A REVIEW OF COUNTRY RISK IN DEVELOPING MARKETS

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Abstract

The free movement of capital and the opportunity to gain higher rates of return make global investors face additional risks when investing in developing countries. Political, financial and economic factors do have significant impact in investment and business environment of companies, thus need special attention from both researchers and practitioners. These factors comprise the country risk, which is very important to be measured, analysed and managed for purposes of portfolio management and financial valuation. The higher the perceived risk of investing in a country, the higher should be the premium to justify this risk, consequently increasing the cost of capital and decreasing the value of the business. There are three widely used methods for measuring country risk: government bond spread, country credit ratings and credit default swap spreads which are used to adjust the standard required rate of return based on the classic CAPM model. This paper gives a review of the most recent literature on the methodologies and modelling of country risk in developing countries.

Keywords: Country risk, valuation, cost of equity, rate of return, developing countries, bond spread, country rating

INTRODUCTION

Developing countries are generally characterized by high average returns, high volatility and low correlations with developed countries (Bekeart et al., 1997; Estrada, 2000). There is additional risk faced by investors when engaging their capital in projects or investments in these countries. Therefore it is necessary for both researchers of financial management and practitioners to analyse the typology of risk and to establish an appropriate risk management system.

There are different classifications of risks, but most significant risks affecting companies in developing countries are grouped as follows (Godfrey and Espinoza, 1996; Lessard, 1996; Goedhart and Haden, 2003; Diller and Jäckel, 2015):

- *Macroeconomic level risks*: political risk, business risk, exchange rate fluctuations, inflation, institutional / regulatory risk, industry-level risk;
- *Market / sector level risks*: price volatility of global / local portfolio, project specific risk;
- *Company level risks*: financing risk, liquidity risk, and risk of capital.

Country risk refers to *'the likelihood that a sovereign state or borrower from a particular country may be unable and/or unwilling to fulfil their obligations towards one or more foreign lenders and/or investors'* (Krayenbuehl, 1985). Based on most of studies, country risk refers to risk arising from economic, financial and politic factors.

The analysis and assessment of country risk is of special importance for the following reasons:

- Investment purposes - it helps investors understand the risk associated with investments in a specific country;
- Valuation purposes - country risk is a factor to be considered when valuing a company/ asset in developing countries because of its impact in future cash flows or cost of capital;
- Financial stability assessment - the level of country risk serves as basis to assess the potential of government to repay its debts;
- Portfolio management - knowing the level of country risk enables investors to better manage and diversify their portfolios.

This paper gives a detailed literature review on methods used to calculate country risk, the way it is measured and used in financial valuations.

COUNTRY RISK PREMIUM METHODS

Country risk analysis is particularly important in the case of foreign direct investments considering the effect in the well-being of investors who engage their capital in countries with fluctuating level of political, economic, legal, and other forms of systemic risk.

International Monetary Fund has designed a specific methodology for assessment of country risk for emerging markets based on the factors which have impact in macroeconomic level in these countries (Table 1). The risk assessment focuses on the likelihood that macroeconomic or financial shocks combined with underlying vulnerabilities could lead to a sudden stop in capital flows. For each sector, a vulnerability index is constructed as a weighted average of individual indicators, with weights derived from the indicator's signal-to-noise ratio (IMF, 2017).

Table 1: Risk assessment variables for emerging markets

EXTERNAL	PUBLIC	FINANCIAL	REAL	CONTAGION
• Current Account Balance	• Gross Public Debt	• Foreign Liability as % of Domestic Credit	• Interest coverage ratio	• Regional EMBI spreads
• REER Misalignment	• Primary Balance Gap	• Capital Adequacy Ratio	• Real GDP Growth	• Change in export demand growth
• External Debt to Exports	• Average Maturity of Debt	• Return on Assets	• Non financial corporation foreign currency debt	• External banking liabilities x VIX
• Private Sector External Debt to GDP	• Average Effective Interest Rate	• Loan to Deposit	• Household total debt	• External banking liabilities x partner GDP growth
• Reserve Coverage as % of ARA Metric	• Interest Expense	• 3-year cumulative credit to GDP	• FX share in total NFC and Household debt outstanding	• Correlation of EMBI spreads x equity price growth
• Change in Reserve Covereage as % of ARA Metric	• Gross Financing Needs	• End of period gap - Equity	• Non-inv grade debt in total stock of debt securities	• Deviation from trend banking liabilities
• Change in external debt to exports	• Short-term Gross Public Debt	• End of period gap - Loan to deposit ratio		
	• Public External Debt	• End of period gap - Credit to the private sector		
	• Foreign Currency share of debt	• End of period gap - Property prices		
	• Cyclically adjusted primary balance			

Source: International Monetary Fund (2017), page 11

A widely used method to express the level of country risk, especially for developing countries, where information is not very accessible and reliable, is based on classifications by international rating companies, which employ specific risk assessment methodologies. Numerous studies have been based on this method and have shown the importance of credit ratings in the level of investment, mainly foreign ones (Cai et al., 2019; Damodaran, 2003).

In practical terms, there are many international companies which provide guidance on country risk factors, as well as issue periodical publications that may be of significant help to researchers and practitioners:

- *The International Country Risk Guide (ICRG)* - rating system which comprises 22 variables representing three major components of country risk, namely economic, financial and political.

- *Standard and Poor's* - rating based on five key risk determinants: political, economic, monetary, external, and fiscal factors.
- *Moody's* - rating based on four main categories: economy, finances, management, debt / pensions.
- *Fitch* - rating system based on macroeconomic, public finances, external finances and structural dimensions which comprise 18 specific variables.
- *Robinson Country Risk Index* - a tool that incorporates four broad dimensions — Governance, Economics, Operations, and Society (GEOS).
- *Coface* - country risk assessment methodology for 160 countries, taking into account macroeconomic, financial and political factors
- *The Economic Intelligence Unit* - 6 risk categories: currency risk, banking sector risk, political risk, economic risk, government financial risk, and comprehensive risk

On the other hand, Damodaran offers a continuous updated database for country risk premiums for more than 150 countries based on Moody's ratings. Below (Figure 1) is a summary of country risk premiums calculated as of January 2020, where it can be clearly seen that emerging and developing countries in Central and South America and Eastern Europe have higher premiums than developing countries in Europe and North America, thus emphasizing the higher risk level. The highest risk premium (17.69%) refers to Venezuela, while for investments in countries such as Sweden, Switzerland, USA and Canada which do not suffer any credit risk, there is no need to add any risk premium.

Figure 1: Country risk premium (%)
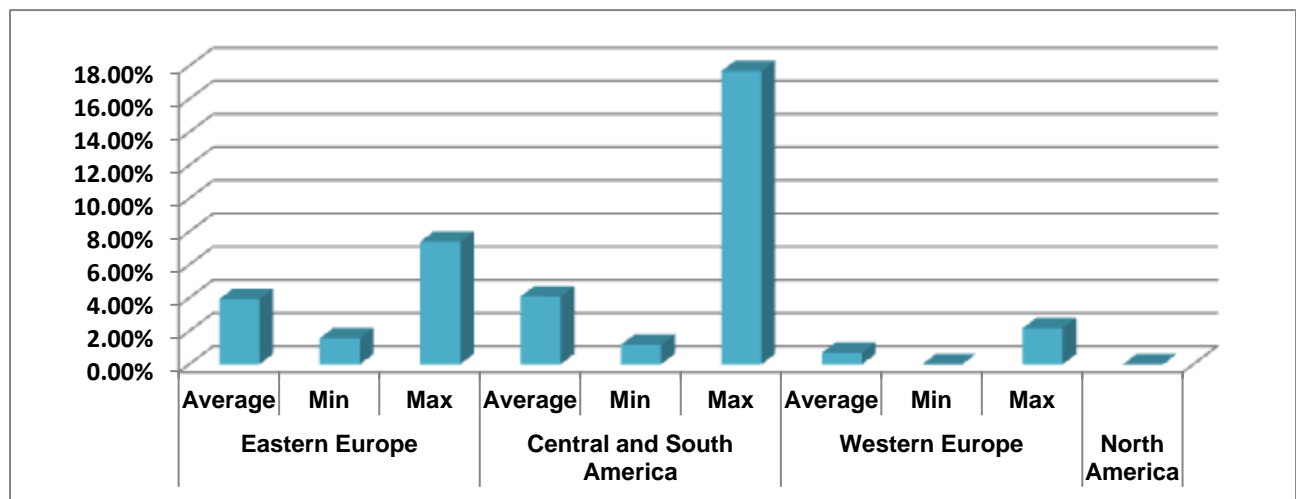
*Source: Calculated by author based on Damodaran (2020): Country Default Spreads
and Risk Premiums (accessed on 05/02/2020)*

Another approach for assessing country risk premium is based on bond default spread which is the spread between the yield to maturity of an emerging market sovereign bond denominated in USA dollars or euro and the yield of a comparable USA or euro bond, with the same maturity (Godfrey and Espinosa, 1996; Damodaran, 2012). The spread of bond yield of the developing countries relative to the bond interest issued by a developed government is influenced by both domestic and global market factors. A study conducted by Juodžiukynienė (2016) identified that the most important factor in the short run was the volatility of the market index in the European Union, while the impact in the long run comes both from internal and external factors in the Central and Eastern European countries.

Other researchers suggest using credit default swap spreads instead of bond spread to measure the country risk based on the characteristics of CDS markets which are considered more precise and updated. (Abuah, 2011; Walker, 2016). On the other hand, the volatility of equity markets in developing countries is sometimes used as a measure of country risk, meaning that the higher the volatility of the market, the higher the risk of the country (Porras, 2011).

COUNTRY RISK MODELLING

Identifying, measuring and expressing risk factors is a must in calculating a company's value. For this reason, researchers and practitioners have always been trying to adapt several methodologies, especially focusing on adjustments in the rate of discount. Sharpe (1964) and Lintner (1965) established the capital asset pricing model, CAPM, which explains the equilibrium relationship between risk and return on an asset. According to them, return on investment is positively correlated with market risk premium, which represents the only systematic risk affecting asset's return:

$$E(r_i) = r_f + \beta_i * [E(r_M) - r_f]$$

Where: E(ri) - expected rate of return on an asset;

       r_f - risk free rate;

       $E_{(rM)}$ - expected market portfolio return;

       β_i - market risk measurement coefficient, which expresses the volatility of returns on financial asset relative to market portfolio returns.

This is a single factor model, which can be applied if certain conditions and assumptions are met. These assumptions have often been contradicted by other scholars being not real, especially when referring to developing countries where there is more than one risk factor affecting returns. Nevertheless, despite of the problems of the classic CAPM model, which sometimes lead to completely incorrect calculations, it remains the gold standard in the field of

valuation (Abuaf, 2011; Canadas dhe Ramirez, 2011; Da et al., 2012; Keck et al., 1998; Estrada, 2007; Aukea et al., 2017). For this reason, most of the studies are based on the rate of return calculated by CAPM adjusted by other risk factors except of market risk.

When referring to segmented markets, the rate of return considers an additional risk premium to justify the risk arising from factors that may adversely affect a company's performance, such as: currency appreciation or depreciation opportunities, risk of government financial failure, inflation risk, etc. (Bekaert and Harvey, 1995). This means that the expected rate of return is calculated on local level data and then adjusted by adding the country risk premium:

$$E(r_i) = r_{f,L} + \beta_{i,L} * (R_{M,L} - R_{f,L}) + RP_C$$

Where: $R_{f,L}$ - *risk free rate in local level;*

$\beta i,L$ - *beta coefficient calculated in a local index;*

$R_{M,L}$ - *return of market portfolio based on local index;*

RP_C - *country risk premium*

This model, called the Local CAPM can lead to multiplying certain systematic risks which are included in market risk (Godfrey and Espinosa, 1996). For this reason, several adjustment of the model have been established (Adjusted Local CAPM, Hybrid CAPM, Global CAPM) (Pereiro, 2001, 2006; O'Brien, 2005; Zhang and Wihlborg, 2010). The use of the country risk measurement factor is also supported by Damodaran (1999), who suggests calculating the initial cost of equity based on US market data for all inputs required, since this market is characterized by higher liquidity levels and the existence of longer time series, and then adding a premium for country-specific risk.

Godfrey and Espinoza (1996) suggest that the rate of return in developing countries investment should consider two additional factors to the standard CAPM model: country risk which is included as a premium to the risk free rate and business risk measured by the ratio of standard deviation of returns of local stock with standard deviation of returns of world portfolio. The proposed model is:

$$E(r)_i = (r_F + RP_c) + MRP * [(0.6) * \sigma_L/\sigma_W]$$

Where: r_F - *risk free rate*

RP_C - *country risk premium*

MRP - *market risk premium*

σ_L - *standard deviation of returns of local stock*

σ_w - *standard deviation of returns of world portfolio*

Erb et al. (1996) analyzed the impact of political, economic and financial risk on forecasting rates of return and concluded that financial risk is the most important risk factor, while political risk being the least important. They analyzed 117 countries, grouping them into 5 categories: all countries, countries with stock markets, developed countries with stock markets, developing countries with stock markets, and countries without stock markets.

There is another approach followed by many authors who do not add the total country risk premium to the expected rate of return, but make adjustments by using some coefficients of distribution. In some cases it is pretended that companies exposure to country risk is at the same level as their exposure to market risk, therefore multiplying the risk premium with beta (Damodaran, 2003; Harvey, 2005):

$$E(r)_i = r_f + \beta * (R_M - r_f)_W + \beta * RP_C$$

Damodaran (2003) suggests measuring a company's exposure to a country-specific risk by the lambda (λ) indicator, which depends on the income one company generates in the developing country, the location of the buildings where the company is operating or the fact if the company is covered by an insurance policy for the activity taking place in the developing country.

$$r = r_f + \beta * (R_M - r_f)_w + \lambda * RP_C$$

The lambda coefficient can be calculated by taking into account the income, profits or market prices of the company. Lambda by company income is calculated as the ratio of income generated by the company in the developing country to the average income generated in the domestic market (1-Exports):

$$\lambda = \frac{Income\ generated\ in\ the\ developing\ country\ (\%)}{Average\ income\ generated\ in\ domestic\ market (\%\ of\ GDP)}$$

The same logic is also followed by Abuah (2011) and Walker (2016). Abuah (2011) considered political risk in calculating the required rate of return of an investor, which, according to the author, includes currency fluctuations, risk of expropriation and institutional instability. The study shows that the cost of capital for an investment in a developing economy is a function of the global cost of capital for that industry and the cost of borrowing of a specific country. The author expanded his study in 2015 by offering a more pragmatic solution, calculating the cost of capital for nine developing countries in Latin America, Asia and Europe. The empirical study showed that returns to these countries depend on the beta coefficient measured by the CAPM model for the US market, as well as the level of country risk expressed by country default swap margin. The model proposed by the author was also followed by Walker (2016), who also conducted a study on capital cost assessment in Latin American countries and adopted a two-factor model for calculating equity cost:

$$E(r)_i = r_f + \beta_e MMERP + \lambda_e CDS$$

Where:

  rf - risk free rate

  MMERP - mature market risk premium

  β_e - coefficient of exposure to market risk

  CDS - credit default swap margin

  λ_e - the coefficient of exposure to the risk of financial distress

Damodaran (1999) calculates the exposure to financial distress risk as CDS weighted by the standard deviation of stock market relative to the standard deviation of the government bond market:

$$Country\ risk\ premium = CDS * \frac{\sigma_{stock\ market}}{\sigma_{government\ bond\ market}}$$

A study of Bilić et al (2016) conducted in eight transitional European countries: Poland, the Czech Republic, Hungary, Slovenia, the Baltic States and Turkey concluded that beta is not a good measure of systemic risk in these markets and therefore appropriate adjustments to include additional risk factors in the required rate of return should be made. Most of studies focused on South-Eastern Europe have used country risk premium calculated as the difference between the domestic government bond rate and the German government bond rate with the same maturity (Lazarevski and Gilevska, 2013; Lazarevski and Mrsik, 2013; Neli, et al., 2020).

DISADVANTAGES OF COUNTRY RISK PREMIUM METHODS

As noted in all of the aforementioned studies, there is not a unique and standard model to apply in all cases. Although being widely used, models that include an additional premium to reflect investment risk in developing countries and more particularly the models based on global credit ratings of countries have some problems. The calculation of premiums is often arbitrary and is not based on objective analysis (Lessard, 1996; Damodaran, 1999; Estrada, 2007). Country risk premium is not an absolute indicator of investment risk in a given country, as it is based on credit risk calculation only, however it remains the most preferred and used method by the practitioners (Sabal, 2004). Nevertheless, Harvey (2004) concluded that investment returns are largely explained by country risk in developing countries than in developed countries, reaffirming once again that the performance and behaviour of these markets is different.

Adjusting the cost of equity with a premium that expresses the specific risk of a developing country means that all companies are equally exposed to this risk and the impact is expected to be constant in the future. This assumption is not realistic, as companies' exposure

to country risk depends on the level of revenue generated in the country, the sector in which the company operates, and so on. On the other hand, country risk measured by the bond spread is mostly related to the risk of government financial distress, which may not be directly linked to the risk affecting the value of companies operating in developing countries (Damodaran, 2003; Sabal, 2008). For this reason this method should be used in combination with other in-depth methodologies to identify and analyze whether the risks measured by the ratings companies are diversifiable or not, affect the value of the company, etc.

Goedhart and Haden (2003) do not support the use of a premium for country risk in long run analysis, arguing that in long run a particular emerging market is more likely to experience some economic distress and this risk will be reflected in other company's valuation inputs. For this reason it makes no sense to add a premium to the cost of capital, as it entails duplication of risk.

CONCLUSIONS

Country risk refers to risk arising from economic, financial and politic factors which have significant impact in portfolio management and financial valuation of companies. Country risk analysis is particularly important in the case of foreign direct investment considering the effect in the well-being of investors who engage their capital in countries with fluctuating level of political, economic, legal, and other forms of systemic risk.

There are three widely used methods for measuring country risk: government bond spread, country credit ratings and credit default swap spreads, nevertheless there is not a unique and standard method to apply in all cases. The government bond spread is the spread between the yield to maturity of an emerging market sovereign bond denominated in USA dollars or euro and the yield of a comparable USA or euro bond, with the same maturity. Developed countries government bonds have been considered as risk free assets and classified with AAA, but after the financial crisis of 2008, many government bonds were downgraded by ranking agencies. Therefore many researchers suggest using credit default swap instead of government bonds to assess the country risk. Sometimes these models has been criticised for being subjective and / or for doubling the risk, but nevertheless they are still widely used by practitioners and researchers.

Despite of the method the country risk premium is calculated, it has a significant impact in the required rate of return of an investor, consequently affecting the value of the company. Most of the studies incorporate the country risk premium in the CAPM formula, therefore modelling the required rate of return from investors.

WAY FORWARD

Considering the importance and increase of foreign direct investments in developing countries, the country risk will remain a significant and interesting topic to be further studied in future. It would be of high interest for investors to understand the specific factors that impact the level of country risk, despite those considered by rating agencies. A specific methodology should be designed for each country based on the macroeconomic development characteristics rather than applying the same methodology for all cases.

REFERENCES

Abuaf, N. (2011). Valuing Emerging Market Equities – The Empirical Evidence. Journal of Applied Finance 21(2): 1–19. https://ssrn.com/abstract=2691604

Aukea, L., Diagne, A., Nguyen, T., Stalin, O. (2017). The Capital Asset Pricing Model and the Arbitrage Pricing Theory. Financial risk, MSA400. http://www.math.chalmers.se/Stat/Grundutb/CTH/mve220/1617/CAPT.pdf

Bekaert, G., Harvey, C. R. (1995). Emerging Equity Market Volatility. http://dx.doi.org/10.2139/ssrn.795405

Bekaert, G., Erb, C., Harvey, C., Viskanta, T. (1997). What Matters for Emerging Equity Market Investments. Emerging Markets Quarterly,17-46

Bilić, M., Dimitrić, M., Škalamera-Alilović, D. (2016). Capm On Postcrisis Capital Markets Of European Transition Countries. Chapter in book: The Eu Economic Environment Post-Crisis: Policies, Institutions And Mechanisms, 251-261. https://bib.irb.hr/datoteka/861359.18_Bilic_Dimitric_Skalamera-Alilovic.pdf.

Cai, P., Kim, S-J., Wu, E. (2019). Foreign direct investments from emerging markets: The push-pull effects ofsovereign credit ratings. International Review of Financial Analysis, Vol. 61, 110-125. https://doi.org/10.1016/j.irfa.2018.10.006

Canadas, J. A., Ramirez, A. R. (2011). The discount rate in valuing privately held companies. Business Valuation Review. Volume 30, N. 2

Da, Zh., Guo, R-J., Jagannathan, R. (2012). CAPM for estimating the cost of equity capital: Interpreting the empirical evidence. Journal of Financial Economics, Volume 103, Issue 1: 204-220. https://doi.org/10.1016/j.jfineco.2011.08.011

Damodaran (2020): Country Default Spreads and Risk Premiums. Stern School of Business

Damodaran, A. (1999). Estimating Equity Risk Premiums. New York University, Leonard N. Stern School, Finance Department Working Paper Seires 99-021. http://www.stern.nyu.edu/fin/workpapers/papers99/wpa99021.pdf

Damodaran, A. (2003). Measuring Company Exposure to Country Risk: Theory and Practice. Stern School of Business, 1-30. http://people.stern.nyu.edu/adamodar/pdfiles/papers/CountryRisk.pdf.

Damodaran, A. (2012). Investment valuation, 3rd edition. Stern School of Business.

Diller, C., Jäckel, C. (2015). Risk in Private Equity. New insights into the risk of a portfolio of private equity funds. British Private Equity and Venture Capital Association Research Paper. https://www.bvca.co.uk/Portals/0/library/documents/Guide%20to%20Risk/Risk%20in%20Private%20Equity%20-%20Oct%202015.pdf

Erb, C., Harvey, C., Viskanta, T. (1996). Political Risk, Economic Risk and Financial Risk. Fuqua School of Business Working Paper No. 9606. http://dx.doi.org/10.2139/ssrn.7437

Estrada, J. (2000). The Cost of Equity in Emerging Markets: A Downside Risk Approach. Emerging Markets Quarterly

Estrada, J. (2007). Discount rates in emerging markets: Four models and an application. Journal of Applied Corporate Finance, 19(2), 72-77. https://doi.org/10.1111/j.1745-6622.2007.00137.x.

Godfrey, S., Espinosa, R. (1996). A Practical Approach to Calculating Costs of Equity for Investment in Emerging Markets. Journal of Applied Corporate Finance, Fall: 80-89. https://doi.org/10.1111/j.1745-6622.1996.tb00300.x.

Goedhart, H. M., Haden, P. (2003). Emerging markets aren't as risky as you think. The McKinsey Quarterly 2003 Special Edition: Global Directions, 3-9

Harvey, C. R. (2005). 12 Ways to calculate the international cost of capital.

Harvey, C.H. (2004). Country risk components, the cost of capital, and returns in emerging markets. Country and political risk: practical insights for global finance, Risk Books, London, 71–102. 10.2139/ssrn.620710

International Monetary Fund (2017). Assessing Country Risk—Selected Approaches—Reference Note

Juodžiukynienė, G. (2016). The significance of country-specific and common risk factors for cee government bond spreads changes. Ekonomika, Vol. 95(1), 84-111. http://dx.doi.org/10.15388/Ekon.2016.1.9908

Keck, T., Levengood, E., Longfield, A.(1998). Using Discounted Cash Flow Analysis in an International Setting: A Survey of Issues in Modeling the Cost of Capital. Journal of Applied Corporate Finance, 11(3): 82–99. https://doi.org/10.1111/j.1745-6622.1998.tb00505.x.

Krayenbuehl, T. E. (1985). Country risk: Assessment and monitoring. Cambridge: Woodhead-Faulkner.

Lazarevski, D., Gilevska, B. (2013). Company valuation models: evidence from Macedonia. Annals of "Eftimie Murgu" Resita, Fascicle II –Economic Studies, 1, 131-140. https://www.researchgate.net/publication/259230056

Lazarevski, D., Mrsik, J. (2013). Macedonian Stock Exchange Apathy: Analysis of Macedonian Companies' Cost of Capital and Optimal Capital Structure. Annals of "Eftimie Murgu" Resita, Fascicle II –Economic Studies, ISSN 1584-0972, vol. 1, 172-182. https://ssrn.com/abstract=2366340.

Lessard, D. (1996). Incorporating Country Risk in the Valuation of Offshore Projects. Journal of Applied Corporate Finance, Fall, 52-63. https://doi.org/10.1111/j.1745-6622.1996.tb00298.x.

Lintner, J., (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgetsReview of Economics and Statistics, Vol. 47, 13–37.

Neli, B., Numani, E., Kripa, D. (2020). The cost of equity: what happens in absent equity market countries? EUROPEAN ACADEMIC RESEARCH Vol. VII, Issue 11, 5406 - 5421.

O'Brien, T. (2005). The Global CAPM and a Firm's Cost of Capital in Different Currencies. Journal of applied corporate finance, Volume 12, Issue 3: 73-79. http://dx.doi.org/10.2139/ssrn.155049.

Pereiro, L.E. (2001). The Valuation of Closely-Held Companies in Latin America. Emerging Markets Review, Vol. 2, No. 4, 330-370. https://ssrn.com/abstract=1874156.

Pereiro, L.E. (2006). The practice of investment valuation in emerging markets: Evidence from Argentina. Journal of Multinational Financial Management. Elsevier 16(2), 160-183. https://ssrn.com/abstract=1874151.

Porras, R. E., 2011. The cost of capital. New York: Palgrave Macmillan

Sabal, J. (2004). The discount rate in emerging markets: A guide. Journal of Applied Corporate Finance, 16(2-3), 157-166. https://doi.org/10.1111/j.1745-6622.2004.tb00547.x

Sabal, J. (2008). WACC or APV? Journal of Business Valuation and Economic Loss Analysis, 2(2). https://doi.org/10.2202/1932-9156.1016.

Sharpe, W.F. (1964). Capital asset prices: a theory of market equilibrium under conditions of risk. Journal of Finance 19 (3): 425-442. https://doi.org/10.1111/j.1540-6261.1964.tb02865.x.

Walker, E. (2016). Cost of capital in emerging markets: bridging gaps between theory and practice. Latin American Journal of Economics, Vol. 53, No. 1: 111–147. http://dx.doi.org/10.7764/LAJE.53.1.111

Zhang, J., Wilhborg, C. (2010). CAPM in up and down markets: Evidence from six European emerging markets. Journal of Emerging Market Finance, 9(2), 229-255. 10.1177/097265271000900205.