

Financial Crises and Growth: An Empirical Analysis from Emerging Mexican Economy A Long Run Perspective

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Summary: The purpose of this research is to assess the effect of financial and economic crises on economic growth in emerging Mexico economy. The aim of this work is to empirically examine the short-run and the long run relation between financial crises and economic growth condition in Mexico over the period from 1990 -2017. To do this, we opted for (ARDL) model. The results suggest that financial crises have a significant and permanent effect. These real effects seem to be more important and persistent in emerging countries.

This research work is one of the very few studies that have investigated Influence the financial crises on long run economic growth in Mexico country situation using (ARDL) model. Moreover, it contributes to the existing literature in the area.

Keywords: Financial crises, GDP growth, Emerging Mexican Economy, short run, long run.

Jel Classification Codes : G01, G15, O11, O16.

I-Introduction:

In recent decades, the economic situation was characterized by series of profound and rapid changes. It has contributed to the re-operation of many economic and financial systems to suit these transformations in developed and emerging economies. The financial crises of various kinds are focus of attention of many researchers and economists, they reflect the phenomenon spread throughout history, Allen, F., Babus, A., & Carletti, E. (2009)¹, it should also be noted that, the crises are a feature of the capitalist economic system, which was confirmed by many economic researchers for example *charles.p.kindlerberger* in 1978 when he said.

"*There is no Capitalism without Financial Crises*"²., and *Plihon, Dominique* in saying³ "*the history of capitalism characterized by international financial crises*".

The Financial crises happened as long as there were financial markets. However, the crises in the economies of emerging countries since the late nineties were more universal and perhaps more damaging to economic and political stability than previous crises. The Most dramatic were the Mexican crisis that began in 1994, which declared the first real crisis in this emerging country, which lasted from 1994 to early 1995, which had devastating effects on the countries of the region, the East Asian crisis that began in July 1997, and the Argentine crisis, which started in 2001.

These events present a puzzle for economists: how can an emerging country shift so dramatically from a path of high growth as did Mexico to such a sharp decline in economic activity. Additionally, how she achieved to recover from these shocks the post crisis.

The manifestation of the crisis of Mexico 1994 materialized in the field gradually. The Mexican crisis began in 1994 with a speculative attack that caused a sharp devaluation of the exchange rate of the Mexican peso against the dollar. Between the end of 1993 and 1994, a change in the exchange rate was observed at 71.5%. This decline in the Mexican currency is the direct result of the massive capital inflows of 1994.

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In fact, capital inflows from 1994 caused the cessation of financing of the Mexican economy. The Mexican crisis in 1994 also caused a drop in the activity of the economy during the crisis. Where, we note that in 1995, the growth rate was about -6.3% while in 1994 it was 4.45%. This decline in economic activity was observed in the share of consumption in GDP. In 1995, the share of consumption in GDP fell to -8.44% from 4.35 in 1994.

Ten years before the Mexican government resorted to comprehensive economic reforms at the level of the state, such as liberalization of the trade sector, deregulation of the exchange rate and the lifting of obstacles to foreign investment, which are indicators of financial liberalization.

The use of the exchange rate as an essential tool in monetary policy led to a good and continuous appreciation of Mexico's pesos between 1988-1993. In contrast, the external deficit increased from 2% of GDP in 1988 to 8% of GDP In 1994, the difference between the actual value of the local currency as a result of its correlation with the US dollar and the continuous trade deficit coinciding with political events⁴.

The United States has supported Mexico with \$ 53 billion in the stabilization program. In addition, the International Monetary Fund (IMF) provided \$ 17.8 billion, the Bank for International Settlements (BIS) pledged \$ 10 billion, and many countries such as Argentina, and Brazil supported it in the form of loans. Strong measures of stabilization and growth reduced government spending and targeted monetary policies, which stabilized the exchange rate for the peso, despite the economic costs of the recession in Mexico. Where the economy began to improve after three years, and achieved a growth rate of 9% and increased the volume of exports and increased, international reserves have increased productivity, which led to an improvement in the sense of equilibrium of payments balance. And Figure (1) shows the evolution of Mexico's economic growth rate from 1990 to 2017.

In this paper, we aim to fill the gap in the literature, and present a unified framework for empirically assessing the potential positive and negative long-run effects of various types of financial crises on economic growth. The period covered spans the 1993's through 2017. The study derives its importance from the importance of the subject itself. As this scientific research examines the impact of various macroeconomic variables on long-term economic growth after the Mexican economic crisis of 1995. Thus contributing to the debate on sources of economic growth in Mexico.

The originality of this research is to integrate a new measure of relationship between the financial crises and economic growth in emerging countries the case of Mexico economy. The remainder of the paper is structured as follows: In the second section, we deals with the literature review and previous studies. In the third section, we present the methodology, the variables and the hypotheses to be tested. The empirical validation will be presented in the fourth and fifth sections, the last section concludes the paper.

I.1. Theoretical framework of the study

In order to identify the nature of the relationship between the independent variables and the design of empirical model of the study, the two researchers reviewed the literature on the subject. We present the most important studies in the Following:

Minsky, 1972⁵ and Charles Poor, 1978⁶ in their study ,stated that financial crises involved a sharp declines in asset prices, failure of large financial and non-financial companies, a decline in inflation and disturbances in the foreign exchange markets. These disturbances necessarily mean the presence of potential serious consequences for the overall economy, which requires the government for rapid intervention.

The study of Garber, P. M. (2001)⁷, pointed that financial crises preceded by prosperity and Booms in asset prices and credit, that which turns eventually to failure and bankruptcy in economy. Boom explains why bubbles occur in asset prices and credit, and hence raises an important question why policy makers do not predict of the risks that precedes the occurrence of such crises and try to slow down the expansion of credits and reduce the increasing of asset prices before spreading to other countries.

Bubble can be defined as a sharp rise in the massive asset price movements in ascending and unexplainable manner, which leads to financial un stability in and developed and emerging economies.

Mishkin, F. S. , 2011⁸ define the financial crisis as a crash in the financial markets as a result of adverse selection and moral hazard, which makes financial markets are becoming unable to direct and managed funds efficiently and leads to a sharp contraction in real economic activity.

Keynes, J. M. , 1930⁹ Moreover Charles Poor, 1978 , showed that Financial and economic crises have common elements that come in many forms. and usually associated with a single phenomenon or several phenomena's including the occurrence of significant changes in the size of credit extended, changes in various asset prices, turbulence in financial markets, the provision of external funding, the government support to economic sectors, in addition to the problems related to companies, households and financial intermediaries in their balance sheet.

These elements indicate that the crisis is a multi-dimensional events and it is difficult to predict or distinguish it by using one element only.

Volatility and shocks that occur in the macroeconomic indicators are mostly responsible for these crises, but the real causes of these crises are almost completely unknown. The crisis sometimes appear because of irrational factors that's include for example bank failures, the indirect effects of contagion from one area to another, and assets liquidation. This means that financial crises are often followed by the so-called animal instincts or the so-called herd behavior or animal spirit.

I. 2. Review of the Empirical Evidence

Barro, 2001¹⁰ evaluated the impact of currency and banking crises in Asia in 1997 on investment and economic growth, adopting a panel approach (on a sample of 67 emerging and industrialized countries) with five-year observations, its study focuses on 10 countries divided into two groups over the period (1960-2000).

The first group consists of countries that experienced the largest currency devaluation more than 50% between July 1997 and early 1998 (South Korea, Indonesia, Malaysia, Philippines and Thailand), while the second group is composed of (China, Hong Kong, Japan, Singapore and Taiwan). Overall, the results of this study show that a currency crisis is associated with a 1.3% loss in the growth rate of the Real GDP and 0.4% of the investment rate (defined by the investment / GDP ratio).

The study of Bordo M., Eichengreen D., Klingebiel D & Martinez-Peria M., 2001¹¹, focused on studying the frequency of financial crises and their effects on economic growth, Their analysis covers a long period (1880-1997) and applies to a sample of industrialized and emerging countries. Their results show that a crisis has an annual cost of 5 to 10% of GDP and that its effects last on average from two to three years. Although the frequency of crises almost doubled during the "modern" period post-1973, its costs did not increase as compared to the previous period.

The study of, Ben Abdallah, M., & Diallo, K, 2004¹² from an empirical point of view, they Attempted examine the incidence of financial crises: currency crises (as well as banking and twin crises) on the growth and on the investment. From a sample of 17 emerging countries, during the period 1974 -2000, using dynamic panel approach, the analysis conducted in this study; highlight the significantly negative effects of currency and banking crises on economic growth and investment.

The authors find that crises, whatever their type, are generally followed by a substantial contraction of the economical activity. More specifically, currency crises, in contrast to the banking ones, appear to have a more substantial impact on the economic growth than on the investment. On the other hand, twin crisis seems to have a greater impact than the two first ones.

The study of Chang-Shuai, 2017¹³ , Worked on the effect of banking and currency crises on long-run growth. The data cover 130 economies during the period of (1800 to 2010), some dating from 1800 with the rest beginning in later years. The author identify that both the frequency of banking crises and the frequency of currency crises have a negative and statistically significant

effect on growth in the short run and a positive effect on growth, though statistically insignificant, in the longer run.

More specifically, The author find that the frequency of banking crisis, is statistically significantly Correlated to growth for the time windows of 1 decade and 2 decades, and then this negative relationship becoming increasingly more statistically insignificant overall for time windows from 3 decades to 10 decades.

Finally, it turns into positive, though statistically insignificant, for the time windows of 13 decades and longer for the sample. Furthermore with regard to the frequency of currency crisis is significantly negatively associated with growth overall for the time windows of 1 decade to 10 decades, and it turns into insignificantly positive for time windows for 13 decades and even longer.

The study of Ali Raza ,and Mohd Zaini Abd Karim. (2017)¹⁴ tested the influence of currency crises, systemic banking crises, and global financial crisis on the relationship between export and economic growth in China by using the annual time series data from the period of 1972 to 2014. They used The Johansen and Juselius' cointegration; auto regressive distributed lag bound testing cointegration, Gregory and Hansen's cointegration and pooled ordinary least square techniques with error correction model. This research paper, indicate the positive and significant effect of export of goods and services on economic growth in both long and short run, whereas the negative influence of systemic banking crises and currency crises over economic growth is observed.

The study of Kouki, M., Belhadj, R., & Chikhaoui, M. . (2018)¹⁵, examined the impact of financial crises: banking, currency, and twin crises on the economic growth of a sample of 17 emerging market and 11 developed countries over a period of 31 years 1980-2011. They found that the effect of banking crises is more expensive and deep than currency crises on GDP growth. As for the twin crisis, with a simultaneous occurrence of a currency and a banking crisis, the effect seems to be more serious and more persistent than the other types of crises. This negative effect is more pronounced when we take into account variables related to the status of the financial system, liberalization, and the level of institutional development.

They found that financial crises have negative and significant effects on economic Growth. The results show that banking crises are costlier and deeper than currency crises for GDP growth and investment. With regard to twin crises, the effect seems more serious and more persistent than the other types of crises.

II– Methods and Materials:

a) Data presentation

Main objective of this paper is to measure the long run econometric association between key macroeconomic indicators of financial crisis in Mexico economy. Therefore, we obtained the data for the study from different issues of World Bank (WB) database exactly in world development indicators (2019) (WDI) and International financial Statistics (IFS). The standard model used to estimate the relationship between the dependent and independent variables it is the autoregressive distributive lag (ARDL).

b) Econometric Model

The ARDL model is used to analyze cointegration series for long- run and short-run dynamics, even when the time-series are stationary I (0) or integrated of order I (1). The variables may include a mixture of stationary and non-stationary time-series for ARDL Bounds testing approach proposed by PESARAN, M. Hashem, 1997¹⁶, (Pesaran, M. H., Shin, Y., & Smith, R. J, 2001¹⁷.

c) Determine the variables of the study

Based on classical and neoclassical theories and previous empirical studies and on study Kouki, M., Belhadj, R., & Chikhaoui, M. , 2018, in modeling financial crises and economic growth, and the study of Ben Abdallah, M., & Diallo, K, 2004, and the study of (Mughal, K., Khan, I., & Usman, F, 2015¹⁸ , and the study of, Ksantinia, M., & Boujelbèneb, Y., 2014¹⁹.

According to the above, we have identified the form as follows:

$$\text{GDP} = F(\text{REE}, \text{INF}, \text{CA}, \text{T_EXPO}, \text{GS}, \text{FDI}, \text{TR}).$$

Where,

REE: Represents the ratio of Real Effective Exchange Rate.

CA: Represents the ratio of the current account to GDP.

TR: Represents the Real interest rate (%).

FDI: Represents foreign direct investment as a percentage of GDP.

GS: Represents the gross savings as a percentage of GDP.

EXPO: Represents the exports as a percentage of GDP.

INF: Inflation rate is introduced as an indicator of macroeconomic stability.

→**The model**

The estimate of the impact of crises on growth is made from the following growth equation:

$$GDP_{Growth} = f(REE , INF , CA, T_Expo , GS, FDI, TR) \dots\dots\dots (1)$$

The mathematical representation of an ARDL regression model is:

$$GDP_{(t)} = \alpha_0 + \beta_1 GDP_{(t-1)} + \beta_2 REE_{(t)} + \beta_3 INF_{(t)} + \beta_4 CA_{(t)} + \beta_5 T_Expo_{(t)} + \beta_6 GS_{(t)} + \beta_7 FDI_{(t)} + \beta_8 TR_{(t)} + \xi_t \dots\dots(2)$$

Where,

α0 Represent the intercept of the function or we can say the constant, and **ξ** a random "disturbance" term, and then **β1; β2; β3; β4; β5; β6** are parameter to be estimated.

III- Results and discussion:

a) Pre-estimation Analysis

Before estimation, the graphs of the time series under study are plotted, descriptive statistics are displayed, unit root test for the variables are performed, and co-integration analysis is done on the variables. The figures below show the line graphs of the historical performance of the variables used in this study. Figure (2) shows GDP, REE, CA, T_EXPO, GS, FDI, TR and INF for Mexico from 1993-2017.

b) Descriptive Analysis of Variables

The Table below presents the descriptive and statistical summary of each of the variables (dependent and independent variables) employed in the study. The statistics are in terms of mean, median, maximum, minimum, standard deviation, *skewness, kurtosis, and Jarque-Bera*. The following table (1) shows the descriptive statistics of the study variables.

c) Unit Root Tests for the Variables

Before presenting empirical results of the (ARDL) model, **we have** to check the order of integration of our variables. We want them to be stationary, because non-stationarity leads to spurious results, since test statistics (t and F) are not following their usual distributions and thus standard critical values are almost always incorrect. We apply the following econometric steps of the stationary and non-stationary Tests of the time series data by Augmented Dickey-Fuller (1979) (**ADF**). Dickey, D.A. & W.A. Fuller, 1979 Test²⁰.

The Augmented Dickey-Fuller (ADF) test results for the time series variables are presented in Tables (2) below.

In the results shown in Table (2), The Augmented Dickey-Fuller (ADF) test statistic of the Real Effective Exchange Rate (REE) are greater than the respective critical values. Thus, we accept the hypothesis of unit roots of this latter, and not significant at 1%, 5%, 10 % level with (*MacKinnon 1996*). Moreover, it is unstable at the level I (0).

In our final evaluation, all the variables which are (GDP, T_EXPO, INF, CA, TR, FDI and GS) became stationary in at level I (0), After taking the first differences, excepting the latter

variable (REE) become stable and significant at 1% 5% 10%, as shown in the table in both The Augmented Dickey-Fuller (ADF) test statistic. In addition, it is integrated of order $I(1)$.

Therefore, to study the long-term relationship between the variables of the study, we will use the autoregressive distributed lag (ARDL) method, because of a combination of stable time series between $I(0)$ and order $I(1)$.

Before estimating the ARDL model, we must determine the optimum degrees delays for the model. The choice of the lags according to the following criteria: **Akaike, Schwarz and Hannan-Quinn**, depending on the lowest statistical value for the criteria that correspond to the acceptable. VAR Lag Order Selection Criteria Were presented in Table (3) below.

After examining the number of the degrees of delays, the results indicate that the number of delay intervals followed by variables is $P = one$ and this is because it corresponds to the smallest value for most standards.

d) ARDL Bounds test estimation results

To determine the existence of long run relationship among the variables of the study, the Pesaran, M. H., Shin, Y., & Smith, R. J, 2001. Bound test procedure was used. The bound test results were presented in Table (4) below.

The result reveals that F-Statistics is ($F = 9.025874$), which is greater than the upper $I(1)$ and Lower $I(0)$ critical bound of 4.26 at 1% level, 5.52 at 3.84% level, 3.5 at 5% level and 3.13 at 10% level. Thus, the null hypothesis can be rejected. This suggests that there is long run relationship among GDP, T_EXPO, INF, CA, TR, FDI, GS, over the period of the study (1993 to 2017).

e) Estimated Coefficients using the ARDL approach

The next step of the ARDL approach would be to estimate the coefficients long run relationship of the variables. The results of the long run estimated coefficients are presented in Table (5).

The results of our estimates show that the macro-economic indicators coefficient is a very important and predictable sign.

The results of the estimation in the short term, confirm that there is a common correlation between the variables of the study in the long-run, because the error correction coefficient, which measures, the speed of return to equilibrium is negative and statistically significant. The error correction coefficient (CointEq = -1.243654) indicates short-term imbalances will be corrected by 124.3654% in the long term. Wherefore, Long-term estimation results indicate, the positive sign of the variables studied is explained by the positive relationship between each variable, and its effect on the output Domestic and vice versa.

Long-term estimation results indicate a positive effect of the real exchange rate on economic growth in the study period, and it is to be significantly positive at 5% level, so that a 1% increase in REE leads to an increase of 15.3815 % in economic growth. But unfortunately not strong relationship.

We also note that, these results show that the inflation variable to be significantly positive at 5% level, where it appears to increase economic growth by about 31.1427 percentage and the relationship supports the a priori expectation, since a higher price paves the way for economic growth by stimulating investment. On the other hand, that there is a positive impact of export on GDP growth and is not significant.

The exports contribute to raising the GDP by 0.166660 units, which is weak compared to the actual importance of the export sector in the Mexico economy, which is 16.66% of GDP.

Hence, is weak compared to the actual importance of the export sector in the Mexican economy, which witnessed Quantum leap forward in the period from 1996 to 2017, after the economic crisis experienced by Mexico in 1995.

On the other hand, the current account and foreign direct investment negatively affect the economic growth in the study period in Mexico, so that the increase in current account by 1% leads to a weakening of growth by 189.9044% in the long term. Moreover, this result is acceptable compared to the estimated results in the short term where Indicates that a 1% increase in the current account is leads to the deterioration of economic growth by 236.1754%. This corresponds to the assumptions of the economic theory, that is, the higher the current account deficit, the greater the economic growth of the country concerned and vice versa.

As well as, we note that, FDI and GDP is negatively related to GDP growth and the relationship is statistically insignificant. So that a 1% increase in FDI (%) leads to a decrease of 55.37 % in economic growth. these results suggest the inadequacy of total savings targeted to stimulate investment and thus sustainable economic growth. In addition, these results are not linked to Lewis's (1955) theory that higher savings lead to increased investment, which in turn leads to higher economic growth. Additionally, the coefficient of GS reveals a positive relationship with GDP growth and the relationship is strongly significant. So that a 1% increase in GS leads to an increase of 75.05 % in economic growth. Virtually, these findings highlight the role of savings as a driver of Mexican GDP over the long term²¹.

Lastly, Long-term estimation results indicate a negative effect of the Real interest rate on economic growth in the study period, so that a 1% increase in RT (%) leads to a decrease of 59.2261 % in economic growth. This is a fairly good result compared to short-term results, where a 1% increase in the real interest rate would result in a 73.6568% decline in economic growth.

Table (6) shows that the coefficient relating to inflation rate is positive. However, this coefficient is not significant. Thus, we can confirm the existence of a positive effect of this variable on the economic growth.

d) Stability test of the model

To make sure, that the data used in this study, does not contain any structural changes, we should use one of the stability test for the model applies the cumulative sum of the squares of recursive residuals CUSUM OF SQUARES and the cumulative sum of recursive residuals (CUSUM). which Brown , Robert L ,Durbin,James,& EVANS ,James M, 1975 , developed in order to clarify the structural change in data ,and the extent of stability and consistency ,of long-term parameters with short-term parameters²².

If the plot of CUSUM-SQ and CUSUM statistic stays within 5% significance level, then the estimated coefficients are said to be stable. A graphical presentation of this test for our **ARDL** model is provided in Figures 3, 4 below.

These results again confirm the robustness of our results achieved in the diagnostic tests. Obviously, the CUSUM statistics stay within the critical bounds indicating significant relationship between GDP and the other variables.

The result in The Figure shows that the curve (**CUSUM**) is located within the critical limits for 5%, but the curve (**CUSUM OF SQUARES**) does not within the critical limits for 5%, which explains that the model is acceptable statistically.

IV-Conclusion:

The Financial Crises affected all world economies. This study examines the relationship between the financial crisis and GDP growth determinants in the Mexico during the period (1990-2017). The variables that the study used are, GDP growth, Real Effective Exchange Rate (REE) ,current account (CA), the gross savings (GS), foreign direct investment (FDI),and exports (T_EXP). Inflation rate (INF), Real interest rate (RT).

The prime objective of this research is to assess the short- and long-term impact of financial Crises on economic growth in the Mexican economy by estimating an autoregressive with distributed lags (ADRL) equation of financial crises and economic growth and deriving the relative impulse response functions for GDP growth.

The main results of the paper can be summarized as follows:

This study concludes that the Table (1) provides self-explanatory descriptive statistics analysis done through E-Views statistical Software. REE has the mean of 100.6680 and standard deviation of 11.98207. INF is having a mean of 8.898042 and standard deviation of 9.016898. CA is having a mean and standard deviation of -1.836464 and 1.258603 respectively. T_EXP is having a mean and standard deviation of 27.14381 and 5.995286 respectively. GS is having a mean and standard deviation of 22.02945 and 1.424906 respectively. FDI is having a mean of 2.584840 and standard deviation of 0.677276. TR is having a mean of 2.799412 and standard deviation of 5.112739. GDP is having a mean and standard of 2.470206 and 3.097426 respectively.

The all the variables: GDP, REE, CA, T_EXPO, GS, FDI and TR are negatively skewed. Except INF is positively skewed. The value of Kurtosis and Jarque - bera shows that data is reliable.

Augmented Dickey Fuller test has been applied to test the stationary status of the data using E-views software. Table (2) shows the all the variables are Stationary at log level but the Real Effective Exchange Rate used in this study is stationary at first (1) difference. The study employed newly developed ARDL bound testing to capture long-run cointegration between financial crises and economic growth.

Table (4) shows the bound test results, these results are statistically significant at 1%, 2.5%, 5%, and 10% significances levels, which shows that suggested there is long run relationship among GDP, and all variables independents over the period of the study (1993 to 2017). After bound test, we estimate short-run and long-run cointegration tested, our results are showing in table (5).

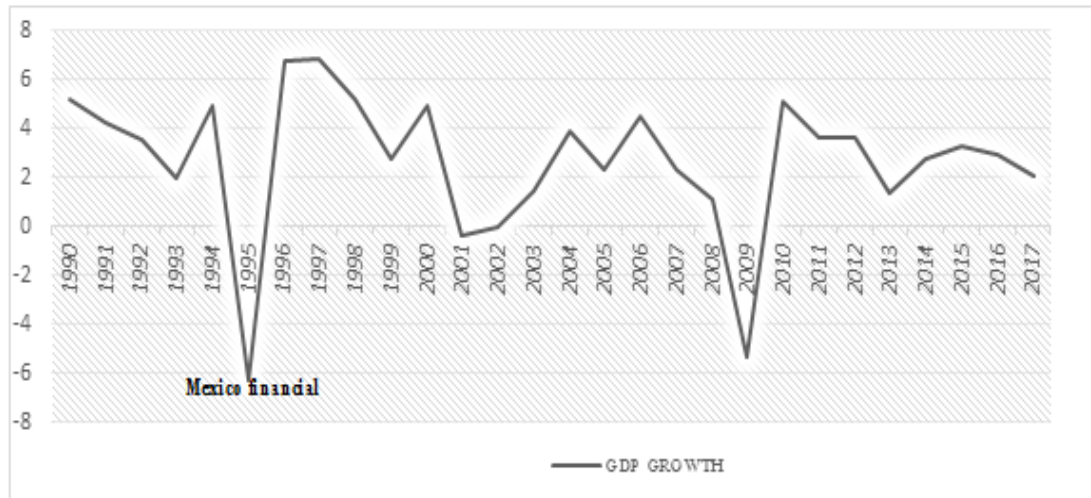
The results of the long run estimated coefficients are revealed that the speed of adjustment to restore equilibrium is 1.24, which suggests that there is a stable long run relationship, compared with the other variables. The gross savings and inflation rate and the exports had the strongest effect on economic growth in the long- run followed by the Real Effective Exchange Rate.

However in the short- run, all the variables with the exception of inflation rate, the exports rate and the gross savings do not have significant effect on economic growth.

To achieve sustainable economic growth, it is suggested that government policies directed at improving the performance of the economy should largely consider the short-run and long run behavior of these variables and the economic policies should be pursued with high degree of transparency. As well as avoid negative repercussions due to repeated economic and financial crises in Mexico.

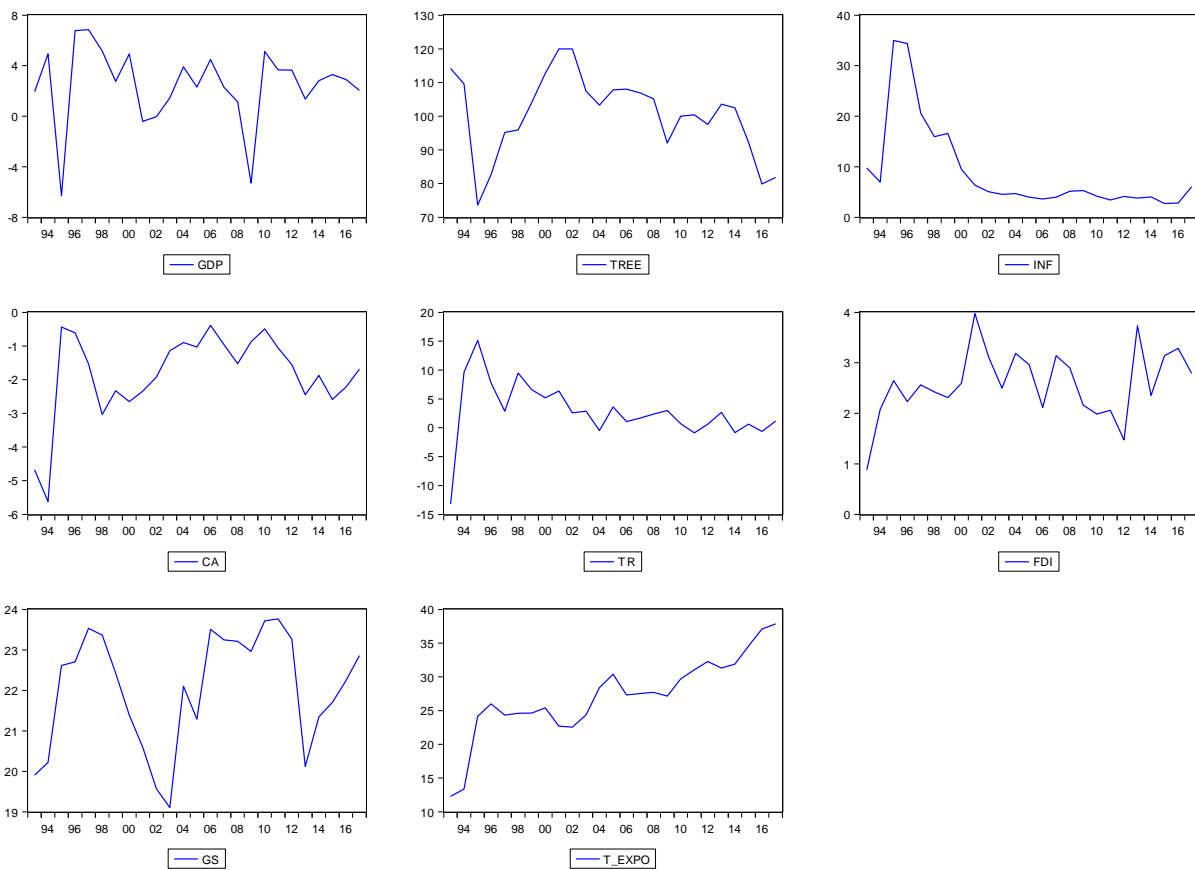
- Appendices:

Figure (1): Evolution of the growth rate in Mexico from 1990 to 2017.



Source: Author's Computation based on World Bank data.

Figure (2): GDP, REE, CA, T_EXPO, GS, FDI, TR and INF for Mexico, 1993-2017



Source: Author's Computation with E-view 09

Figure (3): Plot of CUSUM showing stability of the Model

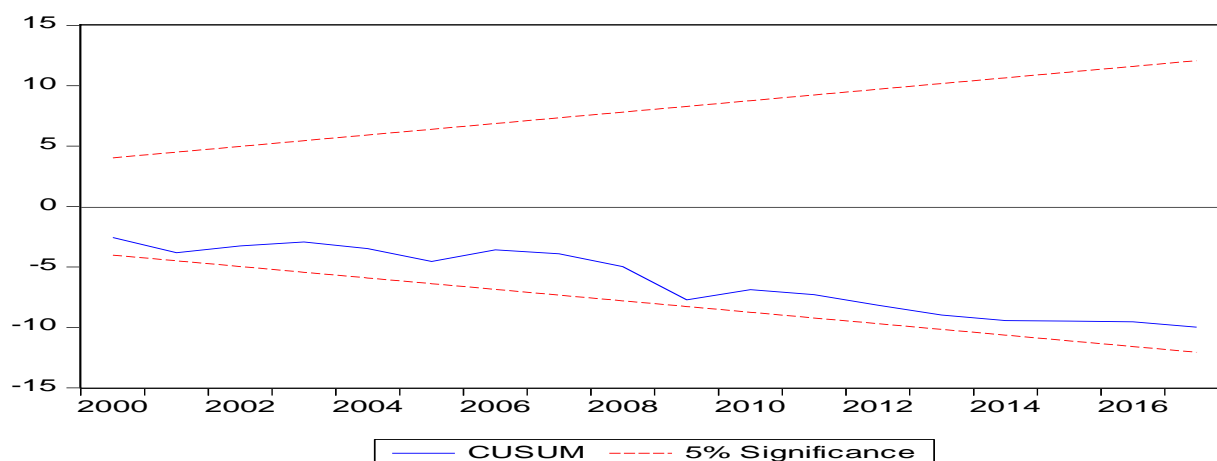
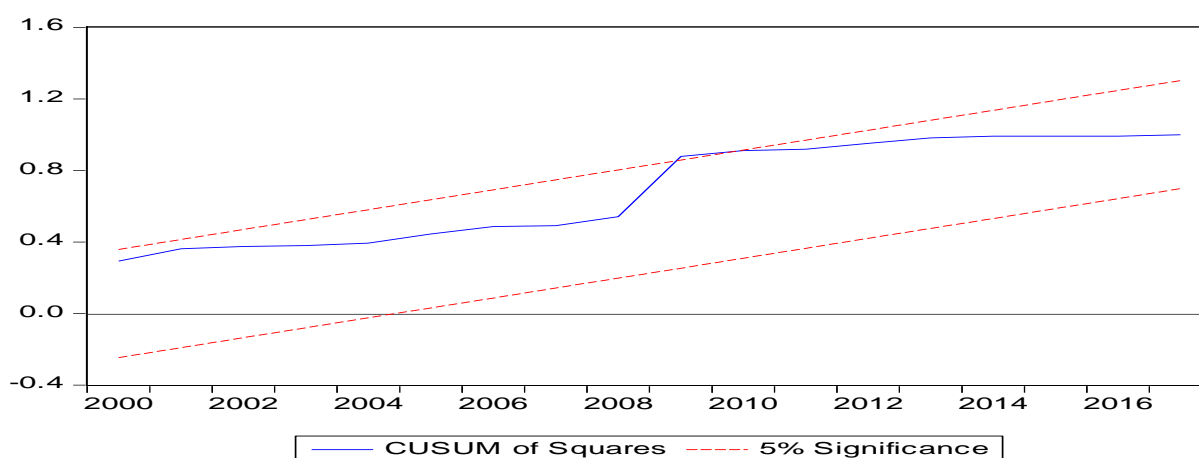


Figure (4): Plot of CUSUM-SQ showing stability of the Model



Source: Author's Computation with E-view 09

Table (1): Descriptive statistics

	GDP	REE	INF	CA	T_EXPO	GS	FDI	TR
Mean	2.470206	100.6680	8.898042	-1.836464	27.14381	22.02945	2.584840	2.799412
Median	2.804340	103.3142	5.030727	-1.556264	27.32516	22.42908	2.563840	2.566238
Maximum	6.846852	120.0088	34.99927	-0.384845	37.86642	23.76488	3.972482	15.14250
Minimum	-6.291231	73.60797	2.720641	-5.619812	12.28130	19.10133	0.876510	-13.17395
Std. Dev.	3.097426	11.98207	9.016898	1.258603	5.995286	1.424906	0.677276	5.112739
Skewness	-1.340234	-0.543644	2.024698	-1.415465	-0.617926	-0.590976	-0.241110	-0.494994
Kurtosis	4.968477	2.768656	6.039494	5.012152	3.821703	2.084837	3.410580	5.982552
Jarque-Bera	11.52064	1.287201	26.70430	12.56554	2.294298	2.327640	0.417824	10.28718
Probability	0.003150	0.525397	0.000002	0.001868	0.317541	0.312291	0.811467	0.005837
Sum	61.75516	2516.700	222.4510	-45.91159	678.5952	550.7363	64.62100	69.98529
Sum Sq. Dev.	230.2571	3445.679	1951.307	38.01798	862.6429	48.72860	11.00886	627.3624
Observations	25	25	25	25	25	25	25	25

Source: Authors, underlying data from World Development Indicator, 2019

Table (2): Summary results of unit root test (The Augmented Dickey-Fuller test)

Variables	At level		At First Difference		Results
	ADF statistical	Result	ADF statistical	Result	
GDP	-5.469032	stationary	----	----	I(0)
REE	-2.621144	No stationary	-4.431187	stationary	I(1)
INF	-3.634409	stationary	----	----	I(0)
CA	-3.530908	stationary	----	----	I(0)
TR	-5.196427	stationary	----	----	I(0)
FDI	-4.861119	stationary	----	----	I(0)
GS	-2.639217	stationary	----	----	I(0)
T_EXPO	-6.163868	stationary	----	----	I(0)

Source: Constructed by the author using EViews output.

Table (3): VAR Lag Order Selection Criteria

Lag	Logl	LR	FRE	AIC	SC	HQ
0	-419.8073	NA	419987.0	35.65061	36.04329	35.75479
1	-280.8770	173.6629*	1108.829*	29.40642*	32.94058*	30.34403*

Source: Author's Computation with E-view 09

Table (4): ARDL Bounds test results

Test Statistic	Value	k
F-statistic	9.025874	7
Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
10%	2.03	3.13
5%	2.32	3.5
2.5%	2.6	3.84
1%	2.96	4.26

Source: Author's Computation with E-view 09

Table (5): ARDL Cointegrating and Long Run Form (Dependent Variable: GDP)

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	P.Value
Short- Run Coefficients				
D(REE)	0.191293	0.084711	2.258187	0.0393
D(INF)	0.387307	0.119510	3.240797	0.0055
D(CA)	-2.361754	0.597258	-3.954329	0.0013
D(T_EXPO)	0.207268	0.218436	0.948873	0.3577
D(GS)	0.933393	0.536994	1.738180	0.1027
D(FDI)	-0.688701	1.078420	-0.638620	0.5327
D(TR)	-0.736568	0.291267	-2.528840	0.0231
CointEq(-1)	-1.243654	0.189703	-6.555801	0.0000
$\text{Cointeq} = \text{GDP} - (0.1538*\text{REE} + 0.3114*\text{INF} - 1.8990*\text{CA} + 0.1667*\text{T_EXPO} + 0.7505*\text{GS} - 0.5538*\text{FDI} - 0.5923*\text{TR} - 36.6333)$				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	P.Value
REE	0.153815	0.068368	2.249813	0.0399
INF	0.311427	0.112406	2.770546	0.0143
CA	-1.899044	0.477437	-3.977580	0.0012
T_EXPO	0.166660	0.173085	0.962881	0.3509
GS	0.750524	0.393392	1.907827	0.0757
FDI	-0.553772	0.897688	-0.616887	0.5466
TR	-0.592261	0.274263	-2.159467	0.0474
C	-36.633260	15.119311	-2.422945	0.0285

Source: Author's Computation with E-view 09.

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