004 Meeting, on earlier drafts of this article.

² See Baskin (1989) for a review of empirical evidence and additional findings supporting the pecking order hypothesis.

³ Maintaining a target capital structure and following a financing hierarchy are not necessarily mutually exclusive. Over time, companies that follow a financing hierarchy may adjust towards a target capital structure.

⁴ The elements of FRICTO analysis are based upon the pragmatic analytical framework for making financing decisions developed by Hunt, Williams, and Donaldson (1966). The FRICTO acronym (originally FRICT) was first suggested by William W. Sihler (1971) in his classic *Harvard Business Review* article "Framework for Financial Decisions."

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