

STUDY GUIDE
TELMEX and CANTV:
WHICH IS THE APPROPRIATE DISCOUNT RATE?¹

Carlos A. Molina and Miguel A. Santos²

Synopsis

This case presents a dilemma situation on how to determine the discount rate for cash flow in places where the country risk perceived by investors differs considerably from the nation's sovereign bonds' yield spreads.

International investment banks normally use, on advising their clients, the cost of capital that equivalent companies obtain in the United States, plus a premium for country risk. This premium is usually calculated, based on spreads of the pertinent country's sovereign debt bonds with respect to similar US bonds.

Nevertheless, Venezuela, on being compared with other Latin American nations, is an atypical case. Until 2000, the sovereign debt of the Venezuelan market was sufficiently correlated to the local capital market measurable to L countries of the region (65%-75%). But this correlation changed as from 2000 on dropping from 74.59% (1997-2000) to 34.69% (2001-April 2006). The low correlation is due, in principle, to the difference in the perception of risk between the capital market (where it is considered high) and the sovereign risk of the Republic (considered low, given the high oil prices and the importance of oil for the Venezuelan economy as a whole).

¹ This case study does not intend to make a value judgment on the acquisition offer made by Telmex for a block of Cantv shares, but, simply, to outline the Venezuelan situation as an investment scenario for an international company and to calculate the respective investment risk. The case is based strictly on public information. The name Alfredo Ramos, and the circumstances mentioned in this study are fictitious.

² Both authors are professors at IESA. Ave. IESA, San Bernardino, Caracas DF 1010, Venezuela. Emails: carlos.molina@iesa.edu.ve, miguel.santos@iesa.edu.ve. The authors thank Hector Ramos and Luis A. Grau for their assistance in research, as well as the judges of the IESA's Case Studies Contest.

This study guide was prepared with the exclusive purpose of assisting instructors in the use of the case. It contains analysis and questions with the aim of helping students to understand the themes examined in the case and to provoke classroom discussion. A Study Guide is developed exclusively to serve as a basis for discussion in an educational setting. It does not constitute a support to individuals or organizations, or illustrate whether management in an administrative situation is effective or not; neither should it be considered a primary source of information.

This case is very useful for the calculation of cost of capital in emerging countries where the perception of political risk differs from the Republic's payment capacity. In general, literature is lacking when it comes to this type of calculations for investments in emerging markets. Due to the lack of sufficient data and companies with which to compare it, data is collected from the North American market and the expected performance is "tropicalized" afterwards. As research in this area is limited, investment advisors and MBA students have resorted to formulas that have no theoretical basis. This case contributes to the literature summarizing existing works, their advantages and disadvantages from a conceptual and practical viewpoint, and proposes new ways of addressing this question.

We present later a class and blackboard plan with possible questions and dilemmas to be raised in the classroom, in order to assist the instructor and to clarify the pedagogical objectives of the case, which we outline below:

Teaching Objectives

The "TELMEX and CANTV" case is designed to introduce students to the difficulties of estimating required rate of returns for investments in countries with high country risk and unique market conditions. The case has the following specific pedagogical objectives:

- a. Appreciate the difficulties of estimating cost of capital in emerging markets, meeting the market requirements and dealing with the lack of consensus theories for this problem.
- b. Consider and evaluate different methodologies for adapting to emerging markets theories originally designed for the United States stock markets, such as the CAPM.
- c. Dealing with the country risk impact on the cost of capital in an emerging market where there is divergence between the perception of political risk and sovereign risk (or payment capacity).

- d. Develop negotiation strategies for an eventual transaction of a property in an emerging market, such as Venezuela, where the discount rate can be the main issue of the negotiation.
- e. Understand how financial analysis, discount rate calculation, and the absence of literature in the field can be used strategically in an event of negotiating a transaction in an emerging market.

Teaching Plan and Analysis

Before addressing this case, the students should have been introduced to cost of capital and required rate of return calculation, studying the mainstream methods such as CAPM, APT (Arbitrage Pricing Theory) and Factor Models. The students will be then prepared to discuss the applications and differences in a different market where CAPM and other methods cannot be applied directly.

The following step-by-step analysis should serve to reinforce the theories for cost of capital analysis, cash flow valuation techniques, and applications to emerging markets. We can separate the analysis in the following four separate but related parts: (a) Analysis of financial information, (b) Revision and discussion of the theories applied to an Emerging Market, (c) Dilemma: what to do?, and (d) What to propose to the board of directors: negotiation plan for a transaction.

a. Analysis of financial information

Before we prepare the students for proposing and discussing a solution to the dilemma of the case (i.e., what cost of capital should we propose to the board of directors for an effective negotiation), we should promote the discussion on the information we need for proposing that solution.

Which information does the case present us with? Is that enough? Do we need to research for more? What if we only have that information at hand? Can we still construct a proposal for the board? These are questions the students should ask themselves. Next we present a plan for the information analysis.

Correlation between sovereign obligations and private assets

The use of sovereign risk as an indicator of business risk derives from a very simple principle: the development of obligations issued by the national government should maintain a very strong correlation (positive) with the private sector's performance; that is, the expectations of agents who define the price of public obligations are strongly confluent with those that fix the prices of private assets.

If correlation is weak, there will be a gap between the risk factors that contribute to the price fixing of public obligations and those that determine the price of private assets.

Students can analyze the existing correlations between the return of public obligations and the return of assets of the private sector, which are represented by the evolution of the asset prices in the Stock Exchange. The magnitude of this correlation determines up to what degree is correct to use sovereign risk as an indicator of country risk.

Alfredo Ramos, CFO of Telmex-America Móvil, has dedicated a great part of his career presenting investment projects in Latin America, always using yield rates that incorporate sovereign debt spreads as an indicator of country risk. This practice had caused him no inconveniences, as in the majority of Latin American countries the existing correlation between price movement in the sovereign debt and the local Stock Exchange is relatively high. Appendices to this paper show two examples (Brazil and Mexico): in the Mexican case (Appendix 10), the correlation has been relatively stable during the last ten years (66.67%), whereas, in Brazil, the correlation between sovereign debt long term bonds and the local securities market during the last five years has been 79.25%.

In the Venezuelan case (Appendix 6), the registered correlation in the last ten years between the monthly price variation of the sovereign debt and the movements of the Bolsa de Valores de Caracas – BVC (Caracas Stock Exchange) is 59.37%. But on separating this ten-year interval into two periods, we observe a significant difference between both correlations: 1997-2000 (74.59%) and 2001-April 2006 (34.69%). From this we observe that as from 2001 there is a very low relation between the performance of sovereign debt and the local stock exchange, a fact that the student has been able to prove in the spread evolution (Appendix 2) and in the performance of the BVC in 2005 (Appendix 5).

Although the analyses of these correlations help us to form an initial idea of how close is the sovereign risk to the private risk, the indicator used in the latter (price movements in the local stock exchange) is far from perfect. Frequently, stock exchanges in emerging markets list few companies, which do not exactly represent the entire private economic activity. In addition, they do not tend to have much liquidity and exhibit some levels of volatility.

Spread Evolution of sovereign debt and the price/earnings (P/E) ratio in the local market

Further data that may give an early alert of the existence of significant differences between sovereign risk and business risk originate from the stock exchange P/E ratios.

In this case, Alfredo Ramos should be aware that, although rates differentials of the Venezuelan and Mexican sovereign debt have been converging in the last three years towards very similar values (Mexico: 1.562%, and Venezuela: 1.597%), the contrary has occurred with the P/E ratio of their respective stock exchanges. At the close of 2005, the Caracas Stock Exchange P/E ratio of was 7.2 times, 36.4% below the Bolsa Mexicana de Valores – BMV (Mexican Stock Exchange). This figure is very similar to the registered figure at the close of 2004, when the Caracas Stock Exchange presented a P/E ratio of 8.6, 31.7% below its Mexican equal (12.8) during the same period. Although in the last two years the Venezuelan sovereign risk has had a notably drop, the same has not occurred with the value perception of assets listed in the BVC.

b. Revision and discussion of the theories applied to Emerging Markets

The student, on understanding that, in cases like Venezuela, sovereign risk is not a good indicator of the risk perceived in the economy of the private sector, should then proceed to review the literature in order to identify formulas that incorporate country risk to the cost of capital and represent it differently to sovereign risk. Students can either propose their own formulas or base their proposals on the previous literature. In doing so, we should encourage the discussion on the advantages and disadvantages of each proposal.

As we review existing literature, we will find that formulas to incorporate country risk into cost of capital calculation have little, if any, theoretical basis. Most formulas derive from adjustments made to the CAPM, and little consideration is given to any alternative method. This will be a good point to discuss whether CAPM is an appropriate method, and why we do not use alternative theories such as APT or Factor Models.³

We can recommend the students to review the bibliography at the end of the Study Guide as part of the preparation process of the case, in order to guarantee a productive discussion in the classroom. We provide next a summary of the main advantages and disadvantages of each method.

b.1 Original CAPM version, adjusted to sovereign risk

From the beginning, Alfredo Ramos proposed this formula that has been rejected by the Board of Directors. Investment banks that operate in emerging markets use this version most.

$$R_i = R_{fUSA} + (R_{fVzla} - R_{fUSA}) + \beta_i (R_{mUSA} - R_{fUSA})$$
$$R_i = 5.34\% + 1.60\% + 1.20 * (7.50\%)$$
$$R_i = 15.94\%$$

Advantages

- Most used and most accepted method; easy to calculate and to communicate.
- Acceptable as long as there is a high correlation between perceptions of sovereign risk and private risk.

Disadvantages

- Does not recognize the situation when sovereign debt risk can be very different to the risk perceived by shareholders in the private sectors (exactly what happened to Alfredo Ramos on presenting his formula to the Board of Directors).
- Assumes, on adding the sovereign risk to the CAPM formula, that all this risk is systematic, non-diversifiable.

³ In pointing out the advantages and problems of CAPM, its simplicity should arise in the discussion.

- Disregards that not all projects or industries are subject to the same levels of country risk.

b.2 Aswath Damodaran – Version I

Students, searching for alternative formulas in literature to calculate country risk, will soon discover the works of Aswath Damodaran (1999a, pp. 23 and 34-43). This first version of Damodaran only differs from the previous in that sovereign risk is included within market premium. Consequently, if the industry in question is high-risk (high beta), the country risk calculated would be higher.

$$E(R_i) = R_{fUSA} + \beta_{i,USA} [E(R_{mUSA}) - R_{fUSA} + \text{CountrySpread}]$$

$$R_i = 5.34\% + 1.20 * (7.50\% + 1.60\%)$$

$$R_i = 16.26\%$$

Advantages

- Easy to calculate and communicate, although not widely used.
- Considers, to some extent, country risk in a different manner for each industry: the higher the risk (high beta), the industry would be more exposed to country risk, and vice versa.
- Acceptable as long as there is a high correlation between perceptions of sovereign risk and private risk.

Disadvantages

- Does not recognize the situations when sovereign debt risk can be very different to the risk perceived by shareholders in the private sectors (in low beta industries, this formula does not give a solution to the problem of low correlation between sovereign risk and private sector risk).
- Assumes, on adding the sovereign risk to the CAPM formula, that all this risk is systematic, non-diversifiable.
- Disregards that there could be projects in low risk (low beta) industries, which does not necessarily imply that they have low country risk (for example banks have always

been among the first to be taken over for inspection, or taken over by the state or nationalized in developing economies, and present a beta lower than 1 in the U.S.

b.3 Aswath Damodaran – Version II

Aswath Damodaran's second version (1999a, pp.16 & ss.) considers that a company is under the influence of country risk (considered sovereign risk), only to the extent that its sales are generated inside the border. Consequently, instead of the original formula (λ), sovereign risk is multiplied by the percentage (λ) of sales generated.

$$E(R_i) = R_{fUSA} + \beta_{i,USA} [E(R_{mUSA}) - R_{fUSA}] + \lambda \text{CountrySpread}$$

As exports are not common in telecommunications, this formula gives similar results to that of the original formula (in b.1).

Advantages

- Easy to calculate and communicate.
- Acceptable as long as there is a high correlation between perceptions of sovereign risk and private risk.

Disadvantages

- Implies that if the company exports 100% of its production ($\lambda=0$), country risk does not exist (in which case, cost of capital results would be similar to that of the original CAPM, without adjusting country risk).
- Does not recognize the situations when sovereign debt risk can be very different to the risk perceived by shareholders in the private sectors.
- Assumes, on adding the sovereign risk to the CAPM formula, that all the risk is systematic, non-diversifiable.

b.4 Jaime Sabal – Version I

In his book on financial decisions in emerging markets, Jaime Sabal (2002, ch.7, pp. 123-124) suggests the use of the CAPM original version, but instead, the beta from the US market

should be multiplied by another beta derived from the relation between the local and the US market. In this manner, the fact that not all the Venezuelan risk is systematic would be corrected, and then only the fraction that cannot be diversified would be incorporated in the country risk formula. Although Sabal opens the possibility for the company to sell in various markets, in this case of telecommunications the formula for calculation would be as follows:

$$E(R_i) = R_{fUSA} + \beta_{i,USA} \beta_{m,USA} [E(R_{mUSA}) - R_{fUSA}]$$

where $\beta_{m,USA}$ is the beta that exists between the local and the US market.

Now then, although the monthly performance of the Venezuelan market volatility is three times higher than the S&P500, its correlation (31.93%) is also low and stable, as per calculations for the last ten years (Appendix 9).

Owing to this low correlation, the value obtained from the $\beta_{m,USA}$ is much lower than 1, which, instead of being translated into an increase of the US beta because of country risk effect, it produces a decrease in the country risk; in this manner the result obtained is definitely lower than that of the CAPM original version without adjusting country risk.

$$\beta_{m,USA} = \frac{COV(m, USA)}{\sigma^2_{USA}}$$

$$\beta_{m,USA} = \frac{\sigma_m \sigma_{USA} \rho_{m,USA}}{\sigma^2_{USA}}$$

$$\beta_{m,USA} = \frac{\sigma_m \rho_{m,USA}}{\sigma_{USA}}$$

$$\beta_{m,USA} = \frac{13.36\% * 0.2948}{4.50\%}$$

$$\beta_{m,USA} = 0.87$$

In this case, the resulting cost of capital would be:

$$E(R_i) = R_{fUSA} + \beta_{i,USA} \beta_{m,USA} [E(R_{mUSA}) - R_{fUSA}]$$

$$E(R_i) = 5.34\% + 1.20 * 0.87 * (7.50\%)$$

$$E(R_i) = 13.21\%$$

Advantages

- Proposes a methodology for incorporating to the CAPM calculations as country risk, only the fraction that is systematic in the local market.

Disadvantages

- More difficult to calculate and communicate.
- Results show lower values than the original CAPM version (if the Board of Directors rejected the rate presented by Alfredo Ramos as they considered it low, this formula does not help solve the mystery of how the members of the Board formed their expectations as to the returns that an investment in Venezuela should have).
- The low beta that exists between the local market and the S&P500 can be a consequence of the low volume of transactions on the local market.
- As the Caracas Stock Exchange Index (IBVC) covers few companies, the index volatility and its correlation with S&P500, it is based on a very small basket of assets.

b.5 Jaime Sabal – Version II

The second option proposed by Jaime Sabal (2002, p. 124, end of page 9), suggests to calculate the beta of local companies versus the local stock exchange index, and multiply it by the beta that exist between the local stock markets and its North American equal (S&P500). This formula is similar to the previous one, but goes a little further: the beta we are going to use now for a certain industry will result from company movements of the same industry in relation to the stock exchange index in the local market. In the telecommunications case, Cantv represents the industry and its beta calculated in the local market is 0.93.

$$E(R_i) = R_{fUSA} + \beta_{i,VZLA} \beta_{m,USA} [E(R_{mUSA}) - R_{fUSA}]$$

$$E(R_i) = 5.34\% + 0.93 * 0.87 * (7.50\%)$$

$$E(R_i) = 11.44\%$$

Advantages

- Proposes a methodology for incorporating to the CAPM calculations as country risk, only the fraction that is systematic in the local market.

Disadvantages

- More difficult to calculate and communicate.
- Local betas are really little representative; larger shares have betas near to 1 due to the simple fact that they “are” the market, not because it represents a specific level of risk.
- There are industries that are not represented within the limited spectrum of the local stock exchange, making it impossible to calculate “local” betas.
- Results show values that are much lower than the original CAPM version (neither does this formula help solve the mystery of how the members of the Board formed their expectations as to the returns that an investment in Venezuela should have).
- The low beta that exist between the local market and the S&P500 may be a consequence of the low volume of transactions in the local market (as in the cases of the Provincial and Santander banks, where a great majority of the block of shares are not negotiated in the market but remain in the hands of the home office in Spain; consequently, the shares show a stability that hears no relation with the banking business risks).
- As the BVC Index covers few companies, on measuring the index volatility and its correlation with the S&P500, it is based on a very small basket of assets.

b.6 Investment banks versions

We now present three new formulas to recognize the fact that private assets in Venezuela have some government risks, and that they are also affected by some other type of volatility. These formulas have been also used and reported by some leading investment banks, so we refer to them as the “investment banks versions.” First, instead of incorporating the spread of the sovereign debt, we take into account the differential associated with the Venezuelan qualification of the risk (B+:5.50%). Second, we multiply the market premium by a factor equivalent to the difference between the volatilities of the corresponding markets.

$$\begin{aligned} E(R_i) &= R_{fUSA} + CreditSpread + \beta_{i,USA} [E(R_{mUSA}) - R_{fUSA}]FAII \\ E(R_i) &= 5.34\% + 5.50\% + 1.20 * (7.50\%) * 2.76 \\ E(R_i) &= 35.67\% \end{aligned}$$

where

$$FAII = \left(\frac{\sigma_{VZLA}}{\sigma_{USA}} \right) = 2.76$$

$$\sigma_{USA} = 4.25\%$$

$$\sigma_{VZLA} = 11.73\%$$

Advantages

- Recognizes that the private sector is exposed to a type of risk that is beyond sovereign risk, and therefore incorporates not only the later within country risk, but also the local market volatility.

Disadvantages

- More difficult to calculate and communicate.
- Incorporates the entire credit spread (5.50%) and also the difference between the volatility of both asset portfolios without considering that they may be correlated (in the Venezuelan case, monthly movements correlation during the last six years is 34.69% (Appendix 6)). In other words, we may be double counting the country risk premium.
- Considers that all the sovereign risk and all the difference in volatility between asset portfolios is systematic, and cannot be reduced or cancelled through diversification.
- Incorporates the local stock market volatility as an indicator of private risk, when indeed that market is comprised of few companies, has little liquidity and, in general, the spectrum of the Venezuelan private risk is little representative.
- Consequently, there is a double accounting risk and unsystematic risk, giving rise to a cost of equity of 35.67%, which is far beyond the Board of Directors' expectations.

b.7 Investment banks version, corrected through the correlation between movements of sovereign debt bonds and of stocks in the local market

From the previous formula, which tends to incorporate elements of sovereign risk and also local market volatility into country risk, arose the idea of adjusting the multiplying factor based on the degree of correlation that exists between price movements in the Venezuelan debt market and the stock exchanges.

$$E(R_i) = R_{fUSA} + CreditSpread + \beta_{i,USA} [E(R_{mUSA}) - R_{fUSA}]FAI$$

$$E(R_i) = 5.34\% + 5.50\% + 1.20 * (7.50\%) * 1.77$$

$$E(R_i) = 26.81\%$$

where:

$$FAI = \left(\frac{\sigma_{VZLA}}{\sigma_{USA}} \right) * (1 - \rho_{bonosvzla,BVC}) = 2.76 * (1 - 0.357) = 1.77$$

$$\sigma_{USA} = 4.25\%$$

$$\sigma_{VZLA} = 11.73\%$$

$$\rho_{bonosvzla,BVC} = 0.357$$

This formula, if necessary, can also be used based on the spread spot of the sovereign debt (1.60%) observed in the market, instead of the credit spread that corresponds to the qualification of the Venezuelan debt (5.50%). That will be the same as saying that the market has a more accurate perception of Venezuela than the risk evaluators.

$$E(R_i) = R_{fUSA} + CountrySpread + \beta_{i,USA} [E(R_{mUSA}) - R_{fUSA}]FAI$$

$$E(R_i) = 5.34\% + 1.60\% + 1.20 * (7.50\%) * 1.77$$

$$E(R_i) = 22.91\%$$

Advantages

- Recognizes that the private sector is exposed to a type of risk that is beyond sovereign risk.
- Eliminates double accounting risks by adjusting the difference in the volatility in the securities markets through its correlation with the sovereign debt market.

Disadvantages

- More difficult to calculate and communicate.
- If the correlation between the movements of the local securities market and the sovereign debt equals 1, the formula –instead of eliminating one of those factors– completely eliminates the effect of the US beta and the market premium.
- Considers that all the sovereign risk and all the difference in volatility between the asset portfolios is systematic, and cannot be reduced or cancelled through diversification.

- Incorporates the local stock market volatility as an indicator of private risk, when indeed the market is comprised of few companies, has little liquidity and, in general, the spectrum of the Venezuelan private risk is little representative.

b.8 Version that considers country risk only as a function of volatility in the local securities market

This formula is based on that private investment in Venezuela is subject only to market volatility, and its relation with sovereign risk only occurs when the later actually has influence on the volatility. The formula also takes into account that a series of factors not included in sovereign risk has influence on volatility.

$$FAII = \left(\frac{\sigma_{VZLA}}{\sigma_{USA}} \right) = 2.76$$

$$\sigma_{USA} = 4.25\%$$

$$\sigma_{VZLA} = 11.73\%$$

$$E(R_i) = R_{fUSA} + \beta_{i,USA} [E(R_{mUSA}) - R_{fUSA}] FAII$$

$$E(R_i) = 5.34\% + 1.20 * (7.50\%) * 2.76$$

$$E(R_i) = 30.16\%$$

Advantages

- Recognizes that the private sector is exposed to a type of risk that is beyond sovereign risk.
- Eliminates double accounting risks as it only incorporates local stock market volatility as country risk.
- Corrects the adjustment factor effect introduced in the previous version.

Disadvantages

- More difficult to calculate and communicate.
- Considers that all the sovereign risk and all the difference in volatility between the asset portfolios is systematic, and cannot be reduced or cancelled through diversification.
- Incorporates the local stock market volatility as an indicator of private risk, when indeed the market is comprised of few companies, has little liquidity and, in general, the spectrum of the Venezuelan private risk is little representative.

- The excessive volatility of the local stock market in relation to the S&P500 produces a cost of equity of 30.16%, which is far beyond the Board of Directors' expectations.

From the available options, we can conclude that there are no options lacking disadvantages, and therefore, there are no clear solutions. Nevertheless, Alfredo Ramos needs to present to the Board of Directors, and defend before any eventual Cantv sellers, a discount rate calculation for Venezuela.

c. Dilemma: What to do?

Venezuela is an atypical case when compared to other Latin American countries, and consequently, poses a dilemma that can be examined in class and maybe useful for enriching the discussion on cost of equity calculations.

The dilemma lies in the great difference between the risk perceived on investing in a country like Venezuela with political instability and uncertainty, and the risk perceived in international markets with respect to the payment capacity of the Republic of Venezuela. The payment capacity of the sovereign debt issuer, i.e., the Venezuelan government, generates an economic risk that cannot be compared with the risk of an individual investor who must leave his money “trapped” in the country, in a certain investment, during a period of time.

When the student examines the theories and executes the practical applications used more frequently to determine cost of equity in emerging market (Petrozuata case), the number obtained will be much lower than the market demands for the risk perceived.

At this point, we may ask the students what the cost of equity did they obtain in the calculations (see previous paragraph), and what rate do they expect to get on investing their own money in Venezuela. We can also show them the following graphic, which lists, on average, the cost of equity usually applied in four of the main industrial sectors of the country⁴:

⁴ The authors compiled the figures via telephone interviews to industry actors and to the investment banks that represent them.

Graphic 1

Industry	Discount Rate (in US\$)
Banking	20.0%
Telecommunications	19.0%
Waste	18.5%
Mining	21.6%

To solve the dilemma, the student must average a pre-selection of the results obtained with the theories indicated above. Each answer should have as much theoretical support as possible, but, at the same time, the results should be within market expectations (Graphic 1).

d. What to propose to the Board of Directors: negotiation plan for a transaction

Once a series of values have been determined as an answer, we continue with the pedagogical objective: negotiation and presentation to the Board of Directors.

The students should outline a negotiation plan, presenting a range of cost of equity duly supported in the theories, so that the seller, present owner of Cantv, has fewer arguments to try to reduce the rate.

This is a typical dilemma in the evaluation of a company in emerging markets. On lacking a fixed theory or consensus, each party uses a methodology that is more fitting to its position within the negotiation process: the seller wishes to apply the minimum cost of equity possible, and the buyer aspires the maximum in order to obtain the lowest value.

In mergers and acquisition process in emerging markets, often the discussions on differences in value perception is centered on the cost of equity and not on projection hypothesis, projected operative results, or other aspects more closely related with business operativity and the dynamics of the markets. This is due to two closely related factors: One, a small difference in the cost of equity can produce significant effects on the value of the company or of the assets in question. Two, and even more important, when the theories do not have

sufficient basis to solve the dilemma of the cost of equity for emerging economies, both parties in the negotiation table tend to manipulate the situation.

The final result will depend on the negotiation capacity of each party, it may be the case that there are more assets or companies of similar characteristics in the market (which gives negotiation power to the buyer), or that, in contrast, there are more buyers interested in the assets or companies (which gives more negotiation power to the seller).

Even in such cases, the problem of determining the required performance rate that both parties wish to obtain continues to be dilemma.

The student should, in this case, understand the situation and, consequently, present the most adequate methodology to defend the range of values for the cost of equity. The seller will surely try to use the most traditional methodology that only adds the sovereign debt differential to the equivalent rate in the United States.

In such a position, the student has many contra arguments:

- i. The resulting figure of the simple sum of the sovereign debt does not seem like what the market expects (Graphic 1).
- ii. Performance of sovereign debt presents a very low correlation with local stock market returns, which evidences dissociation between political investment risk and sovereign debt performance (Appendix 6).
- iii. The Venezuelan stock market has been experiencing a heavy decline, measured in US\$, while the sovereign debt has been reducing its differential (Appendices 2, 5, 7 and 8).

The student should also present a strategy to show that the values calculated are based on various theories, in order to reduce negotiation space and concentrate time on cash flow projections.

Questions and suggested activities

- i. What cost of equity should Alfredo Ramos propose to the Board of Directors to use in the Cantv cash flow?
- ii. Make a summary of the theories and the literature on cost of equity in emerging markets (suggest readings from Sabal, Damodaran and the Petrozuata case in Harvard).
- iii. Do you agree with the Telmex Board of Directors?
- iv. What cost of equity would you request in order to invest in Cantv, if you are offered to participate as minority shareholder together with Telmex?
- v. Would you propose any other method to value Cantv? (optional question).
- vi. Establish a successful negotiation strategy on the cost of equity, from Alfredo Ramos' position as buyer.

Suggested class and blackboard plan

This case can be used in a class of Finance Basics at MBA level, as well as in workshops for executives that include the following points: company evaluation and projects, determination of a cost of equity, and M&A negotiations. The financial analysis is not difficult per se, but the conceptual points and the dilemma presented are more complex.

The following plan is designed for a MBA class. Times are approximate, for a class of 90 to 110 minutes (1:30 to 1:50 hours). The instructor should reduce the time if necessary.

- [15 minutes] **Blackboard 1: Alfredo Ramos vs. the Telmex Board of Directors.** What options does Alfredo Ramos have? How should he consider country risk?
- [10 minutes] **Role Representation.** The instructor may suggest that a student assumes Alfredo Ramos' position, and another, that of the Board of Directors. Review the positive and negative aspects of each position.
- [15 minutes] **Blackboard 2: Cost of equity calculation alternatives.** Quantative topic. Ask about the theoretical investigation that the students should have conducted (question ii).

- [5 minutes] Carry out a **survey among the students** as to the numbers obtained and their perception of risk for investing their own money in Venezuela. Ask, specifically, if they are ready to invest US\$25.000 –from their own savings- in a project of a similar industry in Venezuela. Ask about different investment alternatives and the returns. Generate discussion.
- [5 minutes] Present market results (Graphic 1).
- [10 minutes] **Blackboard 3: Quantitative calculation or “investors’ guts”**. Pro’s and Con’s of using each alternative: quantitative support is necessary in order to negotiate a cost of equity; no one invests on being aware that risk is not compensated with proportional returns.
- [10 minutes] **Return to “Role Representations”:** **Alfredo Ramos vs. Board of Directors**, based on Blackboard 3.
- [10 minutes] **Blackboard 4: buyer vs. seller**. Prepare a negotiation strategy.
- [10 or 30 minutes] **Role Representations 2: buyer vs. seller. What is the agreed cost of equity?** This exercise may be carried out with individual representation (two students in front of the class) or in groups so as to involve the entire class. If there is sufficient time, we recommend the following:
 - Divide the class in even number groups, consisting of three students each. Half of the groups will play the role of the seller (contrary to Alfredo Ramos), while the rest will assume the role of the buyer (Alfredo Ramos). Each team of buyers will get together with a selling team.
 - Dedicate 7 minutes for the negotiation. Students should prioritize the search for a consensus on a cost of equity. It must be made clear that the worst result would be not reaching an agreement.
 - During the last minutes, choose one or two groups from each side (buyer and seller) to give a summary of the agreement reached. Take note of agreed rates in each negotiation. Discuss the results and compare them to real situations.

What Happened

At the end of the month of April 2006, an entity jointly held by América Móvil and Teléfonos de México (Telmex), both own by Mexican billionaire Carlos Slim, announced their interest in pursuing Verizon's 28.51% stake in CANTV. By July 2006 the bid was official, close to US\$ 677 million, as cited by the Economist Intelligence Unit.⁵ The offer corresponded to approximately US\$ 21.00 per ADR and US\$ 2,361 million for the 1100% of CANTV's equity.

In comparison to what the case asks for a required rate of return on equity for CANTV, in the range of 22%-24%, the implicit discount rate in that offer was much higher. If we consider the CANTV's projected free cash flow in Appendix 1.B of the case, and the offer for US\$ 21.00 per ADR, the implicit discount rate could have been estimated in 36.17% in dollars.

For this calculation, refer to the following Graphic 2. We used the projected free cash flow from Appendix 1.B in the case. We also estimated a perpetuity growth of 2%. The estimated debt was US\$ 620.70 million, which included non-interest labor liability for US\$ 572.17 (see Balance Sheet in Appendix 1.A), and interest bearing debt for US\$ 48.53 million. The resulting discount rate 36.17% is a reference for CANTV's WACC, very close to its return on equity given that CANTV hold only 1.43% Debt-to-Assets ratio.

⁵ The Economist Intelligence Unit, Global Technology Forum, July 21, 2006.

Graphic 2

Implicit Discount Rate Calculation

	2006	2007	2008	2009	2010
Free Cash Flow (Appendix 1.A) Perpetuity	485.00	776.00	1,021.00	1,276.00	1,682.00
					5,021.17
Total Free Cash Flow	485.00	776.00	1,021.00	1,276.00	6,703.17
Discount Factor	0.73	0.54	0.40	0.29	0.21
PV Free Cash Flow	356.18	418.51	404.39	371.15	1,431.87
Implicit Discount Rate	36.17%				
Perpetuity Growth	2.00%				
Total Value	2,982.10				
(-) Debt (Labor and Financial)	620.70				
Equity Value	2,361.40				
# shares	787.14				
Value per share	3.00				
Value per ADR (7 shares)	21.00				
America Movil-TELMEX Offer	21.00				

Source: Appendix 1.A and 1.B (Case Study), and public references to America Movil-TELMEX offer for Verizon's stake in CANTV (The Economist Intelligence Unit, July 21, 2206).

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