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A Business Valuation Newsletter for Business Owners and the Professionals Who Advise Them

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Is the Traditional Risk-Free Rate Still Risk Free?

INTRODUCTION

As we all know, on August 5, 2011 Standard & Poor's lowered its rating of long-term U.S. federal debt to AA+, thereby removing the United States from its list of risk-free lenders for the first time. While much has already been written on this groundbreaking decision, from a business valuation standpoint one central concern stands out – is the long-term U.S. federal bond rate still the default option for the risk-free rate in cost of equity calculations? In this brief article, we discuss this question and raise some thoughts about how we might refine calculating the cost of equity.

IS THERE ANOTHER OPTION?

Let us first think about what impact the downgrade has actually had, and whether or not S&P has fundamentally changed the economic picture. The recession and the debt problem have been with us for some time, and in the run up to the passing of the debt ceiling legislation on August 2, 2011, the topic of potential U.S. default was rarely out of the news. This raises the question to what extent, if any, did government bond prices before the downgrade already reflect market perceptions of potential default and/or downgrade? While quantifying this is difficult, it would seem reasonable to assume that market prices should reflect the prevailing economic environment, such that a measure of default or downgrade risk had been incorporated into bond prices before S&P's decision. To this end, the downgrade can perhaps be seen as a reaction to the wider economic environment and the problems in the U.S. economy, rather than as a precursor of fundamental change.

Nevertheless, in response to perceptions of either an increased default risk prior to the downgrade, or the downgrade itself, one might have expected to see bond yields increase in order to compensate investors facing a potential higher level of risk. Leaving aside for the moment the Federal Reserve's interest rate policy (discussed further below), clearly this has not happened, either in recent months or in the days following the downgrade. The explanation for this lack of sharp movements in bond yields would appear to be that the ongoing economic turmoil and uncertainty in the equity markets has actually led investors to buy bonds in order to provide a measure of security; which brings us to two central and related points – the perception of safety and the absence of choice.

First, for decades it has been common practice to refer to U.S. government bonds as a "risk-free" investment, on the basis that the U.S. government would never default on its obligations. Consequently, this "risk-free" rate has been the building block used to calculate the cost of equity capital. However, while hindsight is a wonderful

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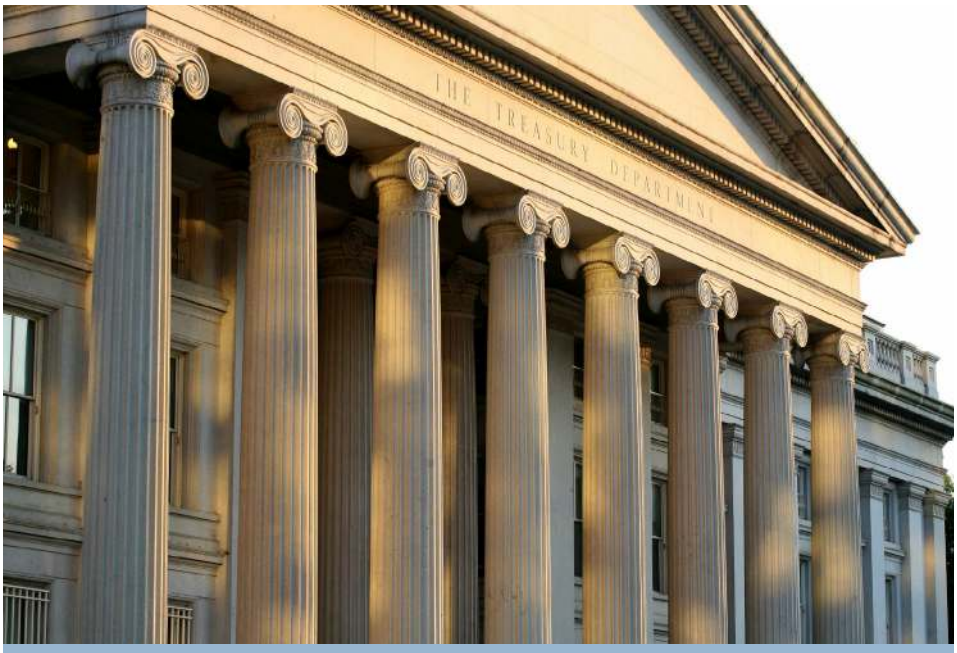
thing, in truth no investment is, and never has been, 100 percent risk free. Valuation professionals have realized this and have often referred to the U.S. 20-year bond rate as a "proxy" for the risk-free rate, i.e., the closest thing that any market has to a true risk-free rate. Notwithstanding, in a difficult and uncertain economy, U.S. government debt is still perceived by investors to be the least risky investment option, even though S&P has downgraded its rating and investors now recognize the presence of a default risk – this perception, and the consequent rush to buy bonds, appears to have countered any upward pressures on bond yields.



EXPERT TIP

We have concluded that, for the moment, the rate on long-term U.S. government debt remains a valid starting point in calculating the cost of equity capital.

Second, while S&P now rates U.S. debt as being more risky than the debt of some other countries, it does not automatically follow that investors would buy foreign over domestic bonds. The Eurozone is rated AAA by all three major ratings agencies, but has a debt problem that is comparable to that in the U.S. Is it therefore reasonable to expect investors to see U.S. debt as significantly more risky than the Eurozone's? Probably not, even if that's only a case of better the devil you know. Also, there are other AAA-rated countries which might be perceived by investors to be in a better economic position than the U.S. However, while some investors might be able to buy bonds from these countries as a "risk-free" investment option in the short term, this is not viable for the market as a whole because the demand far exceeds the available supply. In short, the U.S. market is the only game in town for most investors.

Therefore, on the basis that the market appears to be telling us that U.S. government debt remains a (relatively) safe investment, does that mean we should still use it as the building block in cost of capital calculations? At the moment, the answer is probably "yes", although perhaps we have to move away from using the term "risk-free" rate, and we have to consider some further adjustments to the cost of capital (discussed below).

This is perhaps the biggest impact of the downgrade so far – not that the bond rate is no longer relevant, but that a "risk-free" rate cannot now be taken for granted. It is also worth reminding ourselves that the two other major ratings agencies, Moody's and Fitch, have in recent days reaffirmed their respective AAA ratings for U.S. government debt, albeit with the caveat of a current (Moody's) or a threatened (Fitch) negative outlook.

Further, from a valuation perspective, it is also worth thinking about what could be a practical alternative to using the U.S. long-term bond rate. Theoretically, we could employ the rate on, say, Swiss government bonds. However, if we were valuing a U.S. business with cash flows in U.S. dollars, as a first step we would have to convert these cash flows to Swiss francs. This might be feasible in the short term, but it would be very difficult to reliably estimate long-term forward exchange rates. Therefore, from a valuation perspective, we probably need a U.S. rate. A second alternative could be the borrowing rate on a particularly secure long-term corporate bond. However, this would open up a whole other can of worms, and while a company may be secure and "default-free" today, who can say what the situation would be a few years hence.

REFINING THE COST OF EQUITY

We have concluded that, for the moment, the rate on long-term U.S. government debt remains a valid starting point in calculating the cost of equity capital. Historically, it has been common practice to add an equity risk premium to the "risk-free" rate, and adjust for a number of factors particular to the circumstances at hand, such as the company size and the industry risk, in order to derive the cost of equity capital. In the current environment, perhaps further refinement of this method is required?

The current base interest rate in the U.S. is close to zero, and the Federal Reserve has recently confirmed that it expects to hold rates at this level at least through mid-2013. In theory, this will be a con-

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tributing factor to the present low bond yields, and will presumably continue to have an effect on yields in the medium term. The other factor holding down bond yields, as we have discussed, is high demand from investors.

Therefore, if we used a relatively low "risk-free" rate which is based on the U.S. bond rate, and in the absence of further adjustment, the resulting low cost of capital would result in higher company valuations. In the current economic environment, do lower capital costs and higher valuations seem reasonable for most companies? Probably not, which would suggest that some refinement to cost of capital calculations is appropriate.

The issue then becomes how to achieve this refinement. One possibility would be to adjust upwards the current "risk-free" rate to a normalized "risk-free" rate; the normalized rate calculated by reference to estimated real interest rates and estimated inflation.[1] Additionally or alternatively, it might be appropriate to incorporate a country risk or a default risk premium in calculating the cost of equity capital.[2]

How any refinements to the base cost of equity are calculated is beyond the scope of this article; these are open issues which will no doubt occupy those of us in the valuation community in the coming weeks and months. What does seem clear is that simply adding a risk premium, based on historical data, to the current bond rate will not give an accurate cost of equity capital. Conceptually it makes sense, that when the equity market is volatile and investments carry more risk, the equity premium should increase. The key will be to ensure the increase in the equity premium is calculated in a thoughtful and reasonable manner.

CONCLUDING THOUGHTS

The downgrade has not changed the underlying economic fundamentals, and neither would it appear to have negated the use of the long-term debt rate as the starting point in cost of capital calculations. However, perhaps its greatest impact for now has been to focus the minds of valuation professionals that even investments in sovereign debt are not entirely free of risk. Going forward, we will need to be ever more mindful of the precise circumstances of the valuation, and utilize appropriate inputs to accurately and reasonably calculate the cost of capital.

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[1] Roger Grabowski has discussed this approach. See, for example, "Risk-Free Rate and ERP – Update," July 28, 2011.

[2] Professor A. Damodaran, *Musings on Markets*, July 28, 2011.

Discount Rates Used in Lost Profits Damages

Discounting future monies to a present value is an established economic concept. People prefer to receive cash now rather than in the future and, therefore, put a discount on future receipts. Courts of law have a similar view for future lost profits in awarding damages – but they have made some distinctions.

Courts have not prescribed a single way to discount future lost profits. One appeals court, for example, said, "Although there are several methods used to determine present value, that choice is best left to the trial court, which is in a superior position to assure the entry of a fair and reasonable award on the basis of the evidence" (*McDonald's Corp. v. Brentwood Center, Ltd.*, 942 P.2d 1308 (Colo. App. 1997)). In essence, this court said the method depends on the facts and circumstances of a case – so long as one reaches an award that is fair and reasonable. Damage experts, therefore, find it necessary to consider both the math of present-value calculations and the facts in the case. Consequently, one can generalize about discounting lost profits only up to a point. The exact method often depends on the specific case.

COURT CASE HISTORY

Relatively few higher courts have ever made findings on discount rates in business damage cases. For a list of cases, see Robert Dunn, *Recovery of Damages for Lost Profits* (Westport, CT: Lawpress Corp, 2005, ch 6). In those legal cases, one can classify discount rates in three areas: a safe rate of return, a risk-adjusted rate, and an investment rate. When courts have used a safe rate to discount future lost profits, they often did so as a matter of law. Therefore, if the law requires a risk-free rate, a damage expert determines the amount of the risk-free rate – rather than saying the risk-free rate is the proper rate.

RISK-ADJUSTED OR INVESTMENT RATE?

If the law does not make the risk-free rate mandatory, then the discount rate is either a risk-adjusted rate or investment rate – using this three-part classification. Overall, the courts have not prescribed either one of these rates over the other as their goal is to find an award that is fair and reasonable.

In present-value calculations, a risk-adjusted discount rate means using a rate that reflects the implicit risks in the forecasted lost profits. Although this follows finance theory and seems straightforward, nuances arise in legal settings.

One example is that practitioners often use risk-adjusted discount rates of at least 20 percent when valuing private firms. Of the appeals court cases that ruled on discount rates, however, virtually all

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FEATURED CASE

ESTATE OF LILJESTRAND V. COMMISSIONER

CITATION:

ESTATE OF PAUL H. LILJESTRAND, DECEASED, ROBERT LILJESTRAND, EXECUTOR, Petitioner, v. COMMISSIONER OF INTERNAL REVENUE, Respondent

Docket No. 29397-08, Judge: Hon. Harry A. Haines, Filing date November 2, 2011

VALUATION FACTS – FROM THE COURT

In the case, *Estate of Liljestrand v. Commissioner*, one reason that the taxpayer failed to prevail was his reluctance to rely on a business appraisal prepared by an independent business appraiser. Instead, he chose to rely on his own estimate of fair market value to establish the rate of return on his limited partnership units. The court viewed his actions as self-serving and not what would transpire in an arm's length transaction.

Poor estate planning advice coupled with inattention to partnership formalities doomed the use of the FLP as an estate planning vehicle in the present case. Because the Decedent's relationship with the assets did not change as a result of PLP's formation and because the partners failed to follow through with partnership formalities, the Partnership's assets were includable in Dr. Liljestrand's estate.

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the rates were below 20 percent.

It seems these courts did not like higher discount rates – at least in those circumstances. Moreover, one court made a distinction between present-value calculations for business valuations and for lost profits damages under the law. It said, "There is a difference between discounting to present value damages awarded in a lawsuit, and discounting to present value the value of a business based on a future stream of lost profits. Although … (the expert's) methodology is recognized as a sound way to calculate the latter, that was not the issue here" *(Diesel Machinery, Inc. v. B.R. Lee Industries, Inc.*, 418 F.3d 820 (8th Cir. 2005)).

In another example, one court found a higher discount rate cannot be used to reflect the risk that the injured party would have been unable to perform the contract in the future (*American List Corp. v. U.S. News & World Report, Inc.*, 75 N.Y.2d 38, 550 N.Y.S.2d 590 (1989)).

INVESTMENT RATE AS DISCOUNT RATE

Some courts found an investment rate to discount future lost profits is proper. In legal settings, an investment rate might be used as the discount rate for the present-value calculations. It is based on how the injured party will invest the court award. Rather than relating the risk in the forecasted lost profits to the discount rate, the investment rate considers what opportunities the injured party has available to invest the portion of the award linked to future lost profits. Investing the award will provide a return to the injured firm so the award plus the return has some relation to the future lost profits that it would have received. If the injured party, for example, can invest the award back into its operations, the firm's weighted average cost of capital or cost of equity might be used as the discount rate. If, however, the injured firm is unable to invest the court award back into its business, then its other investment opportunities are considered.

SUMMARY

Discount rates used in the theoretical finance world based on equilibrium assumptions are sometimes too simple for discounting future lost profits. One can get a better insight by also grasping the surrounding case facts and legal concepts about compensatory damages and by knowing how courts have reasoned on this subject in the past.

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