Cost of Capital in Emerging Markets

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Practitioners and academics have developed a range of quantitative tools aiming at calculating the cost of capital in emerging markets.

This document summarises these approaches.
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As pointed out by Harvey (1995), the traditional CAPM is difficult to apply on emerging markets:

- Estimated “beta” as usually low, resulting in underestimated required returns.
- Deep market inefficiencies
- Different nature of risks
- Bad statistical properties of times series
- Lack of historical data, etc.
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Specific models

Practitioners and academics have therefore developed specific models:

- Godfrey & Espinosa (1996)
- Damodaran (1998)
- Estrada (2000)

... and TAC in 2005.
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The Erb, Harvey & Viskanta approach

- They suggest an approach based on credit ratings (CR, provided by Institutional Investors in their case).
- They estimate the link between stock returns and credit ratings.

\[ C_i = R_t i = a + b \log(CR_i) \]
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The Godfrey & Espinosa approach

- They add to the risk free rate (Rf) the spread between the yield between an EM and a US sovereign bond (Spr).

- They use an “adjusted beta”, defined as 60% of the ratio of standard deviation (V) of returns in the targeted market and the US market.

\[ C_i = Rf_{us} + 0.6 \frac{V(Rt_i)}{V(Rt_{us})} (Rt_{us} - Rf_{us}) + Spr \]
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The Damodaran approach

- A model based on a US (or home based) estimated CAPM, adjusted by a country equity premium (CEP).

- These country risk premiums are estimated using bonds ratings and associated default spreads (or CDS spreads).

- Adjusted by a volatility factor, to reflect country equity premiums (especially for the short-term).

\[ C_i = Rf_{us} + beta_{us}(Rt_{us} - Rf_{us}) + \frac{V(Rt_i)}{V(Bonds_i)} CEP \]
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The Espinosa approach

- He suggested in 2000 an approach based on downside risks only.
- According to the author, this method would better reflect the « partial integration » of a couple of emerging market and would be less volatile than the Godfrey & Espinosa estimates.

\[ C_i = Rf_{us} + (Rt_{us} - Rf_{us}) \frac{V_{down}(Rt_i)}{V_{down}(Rt_{us})} \]
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TAC’s approach

- A model that is based on home based estimated CAPM, adjusted by country premiums (CP).
- Country risk premiums are estimated using econometrics estimates between JP Morgan EMBI+ spreads and our ratings.
- Three premiums are added to the country risk: a political premium (CPP), a “crisis signal” premium (CSP) and a “group premium” (GP, commodity producer, past restructuring, liquid market).

\[ C_i = Rf_{us} + \beta_{us}(Rt_{us} - Rf_{us}) + CP + CPP + CSP + GP \]
Here again, different approaches can be used, and the adjustment can be done either on cash flows or on the cost of capital measurement.

Most practitioners use inflation differentials as a proxy of currency risk, but statistical analyses clearly show that this approach is far from reality (absolute and relative PPA usually do not hold).

Most of the time, forward exchange rate cannot be used here, as they are mostly reflecting short-term risks and are affected by a forward discount premium in carry trade countries.
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Cost of capital in local currency

- TAC has therefore created models for long-term inflation and exchange rate forecast on emerging markets, that can be used directly either for the calculation of a cost of capital in local currency, or to adjust cash flows.
- Long-term inflation forecasts are based on the so-called “New Keynesian Philips curves” introduced by Gali and Gertler (1990), and augmented by commodity prices.
- Long-term exchange rate forecasts are based on a combination of purchasing power parity estimates, Balassa-Samuelson effects and consensus estimates.