

MEXICO'S EXCHANGE RATE CHALLENGES WITH A GLOBAL, FINANCIALISED PESO

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Since the mid-1980s, Mexico's economic development model has been outward-oriented. The volume of international trade represents 70% of gross domestic product (GDP),¹ and about 80% of imports are intermediate goods. These two facts taken together make inflation very sensitive to exchange rate volatility, particularly since late 1994, when Mexico established a free-floating exchange rate regime. If we add to this the neglect of the domestic market and huge dependence on external savings, we can understand why the accommodative monetary policy of the developed countries' central banks have forced the Banco de México (BdeM) to consistently intervene in the exchange market to prevent the inflationary impact of a peso depreciation and to raise the reference rate to contain capital flight.²

Throughout 2017, BdeM has been forced to make public statements and justify its continual interventions in the foreign exchange market, arguing that they are due to the need to create order in the market to prevent the depreciation of the peso turning into an exchange-rate pass-through (ERPT), which, in turn, would create secondary effects. And, the BdeM specifies that there is no exchange rate target (Carstens 2017).

This is part of a global phenomenon characterised by excess liquidity in international financial markets and a process of integration, globalisation, and financial liberalisation that has created growing instability. The result seems to be an exchange rate war, a struggle for competitiveness via prices, and the need to place goods in the foreign market due to domestic markets' poor performance.

The objective in this chapter is to demonstrate the increasing ineffectiveness of Mexico's exchange rate policy with a global, financialised currency in light of an export-driven accumulation model strongly impacted by exchange rate volatility. The chapter is divided into five sections including this introduction. The second section analyses Mexico's exchange-rate policy since the inauguration of the free-floating regime and the establishment of different forms of intervention into the foreign exchange (FOREX) market. It will also discuss the restrictions that international financial instability has imposed on Mexico's economic model. The third section analyses the accelerated globalization of the peso in the context of financialisation. The fourth discusses the role of structural changes in the international currency market regarding Mexico's peso. And the fifth section establishes possible alternatives for Mexico's exchange rate policy and lays out our conclusions.

EXTERNAL SHOCKS AND EXCHANGE RATE POLICY IN MEXICO FROM 1994 TO 2017

The analysis of exchange rate policy in the period of the free-floating exchange rate system has been divided into three stages: the first ranges from the beginning of the banking-financial crisis and the transition to the floating exchange rate system beginning on December 22, 1994, until September 14, 2008, when Lehman Brothers went bankrupt. The second stage is from September 2008 to September 2014, when Janet Yellen announced the possibility of beginning to normalise U.S. monetary policy, sparking marked exchange rate volatility in Mexico. This second stage includes the application of an unconventional monetary policy by the Federal Reserve Board (the FED, the US central bank) called quantitative easing (QE), which reduced the reference rate to around zero and caused a sharp monetary expansion in three stages with a strong impact on the carry trade.³ The third stage goes from October 2014 to 2017 and is characterised by the fall in international raw material (oil) prices and the victory of Donald Trump, whose campaign promises and aggressive recommendations have caused a great deal of uncertainty and marked dollar/peso volatility.

Over these three periods, Mexico's economy was subject to strong external shocks that created great uncertainty and exchange rate volatility, putting monetary policy in a straitjacket and reducing the margin for fiscal policy freedom.⁴ However, this volatility accentuated as the Mexican peso became a global currency and went through financialisation, as we will analyse in section three of this chapter.

With the 1994 banking and financial crisis and given the depletion of international reserves, the BdeM was forced to leave the currency market and move toward a floating exchange rate system, establishing two basic objectives: first, to not intervene in free operations of the

foreign exchange market, and second, to foster its development, deepening, and liquidity by creating new financial instruments and welcoming new participants (Sidaoui 2005). To avoid exchange rate volatility, the bank deepened the peso derivatives and foreign exchange market and developed different instruments for direct and indirect intervention (Werner & Milo 1988). Among the former were temporary access to liquidity, the isolation of Mexican oil operations and those of other federal government institutions that receive dollars and are obliged to sell them to the BdeM, as well as discretionary sales of dollars in the currency market. With regard to the latter, it developed US dollar call options.⁵ Dollar auctions were carried out in four ways: direct auctions with and without a minimum price, extra auctions, and complementary auctions. Plus, auctions of exchange rate hedges were added.

In addition, it maintained a positive margin *vis-à-vis* the US interest rate, raising the target rate, and negotiated a flexible line of credit with the IMF to discourage speculative attacks against the peso.

In the early stages of the system, the BdeM established facilities for loans to commercial banks to avert and retain the execution of its external liabilities, through loans in dollars given to the Fund for Insured Deposits (FOBAPROA), which, in turn, assigned the funds to the banks requesting assistance (Sidaoui 2005).

In the first stage (1996-2001), a mechanism for accumulating international reserves (MARI, for its initials in Spanish) was established to replace international reserves and create confidence, a more stable exchange rate, and less country risk. This was accompanied by a program of dollar auctions to mitigate the effects of external shocks. Although the amount was not very significant, the mechanism did impact the willingness of speculators to act due to the daily auction announcements. In this period, the peso had not yet become globalised, and therefore, this type of intervention was effective since it operated in a local market.

From May 2003 to mid-2008, another mechanism was established to reduce the rate of accumulation of international reserves (MRARI, for its initials in Spanish), with the aim of reducing the cost of their accumulation. This mechanism also used dollar auctions. Initially, the interventions were small, US\$200 million a day, and the sale was not always awarded to anyone, since its main objective was to discourage speculation. Financial reforms were also carried out and new institutions created to give the foreign exchange market liquidity, depth, and stability. Outstanding among the measures created were the Mexican Derivatives Market (MEXDER), the opening of an options market, and the authorization for MEXDER to allow foreigners to participate, all implemented in 1998.

The second stage began with the spread of the subprime crisis in September 2008 and the restructuring of monetary policy through increases in the target rate to avoid capital flight. The target rose five times in one year, going from 7% to 7.75%. It later moved down to

reactivate the economy, also taking advantage of the fact that the FED had decreased its own and that the peso was appreciating given the constant entry of portfolio capital.⁶

Between April and October 2009, a swap line was created with the FED to auction credits in dollars to credit institutions in Mexico. In that period, the target rate dropped six times, from 7.7% to 4.5% between February and July 2009. From October 2008 to April 2010, daily dollar auctions resumed and five extra auctions were held for a total of US\$11 billion in October. From March to June 2009, an additional auction mechanism was implemented that operated together with the daily mechanism.

Given international markets' great volatility, the MARI was reactivated through auctions of options to sell between February 2010 and November 2011, followed by the reactivation of dollar auctions to create order in the foreign exchange market from November 2011 to April 2013. In that year, the BdeM reduced the target rate three times, lowering it from 4% to 3.5% to spark greater economic dynamism.

The third stage, beginning in September 2014 and lasting until 2017, was the most volatile. In that period, dollar auctions began again from December 2014 to January 2016, and the MRARI was reactivated between March and November 2015 to complement the auctions. That same month of November, the complementary auctions began again and the bank announced the possibility of making a discretionary intervention. In February, it raised the target rate to 3.25% to try to reverse capital flows, even though the FED had not changed its

target interest rate, and in 2016, it raised the target rate five times, going from 3.75% to 5.75%.

Throughout this period, two mechanisms co-existed: the regular and the supplementary auctions, which were all suspended in January 2017. In February, the bank raised the target rate again to 6.25% and, on February 27, given the market's lack of reaction since it is basically foreign, the BdeM designed a new mechanism: auctions of exchange rate hedges with a US\$20-billion ceiling for credit institutions authorized to operate with derivatives. By November 2017, 18 auctions had been held on 5 different dates, with total awards of US\$3.5 billion; and, from March to June, the target rate rose 3 times, going from 6.5% to 7%. Thus, in no more than 17 months, the target rate went from 3% to 7%, raising the price of credit options and slowing the economic growth process with a high inflationary pass-through: annual inflation jumped from 2.6% to 6.6% between June 2016 and November 2017.

Disregarding the two first years of the flexible exchange rate regime when volatility was extreme, the first stage showed a noticeable reduction in volatility, and the BdeM considered the exchange rate policy a success because it was effective in absorbing external shocks without affecting inflation. However, beginning in 2008, and particularly during the great financial crisis, volatility continually increased, intensifying in the second stage, and broadening in the third stage. See Figure 14.1.

<FIGURE 14.1 HERE>

The increased volatility was the product of unconventional, accommodative monetary policies between 2008 and 2015 due to the huge liquidity injected by the main central banks (approximately US\$10 trillion) (Rozo 2016, 38).

In addition, the reduction of reference rates to nearly zero was an incentive for carry trade speculation that generated large influxes of capital to the emerging economies, among them, Mexico. From late 2008 to 2017, Mexico received US\$324.565 billion in foreign portfolio investment, peaking in 2012, with 2.0% of the world total, and dropping in 2016 to 1.5%.

FED and European Central Bank (ECB) desynchronised and diametrically opposed accommodative policies also had an impact. They caused intense movement of trans-border investment seeking higher yields and greater security, both of which they found in Mexico with higher interest rates, stable public finances, low inflation, and deep, liquid financial markets.

GLOBALISATION AND FINANCIALISATION OF THE PESO: EXCHANGE RATE POLICY TO THE LIMIT (2014-2017)

The financialisation of currencies is the result of a series of intimately linked phenomena, including exploding liquidity in international markets, the fall of the average world growth rate and of productive investment, increased concentration of income and wealth, and low levels of domestic consumption worldwide.

As part of this process, surplus liquidity was channelled toward financial markets, seeking its revaluation through portfolio investments, through a continual exchange of currencies that imprinted the exchange market with its own dynamic, turning it into an instrument that offered great opportunities for speculation. The result was a disconnect between international trade flows of goods and services and exchange transactions, turning the exchange rate into “a financial asset highly suited to speculative activities” (Rozo 2016, 20). In this context, monetary policy loses the autonomy to impose order in the foreign exchange market and retain capital.

The concept of globalisation of a currency is much broader than that of its internationalisation since it relates the use of currencies in trans-border transactions with the relative weight worldwide of different factors. Outstanding among these are national GDP, the volume of international trade, the volume as a receiver and issuer of foreign investment, the volume of the debt, derivatives, and foreign exchange markets, plus the degree of development and depth of the financial market (Thimann 2009). According to Thimann, in 2009, the Mexican peso ranked first among the emerging economies as a global currency.

The financialisation and globalisation of the Mexican peso resulted from the joint effect of fiscal discipline, the trade opening, and the structural reforms of Mexico’s financial sector in the last decade of the twentieth century. All of these led to a period of macro-economic

stability that had not been experienced since the era of *desarrollo estabilizador* (stabilizing development).⁷

In the first years of the twenty-first century, Mexico was characterised by a relatively low, controlled fiscal deficit, an inflation-targeting monetary policy, and a free-floating exchange rate regime; all of this provided national and international investors with certainty. According to Cota (2015), Mexico managed to make its currency one of the three emerging country currencies that was traded 24 hours a day, 5 days a week. However, the levels of dollar/peso transactions did not correspond to the relative size of the Mexican economy or its trade and mainly took place outside of Mexico (McCauley & Scatigna 2011). This implies the existence of speculation and the search for risk hedging coverage that coincides with the figures Levy-Orlik and Domínguez report (2017). They show that trade in the Mexican peso increases more rapidly than the volume of total transactions in the international money market in crisis periods.

The current sophistication of international money markets rests on the proliferation of financial derivative use. These are based on a mixture of currencies, which are used for speculation and produce distortions in relative prices because they augment the movement of the benchmark currency. In addition, the use of Mexico's currency as a hedge against the fall in international basic raw material prices creates new economic policy challenges.

Financial capital flows are not passive, nor are they accommodative, but they are procyclical, and international trade plays a secondary role in determining currency prices. This is because exchange rate transactions are directly linked to capital, since the financial sector operates under different logic from that of the real economy, and economic agents' expectations are what drive the financial assets market (Harvey 2009). This is what is happening to the Mexican peso. For that reason, volatility has increased in the third stage, linked more to expectations about the probable effects of phenomena than to their fundamentals.

According to Eichengreen (2017), currencies become a vehicle for transborder investment, guided by financial transactions and used basically as a hedge to take advantage of arbitrage opportunities. The issue is that the Mexican government prepared the way for this by creating a deep, liquid secondary market and establishing conditions to continually operate with financial assets, liberalise the capital account, and impose a flexible exchange rate.

In the three periods analysed, the exchange rate is the most volatile in Stage 3 (See Table 1), which is even more volatile than in the initial stage, when the BdeM abandoned the foreign exchange market and de-activated the currency band. This is due to the fact that, starting in 2014, external shocks have a greater impact because they directly affect the country's economic dynamic since they are the result of the combination of a series of factors: the fall in commodities prices, particularly that of oil;⁸ announcements and decisions about normalization of US monetary policy and the negative discourse of first candidate and later President Trump about Mexico;⁹ the difficult renegotiations of the North American Free

Trade Agreement,¹⁰ begun in August 2017, together with a promise of a fiscal reform that would reduce corporate taxes; and, finally, the recession in the U.S. industrial sector, with which Mexico is strongly integrated in productive chains.¹¹

<TABLE 14.1 HERE>

On the whole, these phenomena fed the strong volatility of international capital flows and sparked sharp depreciations of the peso against the dollar.¹² The periods of exchange rate volatility broadened and brought into question BdeM commitment to fighting inflation and the floating exchange rate system.

Most of the dollar/peso transactions take place outside Mexico; in 2016, only 17.9% took place inside the country,¹³ and the other 82%, on the international market. Ten years earlier, in 2007, the figures were 40% and 60%, respectively (Banco de México 2016, McCauley & Scatigna 2011).

The globalisation of the peso has been very swift: in 1998, it represented 0.4% of all world foreign exchange transactions; in 2013, it came to 2.6% and in 2016, 2.2%. If we consider the participation of the dollar, whose respective values are 86.8%, 87%, and 86.6%, we can see that Mexico's figures have only relative weight among the 10 main global currencies. In the world derivative market, we went from 0.83% in 2001 to 2.53% in 2013, and 1.92% in 2016.

Today, international capital flows have a new dynamic and structure, increasing the interdependence and reflexivity of the prices of different financial assets and accentuating volatility of exchange rates worldwide. Financial markets and their products are very sophisticated, and using financial robots to determine the precise moment to carry out transactions magnifies price jumps not only of financial assets, but also of currencies in a recursive movement that magnifies exchange rate variations. This forces countries with flexible exchange rate systems like Mexico to look for techniques for indirect intervention in the foreign exchange market, while others impose fiscal, administrative, and legal restrictions on capital flows.

THE ROLE OF STRUCTURAL CHANGES IN THE MEXICAN PESO'S INTERNATIONAL MARKET

In the process of establishing the flexible exchange rate in Mexico, monetary authorities operated using the theory of disappearing intermediate regimes, which states that, in an atmosphere in which international capital is increasingly interconnected, only extreme exchange rate systems are sustainable. This theory posits that hard-pegs, such as a monetary union or a currency board and controlled flotation or pure flotation free exchange rate regimes, are the most sustainable in the face of speculative attacks (Martínez Trigueros 2005).

The exchange rate regime picked was the *de jure* flotation regime (Romero 2005), which is flotation managed through central bank interventions. This change in exchange rate policy produced new behaviour in economic agents, who began to perceive the shocks in the exchange rate as transitory due to the BdeM's credible commitment to stabilising inflation. This can be observed since 2001, through the separation of inflationary prospects and exchange rate depreciation (Capistrán, Ibarra-Ramírez, & Ramos-Francia 2011). As a result, the floating exchange rate system has been maintained, while the exchange rate's inflationary pass-through on prices was reduced (Martínez Trigueros 2005, and Capistrán, Ibarra-Ramírez & Ramos-Francia 2011).

The new set-up also allowed economic agents to better estimate their risks due to exchange rate exposition. In addition, the Mexican economy's fundamentals in terms of indebtedness and public spending and the monetary policy's credibility generated relative macro-economic stability during the first and second stages when it was faced with high volatility internationally. However, when the Mexican peso became a global currency,¹⁴ this reduced the exchange rate and monetary policy's effectiveness with regard to the inflationary pass-through, particularly from 2016 to 2017, when the peso reached greater relative value and lost *vis-à-vis* the US dollar.

In September 2014, then-Federal Reserve Board President Janet Yellen (2014) for the first time mentioned the possibility of normalising monetary policy. This implied a new scenario that increased the possibilities of raising the reference rate in the near future. Given this, economic agents anticipated the interest rate hikes, and capital flows to Mexico reversed:

between November 2014 and September 2016, approximately US\$48 billion invested by foreigners in government bonds were pulled out (Instituto Belisario Domínguez 2016). This strengthened the dollar against the Mexican peso, and between November 2015 and February 2016, the dollar appreciated 42% and the BdeM increased its reference rate by 50 base points.

This outflow of capital was not the first or the last the authorities would face. However, it was different in one important way: for the first time the Mexican peso acted as a global currency, with more than 80% of transactions occurring abroad and in operations involving financial derivatives using the peso as a hedge against losses in value of other emerging currencies and commodities (Levy-Orlik & Domínguez 2017, Cota 2015).

This diminished the effect of the dollar auctions on the exchange rate, making it difficult for local, focalised BdeM measures such as dollar auctions and the sale of exchange rate hedges to be effective ways of decreasing speculation.

As mentioned above, the BdeM response in this third stage was to raise the reference rate ten times between December 2015 and June 2017. This was an attempt to maintain an attractive differential with the US yields and thus diminish the velocity of speculative investment outflows. The result was a negative impact on Mexico's already not-very-dynamic economy.

However, this monetary policy was incapable of containing the rapid depreciation of the peso, and the BdeM could do little to reduce exchange rate volatility without disrupting the

economy. One proof of its lack of control over volatility was the variation in the exchange rate once the US presidential election was over.

When the Republican Party won the election, two issues immediately arose: the anti-free-trade platform on which it had been elected and that led to the beginnings of a trilateral renegotiation of NAFTA in 2017, and the prospect of a fiscal reform that would reduce corporate taxes. This prompted the dollar/peso exchange rate to rise to historic heights in January 2017, when it reached 21.91 pesos per dollar. However, when the US legislative agenda got bogged down and financial market players began to realise how complicated it would be to negotiate the changes in the US Congress, the exchange rate returned to under 18 pesos per dollar. Nevertheless, when US fiscal reform issues became relevant again and differences began to emerge in the final rounds of NAFTA renegotiations, the exchange rate rose rapidly.

It is important to point out that, despite the growth of Mexico's domestic and foreign debt as a proportion of GDP in the last ten years, the macro-economic fundamentals have remained healthy enough to ensure that Mexico maintain its credit rating as designated by the main rating agencies. However, this has not prevented volatility, which has also been impacted by the generalised use of financial derivatives for trading in the Mexican peso. It should be pointed out here that the very first exchange rate futures deals took place in 1970, but the peso derivatives market was not fully developed until the Mexican Derivatives Market (MexDer) was created in 1998 and the Chicago Mercantile Exchange (CME) agreement was reached in 2011 (Levy-Orlik & Domínguez 2017).

This is backed up by the information reported in the BIS tri-annual surveys that, according to Levy-Orlik & Domínguez (2017), between 1998 and 2016, 46% of daily trade in the Mexican peso was done through foreign exchange swaps, 35% in spot transactions, 12% in forwards, and 6.8 % in other derivatives.

The use of financial derivatives, which are based on the parity of the peso with another currency, is generalised even in the operations inside Mexico. The tri-annual BIS survey for 2016 reported that 7 out of every 10 transactions involving the peso, carried out by 17 financial institutions, took place using financial derivatives, mainly swaps, of which 91% matured in under 7 days (Banco de México 2016).

The use of financial derivatives allows investors and speculators to bet against the peso, shorting without a cover, which is also called a “naked short”. That is, they can sell pesos and purchase dollars through a derivative without needing to back up the operation with a loan or hedge.

In addition, depending on the kind of strategies used, this type of operation makes it possible to leverage with little risk of loss, making it the ideal instrument for financial speculation. The importance of these operations is that the existence of the naked short in liquid financial markets means that at moments of high volatility, the exchange rate moves in a single way (Payne 2012).

Another phenomenon that should be pointed out is the use of the peso to protect risks to commodities and other emerging currencies. As mentioned above, the peso is one of the most liquid currencies globally speaking and the second-most-traded emerging currency in the world. This, together with the absence of barriers to the entry and exit from the market and the fact that it is available 24 hours a day, 5 days a week, turns it into the favourite currency in the face of a fall in commodity prices, as well as the proxy hedge for emerging countries' risk in general, particularly Latin American countries (Cota 2015).¹⁵

Upper & Valli (2016) present evidence that, despite the fact that the emerging market economies represent half the world economy, if measured in purchasing power parity, the derivatives based on their currencies are heavily underdeveloped with regard to their potential. This is because they are less financially developed, less integrated into the global economy, and have low per capita income, while liquid currencies like the Mexican peso and the South African rand also stand out because of the complexity of the financial derivatives that they trade in.

ALTERNATIVE EXCHANGE RATE POLICIES

A final issue this chapter must take up is the analysis of the main alternatives the BdeM, together with the country's economic authorities, has to increase the effectiveness of exchange rate policy and combat the transfer of exchange rate shocks to pricing processes.

According to what has been explained above, the FOREX market has changed structurally with regard to other episodes of exchange rate volatility in the past. This makes changing excessive exchange rate volatility in this new scenario a greater challenge. Even the International Monetary Fund has justified the need for protection policies for the exchange rate, which it calls capital flow management measures (CFM) (Rozo 2016: 76, 85). In this regard, some international examples have been used to this end that the BdeM could explore.

The first example of these interventions is banning naked short sales that were used as a temporary measure in financial stock markets during the 2008 crisis and observed during the Greek 2011-2013 crisis (Payne 2012).

Another alternative is the control of capital used by Brazil as a shield against international volatility; this took the form of taxes on carry trade flows which are activated and deactivated according to the international economic cycle. Brazil recently levied a tax on the value of financial derivatives (Chamon & García 2016).

Mexico could use these policies to reduce extreme exchange rate volatility. However, at least two factors must be considered here. First, the BdeM would face a geographical, jurisdictional problem in implementing this type of measures because most of the trade in the Mexican peso occurs outside the country; and to be able to implement an effective speculation-control measure, it would have to be done in close coordination with the international monetary authorities.

Second, and even more importantly, imposing capital controls would imply that Mexico would be changing its exchange rate regime and would implicitly be establishing an exchange rate target regime, sending contradictory signals to those established over the last 25 years.

The BdeM would have three alternatives. The first is to continue with a monetary policy with inflation targets and to support the discourse with movements of the reference rate in line with that objective, maintaining the credibility achieved in the market. The second is to seek better communication and international coordination in order to diminish the volatility of the currencies of emerging countries. And the third would be to continue offering derivatives on the market through leveraged exchange rate hedges, which would increase the potential for its interventions to maintain order in the market.

CONCLUSIONS

The floating exchange rate regime, with free entry and exist of capital flows, and the financial and fiscal reform turned the Mexican peso into a global currency, whose volume of operations is inconsistent with the Mexican economy's volume of international trade or relative importance. However, it does profoundly affect the domestic economy due to its heavy dependence on foreign trade due to the export-driven growth model.

This model is coming under heavy fire given the impact of exchange rate volatility on inflation and the reduction it imposes on the manoeuvring room for monetary and fiscal policy. To this must be added that an important part of trade in the peso in international markets is speculative and has the aim of hedging against risks related to emerging markets.

The globalisation of the economy, together with the generalised use of financial derivatives in international currency markets and the facilities the Mexican peso offers by being available 24 hours a day, 5 days a week, creates a volatility of the peso that is greater and fundamentally different from that which the country faced in other historic periods. In the past, the causes were imbalances in the public budget, the current account, or the capital account. Today, maintaining healthy fiscal accounts, an open economy, and healthy economic fundamentals does not guarantee a stable currency.

The actions of the BdeM have lost effectiveness in moderating the volatility of the exchange rate; the target rate has been increased at the cost of slowing down the economy; and a strong inflationary pass-through has presented itself again, with a heavy impact on the dynamism of the economy.

The BdeM cannot place its trust in the use of traditional stabilisation tools since dollar/peso transactions occur in the international market; and the size of that market is such that, even if it were local, the average weight of the central bank's interventions would have no significant impact.

Any alternative or stabilisation requires either international cooperation through BdeM coordination with international monetary authorities or a return to schemes of capital control. A third way forward is to continue with the regime of inflation expectations as a basis for establishing a monetary policy and acting in consequence through the reference rate, intervening through leveraged exchange rate hedges. However, the latter has proven to be insufficient in moments of high volatility created by the recent changes in US monetary policy, and brings into question one of the banners held the highest in the last 25 years in Mexico: the decrease in the exchange rate pass-through.

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NOTES

¹ Figures from the second quarter of 2017.

² In Mexico, the exchange-rate pass-through has decreased since 1994 as a result of different factors, outstanding among which are the following: 1) a new vision of how to manage public finances called New Public Management, complemented by eliminating fiscal domination, explicitly setting the goal of sustainable public finances, privatising public companies and reducing the size of the state; 2) making the BdeM independent and establishing an inflation-target strategy; 3) opening the economy and liberalising the current and capital accounts; 4) using control of wage hikes as an inflationary anchor and a mechanism to attract foreign investment; and 5) the growing interdependence and globalisation of the economy, which fosters the development of global value chains that reduce production costs.

³ Carry trade is a strategy that consists of borrowing funds in a currency from a country that has a low interest rate (funding currency) to be invested in financial assets from another country with higher interest rates (investing currency).

⁴ In 2015 and 2016, three public spending cuts were made in the amount of Mex\$560 billion, or approximately 3% the value of GDP. This was the result of plummeting international oil prices in 2015 and the volatility generated in international markets (Albarrán 2016).

⁵ This strategy was used during the 1996-2003 stage of recomposition and accumulation of international reserves; from 2010 to 2012 it consisted of placing dollar sale options through monthly auctions. With this instrument, the BdeM was forced to purchase dollars against pesos from the option holder.

⁶ From January 2009 to 2014, the peso appreciated, going from 14.94 to 11.62 dollar/peso, that is, by 22.1% (Rozo 2016).

⁷ “Desarrollo estabilizador” was a period (1958-1970) in which Mexico achieved high economic growth and low inflation and maintained a fixed exchange rate.

⁸ Although oil exports represent no more than 5% of the total and public finances have reduced their dependence on oil income to less than 20%, international investors continue to think that we depend heavily on oil. In fact, in 2015 and 2016, a strong correlation existed between the exchange rate and the international price of oil, and this was heavily influenced by net speculation in the Chicago Market (Siller 2016).

⁹ Regarding the construction of a wall, the repatriation of immigrants, obstacles to sending remittances, and the repatriation of US companies. Remittances are the country’s second source of foreign currency: from 2007 to 2016, they came to an annual average of US\$23.733 billion.

¹⁰ Mexico is heavily dependent on the United States: more than 80% of our exports go there; 60% of foreign direct investment comes from there; and 90% of our tourists are US Americans.

¹¹ Different studies show a strong correlation between the US industrial cycle and Mexico’s manufacturing cycle; the greatest volume of trade is intra-firm; and strong intra-company and intra-sectoral value chains have developed between the two countries (Torres & Vela 2002, Delajara 2012).

¹² Between January 2014 and January 2017, the peso depreciated 67% against the dollar, and at the high point of the 2008 crisis (from September 2008 to March 2009), it dropped 45%.

¹³ A daily average of US\$1.9 billion were dollar/peso transactions in 2016.

¹⁴ The events leading up to the globalization of the peso were an aggressive financial reform in 1998 that liberalised active and passive interest rates; the 1989 Brady Plan; the implementation in 1982 of exchange rate hedges called TESOBONOS; the re-privatisation of the banks between 1991 and 1992; the beginning of warrants being used in the Mexican Stock Market (BMV) in 1992 and their listing on the Luxemburg and London Stock Exchanges between 1992 and 1994; the initiation of operations with options on Telmex ADRs on the Chicago Board Options Exchange; Mexico’s entry into the OECD in May 1994; the BdeM becoming independent in 1994; the transition toward an inflation target strategy; the authorisation of operations with US denominated derivatives and deposits in local currency with foreign financial institutions at the Chicago Mercantile Exchange; the creation of the Mexican Derivatives Market (MEXDER) in 1998; the creation of an

options market and dollar/peso futures operations; the establishment of inflation targets in 2001; the authorisation for banks to make forward foreign currency transactions; and, finally, the adoption of a reference rate or target rate in 2007 (Ramos-Francia & Torres 2005).

¹⁵ Mexico shares the characteristic of being tradable 24 hours a day, 5 days a week, with the Turkish lira and the South African rand, but both of these are less liquid than the Mexican peso (Cota 2015).