A Currency Board for Mexico?

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Abstract

The purpose of this paper is to compare the performance of prices, inflation, real income, and income growth, under various exchange rate regimes to determine whether the currency board is best delivering price stability and income growth. To comply with this goal, the paper contains a theoretical model, and an examination of empirical evidence stemming from the application of the model. The empirical evidence is complemented with interviews encompassing leading Mexican business executives, advisers to the central bank, members of congress from the three main political parties, international banking executives, and monetary authorities of the Bank of Mexico.

The main conclusion arising from the empirical evidence points to a better performance measured in terms of inflation and economic growth, under either fixed rate or currency board for Mexico, Argentina, the US, and other countries. These findings suggest that the implementation of a currency board in Mexico could deliver lower rates of inflation and higher income growth. However, the reform faces major hurdles. For one, the lack of a decisive and resolved white knight willing to face the existing fragmentation of the political institutions and the skepticism of congress, and domestic and international financial institutions to this reform.

Introduction

The currency board was first introduced in the British colony of Mauritius in 1849. It is a rule based monetary institution distinct to conventional central banking. Under this system, local currency may be issued only to acquire foreign exchange or securities of external origin at a fixed exchange rate.[1] This rule guarantees a one hundred per cent backing, in terms of foreign exchange reserves, for currency in circulation.

Benefit, Cost, and Ambiguities of a Currency Board

The argument in favor of a currency board is related to the certainty of trading local currency at a fixed rate.[2] The weakness is associated to the incapacity of the central bank, turned into a board, to act as a lender of last resort.[3] Gray areas are linked to the discretionary powers of the board. For some, the constraint imposed by a currency board on central bank powers is viewed as a disadvantage. For others, it is a blessing.

This previous discussion suggests that the net benefits of a currency board are uncertain. In practice, the approach is gaining acceptance both in academic and government circles. Many small nations overwhelmed by the culture, and economic dominance of a major foreign power on national soil have decided to embrace, rather than fight this preeminence either by fixing the local currency to the legal tender of the dominant partner or by adopting the partner's currency as their own. Andorra, Antigua and Barbuda, Djibouti, Grenada, and St Lucia typify this approach.

An exception to this paradigm is Argentina where the currency board was not implemented to submit the domestic economy to a foreign hegemony. Rather, it was adopted to end the hyperinflation that had plagued the southern cone country for decades. The architects of the Argentine currency board, believed that pegging the peso to the dollar and supporting the peg with 100 percent dollar denominated reserves would:

[1] In Argentina, the exchange rate is set by Congress.
[2] The law guarantees this conversion. Congress, however, can eliminate the convertibility at any time.
[3] In the face of a bank run, the Board cannot act to provide liquidity to the system. By law, the reserves held by a Board, can be used only to buy local currency or foreign securities. Therefore, attempts by the central bank to use reserves to buy the domestic assets of a bank in financial troubles would be in violation of the legal principle supporting the system.

restitute trust to the peso, eliminate the central bank's pursuit of money expansion, help Argentina to resume growth.[4]

The accomplishment of Argentina and the disappointing performance of other countries operating a floating rate have galvanized the integration of groups with diverse backgrounds calling for the adaptation of a currency board in several countries, including Mexico.

Purpose

The goal of this paper is to compare the performance of prices, real income, inflation, and income growth under various exchange rate regimes to determine whether the currency board is best delivering price stability and income growth.

To comply with this goal, the paper contains a theoretical model, An examination of the empirical evidence stemming from the model. Some remarks aimed to contrast the performance of Argentina, Mexico, the US, and other countries under various exchange rate regimes. Interviews with leading Mexican business executives, members of congress from the three main political parties in Mexico, international banking experts, and monetary authorities of the Bank of Mexico. The paper concludes with some observations related to the feasibility of implementing a currency board in Mexico.

The Model

It starts with the following expression.

1) $MsV/P=Y^{â}$

Taking logs and solving by p, provides a price equation.

2) $p = á + m – ây$

where á is the log(v), and p, m, and y are the log of price, money, and real income.

Taking first differences from the previous equation provides an equation for inflation,

3) $ð= Äp = Äv + Äm - âÄy$

This equation presents the conventional view that inflation (ð) is lower in periods of low money growth (Äm), and fast income growth (Äy).

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[4] Agentina is the only large country operating under a currency board. This began on April 1, 1991, when the Argentinean Congress approved the Convertibility Law that fixed the Argentinean peso to the US dollar

To explain how a currency board may contribute to bring inflation down, consider the following expression:

4) $P_d/P_f = E^{ä}$

where P_d is the domestic price, P_f is the foreign price level, and E is the real exchange rate. Taking logs from (4), first difference, and solving by Äp_f yields an expression for inflation:

5) ð =Äp = äÄe + $ð_f$

Inflation (ð) is a function of variations of the local currency in the foreign exchange market (Äe) and word inflation ($ð_f$). A devaluation leads to an increase in inflation (ð). Fixing the exchange rate eliminates price volatility and aligns local to world inflation ($ð_f$) since Äe is zero.

Solving (4) by P_d, substituting this expression for the domestic price level in (2), and taking logs and first difference yield equations for the log of real income and income growth respectively:

6) y = (1/á) [m – p_f] – (ä/â)e + (1/ â)v.

7) Äy = (1/ â) [Äm – $ð_f$] – (ä/ â)Äe + (1/ â)Äv

In expressions (7) income growth is anticipated to be higher the smaller the difference local between local money and foreign inflation [Äm – $ð_f$]. This equation also predicts that a devaluation (Äe) lowers output. Pegging the exchange rate eliminates this problem and isolates real income from variations in the exchange rate, since Äe becomes zero.

Prices in Argentina

The regression for the price equation (p_{arg}) during the floating rate period (1986:1 – 1990:4) is presented in (8). The parameters of the independent variables have the anticipated signs and are statistically significant, except money (m_t).

8) $p_{arg} = 9.13 + 0.99\, p_{t-1} + 0.068 m_t - 7.08\, y_t$
(2.78) (27.3) (0.079) (2.7)

$R^2 = 0.98$, D-W = 1.93

rate at the ratio of one to one

The regression results for the price level during the currency board period (1991:1 – 1997:1) are shown in (9). These results are difficult to interpret since the parameter for money (m_{t-1}) does not have the anticipated sign.

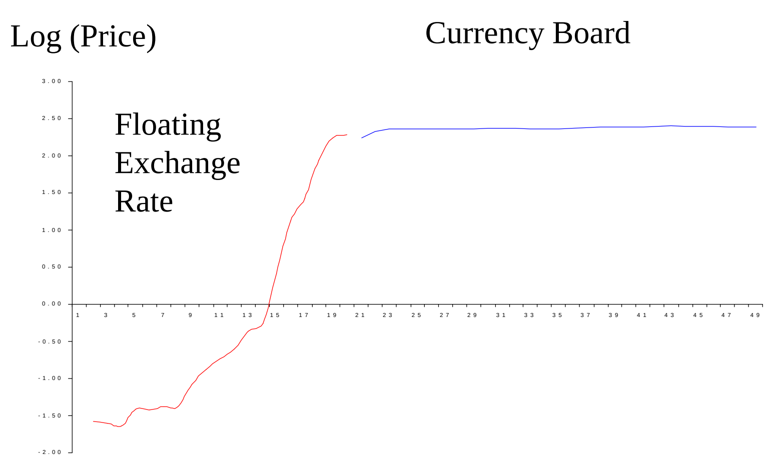
9) $$p_{arg} = \underset{(0.5)}{0.51} + \underset{(1.77)}{0.71p_{t-1}} - \underset{(-1.87)}{0.041m_{t-1}} + \underset{(1.81)}{0.13y_t}$$

$R^2 = 0.97$, D-W = 1.9

However, a possible explanation for the perversion on money (m_{t-1}) may be found in the nature of money growth. In the context a currency board, money variations are not driven by central bank policies. Rather, money changes are associated to anticipations regarding inflation, real rates of return, and the sustainability of the exchange rate.

In the initial stage of the implementation of the currency board, when inflation is high, the credibility in the system raises the expectation of a decline in prices and higher real rates of return. These expectations, in turn, lead to capital balance surpluses and eventually, to money expansion. In this setting changes in the price level are inversely related to money expansion. Chart 1, depicts, neatly, the striking contrast in the slope of the price equation between the floating and currency board systems.

Chart 1
Argentina, Price Estimates



Period 1986:1 - 1997:1

The Argentinean Rate of Inflation

The regression results for inflation during the floating period are presented in (10). In this regression, the parameters for all the independent variables are significant, except money growth (m_{gt}).

10) $Đ_{arg} = 0.13 - 0.4\, Đ_{t-1} + 0.11\, m_{gt} - 4.79 y_{g\,t}$
$\quad\quad (2.17)\ (1.87)\quad (0.15)\quad\quad (-2.5)$

$R^2 = 0.38$, D-W = 2.26

The regression results for inflation within the currency board period are presented in (11). In this case, the R^2 is very low and all the parameters of the independent variables are statistically insignificant. This suggests that inflation in this period acted as a random walk variable or that the model used is unsuitable to explain the behavior of inflation under the currency board.

11) $Đ_{arg} = 0.00079 + 0.018 m_{g\,t} + 0.068 y_{gt}$
$\quad\quad (0.31)\quad (1.0)\quad\quad (1.29)$

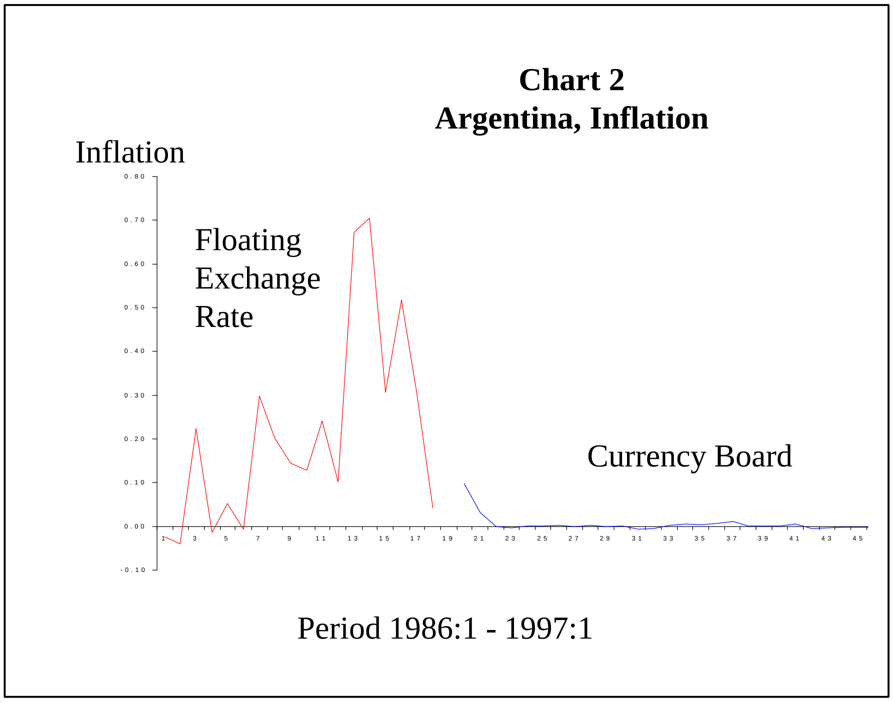
$R^2 = 0.23$, D-W = 1.81

Other Aspects of Inflation

Inflation estimates based on the regression results, previously discussed, indicate that during the floating exchange rate period, inflation in Argentina expanded at a rate of 86% per year, just to decline to 8.8% per year during the currency board period. Price volatility shows a similar trend. Under the first exchange rate regime, the standard error of inflation is 90%, whereas in the second period, is only 8%. These figures point to a remarkable contribution of the currency board to turn around price growth in an economy traditionally dominated by hyperinflation.

An excellent contrast of the inflationary consequences of the two exchange rate systems is presented in chart 2 and the empirical results for prices and inflation are summarized in table 5. [5].

[5] The tables are located in the Statistical Appendix.



While the currency board has been effective bringing inflation down, it has also exhibited some weaknesses. These are associated to beggar-thy-neighbor risk exposure. Argentina operates with a parity of one Argentinean peso to one dollar. Brazil, in contrast, toils with a floating rate. In principle, this disparity in exchange rate regimes did not pose a problem to the commercial relationship of the two countries. However, in January of the year 2,000, the Brazilian government took the decision to depreciate the real against the US dollar. This adjustment in the real parity led to a 50% appreciation of the Argentine peso against the Brazilian currency. The new parity led to recession, higher unemployment (14%), and inflation in Argentina. It also caused a diversion of foreign direct investment from Argentina to Brazil.

In Argentina, for instance, the consumer price in January of the year 2,000 rose to 0.8%. This increase was the first since September of 1999 and the largest since January of 1995.[6]

To prevent a recurrence of beggar-thy-neighbor policies in the context of Mercosur, all the country members have endorsed the creation of a common currency to

[6] Ambito Financiero, and Instituto Nacional de Estadistica y Censos (INDEC), Buenos Aires, Argentina, February 3, 2,000.

be called merco. The plan to introduce this new currency, however, does not appear feasible soon given the existing confidence on the Argentine currency board and the lack of consensus on how to uphold the launching of the merco.

The Mexican Experience

The price regression (p_{mx}) for the fixed exchange rate period (1955 – 1975) is presented in (12). The regression tracks the behavior of prices well, has the anticipated signs in all the independent variables, and all the parameters are statistically significant.

This regression includes two dummy variables, D= 1 if 1970 to 1975, 0 otherwise, and Dm= 1 if 1970 to 1975, 0 otherwise. D was inserted to test for intercept differences between the non-oil (1955- 1969), and oil development (1970 – 1975) periods. Dm was introduced to test for a slope difference in money between the two terms. The parameter for D is negative, for DM is positive, and both are statistically significant.

These results suggest that under the assumption of zero money and income, the price intercept is less in the (1970 – 1975) period. However, for the same period, the variations in money were deemed to be more inflationary.

12) $$p_{mx} = 0.47 + \underset{(7.0)}{1.15p_{t-1}} + \underset{(2.16)}{0.44m_{t-1}} - \underset{(-2.08)}{0.64y_t} - \underset{(-3.4)}{1.9D} + \underset{(3.41)}{0.55Dm};$$

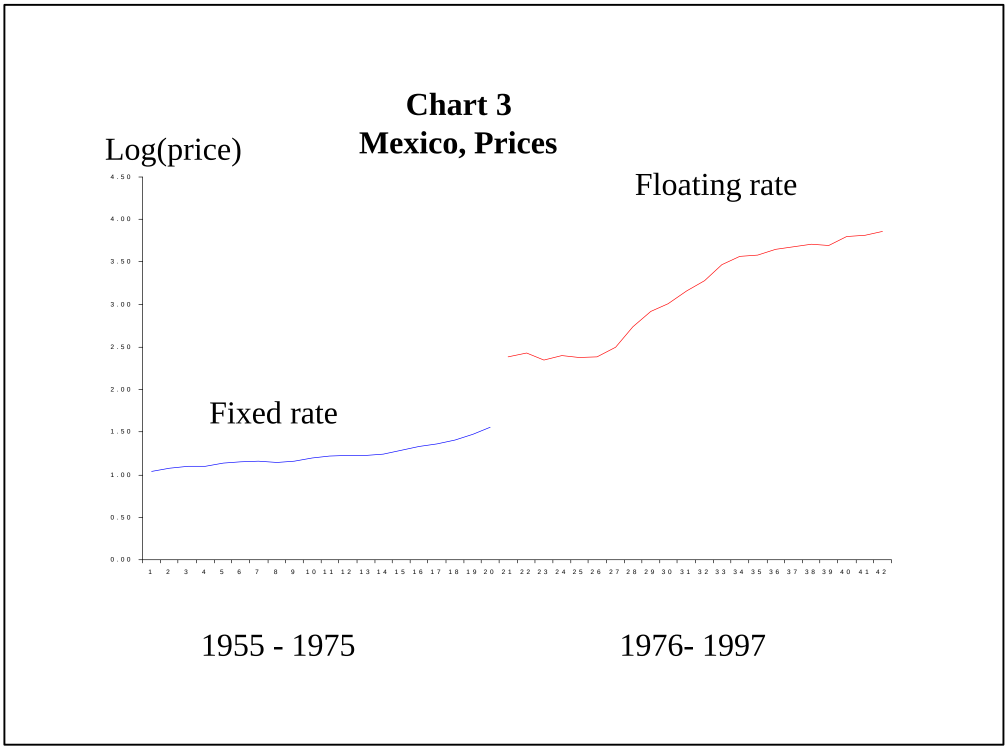
$R^2 = 0.99$; D-W = 2.13

The regression for the price equation during the floating period (1976 – 1997) is shown in (13). The parameters for all the independent variables are statistically significant, except for the two dummy variables introduced to test the significance of the oil crisis Dcrisis (1983 – 1990), and the signing of Nafta (1994 – 1997).

13) $$p_{mx} = \underset{(2.33)}{9.9} + \underset{(4.04)}{0.96p_{t-1}} + \underset{(1.78)}{0.33m_{t-1}} - \underset{(-2.7)}{2.89y_t} + \underset{(0.19)}{0.011Dcrisis} - \underset{(-0.8)}{0.071DNafta}$$

R^2= 0.99, D-W = 2.03

Chart 3 depicts the empirical results for prices in Mexico during the fixed and floating exchange rate regimes. It shows prices having a steeper slope during the floating rate period. This behavior, however, is not consistent throughout the term, since there are plateaus at the beginning and the end, and a steep rise in the slope between the two plateaus.



The Analysis of Mexican Inflation

The regression on inflation during the fixed exchange (1955 – 1975) period is described in (14). In this regression none of the parameters are statistically significant, which suggests that the model is either unfit to explain inflation or that inflation is a random walk process.

14) $$\eth_{mx} = \underset{}{0.03} + \underset{(0.83)}{0.18 m_{gt-1}} - \underset{(-0.22)}{0.1 y_{gt}}$$

$R^2 = 0.47$; D-W = 1.92

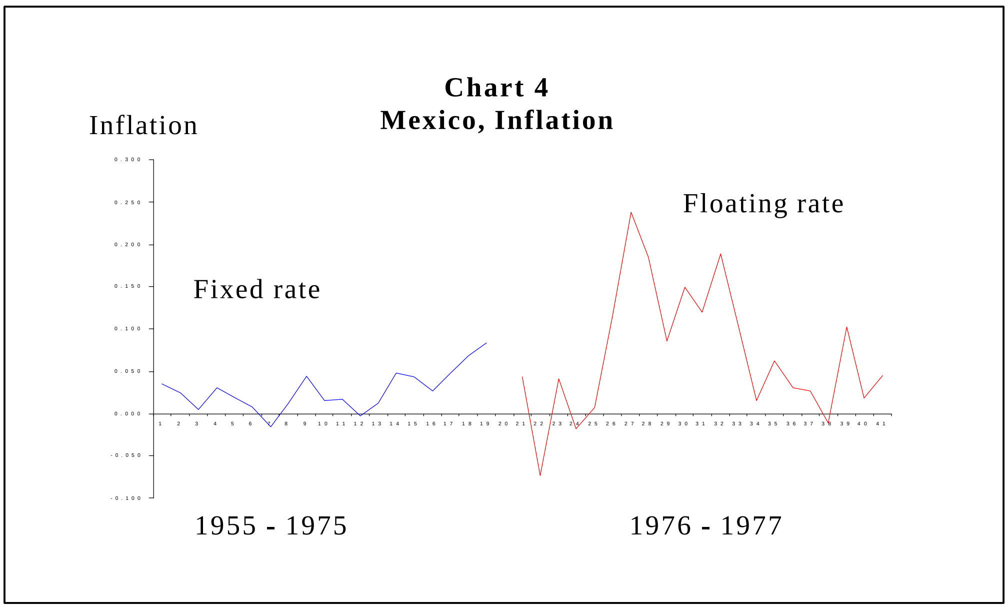
The regression for inflation for the floating period (1970 – 1975) is shown in (15). The parameters for income growth (y_{gt}) and the dummy, Dnafta (1974 – 1977), are statistically significant.

These results suggest that the NAFTA treaty contributed to slow down inflation.

15) $\eth_{mx} = 0.13 + 0.4\eth_{t-1} + 0.9m_{gt-1} - 2.67y_{gt} + 0.009DCrisis - 0.08DNafta$
(0.92) (0.75) (-2.75) (0.13) (-1.78)

R-squared = 0.70, D-W = 1.91

The empirical results of (14) and (15) are depicted in chart 4, which presents a clear contrast of the nature of inflation between periods and shows the continuous variations of inflation during the fixed exchange rate period. The comparative statistics for prices and inflation during the two periods are presented in table 5. [7]



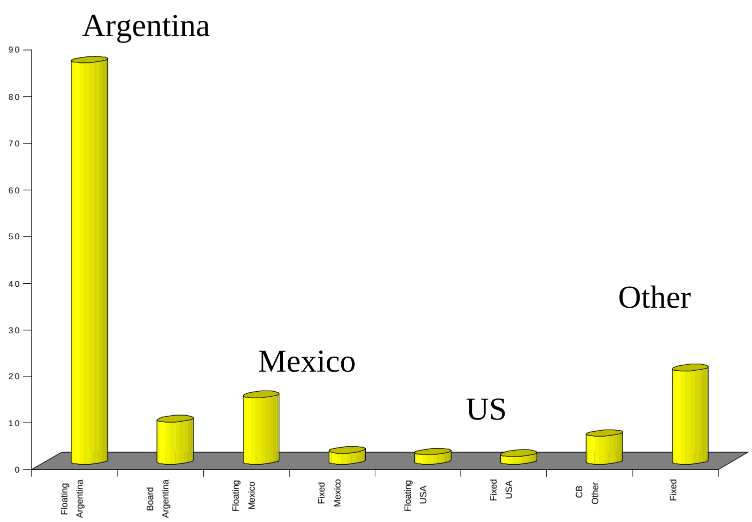
Prices and Inflation in the US

The United States is the largest trading partner of Mexico, and Mexico is the third largest trading partner of the US. Therefore, under any conceivable scenario, the implementation of a currency board would consider fixing the local currency to the dollar. Consequently, studying of the inflationary performance of the US under alternative exchange rate regimes may serve the purposes of providing a bench march for countries wishing to adopt a currency board or a sustainable fixed exchange rate system against the US dollar.

[7] The tables are located in the statistical appendix, at the end of the paper.

The analysis of inflation in the US indicates that, similar to the cases of Argentina and Mexico, this variable was lower and less volatile under the fixed exchange rate period (1956 – 1973). For instance, during the fixed exchange rate system, the average rate of inflation in the US was only 1.6% per year, while under the floating rate it was 2%. In terms of volatility both periods are almost alike, since under both regimes, the standard error of inflation stood at 1.2%.[8] A summary of the inflationary performance of the different countries, under different exchange rate regimes is presented in table 4, and chart 5.

Chart 5
Inflationary Performance



Remarks on Prices and Inflation

The analysis conducted leads to several conclusions. First, Inflation under a fixed exchange rate in a large countries beats the performance of the currency board in Argentina and elsewhere. Second, inflation under a currency board in Argentina and elsewhere, is less than the inflation in large countries operating with a floating exchange rate and the inflation in small countries functioning with a fixed rate. Third, the upper limit required to maintain a competitive exchange rate is an inflation rate of 2% per year.

[8] The inflationary performance of the EC from 1998 to the year 2,000 was similar to the US and stood at

Fourth, currency boards are feasible and are sustainable both in Mexico and Argentina since both countries have been able to reach and sustain rates of inflation of 2% or less in the long run. Fifth, the experience of Argentina with currency boards has shown that this system is sustainable in a large country setting.[9]

Real Income in Argentina

The real income (y_{arg}) regression results for the floating period (1986:1 – 1990:4) is presented in (16). In this equation the R^2 is modest, autocorrealtion is not suspect, and the parameters of the independent variables have the expected signs and are significant.

16) $$y_{arg} = \underset{(-0.62)}{-0.39} + \underset{(4.14)}{0.25m_{t-1}} + \underset{(2.6)}{0.78p_{usat}} + \underset{(3.16)}{0.000006xr_t}$$

$R^2 = 0.63$, D-W = 1.93

The regression for income under the currency board (1991:1 – 1997:1) is presented in (17). In this case, the R^2 is high, the DW statistics discard autocorrelation, and the signs of the parameters are as expected and significant.

17) $$Y_{arg} = \underset{(-0.85)}{-0.71} + \underset{(2.0)}{0.123m_{t-1}} + \underset{(2.27)}{0.91p_{usat}}$$

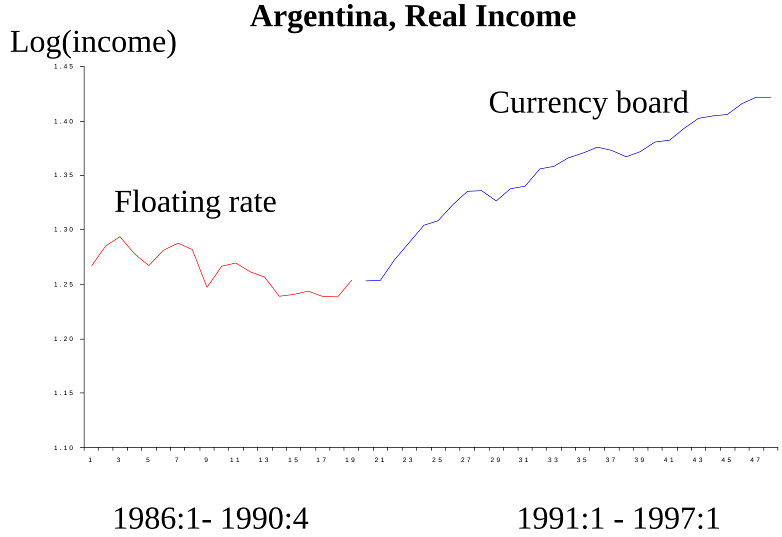
$R^2 = 0.88$, D-W = 2.09

The empirical results on real income for both periods are presented in chart 6, which depicts a steeper slope for this variable during the currency board period. This chart shows real income declining during the floating exchange rate period. In contrast, the currency board period shows real income on the rise, in spite of the formidable challenges faced by Argentina during this period, such as the Mexican and Asian crises.

1.2% per year.

[9] The currency board in Argentina resisted both the Mexican and Asian crises of 1994 and 1997 and the drastic change in the political landscape of Argentina in 1999.

Chart 6
Argentina, Real Income



Income Growth in Argentina

The regression for income growth (Y_{garg}) during the floating period is presented in (18). In this case, all the independent variables have the expected signs but only the parameter of money growth (m_{gt-1}), lagged one quarter, is significant.

18) $$Y_{garg} = \underset{}{0.0037} - \underset{(-0.5)}{0.33y_{gt-1}} + \underset{(2.07)}{0.19m_{gt-1}} - \underset{(-0.22)}{0.61infusa_{t-1}}$$

$R^2 = 0.49$, D-W = 2.14

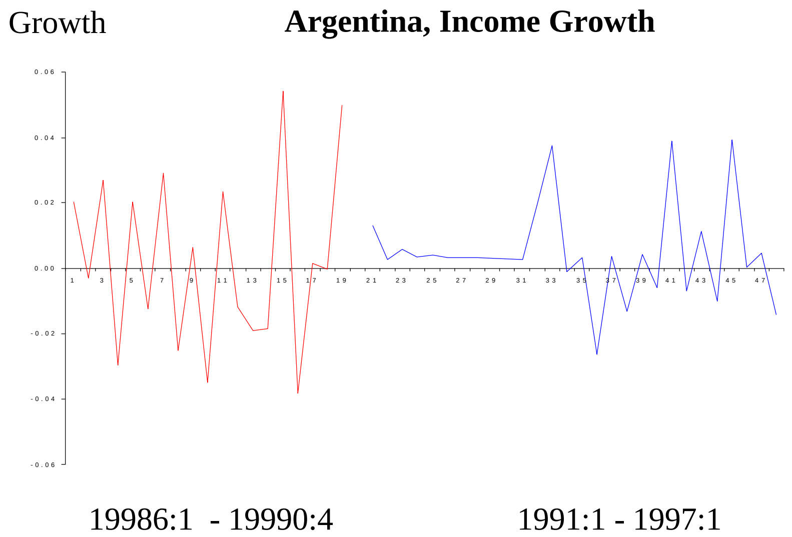
Regression results for income growth during the currency board period are shown in (19). The signs of all the parameters are as anticipated, except, that only the parameter for money growth (m_{gt}) is statistically significant.

19) $$Y_{garg} = \underset{(0.13)}{0.00084} + \underset{(2.0)}{0.1m_{gt}} - \underset{(0.26)}{0.54infusa}$$

$R^2 = 0.17$, D-W = 1.87

The empirical results presented in equations (18) and (19), are presented in chart 7. This chart describes a very volatile income growth during the fixed exchange rate period.. While there are some real income growth imbalance during the currency board, these appear to be smoother. These observations are confirmed by comparing standard error statistics across periods.

Chart 7
Argentina, Income Growth



Income in Mexico

The regression for income (Y_{mex}) in Mexico during the fixed exchange rate (1955 – 1976) period is presented in (20). The R^2 is high, the parameters show the anticipated signs, and all the variables, except the dummy D, are significant. The dummy, covering the oil development period (1970 – 1976), was introduced to test for an intercept difference between oil and non-oil development regimes.

20) $$Y_{mex} = 2.3 + \underset{(2.84)}{0.23m_t} + \underset{(4.5)}{0.0056p_{usat}} - \underset{(0.79)}{0.0083D}$$

$R^2 = 0.99$; D-W = 1.82

The regression for income ($y_{\ mex}$) for the floating period is presented in (21). In this equation the R^2 is high, autocorrelation is not suspect, the parameters of the independent variables have the expected signs, and are significant, except the one related to the dummy inserted to test for intercept differences between the debt crisis period term

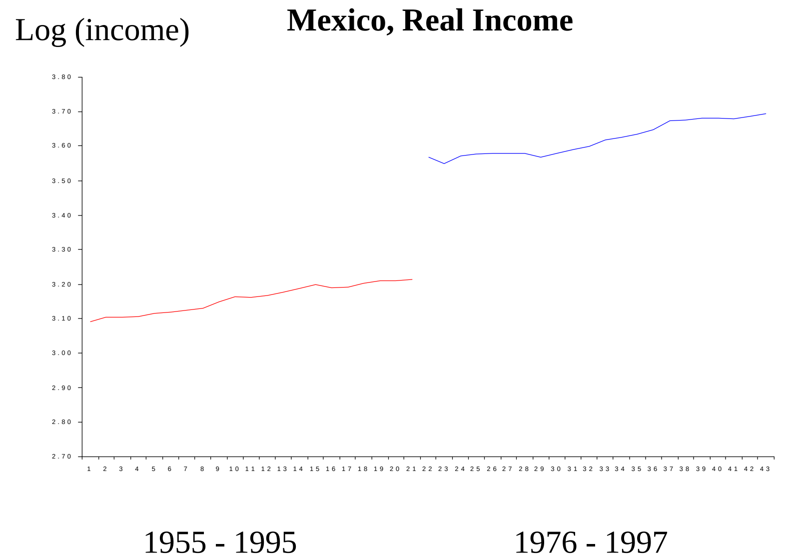
(Dcrisis, 1983 – 1990 = 1, 0 otherwise), and the rest of the period. These results indicate that increments in the US consumer price were positively related to income growth in Mexico. This result is plausible, considering the trade relationship between the two countries. The regression presented in 21 also shows that the debt crisis did not have an effect on income.

21) $$y_{mex} = \underset{}{3.27} + \underset{(2.71)}{0.083m_t} + \underset{(3.52)}{0.001p_{usa\ t-1}} + \underset{(0.029)}{0.0003DCrisis};$$

$R^2 = 0.97$; D-W = 2.22

The two income equations are depicted in chart 8 and the statistical information is presented in table 7. These point to a superior performance of income during the fixed exchange rate since average growth and volatility stand at 2.7% and 0.9% respectively. In contrast, these two statistics are only 1.2% and 1.8% during the floating exchange rate period. This indicates that that during the fixed exchange rate period income grew twice as fast, with less volatility.

Chart 8
Mexico, Real Income



Income Growth

The regression on income growth (Y_{mex}) in the fixed rate period is presented in (22). In this case, the signs for the parameters of the dependent variables are as anticipated, but only the one related to money growth (m_{gt-1}) is significant.

22) $Y_{mex} = 0.021 + 0.14m_{gt-1} + 0.04\ ð_{usat}$
(4.92) (1.73) (0.24)

$R^2 = 0.17$; D-W = 2.07

The regression on income growth for the floating period is shown in (23). This equation includes the dummy variable (Dcrisis = 1 for the period 1983 – 1990, 0 otherwise), inserted to test for growth difference between the debt crisis period (1983 – 1990) and the rest of the term. The signs for the parameters are as expected, and are significant. The only exception is the parameter of the dummy. This implies that income growth within the debt crisis period was not significantly different from growth during the rest of the term. This equation also shows a positive relationship between US inflation and income growth in Mexico.

23) $y_{mex} = -0.0038 + 0.063m_{gt} – 0.0038Dcrisis + 0.77ð_{usat}$
(-0.63) (2.52) (-0.66) (3.45)

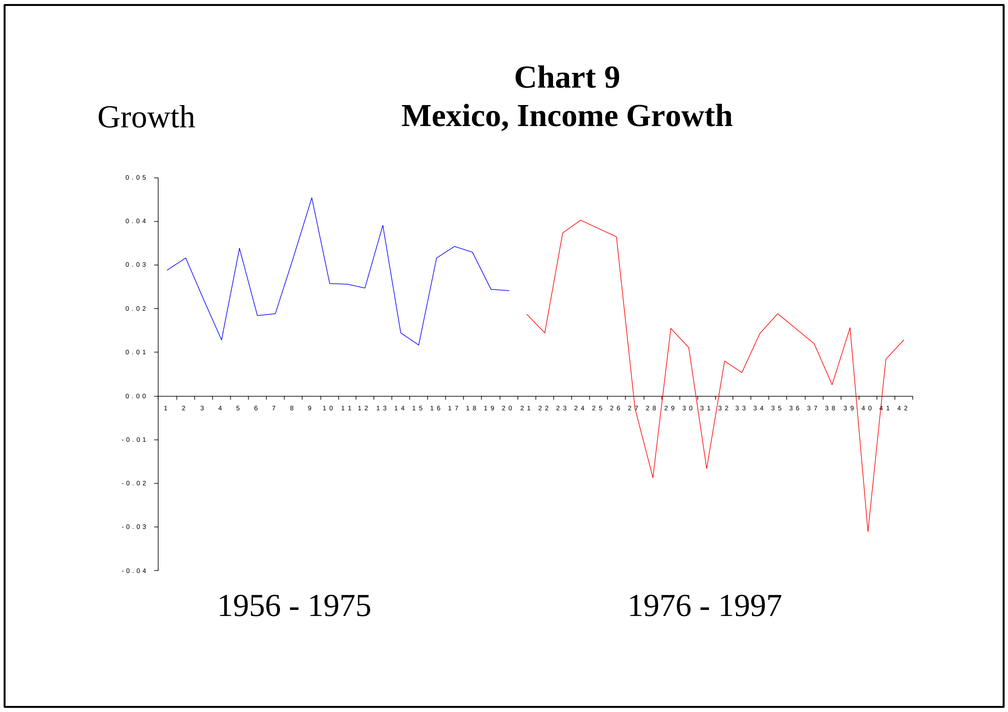
R^2= 0.59; D-W = 2.49

The empirical results for (22) and (23) are depicted in chart 9, which shows a higher and less volatile income growth during the first term.

The US Experience

To extend the knowledge about income growth under different exchange rate scenarios, this paper also investigated the performance of the US economy under fixed and floating exchanger rate regimes. During the first regime, income grew at a rate of 4.2%. By comparison, during the floating regime, growth was only 3%.

A summary of all the empirical evidence collected income, and income growth is presented in table 7.



Currency Board and the Institutions

The implementation of a currency board may be able to help Mexico to reduce the rate of inflation, and to accelerate income growth. However, the success of a currency board depends, at a large extent, on the economic conditions of the country and the support of key institutions. To explore these two issues this section incorporatesthe opinions expressed by leading Mexican business executives, Bank of Mexico advisers, members of the Mexican congress belonging to the three main political parties, and monetary authorities of the Bank of Mexico.[10]

The business community expressed an overwhelming support for the implementation of a currency board and a strong sense of disappointment with monetary policy and central bank management. Eduardo Bours, Chairman of the Confederacion Patronal de la Republica Mexicana, (COPARMEX), the most important business bureau in Mexico, in his farewell speech, delivered a blistering public attack to “seventy years of inept central bank policies.” Monetary authorities in attendance to this event were taken aback by the content of Mr. Bours’ delivery. To address this issue, they invited him to meet the bank's Board. In that meeting, Mr. Bours, unabashedly, restated his views about central bank policies. To review these concerns, the Bank of Mexico requested the advise of Professors Rudiger Dornbusch and Sebastian Edwards.

In a colorful speech, during a workshop dinner in Mexico City, attended by Mexican monetary authorities, Dr. Dornbusch pleaded for the implementation of a currency board. The audience reminded him that in previous meetings, he had recommended to stick to the float and a peso depreciation to reinvigorate the float.

Some central bank officers surprised towards what they perceived as a contradictory and confusing advise on the part of Mr. Dornbusch, asked him to provide evidence supporting his view on the currency board. He agreed to the request promising to do it on the spot. To the astonishment of the bank executives, he rounded up all the Mexican workers helping with the dinner and asked whether they preferred to be paid in pesos or dollars. Overwhelmingly, the majority chose dollars. Dr. Dornbusch, with a grin, stood up, raised his fist, and shouted, "I proved my point!"

Representative, Dolores Padierna, (PRD) and Senator Ifigenia Martinez, both from the Partido de la Revolucion Democratica (PRD) expressed dismay at the central bank policies and rejected the notion of a currency board. If it was up to them, they would prefer a flexible exchange rate system.

Mr. Carlos Medina Plascencia, a congressman and coordinator of the Partido Accion Nacional (PAN) fraction in congress, did not express his opinion on this matter. However, he was perceived by credible sources as a person with a distrust for Central Bank Chairman, Guillermo Ortiz , which was considered by Mr. Medina as a person undeserving of PAN's trust.

Members of congress belonging to the Partido Revolucionario Institucional (PRI), viewed Mr. Zedillo as a weak President facing both a fractured PRI holding a narrow majority, and a large number of left-wing PRI members looking for an excuse to switch party. In this scenario, they did not foresee Dr. Zedillo or PRI pursuing an exchange rate reform.

. The international banking community did not appear sympathetic towards reforming the Mexican exchange rate system. Banking executives from Lehman Brothers

[10] These interviews took place throughout the summer of 1999.

reasoned the unwillingness of their institutions to lobby for a change in the exchange rate system of Mexico on the lack of convincing empirical evidence supporting this reform.[11]

Dr. Taeho Kim, international banking expert and Thunderbird professor, was supportive of implementing a currency board in Mexico. However, he did not believe that the conditions were ripe to carry on with this reform. He equated the currency board to a quasi-gold standard, where reserves were made out of stockpiling dollars. Against this backdrop, he viewed the implementation of a currency board in a large country, such as Mexico, creating a shortage of dollars that could raise the cost of reforming the exchange rate system. He also felt that the dollar reserve requirements of a currency board would subject the exchange rate of a country adopting it to the decision making process of a foreign entity. He recommended patience and to wait for the euro to mature. In his view, the euro will provide both, additional liquidity and the ability of countries wishing to adopt a currency board to increase their monetary independence even under a currency board.

The monetary authorities rejected the charges of ineptitude raised by Mr. Bours and others. They expressed amazement towards the naivete of the arguments raised against Central bank policies.

The central bank executives were not surprised by the views expressed by PRD. However, they were disappointed with PAN, which they had always viewed as a natural ally, given the libertarian views of the party's founding fathers.

The central bank executives were opposed to turning the central bank into a board. They presented coherent arguments to sustain this opposition. They singled out Panama as a country that has remained poor and underdeveloped in spite of low rates of inflation and the connection of Panama's monetary and exchange rate policies to the US dollar, which is ultimately the goal of a currency board in Mexico.

The central bankers felt that business pressure to turn the central bank into a Board was related to the level of inflation. They were confident of reducing inflation to 10% would relieve the Central Bank from the pressure to reform. [12]

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[11] The Lehman Brothers bank executives indicated that the implementation of a currency board in Mexico would serve only to reduce bank earnings in exchange rate management services.
[12] Inflation decreased to 10% in January of the year 2,000.

When asked about the possibility of restricting monetary policy to bring inflation down, they indicated that the central bank was not considering any drastic attempt to correct inflation.

When questioned about alternative bank responses to pro-Board pressures in case they could not meet the 10% inflation threshold. They felt confident that, even under this scenario, the exchange rate system would not be reformed. The monetary authorities believed that only a person with a strong neo-liberal bent could accomplish this reform. Mr. Francisco Labastida, the PRI presidential candidate, was identified as a politician belonging to this cadre. However, under the best of the circumstances, they doubted that even the PRI candidate, if elected President, would dare to reform the exchange rate system.

Is the Currency Board a Fix for Mexico?

Given the past achievement of Mexico with a fixed exchange rate and the success of Argentina, it appears pertinent to suggest the implementation of a currency board in Mexico since such a system could deliver lower rates of inflation and higher income growth. However, this reform faces major obstacles. For one, the lack of a decisive and resolved white knight willing to face the existing fragmentation of the political institutions, and the antagonism of the domestic and international financial institutions to this reform.

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STATISTICAL APPENDIX

Prices and Inflation in Argentina, Mexico, US, and other

The statistical information collected for Argentina is quarterly data running from the first quarter of 1986 to the first quarter of 1997. This time horizon is divided into periods covering floating —first quarter of 1986 to last quarter of last quarter of 1990— and currency board regimes.

The statistical information for Mexico is yearly and extends from 1955 to 1998. Between 1955 to 1975 the country operated a fixed exchange rate regime. This was switched to a floating rate in 1976.

The fixed exchange rate period was broken down into two time horizons, the *stability* and *oil development* periods. This distinction was made to introduce dummy variables to improve the quality of the regression analysis and, if necessary, to test for a difference in monetary regimes between the two sub-periods.[13] The same reasoning was followed to include a dummy identified as *NAFTA* (1992 to 1997) during the floating rate period.

The price and income information for the US is quarterly and runs from the first quarter of 1956 to the first quarter of 1997. A summary of the exchange rate regimes included in this paper is presented in table 1.

Table 1
Exchange Rate Regimes, Mexico, Argentina, and the US

Mexico	**Argentina**	**US**
Fixed Exchange	Floating Exchange	Fixed Exchange
Stability		
1955 – 1969	1986:1 - 1990:4	1955 - 1974
Oil development		
1970 – 1975		
Floating Exchange	Currency Board	Floating Exchange
1976 – 1991	1991:1 - 1997:1	1975 - 1999
NAFTA		
1992 – 1998		

Table 2
Argentina, Price and Inflation

Period	Regime	Dependent Variable	Empirical Result
1986:1 – 90:4	Floating exchange rate	Log (price)	p_{arg} = 9.13 + 0.99 p_{t-1} + 0.068m_t - 7.08 y_t (2.78) (27.3) (0.079) (2.7) R-squared = 0.98, D-W = 1.93
		Inflation	Ð$_{arg}$= 0.13 - 0.4 Ð$_{t-1}$ + 0.11 m_{gt} - 4.79$y_{g\,t}$ (2.17) (1.87) (0.15) (-2.5) R-squared = 0.38, D-W = 2.26
1991:1 – 97:1	Currency board	Log(price)	p_{arg} = 0.51 + 0.71p_{t-1} - 0.041m_{t-1} + 0.13y_t (0.5) (1.77) (-1.87) (1.81) R-squared = 0.97, D-W = 1.9
		Inflation	Ð$_{arg}$= 0.00079 + 0.018$m_{g\,t}$+ 0.068y_{gt} (0.31) (1.0) (1.29) R-squared = 0.23, D-W = 1.81

Table 3
Mexico, Prices and Inflation

Period	Regime	Dependent Variable	Empirical Result
1955- 75	Fixed exchange rate	Log(price)	p_{mx} = -1.55 + 0.98p_{t-1} + 0.48m_{t-1} - 0.01y_t + 1.57D – 0.46Dm; (-3.91) (7.4) (3.12) (-0.04) (5.62) (-5.65) R-squared = 0.99; D-W = 2.13
		Inflation	ð$_{mx}$ = 0.041 + 0.13m_{gt-1} - 0.1y_{gt} – 0.02D (2.52) (0.77) (-0.21) (-1.77) R-squared = 0.52; D-W = 1.73
1976-97	Floating exchange rate	Log (price)	P_{mx} = 9.9 + 0.96p_{t-1} + 0.33m_{t-1} - 2.89y_t + 0.011DCrisis–0.071DNafta (2.33) (4.04) (1.78) (-2.7) (0.19) (-0.8) R-squared = 0.99, D-W = 2.03
		Inflation	Ð$_{mx}$ = 0.13 + 0.4ð$_{t-1}$ + 0.9m_{gt-1} – 2.67y_{gt} + 0.009DCrisis –0.08DNafta (2.57) (0.92) (0.75) (-2.75) (0.13) (-1.78) R-squared = 0.70, D-W = 1.91

Table 4
Inflation, in Argentina, Mexico, the US, and the World

Inflation %	Argentina Floating	Argentina Board	Mexico Floating	Mexico Fixed	USA Floating	USA Fixed	Other CB	Fixed
Average %	86	9	14.3	2.4	2.0	1.6	6	20
Std error	90	8	9.7	2.2	1.3	1.1		
High	266	24	33.8	6.9	4.7	3.9		
Low	-95	-6	- 5.1	-2.0	-0.6	-0.6		

Table 5
Argentina, Real Income and Economic Growth, 1986 - 1997

Period	Regime	Dependent Variable	Empirical Result
1986:1 – 1990:4	Floating rate	Real Income	$y_{arg} = -0.39 + 0.25m_{t-1} + 0.78p_{usat} + 0.000006xr_t$ (-0.62) (4.14) (2.6) (3.16) R-squared = 0.63, D-W = 1.93
		Income Growth	$Y_{garg} = 0.0037 – 0.33y_{gt-1} + 0.19m_{gt-1} - 0.61infusa_{t-1}$ (0.27) (-0.5) (2.07) (-0.22) R-squared = 0.49, D-W = 2.14
1991:1 – 97:1	Currency board	Real Income	$Y_{arg} = -0.71 + 0.123m_{t-1} + 0.91p_{usat}$ (-0.85) (2.0) (2.27) R-squared = 0.88, D-W = 2.09
		Income Growth	$Y_{garg} = 0.00084 + 0.1m_{gt} - 0.54infusa$ (0.13) (2.0) (0.26) R-squared = 0.17, D-W = 1.87

Table 6
Mexico, Real Income and Economic Growth, 1956 - 1997

Period	Regime	Dependent Variable	Empirical Result
1955- 75	Fixed rate	Real Income	$Y_{mex} = 2.38 + 0.23m_t + 0.0056p_{usat} + 0.0083D$ (8.98) (2.84) (4.5) (0.79) R-squared = 0.99; D-W = 1.82
		Income Growth	$Y_{mex} = 0.021 + 0.14m_{gt-1} + 0.04\ ð_{usat}$ (4.92) (1.73) (0.24) R-squared = 0.17; D-W = 2.07
1976 - 97	Floating rate	Real Income	$y_{mex} = 3.27 + 0.083m_t – 0.11p_{usa\ t-1} + 0.3DCrisis;$ (29.3) (2.71) (-3.52) (0.29) R-squared = 0.97; D-W = 2.22
		Income Growth	$y_{mex} = -0.38 + 0.063m_{gt} – 0.0038Dcrisis + 0.77ð_{usat}$ (-0.63) (2.52) (-0.66) (3.45) R-squared = 0.59; D-W = 2.49

Table 7
Income Growth in Argentina, Mexico, the US, and the other

Income Growth %	Argentina Floating	Argentina Board	Mexico Fixed	Mexico Floating	USA Floating	USA Fixed	Other CB	Other Fixed
Average	0.2	0.5	2.7	1.2	4.2	3.0		
Std error	2.7	1.5	0.9	1.8	3.9	3.6		
High	5.7	3.4	4.4	4.8	12	10.2		
Low	-5.3	-2.5	0.9	-2.4	-3.6	-4.2		