

WACC: Practical Guide for Strategic Decision-Making - Part 6: Estimating the WACC in Emerging Markets - The Challenges



FROM THE PREVIOUS ARTICLES IN THIS SERIES, IT CAN BE CONCLUDED THAT ESTIMATING THE WACC IS ALREADY A DIFFICULT EXERCISE IN A DEVELOPED MARKET. DOING THE SAME EXERCISE IN AN EMERGING MARKET ENVIRONMENT WILL BE EVEN MORE CHALLENGING. THIS ARTICLE PROVIDES A GUIDE TO HOW TO INCORPORATE AND ASSESS EMERGING MARKET CHARACTERISTICS AND FEATURES IN THE ESTIMATION OF THE WACC. ONE CAN THINK OF INFLATION, A LACK OF RELIABLE AND CONSISTENT INFORMATION, ILLIQUID AND INEFFICIENT FINANCIAL MARKETS AND SOVEREIGN RISKS. THE ARTICLE ALSO DISCUSSES HOW THE WACC APPLICATION FOR EVALUATION OF INVESTMENT APPRAISALS IN EMERGING MARKETS HAS TO BE DONE WITH CARE.

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Best Practice for WACC Estimation in Emerging Markets

The prospect of emerging markets, mainly driven by high growth potential, draws the attention of a corporate in search for investment opportunities. But often there is a lack of correct appraisal of both these investment opportunities, and the risks involved with the execution of the projects. The CFO and treasurer play a vital role in assessing the quality of the investment proposals by setting the appropriate hurdle rate for project selections, to make sure shareholder value will be created given the risks involved.

The first article in the WACC series extensively describes the components that comprise the weighted average cost of capital and how to estimate the WACC. Part six of the WACC guide will now show methods of how to deal with, and quantify, risks and features of emerging markets when estimating the WACC for foreign investment decisions and appraisals.

Which Discount Rate to Use?

One question that a company investigating a foreign investment in an emerging market should ask is: which hurdle rate should be used? Should a separate project WACC be calculated for this operation? Or, can just the corporate WACC be applied, added with a premium or discount to compensate for different inflation levels?

There are basically three different types of discount

rate:

1. The first method is to use the corporate WACC. Supporters in favor of using one single corporate WACC argue that a multinational company can be considered as a portfolio of multiple (global) investments and therefore each investment can be treated with the same cost of capital, which reflects the company's total aggregated portfolio risks. This approach acknowledges the advantage of a multinational, which is able to diversify country specific risks somewhat when volatilities in different countries are partly off-set by each other due to their low correlation. The appropriate WACC for operating in an emerging market this way is the corporate WACC adjusted for the marginal contributing effect of the operation in the emerging market (based on the specific financial and operational leverage). When calculating of the nominal WACC in the foreign currency, a compensation for the different levels of inflation between the home and foreign currency will have to be added or deducted.
2. The second method is to consider each investment project as a stand-alone investment and value each of them according to a local WACC that reflects the risks of the local country and project. In that respect there is one major argument that demonstrates the need to calculate an individual WACC for an emerging market - emerging markets are, to some extent, non-integrated markets (not integrated with the global market). It is therefore said to be a segmented market. The characteristic of a segmented market is that

real returns (compensated for different levels of inflation) are also determined by domestic risk factors. These are characterized by inefficiencies caused by regulatory, legal and tax barriers in emerging markets. These inefficiencies have an impact on the cost of equity. In such a case, the company determines a local project WACC, with a local cost of equity the measure of a country's equity risk levels for the operations in the emerging markets, rather than the corporate WACC.

3. The third method is a 'middle-of-the-road' approach, which acknowledges the need to

Best practice is that operational risk, which is diversifiable (non-systematic), should be accounted for in the cash flow projections. Industry and country risk, which can not be eliminated by diversification (systematic risk), should be incorporated in the WACC. The industry risk is captured in the beta of the company (adjusted for the capital structure of the company).

Typical non-systematic risks include many operational challenges associated with investments in emerging markets. Included in the cash flow will also be incremental costs associated with investments in

$$\text{Sovereign risk premium} = \text{Local CCY bond yield} - \text{Triple A risk free bond yield (EUR/US\$)} - \text{Inflation differential (CCY-EUR/US\$)}$$

account for the additional sovereign risk factors in the country of the investment in the WACC. This is achieved by simply adding a sovereign risk premium to the corporate WACC as a mark-up. Sovereign risk represents the country risk and the credit risk of the country. Simply put, the sovereign risk premium is the difference between the yield of the risk-free triple-A rated government bond and a bond issued by the local government (with the sovereign risk embedded in it) minus the inflation differential of the two currencies involved. If local bonds are issued in US\$, the inflation differential should not be deducted.

The major disadvantage of adding a sovereign risk premium is that it primarily reflects the sovereign default risk and can hence serve little to quantify the exact measure of equity risk in that country. To some extent it will cover the additional market risk premium (MRP) for an emerging market, but not the total MRP.

The preferred method out of the three presented is therefore the second method that calculates a separate cost of equity and consequently a separate local WACC for the investment in the emerging market.

How is Risk Reflected in the WACC and in Cash Flow?

We have established that the preferred discount rate requires a separate WACC to be calculated for investments in emerging markets to reflect the additional risks.

The question is, which of all these additional risk factors in emerging markets are included in the cost of equity (Re) and the cost of debt (Rd) of the WACC, and which risk factors should be reflected in the projected cash flows?

emerging markets, like insurance costs, legal costs and costs for currency repatriation and hedging.

Typical systematic risks in an emerging market include default, political and country specific economic risks and, in case of equity investments, one will also have to account for inefficient markets. Expected inflation should be treated separately from the aforementioned sovereign risk and market inefficiencies. Whether inflation should be taken into account depends on whether the WACC is calculated in the base currency of the company or in the local currency. In the case of the latter the inflation differential will have to be added on top of the sovereign risk premium.

It is important to mention that inflation rates should be included in the discount rate as well as in the cash flow. Numerator and denominator calculations should be based on the same inflation rates, to avoid any mismatches.

Specific Risk Adjustments in the WACC

Calculating the WACC in developed markets can be a difficult exercise, but the calculation in emerging market environments is even more challenging. As well as the different and additional risks mentioned, emerging markets are also less developed, liquid and consequently less efficient. In other words, reliable information for the determination of the WACC will be harder to obtain. The next section will discuss the specific adjustments for additional risks and uncertainties in the components that comprise the WACC, which need to be taken into account

1. Cost of equity (Re):

The first component of the WACC is the cost of equity. In developed markets the capital asset pricing model (CAPM) is mostly applied to estimate the cost of equity of an investment. But CAPM has one

important underlying theoretical assumption, which is that it assumes that markets are fully integrated and efficient. However, there is evidence to conclude that emerging markets are not efficient. For fully segmented emerging markets it can even be argued that CAPM is unsuitable for estimating the cost of equity, as the equity prices are not determined by equilibrium situations due to inefficiencies and poor liquidity. However, since there is a lack of alternative methodologies to determine R_e in emerging markets, CAPM is still mostly applied. In order to make CAPM suitable for emerging markets, the following factors in CAPM should be taken with care and will have to be adjusted to represent the additional risks of the partly segmented emerging markets:

1. Risk-free rate (R_f): In developed markets, the 10 year government bond is the basis for CAPM calculation. But since emerging markets have a rating below triple-A, the government bonds themselves are not risk-free and they incorporate a sovereign risk premium. Another issue, which especially exists in high inflation environments, is that long-term government bonds are usually unavailable.
2. Beta (β): The β in the CAPM equation provides a quantification of the sensitivity (systematic risk) of an investment project to market movements. When a beta is unknown, it is hard to properly determine in emerging markets. Sometimes companies or industries beta's are not calculated locally, since it is likely that betas and stock returns are less correlated due to a lack of information and market inefficiencies. But there is an alternative, namely to use the global industry β , re-levered to the company's appropriate target leverage.
3. Market risk premium (MRP): The MRP is the extra return that the stock market provides over the risk-free rate to compensate for market risk. In developed integrated markets historically derived market risk premium is estimated to be around 5%. The problem in emerging markets is that reliable data records to determine the return rates are unavailable in many cases. Then, once you have determined the historic risk premium based on the recorded data, you also have to question whether these records are a reliable predictor for the long-term future. Historic averages in emerging markets are often influenced by periods of high volatility. In case that historic data series show periods of extreme volatility in premiums, a downward adjustment is recommendable. Therefore these premiums should be taken with care and the historic risk-premium should subsequently be adjusted according to the prospects. There is an alternative approach often used to determine the additional market risk premium for an emerging market. Take the market risk premium of the developed domestic market and add the sovereign risk premium, multiplied by the ratio of the standard deviation on returns of the country's equity market, divided by the standard deviation on the local government bond.

2. Cost of debt (R_d):

The cost of debt is the second component in the WACC. It is the marginal cost that needs to be offered to raise additional capital in the form of debt, including the issuance costs of the concerning debt. Additionally, the local capital market for debt in an emerging market will show inefficiencies, and is often regulated. Consequently, in case local debt sources are used, the actual cost of debt can be substantially different to what it would have been according to the company's credit rating.

Reliable long-term interest rates in emerging markets are rarely available and, as a result, only short-term debt will be available as a reference. Sometimes in a high inflation environment, debt instruments are dollarized or inflation indexed.

In some emerging countries it might even be impossible to obtain debt financing. This implies that a company can only invest through equity. The chosen capital structure in an emerging market is rarely based on a free will. Restrictions to foreign ownership and a lack of availability of debt instruments or borrowing restrictions from local banks will all have an impact on the actual capital structure.

Project Appraisals

The WACC is widely applied as the discount rate to measure the quality of investments with help of the discounted cash flow method (DCF). The WACC is the proper discount rate for discounting future cash flows into a present value.

In normal circumstances, a company must seek to make a return on its investments in excess of, or at least equal to, the WACC (or a positive net present value).

The DCF-method applied for valuations in emerging markets deviates from the same method in developed markets, as in emerging markets you also have to deal with additional risks that may affect the certainty of future cash flows. It is therefore recommended to model a scenario or sensitivity based DCF for emerging market valuations. This should explicitly incorporate the non-systematic risks involved in the operation in the emerging market.

The impact of future cash flow risk should be carefully assessed, as some risks do not apply equally to industries or companies. An example can be the depreciation or appreciation of a currency. An importing company will be impacted differently by an appreciation than an exporting company.

Apart from exchange rates, the development of other economic variables can heavily impact future cash flow. This can include inflation, GDP and interest. In order to identify the impact of these variables, one can conduct a sensitivity analysis.

Next to the systematic and the non-systematic risks discussed earlier, another important feature

of emerging markets are the often high levels of inflation. There are in principle two methods how to cope with inflation in a DCF-calculation:

1. Nominal prices method:

In this method the inflation is both accounted for in the cash flows and in the discount rate.

2. Real prices method:

This approach takes into account the financial statements in real terms and consequently discounts the cash flows in real terms against the real discount rate.

The major benefit here is that it is somewhat easier to forecast future cash flows in real terms than in nominal terms, especially in environments that face high and variable levels of inflation. It is sometimes said that when inflation levels reach double digit figures it is preferable to model the forecast on real terms. Obviously when cash flows are calculated in real terms, the discount rate should be on real terms as well to avoid a mismatch.

Exchange rates are another element that need to be taken into account in a nominal forecast. In the case of imports and exports of goods in foreign currencies, there are exchange rates involved in the valuation. You will have to take into account that the exchange rates in your valuations are impacted by the inflation rates among other items (according to purchasing power theory), although exchange rates might only be adjusted for the interest differential in the long-run.

A single discount factor (WACC) for DCF calculation in emerging markets will lead to an over-simplification that ignores the dynamics of an emerging market. In

emerging markets, with high levels of uncertainty and variability of inflation and capital structure, it's recommended to calculate a nominal WACC per year reflecting the developments in inflation and capital structure and risk premiums. The level of inflation applied in the WACC should also be reflected in the discounted cash flows.

Conclusions

The major distinction between developed markets and emerging markets is the increased level of risk, caused by macro economic variables, volatility and inefficiencies in capital markets and political situations. There are many different ways to incorporate and account for these additional risks.

A mark-up on the domestic corporate WACC, for the sovereign risks and inflation differential, will not be sufficient to calculate the required compensation for the additional equity risks involved. Best practice is therefore to calculate a local WACC, which not only fully reflects the company specific risks but also the equity and debt market risk of the country of investment. The different components of the WACC will have to be adjusted for the risks involved.

Since emerging markets are rapidly changing, the WACC will consequently also change over time. A point estimation of the WACC should therefore be taken with care, especially when used in DCF's for project appraisals.

The CFO and treasurer will play an important role in the strategic process of project analysis in emerging markets, not only by quantifying the specific risks involved with investment in a particular country in the estimation of the WACC, but also by determining and quantifying the risks on the foreign cash flows.

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