

**BUSI522 – Finance**

“What manager’s should know about Adjusted Present Value“

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Introduction

This school brief summarizes my findings about the valuation method *adjusted present value* (APV) mainly based on the article “What’s it worth? A general manager’s guide to valuation” by Timothy A. Luehrman. This article deals not only with APV but also with *option pricing* and *equity cash flow* and the main goal is to show a different approach to the valuation problems organisations face. The author identifies three main problem areas in valuation: *operations*, *opportunities* and *ownership claims* and the common approaches nowadays are to use the widely known WACC for all of these valuation problems. The three problem areas have in common that they depend on three fundamental factors influencing the valuation: timing, cash and risk. The main conclusion of the article is that this simple approach is not enough for modern organisations and manager are not effectively informed but that an organisation has to deal with the three problems by using the three different approaches now described in more detail.

Adjusted Present Value

In framework of APV takes a variety of corporate finance issues into account and compares the value of an unlevered and otherwise identical levered organisation by taking into account the effects of leverage like tax shield of debt or expected bankruptcy costs.¹

The Adjusted Present Value (APV) defines the value of a levered firm as the value of an otherwise identical but unlevered firm plus the value of any “side effects” due to leverage. These side effects often include the tax shield of debt, expected bankruptcy costs, and agency costs. The APV provides a powerful framework for analyzing a variety of issues in corporate finance, and is especially useful in applications of corporate valuation

The first and most basic problem area is to value operations or asset-in-place which means the valuation of ongoing business like products or markets, the purchase of new equipment or the change of suppliers to name a few examples. The basic question for all three of the problem areas is “What is the value of the future cash flows after the decision is made?”. I don’t want to go into the details of WACC but this approach is only suitable for the simplest and most static of capital structures. In real situation it has to be adjusted to e.g.

¹ Michael C. Ehrhardt & Phillip R. Daves: “The Adjusted Present Value: The Combined impact of Growth and the Tax Shield of Debt on the Cost of Capital and Systematic Risk”; University of Tennessee; 1999

hedges or debt securities and the author suggests that APV is the better alternative to this problem area. The idea of APV was developed by Stewart Myers and the basic rule for APV is to apply basic discounted cash flows and then add them up. But what is the benefit of this approach compared to WACC as both approaches seldom have different results. This idea is called *value additivity* which means that a project is separated into pieces that make managerial sense. In contrast to the WACC approach which focuses on one single value throughout the calculations APV has the additional benefit that it makes the use of spreadsheets easier because it reduces the complexity.

Option Pricing

The second problem area is the valuation of opportunities e.g. how much to spend on R&D and this is especially important as for some companies opportunities are the most valuable things they own. In most cases these opportunities are not valued at all in an organisation until the decision can't be deferred any longer which is a myopic practice that leads to an undervaluation of the company and as a result the companies repeatedly under invest. In financial terms opportunities are analogous to options as they represent the right to buy or sell something on a specific date but real business is more complicated than a put or call option and the factors of time, cash and risk still matters.

Equity Cash Flows (ECF)

The third problem area is the valuation of ownership claims against the value of operations or opportunities for example in joint ventures or partnerships. Managers need to understand not just the value of the whole project but also the value of their company's interest in it. The suggested approach to this valuation problem is ECF which estimates the future cash flows and discount them. The discount rate must be adjusted for the risk of holding a leveraged claim and especially in highly leveraged claims like mergers and acquisitions the handling becomes difficult. High leveraged equity is like a call option because of the risk of default but why then not use the option pricing approach? The ECF approach is easier to apply and will show the correct direction but it also will not be correct. To get the correct value the option pricing approach is correct but nearly impossible to apply as in these cases options on options exist depending on the result of the previous cash flow. The key of ECF is to start with the analysis at a future point beyond the period in which default risk is high and to establish a future value of the equity. These cash flows then can be discounted year by year using standard DCF methods and with change in risk until it finishes at the present year. ECF shows effects in cash flows and risk if ownership structures changes and predicts the behaviour, e.g. how shareholders might vote on proposed merger.