

Administration and management of the company America Movil, S.A.B. of C.V.

MONTES-AGUILAR, Marco†

*Universidad Tecnológica de México*Received March 10, 2015; Accepted November 13, 2015

Abstract

Then introduce a structured data real market, which will be based on data and variables that gives us the Mexican Stock Exchange and the Bank of Mexico model, all to determine how impacts or may impact a company or station in the economy, in turn we take the variables that have already been predetermined for the application. But not before presenting the theory behind this model, to understand the background I will explain what each variable of the same.

Telecommunications services, telecommunications services, wireless services, wireless services

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† Researcher contributing first author.

Methodology

To venture into the field of international finance was taken in the first instance to the company "Agro Industrial Export" yet to find their values on the Mexican Stock Exchange; I found that not enough data to perform the exercise in which we seek to know the value of the station in question.

Agro Industrial Export, S.A. of C.V.
Key Issuer: AGRIEXP
Series: Capitals

Quotes Serie A		Indicators Serie A	
Sales Volume	0	Price / Earnings	0
Sales Position	0	Price / Book Value	0
Sales Volume	0	Earnings per / Action	0
Purchase stance	0	Book value p / Action	0
Made last price	0.059	Shares Outstanding	175000000
PPP	0		
Price Previous	0.059		
Variation	0		
Trading Volume	0		
Maximum	0		
Minimum	0		
Last Year Ago	N/A		

Table 1 Mexican Stock Exchange Data

Company

Therefore it was decided to work with another company that exemplified the best way to model this case look for work with a company that has data that could operate in the exercise. America Movil is a company founded in 2000 whose value on the MSE is presented below.

America Movil, S.A.B DE C.V.
Key Issuer: AMX
Series: Capitals

Quotes Series L		Indicators Series L	
Sales Volume	32594	Third quarter	42064
Sales Position	14.39	Price / Earnings	39.578824
Sales Volume	25000	Price / Book Value	9.699245
Purchase stance	14.38	Utility w / Action	0.363326
Made last price	14.36	Book value p / Action	1.48259
PPP	14.38	Shares Outstanding	42,127,208,063
Price Previous	14.03		
Variation	2.494654		
Trading Volume	57379125		
Maximum	14.42		
Minimum	13.96		
Last Year Ago	N/A		
Max. Last year	17.51		
Min. Year Ago	12.43		

Table 2 Mexican Stock Exchange Data

To determine the MIF has the following formula:

$$MIF = \frac{\left[\frac{(MD - MI)}{Determination - Depreciation} \right]^{Coverage} \left[\frac{Devaluación + Cok}{Forward - Exposition} \right]^{Arbitration}}{Capital cost} - \left[\frac{FCP + FMP + FLP}{(Not fundable - Fundable)} \right]^{(CP+MP)_{LP}^+} + \left[\frac{Performance}{Utility} \right]^{financial range}$$

Variables

(1)

Variables

The general variables to consider are:

- $1/2 = 0.50$
- $3/4 = 0.75$
- $\varepsilon = -0.50$
- $lim = 0.10$
- $\beta_0 = (0.50)^0 = 0.50$
- $\beta_1 = (0.50)^1 = 0.50$
- $\beta_2 = (0.50)^2 = 0.25$

- $\lambda = 0.75$
- $\eta = 0.25$
- $\partial = 0.50$
- $f = 1$
- $d = -1$

I'll start with the first part corresponding to the upper left corner of the formula.

$$\left[\frac{(MD - MI)}{\text{Determination} - \text{Depreciation}} \right]^{\text{Average}} \quad (2)$$

This will require determining where each value:

$$\begin{aligned}
 MD &= \pi - \left[\frac{P_{max} - P_{min}}{2} \right]^{1/2} \\
 MI &= \left[\frac{\pi + PPP}{2} \right]^{1/4} \\
 \text{Determination} &= (\pi_s + \pi_-) \int_{M4}^{M1} \lim_{\pi_-} \frac{\pi_s}{\pi_-} \\
 \text{Depreciation} &= \frac{dM1}{d\lambda1} + \frac{dM2}{d\lambda2} + \frac{dM3}{d\lambda3} + \frac{dM4}{d\lambda4} + \left[\frac{d\lambda1}{\lambda1} \right]^{e2} \\
 \text{Coverage} &= \left[\frac{T.CD}{T.CI} \right]^{\pi_s - \pi_-}
 \end{aligned} \quad (3)$$

I'll start with the values of the Direct Currency, corresponding according to the following, inflation π is determined by the Bank of Mexico and will be equal to π_s / π_- (-s), Pmax and Pmin are those prices are determined on the Exchange Securities. For this exercise we consider the following specific data.

Inflation measured by	Annual
CPI subyacentel /	2.38
Non-core CPI	2.96

Table 3 Inflation Data

Maximum	14.42
Minimum	13.96

Table 4 Data Exchange Rates

For the calculation of inflation, we replace the original formula that takes part of the underlying security and non-core.

$$\pi = \frac{2.38}{2.96} = 0.80 \quad (4)$$

Substitute values into the formula of Direct Currency

$$\begin{aligned}
 MD &= 0.80 - \left[\frac{14.42 - 13.96}{2} \right]^{1/2} \\
 MD &= 0.80 - \left[\frac{0.46}{2} \right]^{1/2} \\
 MD &= 0.80 - [0.23]^{1/2} \\
 MD &= 0.80 - [0.23]^{1/2} \\
 MD &= 0.80 - 0.47 = 0.33
 \end{aligned} \quad (5)$$

Once I had the courage to Direct Currency (0.33) I will proceed to calculate the value of the Indirect Currency according to the following values.

$$\pi = \frac{2.38}{2.96} = 0.80$$

PPP 14.38

Table 5 BMV Data

Where:

$$\begin{aligned}
 MI &= \left[\frac{0.80 + 14.38}{2} \right]^{0.75} \\
 MI &= \left[\frac{15.18}{2} \right]^{0.75}
 \end{aligned}$$

$$MI = [7.59]^{0.75} = 4.57 \quad (6)$$

Once we got the value of the currency Indirect (4.57) values are represented in the formula of the determination, in which we need only know the values of M1-M4 and will be reflected in this way.

M1-M4 will be taken according to the target rate and based on this the value will be sequential and will increase.

Interbank		
target rate	02/11/2015	3.00

Table 6 Data from the Bank of Mexico

Therefore M1 = 3, M2 = 6, M3 = 9 and M4 = 12. Once we know the values we can only replace the corresponding formula.

$$Determination = (2.38 + 2.96) \int_{12}^3 \lim \frac{2.38}{2.96}$$

$$Determination = (5.34) \int_{12}^3 \lim 0.80 \quad (7)$$

As a next step in this part replace the depreciation formula.

$$Depreciation = \frac{dM1}{d\lambda1} + \frac{dM2}{d\lambda2} + \frac{dM3}{d\lambda3} + \frac{dM4}{d\lambda4} + \left[\frac{d\lambda}{\lambda n} \right]^{\xi 2}$$

$$Depreciation = \frac{-1(3)}{-1(0.75)} + \frac{-1(6)}{-1(0.75)} + \frac{-1(9)}{-1(0.75)} + \frac{-1(12)}{-1(0.75)} + \left[\frac{-1(0.75)}{0.75(0.25)} \right]^{(-0.5)^2}$$

$$Depreciation = \frac{-3}{-0.75} + \frac{-6}{-0.75} + \frac{-9}{-0.75} + \frac{-12}{-0.75} + \left[\frac{-0.75}{0.18} \right]^{0.25}$$

$$Depreciation = 4 + 8 + 12 + 16 + [-4.16]^{0.25}$$

$$Depreciation = 40 + 1.42 = 41.42 \quad (8)$$

Finally calculate the values of coverage to complete this part, it will be necessary to bring the exchange rate to be handled at the Bank of Mexico considering the interbank 48 hours.

Date	Exchange rate
30/10/2015	16.50

Table 7 Data from the Bank of Mexico

$$T.CD = 16.50$$

$$T.CI = \log T.CD = 1.21$$

$$Coverage = \left[\frac{16.50}{1.21} \right]^{2.38-2.96}$$

$$Coverage = 0.21 \quad (9)$$

Thus presents the final formula for the first part.

$$\left[\frac{(MD - MI)}{Determination - Depreciation} \right]^{Coverage}$$

$$\left[\frac{(0.33 - 4.57)}{\left((5.34) \int_{12}^3 \lim 0.80 \right) - 41.42} \right]^{0.21}$$

$$\left[\frac{-4.24}{\left((5.34) \int_{12}^3 \lim 0.80 \right) - 41.42} \right]^{0.21}$$

$$\left[\frac{-4.24}{\left((5.34) \int_{12}^3 (0.10) 0.80 \right) - 41.42} \right]^{0.21}$$

$$\left[\frac{-4.24}{\left((5.34) \int_{12}^3 0.08 \right) - 41.42} \right]^{0.21}$$

$$\left[\frac{-4.24}{((5.34)[(1)9](0.08)) - 41.42} \right]^{0.21}$$

$$\left[\frac{-4.24}{3.84 - 41.42} \right]^{0.21}$$

$$\left[\frac{-4.24}{-37.58} \right]^{0.21} = 0.11^{0.21} = 0.62 \quad (10)$$

Once we have the first part I will follow the formula.

$$\left[\frac{\text{Devaluation} + Cck}{\text{Forward} - \text{Exposition}} \right]^{\text{Arbitration}} \quad (11)$$

Where:

$$\text{Devaluation} = \left[\frac{\pi_s}{\pi_{-s}} \right]^{3/4 - 1/2}$$

$$Cck = \left(\frac{CV - CF}{CFL} \right)^{\pi - 1/2}$$

$$\text{Forward} = \left(\frac{PPP - 2}{A. \text{Circulación}} \right)^{3/4}$$

$$\text{Exposition} = [T.CD + T.CI]^\pi$$

$$\text{Arbitraje} = \beta(\$0) + \beta(\$1) + \beta(\$2) + [\beta(\$n)]^2 \quad (12)$$

First the values according to the formula of depreciation taken.

$$\text{Depreciation} = \left[\frac{2.38}{2.96} \right]^{0.75 - 0.5}$$

$$\text{Depreciation} = [0.80]^{0.25}$$

$$\text{Depreciation} = [0.80]^{0.25}$$

$$\text{Depreciation} = 0.94 \quad (13)$$

The following values are substituted into the formula of C. Variable, it is necessary to know the values of costs (variable, fixed and floating). We take these values to calculate the price / utility that will give us BMW.

Price / Earnings	39.57
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Table 8 BMW Facts

$$C. \text{Variable} = (39.57)^{0.75} = 15.77$$

$$C. \text{Fixed} = (39.57)^{0.5} = 6.29$$

$$C. \text{Fluctuating} = \frac{\text{Priceless/Utility}}{\cos \text{Price/Utility}} = \frac{\sin 39.57}{\cos 39.57} = \frac{0.63}{0.77} = 0.81 \quad (14)$$

Therefore:

$$Cck = \left(\frac{15.77 - 6.29}{0.81} \right)^{0.80 - 0.50}$$

$$Cck = \left(\frac{9.48}{0.81} \right)^{0.30}$$

$$Cck = (11.70)^{0.30} = 2.09 \quad (15)$$

Subsequent to this part of the Forward and is calculated prior to it need to obtain other required values.

Shares outstanding are taken from the value provided by the BMV; however it is necessary to smooth the number through a logarithm.

Outstanding shares	42,127,208,063
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Table 9 Facts BMW

$$A. Circulation = \log(42,127,208,063) = 10.62 \quad (16)$$

Once we have that information then the formula of the Forward.

$$Forward = \left(\frac{PPP - 2}{A. Circulación} \right)^{3/4}$$

$$Forward = \left(\frac{14.38 - 2}{10.62} \right)^{0.75}$$

$$Forward = (1.16)^{0.75} = 1.11 \quad (17)$$

Once we have obtained the values of Forward, you must perform the calculation of exposure.

$$Exposure = [16.50 + 1.21]^{0.80}$$

$$Exposure = [17.71]^{0.80}$$

$$Exposure = [17.71]^{0.80}$$

$$Exposure = 9.96 \quad (18)$$

Finally the value of arbitration is calculated by substituting in the following formula.

$$Arbitration = 0.50 + 0.50 + 0.25 + [0.50(0.25)]^2$$

$$Arbitration = 1.25 + [0.12]^2$$

$$Arbitration = 1.25 + [0.12]^2$$

$$Arbitration = 1.25 + 0.01 = 1.26 \quad (19)$$

Once all the required values were obtained are represented in the formula that led to each variable.

$$\left[\frac{Devaluation + Cck}{Forward - Exposure} \right]^{Arbitration}$$

$$\left[\frac{0.94 + 2.09}{1.11 - 9.96} \right]^{1.26}$$

$$\left[\frac{3.03}{-8.85} \right]^{1.26}$$

$$\left[\frac{3.03}{-8.85} \right]^{1.26}$$

$$[-0.34]^{1.26} = 0.25 \quad (20)$$

To determine the capital cost will be necessary to follow the following formula, which will result from the sum of the variable cost plus the cost fluctuating between fixed cost and this will be submitted to Brownian.

$$Capital cost = \left(\frac{CV + CFL}{CF} \right)^{3/4}$$

Where:

$$Capital cost = \left(\frac{15.77 + 0.81}{6.29} \right)^{0.75}$$

$$Capital cost = \left(\frac{16.58}{6.29} \right)^{0.75}$$

$$Capital cost = (2.63)^{0.75} = 2.06 \quad (21)$$

Once it obtained all the left part of the formula the next step will be replaced in the central section of it.

$$\left[\left[\frac{FCP + FMP + FLP}{(Not\ fundable - Fundable)} \right] \right] \left(\frac{CP+MP}{LP} \right)^2 \quad (22)$$

Where:

$$FCP = \left(\frac{V - \pi}{T.C} \right)^{MAX} \quad (23)$$

For the value of "V" it will be taken from the value provided by the BMV.	
Sales Position	14.39

Table 10 BMV Data

MAX is the maximum value that marks the BMV for the actions of the organization.	
Maximum	14.42

Table 11 BMV Data

Therefore:

$$FCP = \left(\frac{14.39 - 0.80}{16.50} \right)^{14.42}$$

$$FCP = \left(\frac{13.59}{16.50} \right)^{14.42}$$

$$FCP = (0.82)^{14.42} = 0.05 \quad (24)$$

Following this we have to calculate the medium-term financing, corresponding to the following formula.

$$FMP = \left(\frac{C + \pi}{T.C} \right)^{MIN} \quad (25)$$

For the value of "C" we find the data in the position of buying it throws the BMV and MIN will find it again in the same data frame.

Purchase stance	14.38
Minimum	13.96

Table 12 BMV Data

According to these values:

$$FMP = \left(\frac{14.38 + 0.80}{16.50} \right)^{13.96}$$

$$FMP = \left(\frac{15.18}{16.50} \right)^{13.96}$$

$$FMP = (0.92)^{13.96} = 0.31 \quad (26)$$

The last of the financing, the long-term financing will be developed through the following formula.

$$FLP = \left(\frac{V - \pi}{C + \pi} \right)^{T.C - \frac{MAX}{MIN}}$$

$$FLP = \left(\frac{14.39 - 0.80}{14.38 + 0.80} \right)^{16.50 - \frac{14.42}{13.96}}$$

$$FLP = \left(\frac{13.59}{15.18} \right)^{16.50 - 1.03}$$

$$FLP = (0.89)^{15.47} = 0.16 \quad (27)$$

As it has done the calculation of financing, now must resolve the formulas of fundable and not fundable, this will be this way.

$$Not\ fundable = \int \frac{\frac{MIN}{d\lambda(MIN)}}{\frac{MAX}{d\lambda(MAX)}}$$

$$Not\ fundable = \int \frac{13.96}{\frac{[(-1)0.75](13.96)}{14.42}}{\frac{[(-1)0.75](14.42)}$$

$$\begin{aligned} \text{Not fundable} &= \int \frac{13.96}{\frac{-10.47}{14.42} - \frac{-10.81}{-10.81}} \\ \text{Not fundable} &= \int \frac{-150.90}{-150.97} \\ \text{Not fundable} &= \int \frac{150.90}{150.97} = (1)0.99 = 0.99 \\ \text{Fundable} &= \int \frac{(MAX)}{d\lambda(MAX)} - \int \frac{(MIN)}{d\lambda(MIN)} \\ \text{Fundable} &= \int \frac{(14.42)}{[(-1)0.75](14.42)} \\ &\quad - \int \frac{(13.96)}{[(-1)0.75](13.96)} \\ \text{Fundable} &= \int \frac{(14.42)}{-10.81} - \int \frac{(13.96)}{-10.47} \\ \text{Fundable} &= \int -1.33 - \int -1.33 \\ \text{Fundable} &= -1.33 + 1.33 = 0 \end{aligned} \quad (28)$$

To continue values are substituted into the formula of deadlines.

Max. Last year	17.51
Min. Year Ago	12.43

Table 1 BMV Data

Short term

$$\begin{aligned} CP &= \left[\int \frac{(MAX-MIN)^{0.5}}{(MAXAnt+MINAnt)^{0.75}} \right]^2 \\ CP &= \left[\int \frac{(14.42-13.96)^{0.5}}{(17.51+12.43)^{0.75}} \right]^2 \end{aligned}$$

$$\begin{aligned} CP &= \left[\int \frac{(0.46)^{0.5}}{(29.94)^{0.75}} \right]^2 \\ CP &= \left[\int \frac{0.67}{12.79} \right]^2 \\ CP &= [(1)12.12]^2 = 146.89 \end{aligned} \quad (29)$$

Medium term

$$\begin{aligned} MP &= \left[\int \frac{(MIN+MAX)^{0.5}}{(MINAnt-MAXAnt)^{0.75}} \right]^2 \\ MP &= \left[\int \frac{(13.96+14.42)^{0.5}}{(12.43-17.51)^{0.75}} \right]^2 \\ MP &= \left[\int \frac{(28.38)^{0.5}}{(-5.08)^{0.75}} \right]^2 \\ MP &= \left[\int \frac{5.32}{-3.38} \right]^2 = [(1) - 8.7]^2 = 75.69 \end{aligned} \quad (30)$$

Long term

$$\begin{aligned} LP &= \left[\int \frac{\left(\frac{MAXAnt+MAX}{2}\right)^{0.5}}{\left(\frac{MINAnt+MIN}{2}\right)^{0.75}} \right]^2 \\ LP &= \left[\int \frac{\left(\frac{17.51+14.42}{2}\right)^{0.5}}{\left(\frac{12.43+13.96}{2}\right)^{0.75}} \right]^2 \\ LP &= \left[\int \frac{\left(\frac{31.93}{2}\right)^{0.5}}{\left(\frac{26.39}{2}\right)^{0.75}} \right]^2 \\ LP &= \left[\int \frac{3.99}{6.92} \right]^2 = [(1)2.93]^2 = 8.58 \end{aligned} \quad (31)$$

Once you have calculated all the data corresponding to the formula, the next step is to replace each value.

$$\left[\frac{0.05 + 0.31 + 0.16}{(0.99 - 0)} \right] \left(\frac{146.89 + 75.69}{8.58} \right)^2$$

$$\left[\frac{0.52}{(0.99)} \right] \left(\frac{222.58}{8.58} \right)^2$$

$$[0.52]^{(25.94)^2} = [0.52]^{672.88} = 0 \tag{32}$$

For the last part of our formula the following reference will be made to begin to calculate the necessary data.

$$\left[\frac{Performance}{Utility} \right]^{Fundable\ range} \tag{33}$$

Where performance:

$$Performance = \frac{d(MAX)}{d\lambda_1} - \frac{d(MIN)}{d\lambda_2}$$

$$Performance = \frac{-1(14.42)}{-1(0.75)} - \frac{-1(13.96)}{-1(0.75)}$$

$$Performance = \frac{-(14.42)}{-(0.75)} - \frac{-(13.96)}{-(0.75)}$$

$$Performance = 19.22 - 18.61 = 0.61 \tag{34}$$

Once the utility will continue to yield was obtained.

$$Utility = \left[\frac{(dMAX/lim\ MAXAnt)^{1/2}}{(dMIN/lim\ MINAnt)^{3/4}} \right]^2$$

$$Utility = \left[\frac{\left(\frac{(-1)14.42}{(0.10)\ 17.51} \right)^{0.5}}{\left(\frac{(-1)13.96}{(0.10)\ 12.43} \right)^{0.75}} \right]^2$$

$$Utility = \left[\frac{(-14.42/1.75)^{0.5}}{(-13.96/1.24)^{0.75}} \right]^2$$

$$Utility = \left[\frac{-2.87}{-6.14} \right]^2 = [0.46]^2 = 0.21 \tag{35}$$

Finally we have the allowable range, corresponding to the following formula.

$$Fundable\ range = \int \left(\frac{\frac{\partial MAX}{\partial MAXAnt}}{\frac{\partial MIN}{\partial MINAnt}} \right) \left[\frac{\partial MAX - \partial MIN}{\partial MAXAnt + \partial MINAnt} \right]^{0.75-0.5}$$

$$Fundable\ range = \int \left(\frac{\frac{(0.50)14.42}{(0.50)17.51}}{\frac{(0.50)13.96}{(0.50)12.43}} \right) \left[\frac{(0.50)14.42 - (0.50)13.96}{(0.50)17.51 + (0.50)12.43} \right]^{0.75-0.5}$$

$$Fundable\ range = \int \left(\frac{\frac{7.21}{8.75}}{\frac{6.98}{6.21}} \right) \left[\frac{7.21 - 6.98}{8.75 + 6.21} \right]^{0.25}$$

$$Fundable\ range = \int \left(\frac{0.82}{1.12} \right) \left[\frac{0.23}{14.96} \right]^{0.25}$$

$$Fundable\ range = [(1)0.3][0.01]^{0.25}$$

$$Fundable\ range = [0.3]0.31 = 0.09 \tag{36}$$

On the last occasion, we substitute our three values in the original formula.

$$\left[\frac{\text{Performance}}{\text{Utility}} \right]^{\text{Fundable range}}$$

$$\left[\frac{0.61}{0.21} \right]^{0.09}$$

$$[2.90]^{0.09} = 1.10 \quad (37)$$

Once all real values of the formula will substitute each data to determine the real value of MIF was obtained.

$$MIF = \frac{0.62[0.25]}{2.06} - [0 + 1.10]$$

$$MIF = \frac{0.15}{2.06} - 1.10$$

$$MIF = 0.07 - 1.10 = |-1.03| = 1.03 \quad (38)$$

Conclusion

Once you gather all the necessary data from America Movil, it was necessary to begin replacing the values along each formula, involving the exchange, currencies, types of term (short, medium and long), among others.

This in order to sustain the current value of the issuer with respect to the country, variables was taken into account in real time for assessment, so we're talking about:

Through the financial integrative model it was determined that the value of financial activity station America Movil represents 1.03 of our national economy in Mexico, holding an exchange rate of 16.50, taking inflation (non-core) 2.96 and being fork or market in the Mexican financial market.

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