Volume 5, Issue 9 – July – December – 2021

Journal-International Economy

ISSN-On line: 2524-2032

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Journal International Economy, Volume 5, Issue 9, July – December 2021, is a journal edited semestral by RINOE. Distrito YongHe, Zhongxin, calle 69. Taipei – Taiwan. WEB: www.rinoe.org journal@rinoe.org. Editor in Chief: SUYO-CRUZ, Gabriel. PhD. ISSN-2524-2032. Responsible for the latest update of this number RINOE Computer Unit. ESCAMILLA-BOUCHÁN, Imelda, LUNA-SOTO, Vladimir. PhD. Distrito YongHe, Zhongxin, calle 69. Taipei - Taiwan, last updated December 31, 2021.

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Journal-International Economy

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The works must be unpublished and refer to topics of Global Outlook; International economic order; Economic integration: Trade, Neoclassical models of trade, Models of trade with Imperfect competition and scale economies, Commercial policy, Protection, Promotion, Trade negotiations, Country and industry studies of trade, Economic integration, Trade and labor market interactions, Trade forecasting and simulation, Trade and environment; International factor movements and international business: International investment, Long-Term capital movements, International migration, Multinational firms, International business; International finance: Foreign exchange, Current Account Adjustment, Short-Term capital movements, International monetary arrangements and institutions, International lending and Debt problems, Foreign aid, Financial aspects of economic integration; Macroeconomic aspects of international trade and Finance: Open Economy Macroeconomics, International policy coordination and transmission, Economic growth of open economies, Forecasting and simulation and other topics related to Social Sciences

Presentation of the Content

In the first article we present, *Impact of COVID-19 on the economic-financial health of the company REIPROACERO S. A., during the periods 2019-2020*, by MUÑOZ-WALTER, Keily Jannina & SOTO-GONZÁLEZ, Carlos Omar, with adscription at the Universidad Técnica de Machala, as, next article, we present *Case study: Facebook Inc.*, by DOMÍNGUEZ, Juan, with adscription at the Universidad Iberoamericana, as following article we present, *Analysis of américa movil*, by LÓPEZ, Aldo, with ascription at the Universidad Iberoamericana, as last article we present, *Financial analysis Axtel*, by RAMOS, Gerardo, with adscription at the Universidad Iberoamericana.

Content

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Impact of COVID-19 on the economic-financial health of the company REIPROACERO S. A., during the periods 2019-2020

Impacto del COVID-19 en la salud económica-financiera de la empresa REIPROACERO S. A., durante los periodos 2019-2020

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DOI: 10.35429/JIEC.2021.9.5.1.10 Received July 10, 2021; Accepted December 30, 2021

Abstract

This research article focused on evaluating the economic-financial situation of the company REIPROACERO SA, through the application of financial analysis methods and financial ratios, in order to determine the impact caused by the COVID-19 pandemic. On the other hand, within the investigative process the scientific method is applied, since it allowed to have an approach to the fact of interest, having contact with the data and information and real facts, which provided clues for the formulation of hypotheses and antecedents, building knowledge and leading to the verification of the same. Likewise, the qualitative descriptive approach was used, since the Financial Statements of the company, obtained from the Superintendencia de Compañias, Valores y Seguros, were analyzed; with a documentary design because information was obtained from scientifically recognized sources such as journals, articles in order to scientifically strengthen research. Where the results obtained showed excessive liquidity, low profitability and poor portfolio rotation.

Financial analysis, Financial statements, Economic and financial situation

Resumen

El presente artículo de investigación se enfocó en evaluar la situación económica- financiera de la empresa REIPROACERO S.A, mediante la aplicación de métodos de análisis financiero y ratios financieros, para que de esa manera poder determinar el impacto que provoca la pandemia por el COVID-19. Por otra parte, dentro del proceso investigativo se aplica el método científico, ya que permitió tener un acercamiento al hecho de interés, teniendo contacto con los datos e información y hechos reales, los cuales proporcionaron pistas para formulación de hipótesis y antecedentes construyendo conocimientos y conduciendo a la verificación de las mismas. Así mismo se utilizó el enfoque cualitativo descriptivo, ya que se analizó los Estados Financieros de la empresa, obtenidos de la Superintendencia de Compañías, Valores y Seguros; con un diseño documental porque se obtuvo información de fuentes reconocidas científicamente como revistas, artículos con la finalidad de fortalecer científicamente investigación. En donde en los resultados obtenidos se evidencio una excesiva liquidez, baja rentabilidad y una rotación de cartera deficiente.

Análisis financeiro, Estados financeiros, Situación económica y financiera

Citation: MUÑOZ-WALTER, Keily Jannina & SOTO-GONZÁLEZ, Carlos Omar. Impact of COVID-19 on the economic-financial health of the company REIPROACERO S. A., during the periods 2019-2020. Journal- International Economy. 2021. 5-9:1-10.

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Introduction

Financial analysis plays an indispensable role in the development of the activities of an entity, since it allows determining the health or the state in which the organization is in the economic and financial field, since from the result obtained from the analysis managers can make decisions either corrective or preventive, and even investment, also allows providing more reliable information to internal and external users (Paredes *et al.*, 2019).

At the end of 2019 the world was affected by a virus that destabilized in several aspects, starting with health and therefore the global and family economy, as most governments chose to take preventive measures to avoid the spread of the virus, such as confinement. This directly affected the economic, social, technological and even political dynamization, which had an impact on the development of the activities of both companies and society in general, causing a drastic decrease in demand, income and labor, as well as difficulties in accessing financing, which was not foreseen in the strategic planning of any entity (Cevallos-Palma *et al*., 2020).

This study focuses on analyzing the impact of COVID-19 on REIPROACERO S.A., a company that has not been oblivious to the economic imbalance suffered by everyone, for which a comparison will be made through financial analysis, using financial analysis methods and financial indicators or ratios. Specifically, the reduction of its revenues is identified, evidently due to the abrupt decrease in demand, leading managers to reduce their staff, these are some of the effects that show the economic and social impact caused by the pandemic in the business environment.

Therefore, the objective of this article is to evaluate the economic-financial situation of the company REIPROACERO S.A., through the application of financial analysis methods and financial ratios, to determine the impact caused by COVID-19.

In such a way that the procedure of this research is composed of a summary, which is responsible for communicating quickly and concretely the content of the research, then the key words are described, the introduction, which highlights the importance of the work and where it is intended to reach, then is the development where the theoretical basis is conceptualized through the literature review, and then move to the results where the solution to the problem is demonstrated, and then end with the conclusions where the fulfillment of the objective or purpose of the research is expressed.

Development

Financial Management

Financial management is focused on all types of companies, since it fulfills the function of determining the financial part to cover in a timely manner all its activities or operations, where it also seeks to optimize to the maximum all resources, same that are indispensable for managers to make accurate decisions from the evaluation and analysis of financial information, in such a way that helps the fulfillment of the objectives of the entity in an efficient manner (Cabrera-Bravo *et al*., 2017).

Financial administration

Financial management is a science that facilitates the supply of economic resources in business transactions and investments that are needed within the organization, then the operation will be carried out efficiently and effectively (Ceballos *et al*., 2016).

Financial Statements

Financial Statements are defined as the mirror where it shows all the activities or operations of an entity in a given period, which can be quarterly, half-yearly or annual, so they are of vital importance within a company, because around the information they provide most of the decisions that managers make are based, as well as provide such information to external users in a reasonable reliable way, for which its structure must be composed according to the International Financial Reporting Standards (IFRS) and International Accounting Standards (IAS 1) (Perea *et al*., 2016).

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Within the main Financial Statements used to determine the economic-financial health are the Income Statements is the one that determines whether within the period has been obtained losses or gains within the same, it is structured by income and expenses (Elizalde, 2019). Likewise, another tool within this analysis is the Statement of Financial Position or also called Balance Sheet, it is that which is responsible for determining the entity's ability to cover its short and long term obligations, fulfilling the purpose of establishing control over operations to then determine the possible benefits that these may generate in the future, this statement is structured by three components: assets, liabilities and equity (Ruíz, 2017).

Financial analysis

The financial analysis is a set of technical procedures that allow determining the current economic-financial health of the entity, as well as allowing forecasting the situation in the future. This analysis is performed based on the information provided in the Financial Statements, through the study and interpretation performed by experts in the area, providing timely and efficient information to internal and external users (Saldaña & Guamán, 2019).

Financial analysis methods

This method is composed of two types:

- Vertical Analysis: it is a static method or technique due to the fact that it is taken into account to evaluate the economic and financial health of an entity, the result of this calculation is expressed as a percentage and denotes what an account represents within a given group (Puerta *et al*., 2018).

$$\text{Vertical anal} = \left(\frac{\text{Minor account}}{\text{Major account}}\right) * 100 \quad (1)$$

- Horizontal Analysis: This method of financial analysis that by means of an absolute variation calculates the increase or decrease of an accounting account, and the result is called relative variation and this is expressed as a percentage, it can be measured from one or more fiscal periods (Soto *et al*., 2018).

$$VA = \text{Year } 1 - \text{Year } 0 \quad (2)$$

$$VR = \frac{VA}{Year\ 0} * 100 \quad (3)$$

Financial Indicators

Also called financial ratios are a tool that is responsible for measuring the economic and financial situation of an entity, where it makes a comparison between historical and current information, so that from its results managers make decisions necessary for the development of the company, among the main financial ratios are, indicators of liquidity, activity, indebtedness and profitability (Correa-Garcia *et al*., 2018)**.**

Liquidity Indicators

These are ratios that are responsible for calculating the capacity that the entity has to cover its short-term obligations or also called current liabilities, where the company seeks to convert its current assets into cash (Jara *et al*., 2018).

Among the main liquidity indicators are:

- Working Capital: This financial ratio establishes if the company has cash available to settle short-term debts, then the payment condition will be reflected, in the case that current assets exceed current liabilities the ratio will be very favorable (Fontalvo *et al*., 2011).

- Current Ratio: This indicator that establishes the sufficiency that the entity has to settle or cover the current obligations it has in the short term, whose cases are necessary of immediate payment or cancellation, that is to say that part of the assets can cover these debts, where it will determine whether the company can continue to operate or should be closed (Gutiérrez & Tapia, 2016).

- Fast ratio: This is one of the indicators widely used when evaluating the liquidity of a company, it reflects the monetary supply to respond at any time to the short-term commitments available to the entity (Fontalvo *et al*., 2011).

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Activity indicators

These indicators have the capacity to fulfill a certain function with its assets within the company, i.e. in accordance with the speed in which these values incurred in the same can be recovered (Espinoza *et al*., 2017).

Where we can detail the following:

- Rotation of accounts receivable: this index indicates the number of times that the collection of the commercialization of goods or services granted on credit is proceeded in a given fiscal period, the collection ability by the entity will be exposed (Gutiérrez-Calle et al., 2020).

- Average collection period: Expresses the time taken by the entity to collect the amounts that have not yet been paid in full by customers, i.e. the time is established in the days used to recover the portfolio (Gutiérrez-Calle *et al*., 2020).

- Inventory turnover: Through the inventory turnover index, the frequency with which the inventory is restored in a fiscal period is demonstrated, regardless of whether the transaction was made in cash or credit, for the respective calculation, the costs of goods sold are taken into consideration as part of the numerator and the average inventory as the denominator (Suárez & Cárdenas, 2017).

- Average inventory age: This ratio allows determining the period of time that the company needs to be able to market its inventory, this with the purpose of being able to satisfy without inconvenience the needs of its customers, this time is expressed in days (Ureña, 2017).

- Average operating cycle: This is a financial indicator that shows the days it takes the company to recover its portfolio, i.e. the time it takes the entity to cash its accounts receivable once its obligations with third parties have been settled (Sanjines, 2019).

Indebtedness indicators

The purpose of this type of indicator is to evaluate the level of debt that the company has for its operation, then it will reflect the percentage of participation of creditors for the monetary contribution, in turn the risk that the owners maintain when resorting to subjects outside the business for financing, as is the case of financial institutions (Restrepo & Sepúlveda, 2016).

- Debt ratio: It is recognized as indebtedness over assets because it represents the level at which assets are maintained under the contribution of third party sources, the calculation corresponds to the comparison of total liabilities between total assets (Salazar-Mosquera, 2017).

- Debt/equity ratio: it is also distinguished as indebtedness over equity, it determines the percentage that equity depends on creditors through the ratio between total liabilities and total equity (Salazar-Mosquera, 2017).

Profitability indicators

This indicator helps to quantify the competition that a financial institution has, the same that seeks the way or the opportunities that can be presented to achieve economic growth as well as within the market, this has many possibilities, however, everything depends on the strategies that each of the companies apply, whose purpose is to have a good performance of its assets and equity achieving positive results that favors the entity (Espinoza *et al*., 2017).

This is divided as follows:

- Gross profit margin ratio: Known as gross margin, this indicator shows the income obtained from sales after deducting the respective cost (Puente-Riofrío & Andrade-Domínguez, 2016).

- Operating profit margin ratio: By means of this indicator, it is established whether the company is profitable or not without considering the contribution by financial means, then it is the portion of profit obtained from sales when discounting operational costs and expenses (Fontalvo *et al*., 2012).

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- Net profit margin ratio: This financial indicator indicates the profit or loss in its entirety because costs, expenses and taxes incurred in relation to net sales are deducted (Fontalvo *et al*., 2012).

- Ratio of profit on investment in assets: By means of this profitability indicator, the profits achieved by the management of assets are revealed, the calculation consists of the quotient of net profit between total assets (Cristobal, 2018).

- Ratio of profit over equity: Through this financial index it is possible to examine the portion of profit that corresponds to the partners with respect to what they have allocated for the development of the entity, for the calculation net profit and equity are required (Salazar-Mosquera, 2017).

Methodology

To diagnose the economic and financial situation of the company REIPROACERO S.A, the scientific method will be applied, since it allows us to have an approach to the fact of interest, likewise this method allows us to have contact with data and information and real facts, which provide clues to formulate hypotheses and background for the construction of knowledge and leads to the verification of the previously established hypotheses (Rodríguez & Pérez, 2017).

Likewise, the approach to be used is the descriptive qualitative one, where the analyst makes a thorough measurement of its variables, based on objectives that are previously defined and delimited, so the Financial Statements of the company REIPROACERO S.A, obtained from the Superintendence of Companies, Securities and Insurance will be analyzed through the application of the methods of financial analysis and the financial ratios or indicators (Corona-Lisboa, 2016).

In turn, a documentary design will be chosen because information will be extracted from scientifically recognized sources such as journals, articles with the purpose of scientifically strengthening the present research.

Taking into account that this design allows evaluating and analyzing the information in an objective, methodological and quantitative way, in such a way that allows making valid and reliable deductions (Cadena-Iñiguez *et al*., 2017).

Results

Horizontal analysis

To measure the impact caused by the COVID-19 in the company REIPROACERO S.A. the methods of financial analysis were used, the horizontal analysis to the Income Statement of the company REIPROACERO S.A., in the sales item in the year 2019 a total of $7.820.876,49, while for 2020 shows a total of $6.939.410,86, thus obtaining a decrease of $881.465,63, which constitutes a -11,27%. Likewise, as for the operating expenses for the year 2019 it shows a total of $870,322.70, while for the year 2020 $703,855.48; having a decrease of $166,467.22, which constitutes a -19.13%. In the year 2019 the company obtained a net profit of $196,468.01, while for the period 2020 it obtained a net profit of $52,789.57; having a decrease with respect to the previous year of $143,678.44, same that represents -73.13%; this because its income decreased and its expenses increased, in the item of commissions increased by 749.73%, likewise in taxes and eviction with 484.98% and 205.79% respectively.

The horizontal analysis shows that in the Statement of Initial Situation in 2019 the entity has total assets of $7,327,275.58; while in 2020 it has total assets of $7,264,946.60, with a decrease of $62,328.98, which represents 0.85%. On the other hand, liabilities in 2019 show a total of $5,003,344.89, while for the following period a total of $4,893,651.73; evidencing a decrease of $109,693.16, which represents -2.19%. Likewise, the Equity for the period 2019 has a total of $2,323,930.69, while for 2020 it has a total of $2,371,294.87, showing an increase of $47,364.18, which represents 2.04% between both periods.

Vertical analysis

On the other hand, regarding the vertical analysis to the Income Statement in the period 2019, it is evident that the item that has the highest representation is the Cost of Sales with 84.93% while in the year 2020 it is 88.66% over the total sales.

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Regarding the vertical analysis in the Statement of Financial Position, it was obtained that in 2019 in the Assets, the accounts with the highest representation are Accounts Receivable; Property, plant and equipment; and Inventories with 41.46%; 36.23% and 15.98% respectively to the total Assets, while in 2020 the most representative accounts of the Assets are also Accounts Receivable with 26.68% over the total assets; Property, plant and equipment with 48.55% and Inventories with 14.24% over 100% of its assets. As for its Liabilities in 2019 the most representative accounts are non-current and current accounts payable with 41.08% and 12.25% respectively, while in 2020 the most representative items are non-current accounts payable with 37.65% and obligations with financial institutions with 9.31%. On the other hand, in 2019 the most representative account in equity is the accumulated results with 53.28%; coinciding with the following year with 52.98% of the total equity.

Liquidity ratios

The company REIPROACERO S.A in 2019 reflects a working capital of $2,699,895.15, while for 2020 this decreased to $2,248,080.37; although this shows a decrease for the following year, the entity does have the necessary capacity to develop its activities or operations after covering its short-term obligations. Regarding the Current Ratio for the year 2019 and 2020, it is evidenced that for each dollar ($1) in current liabilities the entity has a current liquidity of $2.37 and $2.54 respectively to settle them, which means that the entity has sufficient liquidity to cover its short-term obligations. Meanwhile, the quick ratio reflects that for every $1 in current obligations, the entity has $1.78 in 2019 and $1.83 in 2020, as shown in Table 1.

Likewise in terms of long-term liquidity the company REIPROACERO S.A has, for the year 2019 a 68.28% while for the year 2020 shows a 67.36% of its committed assets in relation to the obligations that the organization passes, so it reflects an efficient long-term solvency to cover its liabilities with the assets that the entity has, however it is necessary to make wise decisions regarding the level of indebtedness, i.e. to determine whether it is necessary or convenient to acquire new obligations, as shown in Table 2.

Debt ratios

The company REIPROACERO S.A for the year 2019 evidences a debt ratio of 68.28%; that is to say that this is the percentage that the entity has committed its assets while for the period 2020 a 67.36%, the debt level decreased which is favorable; while the debt/equity ratio for the year 2019 the entity has committed 215.30% of its equity, while for the following year (2020) shows 206.37%, evidencing a decrease which is favorable for the company; as shown in Table 2.

Activity ratios

The company REIPROACERO S.A, in the activity indicators reflect that in the average accounts receivable for the year 2019 reflects $ 2,358,257.02; while for the period 2020 shows $ 2,488,294.32; as for the turnover of accounts receivable in the year 2019 shows a turnover of 1.99 times, for the following year reflects a turnover of 1.67 times, thus showing a slower turnover for this period. The average collection period in the period 2019 shows 183.43 days, while for the period 2020 reflects 218.13 days to recover its portfolio. The average inventory in the year 2019 reflects $1374420.03, while in the period 2020 shows $1102738.14; so in its inventory turnover for the period 2019 reflects a turnover of 3.4 times while for the year 2020 its turnover increased to 5.58 times. Likewise, the average inventory age for the year 2019 shows 107.42 days while for the following year it shows 65.42 days, where it reflects a decrease, which is favorable for the company, since its liquidity increases. The average operational cycle for the year 2019 reflects 145.43 days, time that the entity takes to convert its accounts receivable into cash, while for the period 2020 this decreased to 141.78 days, i.e. for this period the entity makes its accounts receivable faster, as shown in Table 3.

Profitability ratios

The company REIPROACERO S.A. shows a gross profit margin ratio for the period 2019 of 11.34%; that is to say that for each dollar of sales the entity will have a gross profit of ($0.11), that is to say 11.34%; while for the year 2020 it increased to 15.07%. Likewise, the Operating Profit Margin Ratio for the year 2019 reflects 3.94%, while for the period 2020 shows 1.19% of operating margin; it shows a decrease between both periods.

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Meanwhile, the net profit margin ratio for 2019 reflects 2.51% of profit after calculating employee profit sharing and taxes, while for the 2020 period it only obtained 0.76% of net profit. As for the ratio of profit over investment in assets for the period 2019 shows 2.68% for each dollar of investment in assets, while for the period 2020 it reflects 0.73%. Finally, the ratio of profit on equity for the year 2019 shows that for each dollar of investment in equity, it obtained a profit of 8.45%; while in the 2020 period it reflects a profit of 2.23%; as shown in Table 4.

Reason	Formula	2019	2020
Working Capital	$WC = Current\ Assets - Current\ Liabilities$	2.699.895,15	2.248.080,37
Current Ratio	$CR = \frac{Current\ Assets}{Current\ Liabilities}$	2,37	2,54
Quick Ratio	$QR = \frac{Current\ Assets - Inventory}{Current\ Liabilities}$	1,78	1,83

Table 1 Liquidity indicators
Source: Soto et al., (2018) and modified by the author

Reason	Formula	2019	2020
Debt Ratio	$DR = \frac{Total\ Liabilities}{Total\ Assets} x100$	68,28 %	67,36%
Debt to Equity Ratio	$RD/P = \frac{Total\ Liabilities}{Total\ Assets} x100$	215,30%	206,37%

Table 2 Debt indicators
Source: Soto et al., (2018) and modified by the author

Reason	Formula	2019	2020
Average accounts receivable	$AAR = \frac{CC.Initial + CC.Final}{2}$	2.358.257,02	2.488.294,32
Accounts Receivable Turnover	$RCC = \frac{Credit\ Sales}{Average\ Accounts\ Receivable}$	1,99	1,67
Average Collection Period	$PPC = \frac{365\ days}{Accounts\ Receivable\ Turnover}$	183,43	218,13
Average Inventory	$IP = \frac{Beginning\ Inventory + Ending\ Inventory}{2}$	1374420,03	1102738,14
Inventory Turnover	$RI = \frac{Cost\ of\ Sales}{Average\ Inventory}$	3,40	5,58
Average inventory age	$EPI = \frac{365\ days}{Inventory\ Turnover}$	107,42	65,42
Average operating cycle	$COP = \frac{PPC + EPI}{2}$	145,43	141,78

Table 3 Activity Indicators
Source: Soto et al., (2018) and modified by the author

Reason	Formule	2019	2020
Gross Profit Margin Ratio	$RMUB = \frac{Gross\ Profit\ on\ Sales}{Sales} x100$	11,34%	15,07%
Operating Profit Margin Ratio	$RMUO = \frac{Operating\ Profit}{Sales} x100$	3,94%	1,19%
Net Profit Margin Ratio	$RMUN = \frac{Net\ Profit}{Total\ Assets} x100$	2,51%	0,76%
Ratio of Profit on Investment in Assets	$RUSIA = \frac{Net\ Profit}{ATotal\ Assets} x100$	2,68%	0,73%
Ratio of Profit on Equity	$RUSP = \frac{Cost\ of\ Sales}{Average\ Inventory} x100$	8,45%	2,23%

Table 4 Profitability indicators
Source: Soto et al., (2018) and modified by the author

Subject:	Impact of COVID-19 on the Economic-Financial health of the company REIPROACERO S.A, during the periods 2019-2020
Objective:	To evaluate the economic-financial situation of REIPROACERO S.A. by applying financial analysis methods and financial ratios to determine the impact caused by COVID-19.
Addressed to:	To the accountant of the company REIPROACERO S.A.

UNIVERSIDAD TÉCNICA DE MACHALA
"Calidad, Pertinencia y Calidez"
FACULTAD DE CIENCIAS EMPRESARIALES
CARRERA DE CONTABILIDAD Y AUDITORIA

INTERVIEW GUIDE

I. GENERAL INFORMATION

Gender:	Male	Female
	X	

a) Age: 32

b) Level of Education:

Basic	High School	University	Master's

c) Years of Labor Activity:

1-5 years	5-10 years	10-25 years

II. DEVELOPMENT

1. Which financial analysis method do you apply?	
a) Horizontal Method	
b) Vertical Method	
c) Financial Indicators	X
d) All of the above	
e) None of the above	
2. According to the previous answer, how often is the economic and financial situation of the entity evaluated?	
a) Monthly	
b) Bimonthly	
c) Quarterly	
d) Semiannual	
e) Annual	X
3. According to your criteria, what is the economic and financial situation of the company compared to years before the COVID-19 crisis?	
a) Good	X
b) Bad	
Why? There was an unrestricted flow of suppliers and customers to the schedules.	
4. Does the entity have a credit policy manual?	
a) Yes	X
b) No	
5. If yes, what is the percentage of credit sales?	
60% of sales to fixed and constant customers.	
6. At what level does the use of financial analysis influence decision making?	
a) High	X
b) Medium	
c) Low	

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Conclusions

Throughout the development of this research it was possible to demonstrate the importance of financial analysis within an entity, since this evaluates the economic and financial situation of the entity, in the case of the company REIPROACERO S.A. a comparison was made during the years 2019 and 2020, through the methods of financial analysis and financial indicators, which reflects the negative effects that the organization suffered because of the pandemic caused by COVID-19 and the following was obtained:

Through the horizontal financial analysis method it was shown that sales had a decrease of 11.27%; consequently this transcends in the net profit of the period, this due to the paralysis of activities throughout the country caused by the aforementioned virus, since in its strategic planning such situation was not predicted; it was also analyzed through the vertical analysis where it was reflected that the most representative value in the years 2019 are the accounts and documents receivable with 41.46%; This is due to the fact that the portfolio turnover is very slow, so it is recommended to evaluate the collection processes, so that in this way it can cover its obligations on time and reduce its accounts and documents payable, which for the year 2019 reflects 41.08%, while for the period 2020 has 37.65%, which may represent a conflict with suppliers and may affect the image of the entity.

As for the analysis through financial indicators, it was evidenced that the company REIPROACERO S.A for the year 2019 has an adequate liquidity, since it reflected $2.31 to cover one dollar of its obligations, however, for 2020 it evidences $2.54: same that is not adequate because it is outside the commonly acceptable ranges, this is because it has idle money, so it is recommended to invest such money to increase the productivity of the organization (Table 1). Likewise, regarding the activity ratios, it is evident that the accounts receivable turnover in 2019 is 1.99 times, while for the following period it is 1.67 times; therefore, it is evident that the portfolio recovery is very slow, taking into account the activity that the company is engaged in (Table 3). As for the indebtedness indicators, it was evidenced that the entity is within the acceptable ranges of financial obligations, having 68.28% in 2019 and 67.36% in 2020 (Table 2).

Finally, the profitability indicators for the period 2019 reflected a gross profit of 2.51%, while for the following year 0.76%; evidencing low profits for the entity (Table 4), so it should focus on putting corrective actions in the portfolio rotation and invest the money that is available once its obligations are paid (Table 3).

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Article **Journal-International Economy**
December 2021, Vol.5 No.9 11-18

Case study: Facebook Inc.

Caso de estudio: Facebook Inc.

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DOI: 10.35429/JIEC.2021.9.5.11.18 Received July 15, 2021; Accepted December 30, 2021

Abstract

The main objective of this paper is to demonstrate a mathematical form whether to invest in a technology company like Facebook or not, we know that the global environment and the great speed at which information technologies are developed we think orillan that at this time there is no safer than doing technology investment, but there are more factors to consider and from another point of a more social and human leads us to ask new questions that cause us to make a decision uncertainty, for example if the use of a social network is not as fun as before, or if you step fashion, or whether to move to a better, although this can be measured statistically, representative sampling would be necessary and when we speak of a platform using more than 1.3 billion users around the world becomes very complex to try to measure trends to see if the company will grow or not, or whether to invest or not, so I will only focus on resolving the question of whether to invest in Facebook or not. Through the document develop mathematical models which provide us with a more accurate result to make a decision, we will use variables of the financial operation of the company in the BVM, this data will be collected in real time the BVM page and end the purpose of this document is to know with scientific arguments whether or not to invest in the purchase of shares of that company.

Facebook, Social network, Technology, Users, BMV, Nasdaq, DAU's, MAU's, ARPU, Market shares, BMV

Resumen

El objetivo principal de este trabajo es demostrar de forma matemática si se debe invertir en una empresa tecnológica como Facebook o no, sabemos que el entorno global y la gran velocidad a la que se desarrollan las tecnologías de la información nos hace pensar que en estos momentos no hay nada más seguro que hacer una inversión tecnológica, pero hay más factores a tener en cuenta y desde otro punto de vista más social y humano nos lleva a plantearnos nuevas preguntas que nos hacen tomar una decisión de incertidumbre, por ejemplo si el uso de una red social ya no es tan divertido como antes, o si pisas la moda, o si te pasas a una mejor, aunque esto se puede medir estadísticamente, sería necesario un muestreo representativo y cuando hablamos de una plataforma que utiliza más de 1. 3.000 millones de usuarios en todo el mundo se hace muy complejo intentar medir las tendencias para ver si la empresa va a crecer o no, o si hay que invertir o no, por lo que sólo me centraré en resolver la cuestión de si hay que invertir en Facebook o no. A través del documento desarrollaremos modelos matemáticos que nos proporcionen un resultado más preciso para tomar una decisión, utilizaremos variables de la operación financiera de la empresa en la BVM, estos datos serán recolectados en tiempo real la página de la BVM y al final El objetivo de este documento es conocer con argumentos científicos si se debe o no invertir en la compra de acciones de dicha empresa.

Facebook, Red social, Tecnología, Usuarios, BMV, Nasdaq, DAU's, MAU's, ARPU, Cuotas de mercadoa

Citation: DOMÍNGUEZ, Juan. Case study: Facebook Inc. Journal - International Economy. 2021. 5-9:11-18.

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Introduction

The company mentioned in this financial analysis is used to represent a real case study, this work has a totally academic spirit and we will focus on an Information Technology company, for this case we have selected the emblematic American company founded by Mark Zuckerberg in 2004, known as Facebook. Beyond the story we all know about how FB was founded, in this document we are going to focus on scientifically analyzing whether or not it is profitable to invest in this company. The theory tells us that it is one of the most profitable companies in the world and there is practically no risk of losing money, so this idea is the one we are going to confirm or discard as we reach the final result.

Reasons to invest in FB

We know that millions of people around the world use FB, we are talking about more than 1300 million users, if we think about e-commerce, electronic advertising, games, applications, music, videos, photos, etc. we can understand that there are millions of millions of dollars circulating through this company directly and indirectly, so without having much knowledge in Finance or Economics we could assume that our investment would be safe in a company of this type, so the first hypothesis would be to invest with closed eyes in the FB company.

(CNNMexico) - Facebook began trading on the Nasdaq stock market on Wall Street under the acronym FB. Its shares opened at 42.05 dollars and in a short time increased 11% with respect to the price of the initial public offering (IPO).

The following figure shows information on the Class A common stock that has been listed on the NASDAQ Global Market under the ticker symbol FB, prior to 2012 there was no public offering of shares in the market. Here are the high and low prices of the Class A common stock by period.

	2014		2013	
	High	Low	High	Low
First Quarter	$ 72.59	$ 51.85	$ 32.51	$ 24.72
Second Quarter	$ 68.00	$ 54.66	$ 29.07	$ 22.67
Third Quarter	$ 79.71	$ 62.21	$ 51.60	$ 24.15
Fourth Quarter	$ 82.17	$ 70.32	$ 58.58	$ 43.55

Figure 7.1
Source: http://investor.fb.com/annuals.cfm

The following graph shows a comparison from May 18, 2012 (the date it began trading on NASDAQ) through December 31, 2014, of the Class A stock's cumulative total return for the Standard & Poor's (S&P 500 Index) and on Nasdaq (NASDAQ Composite).

The chart assumes $100 was invested at market close on May 18, 2012 for the Class common stock of Facebook, Inc.

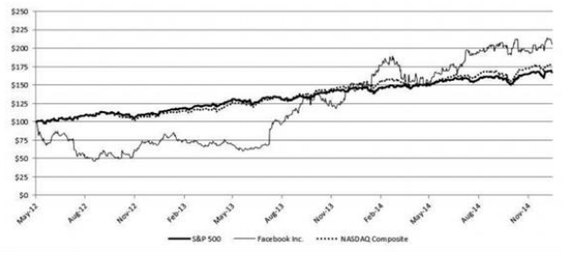

Figure 2
Source: http://investor.fb.com/annuals.cfm

Reasons not to invest in FB

From what we have been able to read so far we can assume that there is no risk in investing in a company like FB, and even more if we take more references of companies in the middle as could be Google Inc. that when it made public its offering in the New York Stock Exchange in 2004 its shares had a value of US$ 85, today those shares are worth more than US$ 600, this is a 613% appreciation in 10 years.

However, different financial advisors around the world agree that FB's user growth in recent years has tended to decline and its operating costs and expenses have grown at a higher rate than its revenues, in addition to qualifying that its popularity is decreasing significantly, the question is how they justify that the value of the stock is so high since FB is not really a product like a smartphone or a computer. Here we have the second hypothesis, FB's popularity will decrease over time and the value of the company will have a downward trend.

Facebook invests millions of dollars in research, for example its metrics are based on daily active users, mobile users, and average revenue per user: Daily active users (DAUs), MAUs, mobile MAUs, and average revenue per user (ARPU). These metrics are based on the activity that users have on FB in addition to the impact that advertising has on each of them.

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Figure 3
Source: http://investor.fb.com/annuals.cfm

Figure 4
Source: http://investor.fb.com/annuals.cfm

We can see that these graphs represent an incremental trend of activity at the technological level, by this I mean that we can see the number of users globally or by region or country that sign on the platform, but referring to our second hypothesis with these graphs we do not reach to measure the social and human part that for example would be fashion trends, preferences to new technologies, the change in the tastes of people, etc.. This is why we cannot be sure that the trend of future usage will be incremental, so if the opposite were the case it would reflect a decrease in the value of the company.

Financial approach

We are talking about a company with more than 1.3 billion users around the world and we would need representative samples at a social level such as those that Facebook makes at a technological level, not to mention that it is not the objective of this document, what we will do is a detailed analysis through mathematical models to answer the question of whether or not to invest in the company and to be able to support it from a financial approach.

Facebook on the Mexican Stock Exchange (BVM)

In order for a company to be listed on the stock exchange it must meet certain requirements, as we know there are different types of stock exchanges and indicators around the world. The Standard & Poor's 500, the Dow Jones, Exchange (NYSE), Japan Topix, United Kingdom Financial Times-30 (FT- ordinari), etc. For this case study we will work with data collected in real time from the BVM (Mexican Stock Exchange).

Company profile: Name: FACEBOOK, INC.

Country of origin: United States

Stock Exchange: NASDAQ

Date of incorporation	01-JAN-2004
Date of Listed on BMV	02-OCT-2012
Corporate Offices	N/A
Sector	Information Technology.
Subsector	Software and Services
Bouquet	Software and Internet Services.
Sub Branch	Software and Internet Services.
Activity Economic	The Company, through its website, enables communication by developing technology that allows the sharing of information, photographs, videos, among others. information, photographs, videos, among others.

Table 1 General Data

Facebook on the Mexican Stock Exchange (BVM)

Company's Legal Information: Password: FB

Series: Capitals Web: N/A FACEBOOK, INC.

Value type	Serie	Isin	Status	Description
1A	*	US30303M1027	Activate	Shares international quotation system

Table 2

Figure 5 Stock market transaction. Date of quotation: 10/27/2015
Source:http://www.bmv.com.mx/es/emisoras/estadisticas/FB-7807-7958

Variable	Descripción	Valor
P_a^M	Precio máximo	1721
P_i^M	Precio mínimo	1705.48
V	Variación	-0.240954
PPP	PPP	1709.89
MP_a^a	Max. Año anterior	1194.23
M_a^i	Min. Año anterior	716
A_c	Acción en circulación	2,248,896,000
Pu	Precio / Utilidad	0
P^{VL}	Precio / Valor libro	0
P^{Uh}	Precio ultimo hecho	1711.3
V_c	Volumen de compra	6000
V_V	Volumen de venta	6000
P_c	Postura de compra	1708.41
V^{La}	Valor libro por Acción	0
V_o	Volumen operado	9496
D_p	Tipo de cambio	16.686
D_l	Constante	1
P_V	Postura de venta	1715.29
IPC	Índice de Precios al consumidor	2.59
IPC_S	Índice de Precios al consumidor Sub	2.30
U_a	Utilidad / Acción	0
P_1	Partición	1706.75
P_2	Partición	1706.77
P_3	Partición	1706.77
P_4	Partición	1714.5
P_5	Partición	1715.29
P_6	Partición	1726.5
P_7	Partición	1730

Table 3 Record of the operation
Source:http://www.bmv.com.mx/es/emisoras/estadisticas/FB-7807-7958

Risk and Return Model (Levy)

CDO: Turnovsky modeling assumption.

Put:

$$P = \frac{[V_V - P_V]^{\frac{1}{2}}}{V_O - P^{Uh}} + \frac{3}{4}\left[\frac{(P^{VL})}{(P_u)}\right] \rightarrow \int_V^{U_a}$$

$$P = \frac{[6000 - 1715.29]^{1/2}}{7784.7} + \frac{3}{4}\left[\frac{(0)}{0)}\right] \rightarrow \int_0^0$$

$$P = \frac{[4284.71]^{1/2}}{7784.7} + \frac{3}{4}\left[\frac{(0)}{(0)}\right] \rightarrow \frac{ln(1)}{log(-1)}$$

$$P = \frac{65.457}{7784.7} + 0 \rightarrow 0$$

$$P = 0.0084$$

$$P = 0.84\%$$

Call:

$$C = \left[\frac{V_c - P_c}{\left[\frac{V_o}{P^{Uh}}\right]^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \int^{P_{VL}} - \left[\int^{P_u} + \int\right]_{n_{\alpha-1}}^{U^a + V^{La}} = \left[\frac{6000 - 1708.41}{\left[\frac{9496}{1711.3}\right]^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \int^0 - \left[\int^0 + \int\right]_{n_{\alpha-1}}^{0+0}$$

$$C = \left[\frac{4291.59}{\left[\frac{9496}{1711.3}\right]^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \frac{\ln 1}{log} - \left[\frac{\ln 1}{log} + \frac{ln}{log}\right]_{n-\frac{1}{1}}^{0}$$

$$C = \left[\frac{4291.59}{[5.548]^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \frac{\ln 1}{log} - \left[\frac{\ln 1}{log} + \frac{ln}{log}\right]_{n-\frac{1}{1}}^{0} = \left[\frac{4291.59}{2.355}\right]^{\frac{3}{4}} + \frac{\ln 1}{log} - \left[\frac{\ln 1}{log} + \frac{ln}{log}\right]_{n-\frac{1}{1}}^{0}$$

$$C = [1822.33]^{\frac{3}{4}} + \frac{\ln 1}{log} - \left[\frac{\ln 1}{log} + \frac{ln}{log}\right] + \frac{0}{\frac{1}{-1}} = 278.91 + 0 - 1$$

$$C = 2.44\ log$$

$$C = 0.38 * 100\ /100$$

$$C = 0.38\%$$

Market price:

$$PM = \frac{\partial\left[\frac{Pu + \partial P^{VL}}{P^{Uh}}\right] + \left(\frac{\partial P_V}{\partial P_C}\right)^{\frac{3}{4}} - \left(\frac{\partial v_{V-1}}{\partial v_{C+1}}\right)^{\frac{1}{2}}}{\int_{P_u}^{V_O}}$$

$$\frac{(-1)\left[\frac{0+(-1)(0)}{1711.3}\right] + \left(\frac{(-1)(1715.29)}{(-1)(1708.41)}\right)^{\frac{3}{4}} - \left(\frac{(-1)(-0.24)-1}{(-1)(1)+1}\right)^{\frac{1}{2}}}{\int_0^{9496}}$$

$$PM = \frac{(-1)\left[\frac{0+(1)}{1711.3}\right] + \left(\frac{(-1715.29)}{(-1708.41)}\right)^{\frac{3}{4}} - \left(\frac{(0.24)-1}{(-1)+1}\right)^{\frac{1}{2}}}{\int_0^{9496}} = \frac{(-1)\left[\frac{1}{1711.3}\right] + (1.00)^{\frac{3}{4}} - \left(\frac{-0.76}{0}\right)^{\frac{1}{2}}}{\int_0^{9496}}$$

$$PM = \frac{(-1)(0.000584) + (1.00) - (-1)^{\frac{1}{2}}}{\int_0^{9496}} = \frac{(-0.000584) + (1.00) - (-1)}{\frac{\ln 9496}{\log(0)}}$$

$$PM = \frac{\frac{0.900}{9.15}}{1} = \frac{0.900}{9.15}$$

$$PM = 0.098 * 100/100$$

$$PM = 0.098\%$$

Partitions:

$$P = \beta_0(1706.75_1) + \beta_1(1706.77) + \beta_2(1706.77) + \beta_3(1714.5) + \beta_4(1715.29) + \beta_5(1726.5) + \beta_6(1730) + \beta_{-\alpha}^{\xi}$$

Market shares:

$$AM = \left[\frac{P_a^M + P_l^M}{\left[\frac{PPP}{V}\right]^{1/2}}\right]^{3/4} + \left[\frac{MP_a^a + M_a^l}{A_c}\right] + \xi^2 = \left[\frac{P_a^M + P_l^M}{\left[\frac{PPP}{V}\right]^{1/2}}\right]^{3/4} + \left[\frac{MP_a^a + M_a^l}{A_c}\right] + 1$$

$$AM = \left[\frac{1721 + 1705.48}{\left[\frac{1709.89}{-0.2409}\right]^{1/2}}\right]^{3/4} + \left[\frac{1194.23 + 716}{2,248,896.000}\right] + 1 = \left[\frac{3426.48}{[-7097.92]^{1/2}}\right]^{3/4} + \left[\frac{1910.23}{2,248,896.000}\right] + 1$$

$$AM = \left[\frac{3426.48}{-84.24}\right]^{3/4} + 8.49\ x\ 10^{-07} + 1 = [-40.67]^{3/4} + (-1) + 1 = -16.10 - 1 + 0 =$$

AM = 17.10 log

AM = 1.2 *100 /100

AM= 1.2%

Exchange rate

$$TC = \frac{D_P - D_I}{1/2} = \frac{16.68 - 1}{1/2} = 31.36$$

Inflation

$$\pi = \frac{IPC_2^{\frac{3}{4}}}{IPC_2} = \left[\frac{2.59}{2.30}\right]^{\frac{3}{4}} = [1.12]^{\frac{3}{4}} = 1.09$$

Integration of the risk model (-) (MRI).

$$MRI = \frac{\left\{\left[\frac{P_a^M + P_l^M}{\left[\frac{PPP}{V}\right]^{1/2}}\right]^{3/4} + \left[\frac{MP_a^a + M_a^l}{A_c}\right] + \xi^2\right\}^{\frac{IPC_2}{IPC_2}^{3/4}}}{\left\{\left[\frac{V_V - P_V}{V_Q - PUh}\right]^{1/2} + \frac{3}{4}\left[\frac{PVL_L}{(P_U)}\right] \to \int_{VLa}^{U_p} \left[\left[\frac{V_c - P_c}{\left[\frac{V_Q}{PUh}\right]^{1/2}}\right]^{3/4} + \int^{PuL-} [P^u + \int]_{nc...}^{UQ} + VLa\right]\right\}^{\left(\frac{Dp - D_I}{1/2}\right)}} + \frac{\partial\left[\frac{Pu + \partial P^{VL}}{PUh}\right] + \left(\frac{\partial Pv}{\partial P_C}\right)^{3/4} - \left(\frac{\partial V_V - 1}{\partial V_C + 1}\right)^{1/2}}{\int_{P_u}^{P_0}} \int_{P_7}^{P_1}$$

$$MRE = \frac{\left\{\left[\frac{1721 + 1705.48}{\left[\frac{1709.89}{-0.24}\right]^{1/2}}\right]^{3/4} + \left[\frac{1194.23 + 716}{2,248,896.000}\right] + 1\right\}^{\frac{2.59}{2.30}^{3/4}}}{\left\{\left[\frac{6000 - 1715.29}{9496 - 1711.3}\right]^{1/2} + \frac{3}{4}[0] \to \int_{-0}^{0} \left[\left[\frac{6000 - 1708.41}{\left[\frac{9496}{1711.3}\right]^{1/2}}\right]^{3/4} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right]\right\}^{\left(\frac{16.68 - 1}{1/2}\right)}} + \frac{(-1)\left[\frac{0 + (-1)0}{1711.3}\right] + \left(\frac{(-1)1715.29}{(-1)1708.41}\right)^{3/4} - \left(\frac{(-1)6000 - 1}{(-1)6000 + 1}\right)^{1/2}}{\int_0^{9496}} \int_{P_7}^{P_1}$$

$$MRE = \frac{\left\{\left[\frac{3426.48}{[-7124.54]^{1/2}}\right]^{3/4} + \left[\frac{1910.23}{2,248,896.000}\right] + 1\right\}^{(1.12)^{3/4}}}{\left\{\left[\frac{[4284.71]^{1/2}}{7784.7} + \frac{3}{4}[0] \to \int_{0}^{0} \left[\left[\frac{4291.59}{[5.54]^{1/2}}\right]^{3/4} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right]\right\}^{\left(\frac{16.68}{1/2}\right)}} + \frac{(-1)\left[\frac{0}{1711.3}\right] + (1.004)^{3/4} - \left(\frac{-6001}{-5999}\right)^{1/2}}{\int_0^{9496}} \int_{1730}^{1706.75}$$

$$MRE = \frac{\left\{\left[\frac{3426.48}{-84.40}\right]^{3/4} + [0.00084] + 1\right\}^{1.08}}{\left\{\left[\frac{65.45}{7784.7} + \frac{3}{4}[0] \to \int_{0}^{0}\right]\right\}^{(31.36)}} + \frac{(-1)[0] + 1 - 1}{\int_0^{9496}} \int_{1730}^{1706.75}$$

$$MRE = \frac{-21.43}{\left\{\left[\frac{0.0084}{279.35}\right]^{31.64} + \frac{\ln(1)}{\log(1)}\right\}^{31.64}} + \frac{1}{\frac{\ln(9496)}{\log(1)}} \frac{\ln(1706.75)}{\log(1730)}$$

$$MRE = \frac{-21.43}{\left\{\left[\frac{0.0084}{279.35}\right]^{31.64} + \frac{\ln(1)}{\log(1)}\right\}^{31.64}} + \frac{-21.43}{8.47} + \frac{1}{\frac{\ln(9496)}{\log(1)}} \frac{\ln(1706.75)}{\log(1730)}$$

MRE = - 2.53 + $\frac{1}{\frac{\ln(9496)}{0}} \frac{\ln(1706.75)}{\log(1730)}$

MRE = -2.53 + $\frac{1}{\frac{9.15}{0}} \frac{7.44}{3.23}$

MRE = $-2.53 + 1\ (2.30)$

MRE = $-2.53 + 2.30$

MRE = -0.23 *100 /100

MRE = 0.23%

Integration of the risk vs. return (RRM) model.

$$MRR = \int_A^B + [(log\ C)^{\pi} - (ln\ D)^{TC}] + \left[\frac{log\ B}{ln\ A}\right]^{\frac{3}{4}} + [(log\ D)^{TC} - (ln\ C)^{\pi}] + \frac{ln\ A + log\ B}{C - D} + 1$$

MRR = 1 + 1

MRR = 2 Log

MRR = 0.30

MRR = 0.30*100/100

MRR= 0.3%

Company reliability analysis

The logarithm applied to the partitions is constant, which means that the company is financially solvent, it is determined solvent by its R_2= 0.0076 value, which is a value < 0.5.

Partition		Value	Log
P1 8:00 am	-	1706.75	3.23
P2 9:00 am	-	1706.77	3.23
P3 10:00 am	-	1706.77	3.23
P4 11:00 am	-	1714.5	3.23
P5 12:00 am	-	1715.29	3.23
P6 1:00 pm	-	1726.5	3.23
P7 2:00 pm	-	1730	3.23

Integration of the performance model (+) (MRE).

$$MRI = \frac{\left\{\left[\frac{P_a^M + P_l^M}{\left[\frac{PPP}{V}\right]^{1/2}}\right]^{3/4} + \left[\frac{MP_a^a + M_a^l}{A_c}\right] + \xi^2\right\}^{\frac{IPC_2}{IPC_2}^{3/4}}}{\left\{\left[\frac{V_V - P_V}{V_Q - PUh}\right]^{1/2} + \frac{3}{4}\left[\frac{PVL_L}{(P_U)}\right] \to \int_{VLa}^{U_p} \left[\left[\frac{V_c - P_c}{\left[\frac{V_Q}{PUh}\right]^{1/2}}\right]^{3/4} + \int^{PuL-} [P^u + \int]_{nc...}^{UQ} + VLa\right]\right\}^{\left(\frac{Dp - D_I}{1/2}\right)}} + \frac{\partial\left[\frac{Pu + \partial P^{VL}}{PUh}\right] + \left(\frac{\partial Pv}{\partial P_C}\right)^{3/4} - \left(\frac{\partial V_V - 1}{\partial V_C + 1}\right)^{1/2}}{\int_{P_u}^{P_0}} \int_{P_7}^{P_1}$$

$$MRI = \frac{\left\{\left[\frac{1721 + 1705.48}{\left[\frac{1709.89}{-0.24}\right]^{1/2}}\right]^{3/4} + \left[\frac{1194.23 + 716}{2,248,896.000}\right] + 1\right\}^{\frac{2.59}{2.30}^{3/4}}}{\left\{\left[\frac{6000 - 1715.29}{9496 - 1711.3}\right]^{1/2} + \frac{3}{4}[0] \to \int_{-0}^{0} \left[\left[\frac{6000 - 1708.41}{\left[\frac{9496}{1711.3}\right]^{1/2}}\right]^{3/4} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right]\right\}^{\left(\frac{16.68 - 1}{1/2}\right)}} + \frac{(-1)\left[\frac{0 + (-1)0}{1711.3}\right] + \left(\frac{(-1)1715.29}{(-1)1708.41}\right)^{3/4} - \left(\frac{(-1)6000 - 1}{(-1)6000 + 1}\right)^{1/2}}{\int_0^{9496}} \int_{P_7}^{P_1}$$

$$MRI = \frac{\left\{\left[\frac{3426.48}{[-7124.54]^{1/2}}\right]^{3/4} + \left[\frac{1910.23}{2,248,896.000}\right] + 1\right\}^{(1.12)^{3/4}}}{\left\{\left[\frac{[4284.71]^{1/2}}{7784.7} + \frac{3}{4}[0] \to \int_{0}^{0} \left[\left[\frac{4291.59}{[5.54]^{1/2}}\right]^{3/4} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right]\right\}^{\left(\frac{16.68}{1/2}\right)}} + \frac{(-1)\left[\frac{0}{1711.3}\right] + (1.004)^{3/4} - \left(\frac{-6001}{-5999}\right)^{1/2}}{\int_0^{9496}} \int_{1730}^{1706.75}$$

$$MRI = \frac{\left\{\left[\frac{2516.48}{-84.40}\right]^{3/4} + \left[\frac{1910.23}{2,248,896.000}\right] + 1\right\}^{(31.26) - (1.09)}}{\left\{\left[\frac{65.45}{7784.7} + \frac{3}{4}[0] \to \int_{0}^{0}\right]\right\}^{\left[\frac{4291.59}{2.355}\right]^{\frac{2}{4}}} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right\}} + \frac{\frac{41.21}{41.55}}{\frac{-1\left[\frac{0+0}{1711.3}\right] + (1.004)^{3/4} - \left(\frac{-6001}{-5999}\right)^{\frac{1}{2}}}{9.15}}$$

$$MRI = \frac{\left\{[-41.66]^{2/4} + [0.00084] + 1\right\}^{30.27}}{\left\{0.0084 + 0 \to \int_{0}^{0}\right\} - \left\{[1822.33]^{\frac{2}{4}} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right\}} + \frac{0.99}{\frac{-1[0] + 1.002 - 1}{0}}$$

$$MRI = \frac{\{-16.39 + 0.00084 + 1\}^{30.27}}{\left\{0.0084 + 0 \to \int_{0}^{0}\right\} - \left\{[1822.33]^{\frac{2}{4}} + \int^{0} - [\int^{0} + \int]_{n_{n-1}^{n+1}}^{0+0}\right\}} + \frac{0.99}{\frac{-1[0] + 1.002 - 0}{0}}$$

$$MRI = \frac{-8.49}{\left\{0.0084 + \frac{ln(1)}{log(1)}\right\} - \left\{278.91 + \frac{ln(1)}{log(-1)} - \left[\frac{ln(1)}{log(-1)} + \frac{ln}{log}\right] + \frac{0}{\frac{1}{-1}}\right\}} + 0$$

$$MRI = \frac{-8.49}{\{0.0084\} - \left\{278.91 + 0 - \left[0 + \frac{ln}{log}\right] + \frac{0}{-1}\right\}} + 0$$

$$MRI = \frac{-8.49}{\{0.0084\} - \{278.91 + 0 - [0 + 0] + 0\}} + 0$$

$$MRI = \frac{-8.49}{\{0.0084\} - \{278.91\}} + 0$$

$$MRI = \frac{-8.49}{-278.90}$$

MRI = 0.030*100/100

MRI = 0.030 % Riesgo = RI < 1

Variable	Value	Log
Maximum	1721	3.23
Minimum	1705.48	3.23
Max. Ant.	1194.23	3.07
Min. Ant.	716	2.85
VAR	-0.24	-0.61
PPP	1709.89	3.23
AC	2,248,896.00	6.35

Table 4

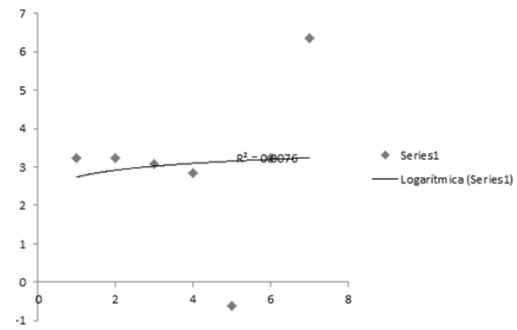

Figure 6
Source: Chart produced in Excel

Level of income and expenses of the company

The company's net income is at risk with negative income at -2.24% of its outstanding shares representing -$5,037,527.04 pesos.

Net income = 2,248,896.00 * (-2.24) = -$5,037,527.04 pesos

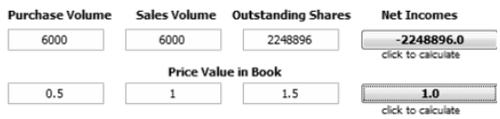

Figure 7
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Calculation of the days with stock/fork item

FB began operations on the BMV on October 02, 2012, by October 27, 2015, it has been in operation for 3 years and 25 days (36 months, 25 days).

Activity	Operativity	Time inicial	Time limit	Val-Book *Asset	Market-SIM
INICIO	0	36	36	.5	18
Proc A	1721	72	1793	1	72
Proc B	1705.48	108	1813.48	1.5	162
M 1*	2.52	144	25	2	288
Proc C	-0.24	180	179.76	2.5	450
M 2*	2.6	216	25	3	648
Proc D	1194.23	252	1446.23	3.5	882
Proc E	716	288	1004	4	1152
Final	0	324	324	4.5	1458
					2394
					1026

Figure 8
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Net Present Value

Input data

L = log (Ac) = log (2,248,896.00) = 6.35 Ac = 2,248,896.00

N = 1458

I = 2.59 non-core inflation

The capital is 5%, there is no continuity in the market, the graph shows problems due to its sawtooth shape.

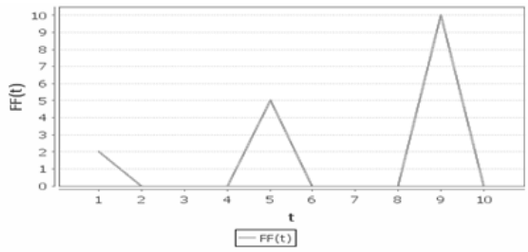

Figure 9 Net Present Value
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Internal Rate of Return (IRR)

The IRR is 1, the graph shows 2 cosines (loss) and 1 sine (gain), its absolute value is 1.

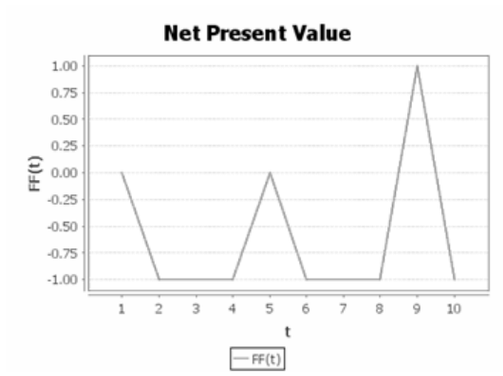

Figure 10
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Acquisition and subsidy

Input data:

Grace period = 1458 CETE = 3.02

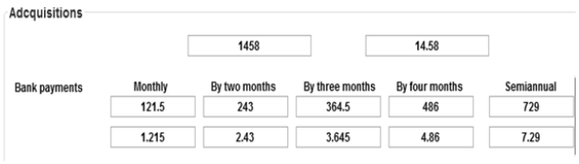

Figure 11 Procurement
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Deadline	Rate (%)
Monthly	1.2
Bimonthly	2.43
Quarterly	3.6
Quarterly	4.86
Semiannual	7.29

Table 5

Subsidies

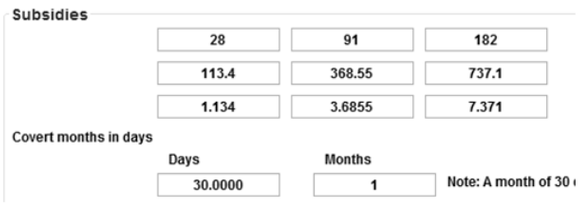

Figure 12
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Deadline	Rate (%)
28 days	1.13
91 days	3.6
182 days	7.3

Table 6

Financing

The maximum loan that can be granted to the company is 3 years.

Figure 13
Source: Software Consulting and Financial Management
ISBN: 978-607-00-6321-4

Conclusion

The mathematical models show us that the company is reliable and there is low risk of losing money if we decide to buy shares of it, we have found that the models give us certainty of decision making, this coupled with financial information such as income statements, balance sheet, etc., confirms that investing in FB is a safe gain, then with this information we can assume the answer to the question posed at the beginning of the article, if it is advisable to invest in FB.

But on the other hand the second hypothesis should not be discarded, although mathematics and accounting confirm that FB is a healthy low risk company this can change due to social phenomena and it is not far to think that a social network can be displaced by a new technology, in fact if we go back to the late 90's we have several cases of technologies that were leaders at the time and now do not exist or were bought by a new one, I assume that FB is asking itself these same questions and its business plan is focused on being the leading social network in the world, I hope this is reflected in better service and quality, which all of us who use the network will be grateful for.

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Wasserman, E., & Staton, T. AstraZeneca Launches' Take on Depression'Campaign Through Facebook® and TwitterTM.

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Article **Journal-International Economy**
December 2021, Vol.5 No.9 19-29

Analysis of America movil

Análisis de América móvil

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DOI: 10.35429/JIEC.2021.9.5.19.29 Received July 20, 2021; Accepted December 30, 2021

Abstract

America Movil is the leader in Latin America and one of the five largest in the world in terms of equity subscribers cellular company belonging to the telecommunications market remains a public stock corporation with variable capital. The commitment to the region, proximity to customers and the ability to take advantage of the opportunities that are presented will enable America Movil to continue to grow profitably. It has operations in eighteen countries in America and seven more in European countries. It has more than two 289 million cellular subscribers, over 34 million fixed lines, 2.5 million broadband accesses and more than 21 million TV subscribers.

America movil, Modelation, Risk

Resumen

América Móvil es el líder en América Latina y uno de los cinco mayores del mundo en términos de suscriptores de capital celular empresa perteneciente al mercado de las telecomunicaciones sigue siendo una sociedad anónima de capital variable. El compromiso con la región, la proximidad a los clientes y la capacidad de aprovechar las oportunidades que se presentan permitirán a América Móvil seguir creciendo de forma rentable. Tiene operaciones en dieciocho países de América y siete más en países europeos. Cuenta con más de dos 289 millones de suscriptores de telefonía celular, más de 34 millones de líneas fijas, 2,5 millones de accesos de banda ancha y más de 21 millones de suscriptores de televisión.

América móvil, Modelación, Riesgo

Citation: LÓPEZ, Aldo. Analysis of America movil. Journal-International Economy. 2021. 5-9:19-29.

† Researcher contributing first author.

Introduction

The objective of the article is to support the investment feasibility by means of risk and return models as well as by the reliability, net present value, internal rate of return, acquisition payment rates, government subsidy and financing frontier of América Móvil.

Brief history of the station in Mexico

América Móvil was created after the extinction of the assets of cellular telephony, cable television (Cablevisión) and other assets belonging to Teléfonos de México.

The company continues to be controlled by the same financial company Grupo Carso, which, although it becomes an independent company from Telmex and its parent company, continues to have the same shareholders. Registration and Maintenance

Registration and Maintenance

- At least 12% of the paid-in capital stock must be held in cash.
- Partially complies with the minimum of 100 investors, series AA does not apply.
- It is considered a holding company.

Modeling

COTIZACIONES SERIE L	Valor
Volumen de Venta (V_V)	55293
Postura de venta (P_V)	14.75
Volumen de Compra (V_c)	423530
Postura de Compra (P_c)	14.74
Precio Último Hecho (P^{Uh})	14.74
PPP	0
Precio Anterior	14.84
Variación (V)	0.67
Volumen Operado (V_O)	30740664
Máximo (P_a^M)	14.89
Mínimo (P_i^M)|	14.59
Último Año Anterior	N/A
Max. Año Anterior (MP_a^a)	17.51
Min. Año Anterior (MP_a^i)	12.43

INDICADORES SERIE L	Valor
Segundo trimestre del año	2/2015
Precio/ Utilidad (P_u)	26.17
Precio/Valor Libro (P^{VL})	7.59
Utilidad p/Acción(U_a)	0.56
Valor Libro p/Acción (V^{La})	1.95
Acciones de Circulación (A_c)	42,190,408,063
P1 (09:00)	14.84
P2 (10:00)	14.84
P3 (11:00)	14.6
P4 (12:00)	14.76
P5 (13:00)	14.8
P6 (14:00)	14.83
P7 (15:00)	14.74
D_0 (Tipo de cambio)	16.64
D_1 (Tipo de cambio)	1
IPC (Inflación no subyacente)	3.51
IPC_s (Inflación subyacente	2.30

Table 1 América Móvil Broadcaster Data
Source: (https://www.bmv.com.mx/es/emisoras/estadisticas/AMX-6024)

Put

$$P = \frac{[V_V - P_V]^{1/2}}{V_O \_ P^{Uh}} + \frac{3}{4}\left[\frac{(P^{VL})}{(P_u)}\right] \rightarrow \int_V^{U_a^L}$$

$$P = \frac{[55293 - 14.75]^{1/2}}{30740664 \_ 14.74} + \frac{3}{4}\left[\frac{(7.59)}{(26.17)}\right] \rightarrow \int_{1.95}^{0.56}$$

$$P = \frac{[55278.25]^{1/2}}{30740649.26} + \frac{3}{4}\left[\frac{0.29}{1}\right] \rightarrow \frac{\ln 0.56}{\log 1.95}$$

$$\mathbf{P} = .000007648 + 0.22(-2.0)$$

Of course, under Turnosky modeling.

$$P = -0.44 = \log|-44| = \frac{(1.64)(100)}{100}$$

$$P = 1.64\%$$

Call

$$\mathbf{C} = \left[\frac{V_c - P_c}{\left[\frac{V_O}{DUh}\right]^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \int^{P^{VL}} - \left[\int^{P_u} + \int\right]_{0c\cdots}^{U^a + V^{La}}$$

$$\mathbf{C} = \left[\frac{423530 - 14.74}{\left[\frac{1.95}{14.74}\right]^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \int^{7.59} - \left[\int^{26.17} + \int\right]_{0c\cdots}^{0.56 + 1.95}$$

$$\mathbf{C} = \left[\frac{42235.26}{0.36}\right]^{\frac{3}{4}} + \frac{\ln 7.59}{\log 0} - \left[\frac{\ln 26.17}{\log 0} + \frac{\ln}{\log}\right]_{n_{-1}}^{2.51}$$

$$\mathbf{C} = 6350.38 + 0 - \left[0 + \frac{ln}{log}\right]_{n_{-1}}^{2.51}$$

Of course, under Tumovsky modeling

$$\mathbf{C} = 6350.38 + 0 - 1 = \log 6349.38$$

$$\mathbf{C} = \ln(3.80) = \frac{(1.34)(100)}{100}$$

C = 1.34%

Market price

$$\mathbf{PM} = \frac{\partial\left[\frac{Pu + \partial p^{VL}}{p^{Uh}}\right] + \left(\frac{\partial P_V}{\partial P_C}\right)^{2/4} - \left(\frac{\partial V_V - 1}{\partial V_{C+1}}\right)^{1/2}}{\int_{P_{ii}}^{V_0}}$$

$$\mathbf{PM} = \frac{(-1)\left[\frac{26.17 + (-1)7.59}{14.74}\right] + \left(\frac{(-1)14.75}{(-1)14.74}\right)^{4/4} - \left(\frac{(-1)55294 - 1}{(-1)(-0.67) + 1}\right)^{4/4}}{\int_{0.67}^{0.67}}$$

$$\mathbf{PM} = \frac{(-1)\left[\frac{18.58}{14.74}\right] + \left(\frac{-14.75}{-14.74}\right)^{2/4} - \left(\frac{-55294}{1.67}\right)^{1/2}}{\frac{In\,1.95}{Log\ 26.17}}$$

$$\mathbf{PM} = \frac{-1.26 + 1 - 66220.36}{\frac{0.67}{1.42}}$$

$$\mathbf{PM} = \frac{-66220.62}{0.47}$$

Of course, under Tomvsky modeling

$$\mathbf{PM} = \log|-140894.94|$$

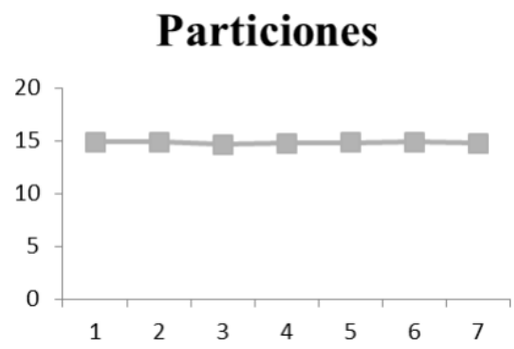
$$\mathbf{PM} = \ln(5.15)$$

$$\mathbf{PM} = \frac{(1.64)(100)}{100}$$

$$\underline{\mathbf{PM = 1.64\%}}$$

$$\mathbf{P} = \beta_0(P_1) + \beta_1(P_2) + \beta_2(P_3) + \beta_3(P_4) + \beta_4(P_5) + \beta_5(P_6) + \beta_6(P_7) + \beta^{\xi}_{-\infty}$$

$$\mathbf{P} = \beta_0(14.84) + \beta_1(14.84) + \beta_2(14.6) + \beta_3(14.76) + \beta_4(14.8) + \beta_5(14.83) + \beta_6(14.74) + \beta^{\xi}_{-\infty}$$



Graphic 1 América Móvil's Shareholdings
Source:
(https://www.bmv.com.mx/es/emisoras/perfil/AMX-6024
Oct 6,2015)

Market Actions

$$\mathbf{AM} = \left[\frac{p^M_a + p^M_1}{\left[\frac{ppp}{V}\right]^{1/2}}\right]^{3/4} + \left[\frac{MP^a_a + M^1_a}{A_c}\right] + \xi^2$$

$$\mathbf{AM} = \left[\frac{14.89 + 14.59}{\left[\frac{0}{-0.67}\right]^{1/2}}\right]^{3/4} + \left[\frac{17.51 + 12.43}{42,190,408,063}\right] + 1$$

$$\mathbf{AM} = \left[\frac{17.51 + 12.43}{42,190,408,063}\right] + 1$$

$$\mathbf{AM} = \left[\frac{29.94}{42,190,408,063}\right] + 1$$

$$\mathbf{AM} = \frac{(1)(100)}{100}$$

$$\underline{\mathbf{AM = 1\%}}$$

Exchange rate

$$\mathbf{TC} = \frac{D_p - D_I}{\frac{1}{2}}$$

$$\mathbf{TC} = \frac{16.64 - 1}{1/2}$$

$$\underline{\mathbf{TC = 31.28}}$$

Inflation

$$\pi = \frac{IPC^{3/4}}{IPC_i}$$

$$\pi = \left[\frac{3.51}{2.30}\right]^{3/4}$$

$$\underline{\pi = 1.38}$$

Risk model

$$\mathbf{MRI} = \frac{\left\{\left[\frac{p^M_a + p^M_1}{\left[\frac{ppp}{V}\right]^{1/2}}\right]^{2/4} + \left[\frac{MP^a_a + M^1_a}{A_c}\right] + \xi^2\right\}^{\left(\frac{D_0 - D_I}{1/2}\right) - \left(\frac{IPC^{3/4}}{IPC_i}\right)}}{\left\{\left[\frac{V_V - P_V]^{1/2}}{V_O - p^{Uh}} + \frac{\partial}{4}\left[\frac{(p^{VL})}{(P_u)}\right]\right\}\int_{VLa}^{U_a} - \left\{\left[\frac{V_c - P_c}{\left[\frac{V_c}{p^{Uh}}\right]^{1/2}}\right]^{2/4} + \beta^{Pu} - \left[\beta^{P_a} + \beta^{1}\right]_{\infty...}^{V_a} + V^{La}\right\}} + \frac{Lim\ P_1 \to P_7}{\frac{\partial\left[\frac{Pu + \partial p^{VL}}{p^{Uh}}\right] + \left(\frac{\partial P_V}{\partial P_C}\right) - \left(\frac{\partial V_V - 1}{\partial V_{C+1}}\right)^{1/2}}{\int_{P_u}^{V_0}}}$$

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MRI =

$$\frac{\left\{\left[\frac{14.89+14.59}{\left[\frac{0}{-0.67}\right]^{1/2}}\right]^{2/4}+\left[\frac{17.51+12.42}{42,190,408,062}\right]+1\right\}^{\left(\frac{16.64-1}{1/2}\right)-\left(\frac{2.22^{2/4}}{2.30}\right)}}{\left\{\frac{[55292-14.75]^{1/2}}{30740684-14.74}+\frac{3}{4}\left[\frac{(7.59)}{4(26.17)}\right]\rightarrow_{1.95}^{0.56}\right\}-\left\{\left[\frac{422320-14.75}{\left[\frac{30740004}{14.74}\right]^{1/2}}\right]^{2/4}+\int^{7.59}-\left[\int^{14.75}+f\right]_{\infty-}^{V_{a+}1.95}\right\}}+\frac{Lim\ 14.84\ \_\ 14.74}{\frac{-1\left[26.17+7.59\right]}{14.74}+\left(\frac{14.75}{14.74}\right)-\left(\frac{55292-1}{422822.1}\right)^{1/2}}{\frac{30740004}{26.17}}$$

MRI =

$$\frac{\left\{\left[\frac{29.48}{\left[\frac{0}{-0.67}\right]^{1/2}}\right]^{2/4}+\left[\frac{29.94}{42,190,408,062}\right]+1\right\}^{7.82-\left(1.22^{2/4}\right)}}{\left\{\frac{[55278.25]^{1/2}}{30740849.26}+\frac{3}{4}\left[\frac{(7.59)}{4(26.17)}\right]\rightarrow_{1.95}^{0.56}\right\}-\left\{\left[\frac{422515.26}{[2000000.73]^{1/2}}\right]^{2/4}+\int^{7.59}-\left[\int^{14.75}+f\right]_{\infty-}^{V_{a+}1.95}\right\}}+\frac{Lim\ 14.84\ \_\ 14.74}{\frac{-1\left[2.29\right]+(1)-\left(\frac{55292}{422822.1}\right)^{1/2}}{\frac{30740004}{26.17}}}$$

MRI =

$$\frac{\{[0]^{2/4}+[.00000000070]+1\}^{(7.82)-(1.26)}}{\left\{\frac{[235.11]^{1/2}}{30740849.26}+\frac{3}{4}[0.29]\rightarrow_{1.95}^{0.56}\right\}-\left\{\left[\frac{422515.26}{1444.12}\right]^{2/4}+\int^{7.59}-\left[\int^{14.75}+f\right]_{\infty-}^{V_{a}}\right.}+\frac{Lim\ 14.84\ \_\ 14.74}{\frac{-1[2.29]+(1)-(1.26)^{1/2}}{\frac{30740004}{26.17}}}$$

MRI =

$$\frac{\{[1.0000000007 0]+1\}^{(6.46)}}{\{.00000076+.21-1.99\}-\{70.86\}}+\frac{1}{\frac{-1.29-1.14}{10.25}}$$

$$\mathbf{MRI}=\frac{88.03}{-70.64}+-4.34$$

$$\mathbf{MRI}=1.24+-4.34=-5.58$$

$$\mathbf{MRI}=1.24+-4.34=-5.58$$

Of course, under Turnovsky modeling.

$$\mathbf{MRI}=\log|-5.58|$$

$$\mathbf{MRI}=\frac{(0.74)(100)}{100}$$

MRI = 0.74%

Performance Model

MRE=

$$\frac{\left\{\left[\frac{p_a^M+p_1^M}{\left[\frac{ppp}{V}\right]^{1/2}}\right]^{2/4}+\left[\frac{MP_a^a+M_a^1}{A_c}\right]+\S^2\right\}^{\frac{D_0-D_1}{1/2}}}{\left\{\frac{[V_V-p_V]^{1/2}}{V_{Ch}-p^{Uh}}+\frac{3}{4}\left[\frac{(p^{VL})}{(p_u)}\right]\rightarrow_{V^{La}}^{U_a}\right.}+\left\{\left[\frac{V_c-p_c}{\left[\frac{V_a}{p^{Uh}}\right]^{1/2}}\right]^{2/4}+\int^{p_u}-\left[\int^{p_u}+f\right]_{\infty-}^{V_a}+V^{La}\right\}^{\left(\frac{D_0-D_1}{1/2}\right)}$$

$$\frac{\partial\left[\frac{p_u+\partial p^{VL}}{p^{Uh}}\right]+\left(\frac{\partial p_V}{\partial p_C}\right)-\left(\frac{\partial V_V-1}{\partial V_C+1}\right)^{1/2}}{\int_{p_u}^{V_a}}\quad\int_{P_7}^{P_1}\square$$

MRE=

$$\frac{\left\{\left[\frac{14.89+14.59}{\left[\frac{0}{-0.67}\right]^{1/2}}\right]^{2/4}+\left[\frac{17.51+14.59}{42190408062}\right]+\S^2\right\}^{\frac{16.64-1}{1/2}}}{\left\{\frac{[55292-14.75]^{1/2}}{30740684-14.74}+\frac{3}{4}\left[\frac{7.59}{(26.17)}\right]\rightarrow_{1.95}^{0.56}\right\}^{\left(\frac{16.64-1}{1/2}\right)}}{\left\{\left[\frac{422320-14.74}{\left[\frac{30740684}{14.74}\right]^{1/2}}\right]^{2/4}+\int^{7.59}-\left[\int^{26.17}+f\right]_{\infty-}^{V_a+1.95}\right\}}$$

$$+\frac{\partial\left[\frac{26.17+7.59}{14.74}\right]+\left(\frac{\partial 14.75}{\partial 14.74}\right)-\left(\frac{55292-1}{-0.67+1}\right)^{1/2}}{\int_{14.75}^{1.95}}\quad\int_{14.74}^{14.84}\square$$

MRE=

$$\frac{\left\{\left[\frac{14.89+14.59}{\left[\frac{0}{-0.67}\right]^{1/2}}\right]^{2/4}+\left[\frac{17.51+14.59}{42190408062}\right]+1\right\}^{\frac{16.64-1}{1/2}}}{\left\{\frac{[55292-14.75]^{1/2}}{30740684-14.74}+\frac{3}{4}\left[\frac{7.59}{(26.17)}\right]\rightarrow_{1.95}^{0.56}\right\}^{\left(\frac{16.64-1}{1/2}\right)}}{\left\{\left[\frac{422320-14.74}{\left[\frac{30740684}{14.74}\right]^{1/2}}\right]^{2/4}+\int^{7.59}-\left[\int^{26.17}+f\right]_{\infty-}^{V_a+1.95}\right\}}$$

$$+\frac{(-1)\left[\frac{26.17+7.59}{14.74}\right]+\left(\frac{14.75}{14.74}\right)-\left(\frac{55292-1}{-0.67+1}\right)^{1/2}}{\int_{14.75}^{1.95}}\left(\frac{\ln 14.84}{log\ 14.74}\right)$$

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$$MRE = \frac{[0+[1]+1)^{21.28}}{\left\{\frac{\left[\frac{[222.83.25]^{1/2}}{2074.06.29.26}+\frac{3}{4}[0.29]\frac{\ln 0.96}{\log 1.92}\right]^{3/4}}{\left[\frac{42222.0-14.74}{[\frac{2074.06.64}{14.74}]^{1/2}}\right]}+\frac{\ln 7.29}{\log 6}\right\}^{21.28}} + \frac{(-1)[2.29]+(1)-\left(\frac{22297}{0.22}\right)^{\frac{1}{16}}}{\frac{\ln 1.92}{\log 14.72}}\left(\frac{2.70}{1.17}\right)$$

$$MRE = \frac{9.71}{\left\{0+\frac{3}{4}[0.29](-2)\right\}^{21.28}} + \frac{(-1)[2.29]+(1)-409.35}{0.57}\left(\frac{2.70}{1.17}\right)$$

$$MRE = \frac{9.71}{-1} + \frac{-410.64}{0.57}\left(\frac{2.70}{1.17}\right)$$

$$MRE = -9.71 + -1662.51$$

Of course, under Turnovsky modeling

$$MRE = \log|1652.80| = 3.22$$

$$MRE = \ln(3.22) = 1.17$$

$$MRE = \frac{(1.17)(100)}{100}$$

$$\underline{MRE = 1.17\%}$$

Risk-Return Model

$$MRR = \int_A^B + \frac{(\lim C)^{\pi}}{(\lim D)^{TC}} + \left[\frac{\log B}{\ln A}\right]^{3/4} + \frac{(\lim D)^{TC}}{(\lim C)^{\pi}} + \frac{\ln A + \log B}{C-D} + \S^2$$

Variable	Valor
A	1.24
B	-9.71
C	-4.34
D	-1662.51
π	1.38
TC	31.28

Table 2 Risk-Return Model Data

$$MRR = \int_{1.24}^{(-9.71)} + [(log(-4.34))^{1.38} - (ln(1662.51)^{21.28}] + \left[\frac{\log -9.71}{\ln 1.24}\right]_i^* + [(log-1662.51)^{21.28} - (ln-4.34)^{1.38}] + \frac{\ln 1.24 \mp 9.71}{-4.34-(-1662.51)} + 1$$

$$MRE = \frac{\ln -9.71}{\log 1.24} + \left[(0.64)^{1.38} - (7.42)^{21.28}\right] + [4.59]_i^* + [(3.22)^{21.28} - (1.47)^{1.38}] + \frac{2.14}{1658.17} + 1$$

$$MRE = -24.33 + [0.54 - 716.02] + 3.14 + 1 - 1.70] + 0 + 1$$

$$MRE = 743.25$$

Of course, under Turnovsky modeling.

$$MRE = \log(743.25) = 2.87$$

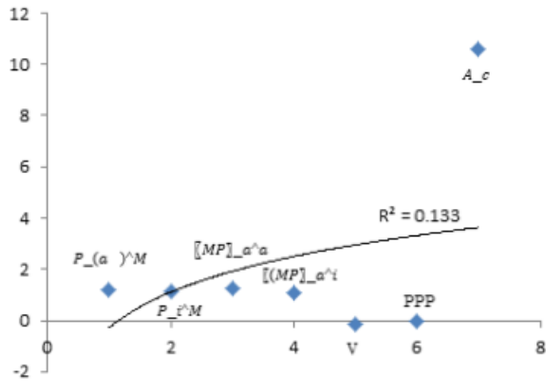
$$MRE = \ln(2.87)$$

$$MRE = \frac{(1.05)(100)}{100}$$

$$MRR = 1.05\%$$

Mercado		
MAXIMO	1.172895	14.89
MINIMO	1.164055	14.59
MAX ANT	1.243286	17.51
MIN ANT	1.094471	12.43
VAR	-0.17393	0.67
PPP	0	0
A.C.	10.62521	42,190,408,063

Table 3 Table of data to obtain the reliability, the value in the second column is obtained from the result of the logarithm of the value in the third column



Graphic 2 Reliability graph comparing variable against values in Table 3

Conclusion: Financially reliable company since $R^2 < 0.5$

Income level

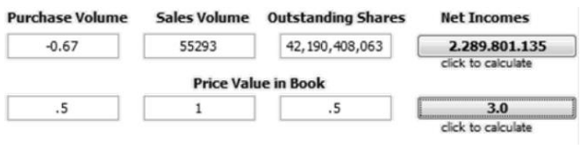


Figure 1

Net Income = 42, 190, 408,063 * (2.28)

Net Income = $96, 194, 130,383.64

Days with stock/holding item

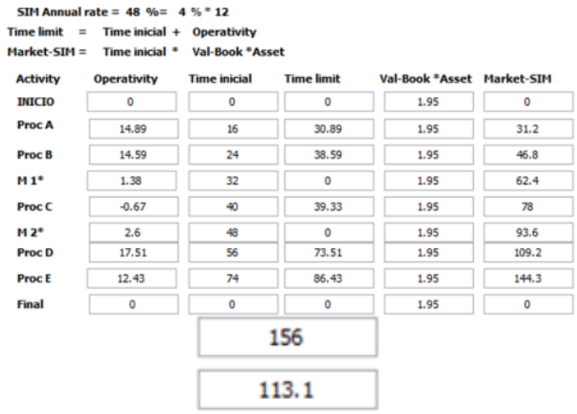


Figure 2

145 days with stock market start.

220 days (365 -145) with a fork heading equivalent to 7.33 months.

Net present value

Variable	Valor
Tasa de inflación (i)	3.51
Logaritmo de Acciones en circulación (I)	10.63
Periodo de gracia (n)	220

Table 4 Data to obtain Net Present Value
Source: http://www.bancodemexico.gob.mx/portal-inflacion/index.html

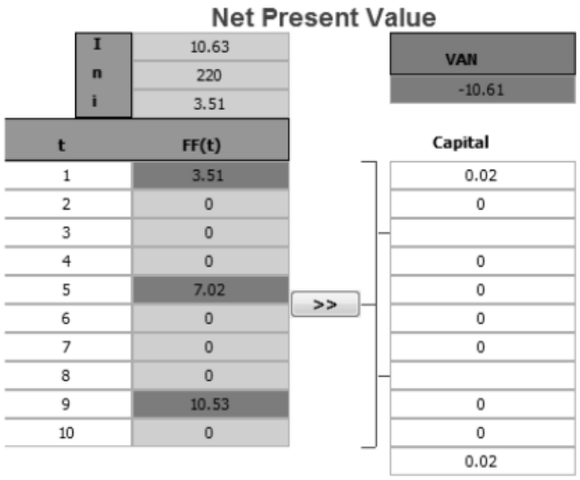
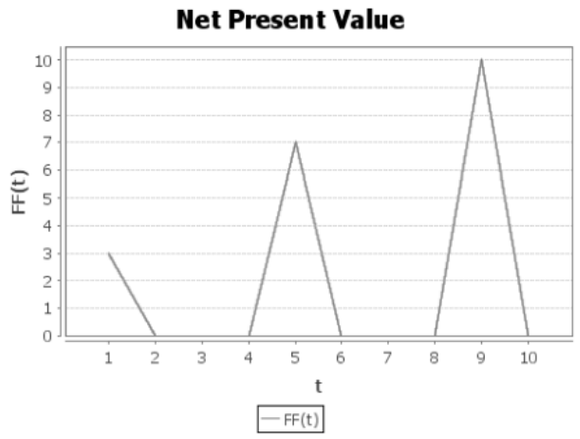


Figure 3 Valor Presente Neto (Software de Consultoría y Gestión Financiera)



Graphic 3 Net present value graph with financial problems as it presents the trend

Conclusion: Capital is equal to 2%, in the graph we observe that América Móvil presents financial problems since it shows the trend of gaps.

Internal Rate of Return

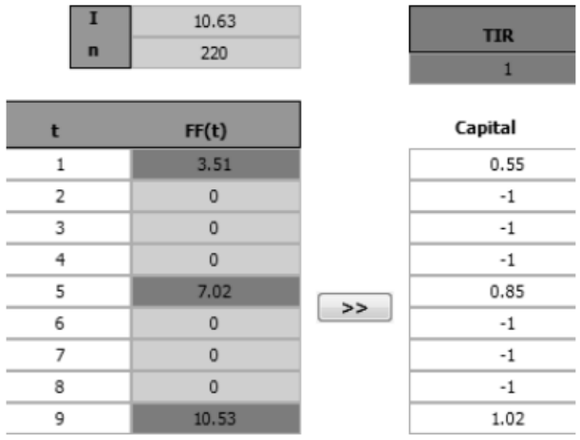


Figure 4 Internal Rate of Return (Consulting and Financial Management Software)

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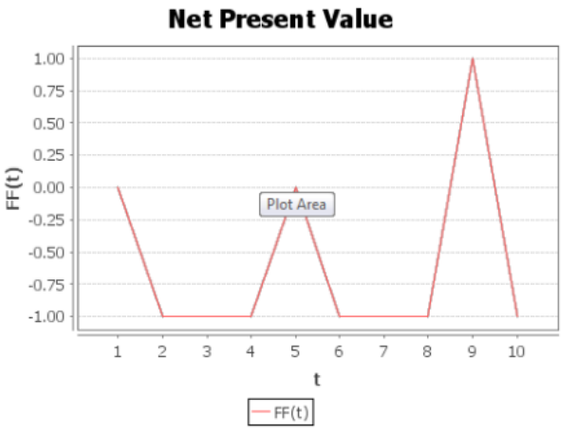

Graphic 4 Graph of the internal rate of return with trend of two sines and one cosine

Conclusion:

- The Internal Rate of Return is equal to 1.
- One year is required to have 10.63.

Acquisition payment rate

Variable	Valor
Periodo de gracia	7.33
CETES	3.02

Table 5 Data to obtain the payment per acquisition)
Source: http://www.bancodemexico.gob.mx/portal-mercado-valores/index.html

Figure 5 Pay-per-acquisition rate (Consulting and Financial Management Software)

Plazo	Tasa
Mensual	0.61%
Bimestral	1.22%
Trimestral	1.83%
Cuatrimestral	2.44%
Semestral	3.67%

Table 6 Results obtained through the software showing the term in months as well as its rate in percentage.

Government subsidy

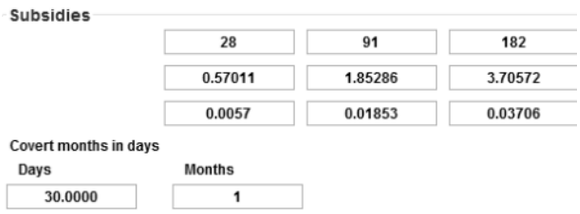

Figure 6 Government Grant (Consulting and Financial Management Software)

Plazo (días)	Tasa
28	0.57%
91	1.8%
182	3.7%

Table 7 Results obtained through the software showing the term in days as well as its rate in percentages

Funding frontier

Figure 7 Financing frontier (Consulting and Financial Management Software)

Conclusion:

- The maximum loan term may be three years.

Annex A Directory

América Móvil

- Daniel Hajj Aboumrad» Chief Executive Officer
- Carlos García Moreno Elizondo» Chief Financial Officer
- Alejandro Cantú Jiménez» General Counsel

México

- Patricia Raquel Hevia Coto» Director of Operations
- Salvador Cortés Gómez» Chief Operating Officer
- Fernando Ocampo Carapia» Chief Financial Officer

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Central America

- Juan Antonio Aguilar» Chief Executive Officer
- Enrique Luna Roshard» Chief Financial Officer

Colombia

- Juan Carlos Archila Cabal» Chief Executive Officer
- Fernando González Apango» Chief Financial Officer

Ecuador

- Alfredo Escobar San Lucas» Chief Executive Officer
- Marco Antonio Campos García» Chief Financial Officer

Perú

- Humberto Chávez López» Chief Executive Officer
- Carlos Solano» Chief Financial Officer

Brazil

- José Antônio Guaraldi Félix» Chairman
- José Formoso Martínez» General Manager - Business Market Unit
- Daniel Feldmann Barros» General Manager - Residential Market Unit
- Carlos Hernán Zenteno de los Santos» General Manager - Personal Market Unit
- Roberto Catalão» Chief Financial Officer

Chile

- Mauricio Escobedo Vázquez» Chief Executive Officer
- Alfonso Lara López» Chief Financial Officer

Argentina, Uruguay and Paraguay

- Julio Carlos Porras» Chief Executive Officer
- Daniel De Marco» Chief Financial Officer

Dominican Republic

- Oscar Peña Chacón» Chief Executive Officer
- Francisco Marmolejo Alcántara» Chief Financial Officer

Puerto Rico

- Enrique Ortiz de Montellano Rangel» Chief Executive Officer
- Ana Betancourt» Chief Financial Officer

Panamá

- Oscar Borda» Chief Executive Officer
- Abraham Hernández» Chief Financial Officer

United States

- F.J. Pollak» Chief Executive Officer

Annex B Board of Directors

Carlos Slim Domit Chairman of the Board of Directors

Date of Birth: 1967

Principal Occupation: Chairman of the Board of Directors of Telmex.

Patrick Slim Domit Vice Chairman of the Board of Directors

Date of Birth: 1969

Principal Occupation: Vice Chairman of the Board of Directors of América Móvil.

Daniel Hajj Aboumrad Director

Date of Birth: 1966

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Principal Occupation: Chief Executive Officer of América Móvil.

Carlos Slim Helú Director

Date of Birth: 1940

Principal Occupation: Chairman of the Boards of Minera Frisco, S.A.B. de C.V. and Carso Infraestructura y Construcción. C.V. and Carso Infraestructura y Construcción; director of Impulsora del Desarrollo y el Empleo en América Latina, S.A.B. de C.V., Grupo Sanborns, S.A.B. de C.V. and Inmuebles Carso, S.A.B. de C.V.

Luis Alejandro Soberón Kuri

Date of Birth: 1960

Principal Occupation: Chairman of the Board of Directors, Chief Executive Officer and Chief Executive Officer of Corporación Interamericana de Entretenimiento, S.A.B. de C.V.

Carlos Bremer Gutiérrez

Date of Birth: 1960

Principal Occupation: Chief Executive Officer of Value Grupo Financiero, S.A.B. de C.V. and Valúe, S.A. de C.V., Casa de Bolsa.

Juan Antonio Perez Simón

Date of Birth: 1941

Principal Occupation: Chairman of the Board of Directors and member of the Executive Committee of Sanborn Hermanos, S.A. de C.V.

Ernesto Vega Velasco

Date of Birth: 1937

Principal Occupation: Retired. Member of the Board of Directors and the audit and corporate practices, planning and finance, and evaluation and compensation committees of several companies.

Rafael Moisés Kalach Mizrahi

Date of Birth: 1946

Principal Occupation: Chairman of the Board of Directors and Chief Executive Officer of Grupo Kaltex, S.A. de C.V.

Antonio Cosío Pando

Date of Birth: 1968

Principal Occupation: Chief Executive Officer of Grupo Hotelero Las Brisas and Chief Executive Officer of Compañía Industrial Tepeji del Río, S.A. de C.V.

Arturo Elías Ayub

Date of Birth: 1966

Principal Occupation: Director of Strategic Alliances, Institutional Communications, Telmex, and Relation General Director of Fundación Telmex.

Oscar Von Hauske Solís

Date of Birth: 1957

Principal Occupation: General Manager of Fixed Operations of América Móvil.

Louis C. Camilleri

Date of Birth: 1955

Principal Occupation: Chief Executive Officer of Philip Morris International.

Pablo Roberto González Guajardo

Date of Birth: 1967

Principal Occupation : Chief Executive Officer of Kimberly Clark de México, S.A.B. de C.V.

David Ibarra Muñoz

Date of Birth: 1930

Principal Occupation: Retired Mr. Alejandro Cantú Jiménez, who is the Company's General Counsel, is the Secretary of the Board of Directors and Mr. Rafael Robles Miaja is its Assistant Secretary.

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Annex C Major Shareholders

Serie	Número de acciones (millones)	Porcentaje del capital	% del Total de acciones Series AA (*) y A
Serie L	44.120	64.4%	-
Serie AA	23.384	34.6%	97.3%
Serie A	641	1.0%	2.7%
TOTAL	67.526	100%	100%

Table 8 Capital stock structure of the Company as of March 31, 2015
Source:http://www.americamovil.com.mx/amx/es/cm/about/struct

According to the shareholding reports filed with the SEC, the Slim Family may be deemed to exercise control of the Company through its rights as trustee of a trust whose assets are comprised of Series "AA" and Series "L" shares (the "Family Trust"); direct holdings of shares of Inmobiliaria Carso and Grupo Financiero Inbursa; and direct holdings of shares of Inmobiliaria Carso and Grupo Financiero Inbursa (the "Family Trust").

L‖ (the -Family Trust‖); the holding of shares of Inmobiliaria Carso and Grupo Financiero Inbursa; and the direct holding of shares of the Company.

Series L shares: Limited voting rights. May be acquired by domestic or foreign investors.

Series AA shares: Non-tradable Telmex shares held in trust.

Series A shares: Ordinary shares are reserved for Mexican shareholders and can only be acquired by foreigners through neutral investors or ADRs (American Depositary Receipts).

The following table identifies each of the persons who as of March 31, 2015 owned more than 5.0% of the shares of any series of the Company's capital stock. Except as indicated in such table and in the respective notes, to the best of the Company's knowledge, no other person owns more than 5% of the shares representing its capital stock. The following figures do not include the Series -L‖ Shares that would be owned by the respective shareholder if he were to exchange his Series -AA‖ or Series -A‖ Shares for Series

L‖ in accordance with the provisions of the Company's bylaws. ‖

1. The Family Trust holds Series -AA‖ Shares and Series -L‖ Shares for the benefit of members of the Slim Family. In addition to the shares beneficially owned by the Family Trust, certain members of the Slim Family, including Mr. Carlos Slim Helú, directly own a total of 3,558 million Series -AA‖ Shares and 9,570 million Series -L‖ Shares, equivalent to 15.2% and 22.0% of such series, respectively.According to the share ownership reports filed with the SEC, except for Mr. Carlos Slim Helú, no member of the Slim Family individually owns more than 5% of the shares of any series of the Company's capital stock.

2. Includes shares owned by Inmobiliaria Carso's subsidiaries. According to the shareholding reports filed with the SEC, Inmobiliaria Carso can be considered as a subsidiary of Inmobiliaria Carso.

3. According to the shareholding reports filed with the SEC. Inmobiliaria Carso can be considered to be indirectly controlled by the Slim Family.

4. U.S. financial institution considered one of the largest asset management companies in the world.

Acciones	Acciones Serie AA.- Acciones detentadas (millones)
Fideicomiso Familiar (2)	10.894
Inmobiliaria Carso (3)	7.132
Carlos Slim Helu (2)	1.879
Acciones	Acciones Serie L.- Acciones detentadas (millones)
Fideicomiso Familiar (2)	5.998
Inmobiliaria Carso (3)	3.072
BlackRock (4)	2.560

Table 9 Owners of more than 5.0% of the shares of any series of América Móvil's capital stock
Source: http: //www.americamovil.com.mx/amx/es/cm/about/struct

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Article **Journal-International Economy**
December 2021, Vol.5 No.9 30-34

Financial analysis Axtel

Análisis financiero Axtel

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DOI: 10.35429/JIEC.2021.9.5.30.34 Received July 25, 2021; Accepted December 30, 2021

Abstract

Currently, telecommunications are some of the most important sectors for any country, they contribute to economic and social development, and g the quality of life of the population, also in a commercial context, they offers a greater range of opportunities for businesses. Telecommunications became an important factor, the volume of people connecting to the Internet is increasing. Businesses are more dynamic every day, companies are changing the way we do business using the latest advances in technology, smartphones, tablets, together with the internet service have enabled communication with customers in the worldwide. The accelerated growth of telecommunications has helped to attract investment in this sector; for this reason, the goal of this paper is explaining an analysis of the financial and investment situation of the company Axtel (mexican company), as purpose to know the situation on the market. This analysis was done under risk model and performance model.

Axtel, Telecommunications, Internet, Risk model, Performance model

Resumen

Actualmente, las telecomunicaciones son uno de los sectores más importantes para cualquier país, contribuyen al desarrollo económico y social, y g la calidad de vida de la población, también en un contexto comercial, ofrecen un mayor abanico de oportunidades para las empresas. Las telecomunicaciones se han convertido en un factor importante, el volumen de personas que se conectan a Internet es cada vez mayor. Los negocios son cada día más dinámicos, las empresas están cambiando la forma de hacer negocios utilizando los últimos avances en tecnología, los teléfonos inteligentes, las tabletas, junto con el servicio de Internet han permitido la comunicación con los clientes en el mundo. El crecimiento acelerado de las telecomunicaciones ha ayudado a atraer inversiones en este sector; por esta razón, el objetivo de este trabajo es explicar un análisis de la situación financiera y de inversión de la empresa Axtel (empresa mexicana), como propósito de conocer la situación en el mercado. Este análisis se realizó bajo el modelo de riesgo y el modelo de desempeño.

Axtel, Telecomunicaciones, Internet, Modelo de riesgo, Modelo de rendimiento

Citation: RAMOS, Gerardo. Financial analysis Axtel. Journal - International Economy. 2021. 5-9:30-34.

† Researcher contributing first author.

Introduction

BMV maintenance requirements

Axtel complies with the requirements for maintaining securities registration. A minimum of 100 shareholders, 12% of capital, Bursátil.

Figure 1 BMV maintenance requirements

BMV trading data

Trading data obtained from the Mexican Stock Exchange corresponds to October 9, 2015.

Cotizaciones	
Volumen de Venta	1966
Postura de Venta	7.57
Volumen de Compra	100000
Postura de Compra	7.56
Precio último hecho	7.57
PPP	7.58
Precio anterior	7.53
Variación	0.664011
Volumen Operado	1443213
Máximo	7.64
Mínimo	7.52
Último Año Ant	N/A
Max Año Anterior	5.43
Min Año Anterior	3.18

Table 1 BMV Listing Data

Indicadores	
Segundo Trimestre del año	2/2015
Precio/Utilidad	-5.44817
Precio/Valor Libro	1.849734
Utilidad p/Acción	-1.391293
Valor Libro p/Acción	4.097887
Acciones de Circulación	1,303,223,345

Table 2 Indicators on the BMV

Variables adicionales	
Inflación	1.18
Tipo de cambio	30.86

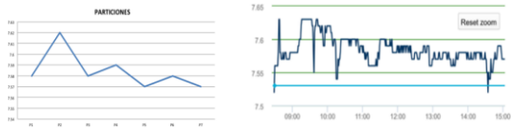
Table 3 Calculation of Inflation and CT

Bursatility

AXTEL's performance on the BMV was constant, based on the values reached in the seven daily splits.

Particiones	Valores	Log
P1	7.58	0.88
P2	7.62	0.88
P3	7.58	0.88
P4	7.59	0.88
P5	7.57	0.88
P6	7.58	0.88
P7	7.57	0.88

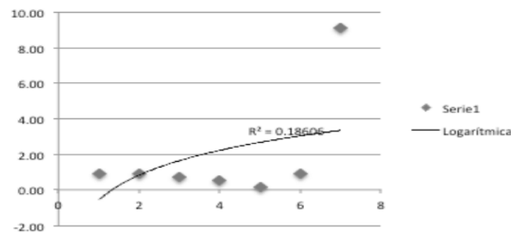
Table 4 BMV shares on October 9.



Graphic 1 Paritions' behavior on October 9

Variables	Valores	Log
Máximo	7.64	0.88
Mínimo	7.52	0.88
Max. Año Anterior	5.43	0.73
Min. Año Anterior	3.18	0.50
Variación	0.66	0.18
PPP	7.58	0.88
Acciones en Circulación	1,303,223,345	9.12

Table 5 Quotation variables



Graphic 2 Reliability of the company

Risk and return variables

Modeling under S. Turnovsky

Integral:

$$\int_{\lim -1}^{\lim 1} = \int \frac{\lim 1}{\lim -1} = \left[\frac{1(-1)}{lim}\right]^2 = \frac{0^2}{lim} = \sqrt{lim} = 0 = 0 \rightarrow = \propto$$

$$\int_{\lim -1}^{\lim 1} = 1$$

Differential:

$$\frac{d}{dx}.\frac{d}{dy}.\frac{d}{dz} = \frac{\mathrm{d}(x.y.z)}{\mathrm{dxyz2}a} \therefore \frac{dx+dy+dz}{dx} + \frac{dx+dy+dz}{dy} + \frac{dx+dy+dz}{dz} \therefore \frac{d}{x.y.z}$$

$$\frac{d}{dx}.\frac{d}{dy}.\frac{d}{dz} = -1$$

Partial:

$$\partial \to \frac{\partial y}{z} = \frac{\partial_y^*}{dz} = \frac{\partial'}{dy} \cdot \frac{\partial^*}{dz} = \left[\frac{\partial}{y.z}\right]^2 = \frac{\sqrt{\partial}}{y.z} = 0.5 \therefore \frac{1}{2}$$

$$\partial \to \frac{\partial y}{z} = \frac{1}{2}$$

Modeling

Put

$$P = \frac{[V_V - P_V]^{1/2}}{V_O - P^{Uh}} + \frac{3}{4}\left[\frac{(P^{VL})}{(P_u)}\right] \to \int_V^{U_a} La$$

$$P = \frac{[1966 - 7.57]^{1/2}}{1443213 - 7.57} + \frac{3}{4}\left[\frac{(1.84)}{(-5.44)}\right] \to \int_{4.09}^{1.39}$$

$$P = \frac{[1958.43]^{1/2}}{[1443205.43]} + \frac{3}{4}[-0.34] \to \int_{4.09}^{1.39}$$

$$P = \frac{44.25}{1443205.43} + \frac{3}{4}[-0.34](1.63)$$

$$P = -0.42 = (-0.42)(-1) = 0.42$$

$$P = 0.42\ \%$$

The issuer has a trading bias in favor by 0.42, therefore the transaction is acceptable in stock market terms for the capital market.

Call

$$C = \left[\frac{V_c - P_c}{\left|\frac{V_O}{P^{Uh}}\right|^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \int^{P^{VL}} - \left[\int^{P_u} + \int\right]_{\propto \ldots}^{U^a + V^{La}}$$

$$C = \left[\frac{100000 - 7.56}{\left|\frac{1443213}{7.57}\right|^{\frac{1}{2}}}\right]^{\frac{3}{4}} + \int^{1.84} - \left[\int^{-5.44} + \int\right]_{\propto \ldots}^{-1.39 + 4.09}$$

Applying Turnovsky's assumption

$$C = [229.01]^{\frac{3}{4}} + 1$$

$$C = 57.49$$

Market shares

$$AM = \left[\frac{P_a^M + P_i^M}{\left[\frac{PPP}{V}\right]^{1/2}}\right]^{3/4} + \left[\frac{MP_a^a + M_a^i}{A_c}\right] + \xi^2$$

$$AM = \left[\frac{7.64 + 7.52}{\left[\frac{7.58}{.66}\right]^{1/2}}\right]^{3/4} + \left[\frac{5.43 + 3.18}{1303223345}\right] + .75^2$$

$$AM = \left[\frac{15.16}{[11.42]^{1/2}}\right]^{3/4} + \left[\frac{8.61}{1302223345}\right] + .75^2$$

$$AM = -0.38 + 0 + .056$$

$$AM = .18$$

Market shares are below the standard, which corresponds to 0.3 cents.

Market price

$$PM = \frac{\partial\left[\frac{Pu + \partial P^{VL}}{P^{Uh}}\right] + \left(\frac{\partial P_V}{\partial P_C}\right)^{3/4} - \left(\frac{\partial V_V - 1}{\partial V_C + 1}\right)^{1/2}}{\int_{P_u}^{V_O}}$$

$$PM = \frac{-1\left[\frac{-5.44 + (-1)(1.84)}{7.57}\right] + \left(\frac{(-1)(7.57)}{(-1)(7.56)}\right)^{3/4} - \left(\frac{(-1) - (1966) - 1}{(-1)(1000) + 1}\right)^{1/2}}{\int_{5.44}^{1443213}}$$

$$PM = \frac{0.96 + 1 - (0.14)}{14.18}$$

$$PM = 0.13$$

The market price is bankable, since it is less than 0.5, according to Gaussian modeling, an acceptable price for the consumer.

Exchange rate

$$TC = \frac{D_P - D_I}{1/2} = \frac{16.42 - 1}{1/2} = 30.86$$

$$TC = \log(30.86)$$

$$TC = 1.48$$

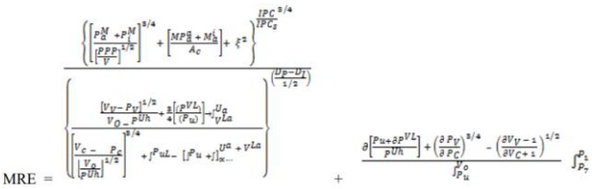
The exchange rate is acceptable, as it is below the Bank of Mexico's inflation rate; therefore, Axtel's operations are profitable in Mexican pesos.

Inflation

$$\pi = \frac{IPC}{IPC_s}^{3/4} = \left[\frac{2.96}{2.38}\right]^{3/4} = [1.24]^{3/4} = 1.18$$

The inflationary policy complies with the target of 4.6%, thus reaffirming the no increase in price changes.

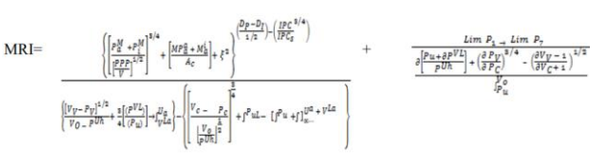
Performance model



MRE = 0.75%

The company's yield is .75%, so it is not advisable to invest in this company, since its yield is less than 1.

Risk model



MRI = .53 = ((.053)(100)/(100)

MRI = 0.53 %

The risk of investing in Axtel is moderately high, since according to confidence levels it has a risk of .53%.

Income level

Based on the sales volume of 1966 and the purchase volume of 100,000, it is determined that the company's net income is at risk with a negative income at -2.28% of its outstanding shares representing - $ 2,971,349,226.60 mxp.

Net Income = Outstanding Shares * Revenue

Net Income = 1303223345 * -2.28 = - $ 2,971,349,226.60

Purchase Volume	Sales Volume	Outstanding Shares	Net Incomes
100000	1966	2289801700	-2.289703666E9
			click to calculate
	Price Value in Book		
65.75	54.00	3.71	32.2776280323
			click to calculate

Figure 2

Days with stock market start-up

Axtel has 271 days with a stock market entry, so its holding period is 94 days, equivalent to 3.05 months. If this limit is exceeded, Axtel must pay a fine of 156,386,801.40 pesos, which corresponds to 12% of its capital.

Net Present Value

Activity	Operativity	Time inicial	Time limit	Val-Book *Asset	Market-SIM
INICIO	0	8	8	.5	4
Proc A	7.64	16	23.64	1	16
Proc B	7.52	24	31.52	1.5	36
M 1*	1.3	32		2	64
Proc C	.66	40	40.66	2.5	100
M 2*	2.6	48		3	144
Proc D	5.43	56	61.43	3.5	196
Proc E	3.18	64	67.18	4	256
Final	0	0	0	4.5	0
					208
					163.2

Figure 3

Datos de entrada	
Acciones en circulación	1,303,223,345.00
Log (Ac)	9.12
Días de teneduría	94
IPC no subyacente	2.52

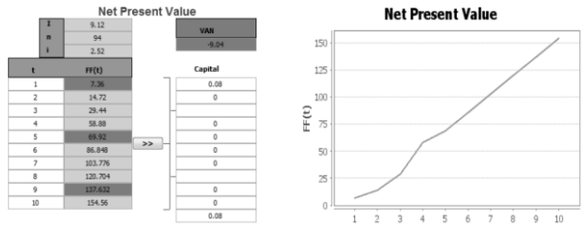


Figure 4

Rate of Return

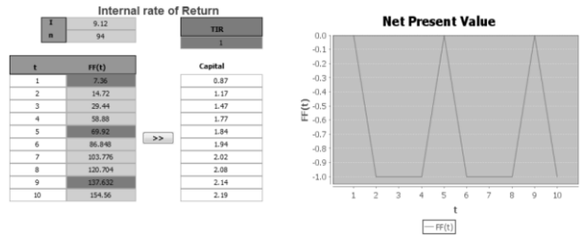


Figure 5

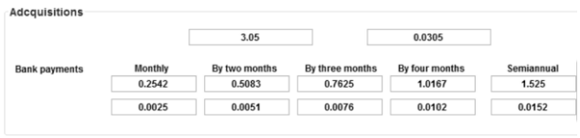
The Internal Rate of Return (IRR) is 1, the graph shows 2 cosines (losses) and 1 sine (gain), its absolute value is 1.

Grants and acquisitions

Datos de entrada	
Periodo de gracias	3.05
CETES	3

Table 6

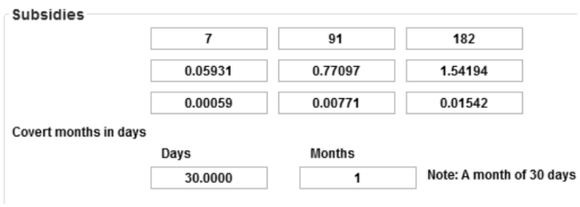
Acquisition payment rate



Plazo	Tasa
Mensual	0.25%
Bimestral	0.50%
Trimestral	0.76%
Cuatrimestral	1.01%
Semestral	1.50%

Figure 6

Government subsidy rate



Plazo	Tasa
28 días	0.05%
91 días	0.77%
182 días	1.50%

Figure 7

Financing Frontier

Figure 8

Appendix

Axtel has invested more than 43 billion pesos in the creation of basic infrastructure services and solutions for its customers and society.

It is the second largest fixed telephony operator in Mexico, with its own network in 39 of the main cities in Mexico, as well as connectivity in 200 cities throughout the country.

Its fiber network extends over 14,784 kilometers, including more than 2,000 kilometers of metropolitan rings and more than 4,500 kilometers of FTTX network, also known as fiber to the home or business, the best technological alternative for providing high-speed broadband access. It operates the world's largest wireless network.

It generates more than 26,000 jobs, including 6,500 direct jobs and 20,000 indirect jobs for contractors, direct suppliers, small and medium-sized companies.

During 2014, it was characterized by strongly boosting its growth in all market segments, by improving its relationship capacity with the main stakeholders it serves, as well as by undertaking actions that would allow it to have a more solid financial condition.

The living of our Values was evident in our activities and achievements: Commitment, Honesty, Service, Communication and Innovation. (Information obtained from the portal www.axtel.mx)

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www.banxico.org.mx

http://axtel.mx/acerca-de-axtel/nuestra-historia
www.bmv.com.mx

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[Title in Times New Roman and Bold No. 14 in English and Spanish]

Surname (IN UPPERCASE), Name 1st Author†*, Surname (IN UPPERCASE), Name 1st Coauthor, Surname (IN UPPERCASE), Name 2nd Coauthor and Surname (IN UPPERCASE), Name 3rd Coauthor

Institutional Affiliation of Author including Dependency (No.10 Times New Roman and Italic)

International Identification of Science - Technology and Innovation

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(Report Submission Date: Month, Day, and Year); Accepted (Insert date of Acceptance: Use Only RINOE)

Abstract (In English, 150-200 words)

Objectives
Methodology
Contribution

Abstract (In Spanish, 150-200 words)

Objectives
Methodology
Contribution

Keywords (In English)

Indicate 3 keywords in Times New Roman and Bold No. 10

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Citation: Surname (IN UPPERCASE), Name 1st Author†*, Surname (IN UPPERCASE), Name 1st Coauthor, Surname (IN UPPERCASE), Name 2nd Coauthor and Surname (IN UPPERCASE), Name 3rd Coauthor. Paper Title. Journal-Mathematical and Quantitative Methods. Year 1-1: 1-11 [Times New Roman No.10]

* Correspondence to Author (example@example.org)
† Researcher contributing as first author.

Introduction

Text in Times New Roman No.12, single space.

General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

Explanation of sections Article.

Development of headings and subheadings of the article with subsequent numbers

[Title No.12 in Times New Roman, single spaced and Bold]

Products in development No.12 Times New Roman, single spaced.

Including graphs, figures and tables-Editable

In the article content any graphic, table and figure should be editable formats that can change size, type and number of letter, for the purposes of edition, these must be high quality, not pixelated and should be noticeable even reducing image scale.

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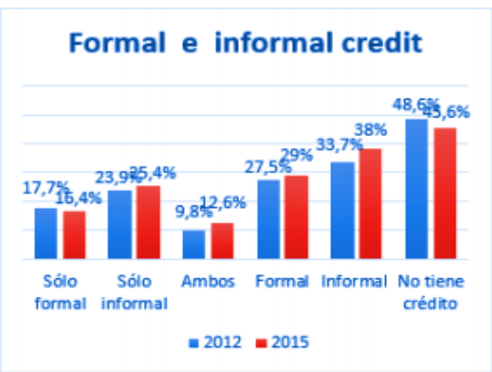

Graphic 1 Title and Source (in italics).

Should not be images-everything must be editable.

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Products	Industry	Chocolate Business
Food and beverage provision services	Processed food	
	Cultural tourism	Commercial chocolate (national and international brands)
Cultural Services	Agroindustry	Museums of chocolate

Table 1 Title and Source (in italics**).**

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Each Article shall present separately in **3 folders**: a) Figures, b) Charts and c) Tables in .JPG format, indicating the number and sequential Bold Title.

For the use of equations, noted as follows:

$$Y_{ij} = \alpha + \sum_{h=1}^{r} \beta_h X_{hij} + u_j + e_{ij} \quad (1)$$

They must be editable and number aligned on the right side.

Methodology

Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

Results

The results shall be by section of the Article.

Annexes

Tables and adequate sources thanks to indicate if they were funded by any institution, University or company.

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Conclusions

Explain clearly the results and possibilities of improvement.

References

Use APA system. Should not be numbered, nor with bullets, however if necessary numbering will be because reference or mention is made somewhere in the Article.

Use Roman Alphabet, all references you have used must be in the Roman Alphabet, even if you have quoted an Article, book in any of the official languages of the United Nations (English, French, German, Chinese, Russian, Portuguese, Italian, Spanish, Arabic), you must write the reference in Roman script and not in any of the official languages.

Technical Specifications

Each Article must submit your dates into a Word document (.docx):

Journal Name
Article title
Abstract
Keywords

Article sections, for example:

1. Introduction
2. Description of the method
3. Analysis from the regression demand curve
4. Results
5. Thanks
6. Conclusions
7. References

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