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IMPLEMENTATION OF MONETARY POLICY AND ITS INFLUENCE ON THE OUTPUT

Abstract:

The output plays one of the main roles in both theoretical: orthodox and heterodox framework. In Mexico, where was embrace, and it is still ruling, an Inflation Targeting policy, it says that the output gap determines the inflation level, hence it symbolize worthy role of the application policy. Besides the fact that, in the heterodox framework, where the aggregate demand determines the output, it in turn, affect the level of employment, etc. This paper portrays, though statistics analysis, how monetary policy affects the output in Mexican case, also to provide a contrast of the role of product into the orthodox and heterodox framework.

Keywords:

Monetary Policy, Output, Mexico

JEL Classification: E52, E58, O42

Introduction

The theoretical framework governing central bank decisions from 2001 in Mexico is the orthodox and more specifically, the known as Inflation Targeting (Banco de Mexico, 2002).

The Inflation Targeting model (IT) can be considered as the remains of the New Consensus in Macroeconomics (NCM) where there was the idea of one movement on the monetary base would influence the level of the economy. Inflation Targeting states that it is through interest rate fine tuning is how this can be achieved. Hence for authors as Sawyer (2009) speak of monetary policy is the same thing that speak of interest rate policy. He says, politics, to accept interest rate as single monetary anchor, has been substantially reduced to the point of presenting decisions only in the sense of adjustments thereto.

The orthodox framework, supposes that supply is what determines the demand, which means, demand will grow in as much as supply determine. Given the above, it is understood that, in order to influence in the level of economic activity, it is must increase supply as much as possible and demand will level to it,[1] so its explanation is based on mechanisms that influence aggregate supply, caring at all times the non-increase in inflation.

Fluctuations of effective demand play no role in the framework of this monetary paradigm since the gross domestic product (GDP) growth is determined by the supply of productive resources (Arestis, Sawyer, 2003b; Lavoie, 2004).

Lavoie (2004) also states that into this logic, the natural rate of growth is determined by the difference between the current inflation rate and its optimal rate. Therefore, this natural rate also depends on the current pattern of the rate of growth of output and an increase of effective demand may causes an increase in the natural rate of the product. This could result in multiple equilibria, which would result from the effects on the expansion of effective demand for short-term over the trajectory of long-term aggregate supply. In other words, increases in the short term of effective demand, determine the level of long-term product that tends to full employment.

Some authors as Perrotini (2007) and Mántey, Levy (2002) in Mexico and Arestis, Sawyer (2003; 2006) in the United Kingdom, use the term inflation targeting to encompass some policies as:

1. Setting a numerical target, in Mexico of 3% plus / minus one percentage point.

2. The use of monetary policy as a key instrument to achieve the target (monetary policy in the form of interest rate fine tuning)[2].

3. The implementation of monetary policy in hands of a independent central bank.

4. The sole objective of monetary policy of an target inflation rate.

[1] A critical about some unorthodox conceptions exceeded, for example, with respect to employment and unemployment can be found in Spencer, Sawyer (2010), Labour Supply, Employment and Unemployment in Macroeconomics: A Critical Appraisal of Orthodoxy and Heterodox Alternative.

[2] Arestis, Sawyer (2003) state some other features of this new model, for instance, the stock of money has no role in the model and the idea of the lag in the response to monetary policy adjustments due to sticky prices.

- Interest Rate Policy.

The interest rate policy is based on fine-tuning of the tool to influence the level of economic activity[3].

The fine tuning that are made on the interest rate are based on the explanation by the Taylor Rule. Sawyer (2009) describes it as follows:

$$R_t = RR^* + E_t(p_{t+1}) + c_1 Y^g_{t-1} + C_2(p_{t-1}-p^T) + s_3 \qquad Ec(1)$$

The rate of interest central bank tool in nominal terms (R_t) is in function of the equilibrium interest rate (RR *), the output gap (Y^g_{t-1}), the historic and target inflation ($p_{t-1}-p^T$), and finally, both of external shocks (s_3) and future expectations ($E_t(p_{t+1})$).

Being the main concern of the central authority the measure of inflation, it is obtained from Eq (2), determined by the output gap (Y_t^g), historical data of inflation (p_{t-1}) and future inflation expectations ($E_t(p_{t+1})$), considering external shocks (b_1, b_2, b_3 and s_2) :

$$p_t = b_1 Y_t^g + b_2 p_{t-1} + b_3 E_t(p_{t+1}) + s_2 \qquad Eq(2)$$

Finally, the output gap, is the result of both external shocks and the same output gap in the previous period ($a_1 Y^g_{t-1}$), and the interest rate instrument and future inflation expectations ($a_3[R_t - E_t\,(p_{t+1})]$). It is explained by Equation 3:

$$Y_t^g = a_0 + a_1 Y^g_{t-1} + a_2 E_t(Y^g_{t+1}) - a_3[R_t - E_t\,(p_{t+1})] + s_1 \qquad Eq(3)$$

Even in an orthodox framework, the output plays, nevertheless it is not officially accepted, one of the main roles of the monetary (and the economic) policy.

Otherwise, Fontana (2007), explains how the inflation targeting scheme conceives the output based on pure credit economy Wicksell, using 3 equations:

$$\rho - r = h\,(\pi - \pi^T) \qquad Eq\ (4)$$

This equation expresses the difference between actual inflation and expected inflation ($h(\pi-\pi^T)$ as equivalent to the difference between the natural interest rate and the real interest rate (ρ - r). Fontana (2007) explains this function as monetary policy strategy: the strategy to keep the real interest rate as higher as possible in order to reduce the gap with the natural interest rate.

The natural interest rate (ρ) is the interest rate that would be determined by supply and demand money if the use of money is not made and all loans were exercised in the form of capital goods; It varies depending on the variables that affect the marginal productivity

[3] Assumption of the orthodox approach course.

of capital and is determined by the shortage of savings. It is the rate of return of the production process. The natural interest rate is not constant but changes as a result of the effect of all the variables that affect the marginal productivity of capital.

The loan interest rate (r) is the interest rate on bank loans; it is a contractual or controlled and established by the banking system.

It is important to mention at this point that, in the Mexican case, liberalization of interest rates by eliminating boundaries on it, got an increase in the negative spread of interest rates on bank deposits regarding the risk-free rate (CETES[4]), forcing the monetary authority to invest to avoid unwanted declines in interest rates and decreasing the government's ability to stimulating aggregate demand and encouraging the rationalization of credit demand (Mántey, 2002).

Mántey (2002) explains that in a specific situation where oligopoly is presented (as is the case of Mexico) in the banking market, with aligopsonio in the wholesale market for government securities, and a free risk interest margin is generated (when the rate interest on government securities is higher than bank deposits), financial intermediaries have little or no incentive to place indirect debt securities on the stock market in order to provide long term financing to companies[5]. The supply of private equity is then limited to short-term commercial paper and to owners of equity capital of the largest companies whose yields remain close to the equilibrium rate of risk-free asset, being that, broadcasters due to its credit quality and their size, they have access to other sources of funds abroad.

In the absence of banking intermediation in the stock market, medium and small businesses have only few chances to enter the capital market. The private placement of its securities, to supply their private investment portfolios, would be done through operation Over The Counter (OTC) and would be against the interest of commercial banks that offered yields for the saver. If private investment funds are managed by banks is to expect they level their profits regarding its deposit rate by charging high fees; this can be done in complicity, thanks to the banking oligopoly.

When applied policies of development of financial market in an economy whose banking sector is oligopolistic, a shortage of private securities issuers with high credit quality obliges the government to meet the demand for titles that is generated for private portfolios, particularly institutional investors.

This phenomenon is exacerbated if monetary policy is oriented toward to stabilize the nominal exchange rate through higher real interest rates. In Mexico the opening of capital requires the government to pay the return that would require banks in the primary auction of CETES and has become the guarantor of exchange-rate stability

Paradoxically, monetary policy oriented at boosting domestic savings and stabilize the nominal exchange rate encourages banks to borrow abroad due to the rate of loans financial margin is increased while currency risk is reduced. Likewise, this policy attracts foreign capital flows seeking investments in high performance and low currency risk. The

[4] Certificado de la Tesorería (CETES)

[5] See also what Sawyer (2006: 641) describes when he talks about a political "*day-to-day*", which could, and in the Mexican case it does, adopt an attitude like that rejected Brown (2002) and Sawyer (2010: 500) of "*take-what-you-ca irresponsability*".

monetization of capital inflows and the consequent expansion of domestic credit, forcing the monetary authority to perform sterilization operations to sustain the interest rate, pressuring the current government to present it self as the issuer of last resort.

Arestis, Sawyer (2010), explained that although the NCM states to pay attention to both monetary and financial stability do not understand how it works, nor the operation of recessions[6]:

1. The NCM is based on the absence of banks even though banks are who transmit changes in policy interest rates to the borrowers and most importantly, banks are who create credit bubbles.

2. In the words of Goodhart (2005: 300):

"*if inflation, and with it interest rates, is now likely to be more stable, this enables the private sector to assume more risk, in the shape of greater leverage and driving down risk premia in asset markets. If the authorities make the conjuncture safer, the private sector is bound to undo some part of that to restore their desired risk/return equilibrium. It is this kind of analysis that lies behind the argument that greater stability of goods and services prices will generate potentially greater instability in asset prices, and whether—and, if so, how—a central bank could and should deal with the latter*".

Returning to the exposure of Fontana (2007), just to finish with the main idea, in Equation 5 it is explained the inflation for the period based on the output gap:

$$\pi = g (y - \bar{y}) \qquad \text{Eq (5)}$$

Finally, for Fontana (2007), output gap is explained as a function of the difference between natural interest rates and the real interest rate (ρ - r) via Eq. (4) getting Equation 6:

$$y - \bar{y} = f (\rho - r) \qquad \text{Eq (6)}$$

- Monetary Policy and Exchange Rate Policy in Mexico

The Bank of Mexico acquired its autonomy in April 1994 and according to the constitutional changes of 1993 stood at such reform its legal basis in Art. 28 of the Constitution stating that "... no authority can order the bank (of Mexico) grant financing ... "(CPEUM Article 28, 1993) and since 1994 its primary objective is to ensure the stability of the purchasing power of the currency (Mexico Bank Act, Article 2, 1993).

The exchange rate is variable, sine qua non of IT (Svensson, 2001) so it can not intervene in its level, however, the Bank of Mexico has conducted various operations known as sterilization operations exchange rate.

According to Mántey, Lopez (2010), interventions in the foreign exchange market when they are sterilized, may constitute an independent instrument of monetary policy. She found that the multilateral financial institutions justify interventions sterilized when:

[6] Arestis, Sawyer (2010), suggest that the NCM is a way to justify the application of orthodox current.

- It is wished to correct a misaligned exchange rate on the foundations of the economy.

- It is expected reassure a disorderly market in which supply and demand are not in proper quantities.

- It is wanted to get to increase the country's foreign exchange reserves.

- It is required provide foreign currency to the exchange market and, the public sector, it is the main supplier.

In this regard, Capraro, Perrotini (2012) found that the Bank of Mexico has intervened in the exchange rate in nine different ways and at different times:

1. Auctions of dollar options between August 1996 and June 2001, and from February 2010 to December 2010.

2. Auction of dollars between February 1997 and June 2001.

3. Mechanism to reduce the pace of accumulation of international reserves between May 2003 and July 2008.

4. Auctions of dollars extraordinary in October 2008.

5. Auctions of dollars with minimum price throughout October 2008 to April 2010.

6. Auction of dollars without minimum price, from March 2009 to September 2009.

7. Auction of dollar credit by means of a line for swap arrangement with the Fed.

8. Direct selling dollars in the spot market in September 1998 and February 2009.

9. Flexible credit line negotiated by the Exchange Commission (CC) with the IMF for 48 000 md, effective from 2009-2010.

According Toporowski (2002), Keleki believes that the exchange rate affects sales and corporate income but has minimal effects on production, because of the flexibility of the exchange rate changes total output through their effect on earnings, the effect on earnings depends crucially on trade imbalances so that the real~commercial exchange fluctuations tends to compress profit, and in the long term, these fluctuations discourage international trade.

In econometric tests, some suitable lags can help find predictable movements in demand or product matched correctly with variations in the exchange rate (especially if other variables compatible with the exchange rate are excluded). Profits are defined as capitalist consumption plus its saving[7]. Kaleki argues that in reality the economic units cannot determine their income, can only determine their spending so for some tests of economic policy (and monetary), these are used as adequate replacement of the income and for this aspect generally the balance business can be divided into profits from exports and profits from imports.

[7] In Levy (1998), it can be analyzed the profits as determinant investment.

For the Mexican case Mantey (2013), advise not to flexibilize the exchange rate[8], in the sense of a devaluation of the same, in order to promote export-led growth due to, among other factors to:

- The high dollarization difficult the use of the exchange rate to stabilize the balance of payments, because of a devaluation has serious implications for the creditworthiness of economic agents.

- This action is heavily penalized in international credit ratings and it conditions the refinancing of foreign debts due to the effect that devaluation occurs in balance sheet.

- The real exchange rates and relative unit labor costs have shown a declining influence on the competitiveness of developing countries, which is more influenced by technological advancement.

- Export companies from developing countries, as is the case of Mexico, have disadvantages of origin against transnational corporations because of the positive externalities they get from their governments (income agglomeration) and due to they record high dollarization of its liabilities.

The proposal in this regard is:

- Maintain the objective of stabilizing the nominal, practice adopted tactically by developing countries.

- Raise competitiveness through financial policies to stimulate growth and productivity by improving the productive infrastructure and strengthening of the internal market.

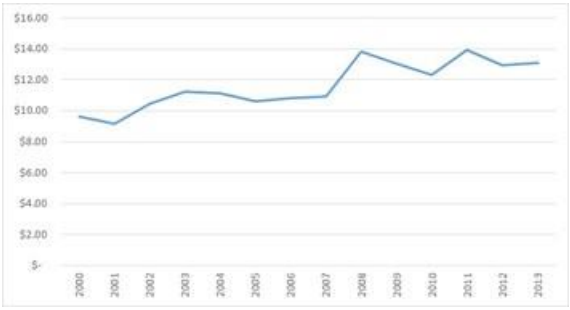
- Give priority to import substitution, weighing up that the marginal benefits in terms of foreign exchange would be less uncertain and higher magnitude compared to marginal revenue to be gained by overseas sales of new products.

Graph 1 shows the evolution of the nominal exchange rate of the Mexican peso against the US dollar which shows how, despite various interventions and posture of the central institution to protect the exchange rate, along the period, the currency has gradually lost ground to its US counterpart.

[8] In Mexico it is very discussed the central bank intervention in each of the times that there has been a possible currency devaluation, so that the flexible exchange rate is understood as the central authority's stance of not performing any operations in the exchange market, which necessarily would result in a devaluation of the same.

Graph 1. Nominal Exchange Rate

Peso / US Dollar



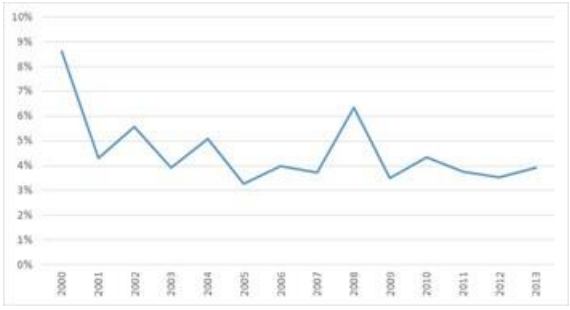
Source: Own Elaboration with data of Banco de México from

http://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAction.do?accion=consultarCuadro&idCuadro=CF372&sector=6&locale=es

- Inflation and Output in Mexico

From 2001 monetary policy aimed at reducing inflation "got down inflation" of 4.31% in year 2001 to 3.91% in year 2013, through periods like year 2005 where inflation stood at 3.28 points as shown in Graph 2. However, it is noted in the study period the concepts that make up the indicator suffered four structural changes, disappearing some concepts and disappearing new concepts to be part of the indicator (Banco de Mexico, 2011, 2013; INEGI, 2011; 2013).

Graph 2. Inflation



Source: Own Elaboration with data of INEGI from

http://www.inegi.org.mx/sistemas/IndicePrecios/Cuadro.aspx?nc=CA55&T=%C3%8Dndices%20de%20Precios%20al%20Consumidor&ST=%C3%8Dndice%20Nacional%20de%20Precios%20al%20Consumidor%20y%20sus%20componentes

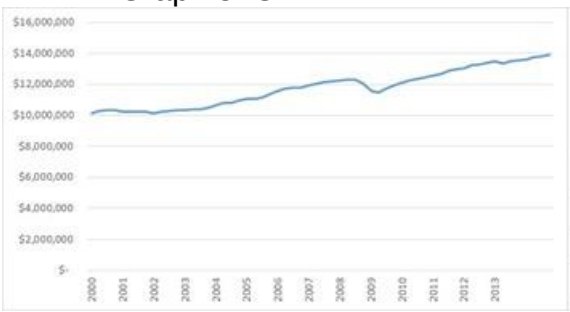
The inflation targeting regime was officially recognized for the year 2001. Graph 2 shows data from 2000 because as Perrotini (2007) states, the inflation targeting regime itself did not reduce inflation, but in several cases began to be applied once it had achieved decrease.

In this regard, Perrotini (2007), says that countries like New Zealand, Canada, United Kingdom and Sweden, reduced their inflation before adopting inflation targeting model and that Chile and Mexico had rates of 25% and 18% respectively before adopt it, although in Mexico, in 2001 (the year it was formally worked under inflation targeting) annual inflation was barely 4.31 percent.

The product, meanwhile has treated some particularity little treated, it shows an increase year on year (Graph 3) which could be interpreted as a fairly convenient. But conducting an analysis of the annual increase (Graph 4), we find that the annual increase is constant and close to one percent, which projects a completely different landscape to that presented in the first analysis, only Figure 3. Thus we can infer that while a inflation level lower than presented in other periods as would be the "import substitution" or "stabilizing development", the product has also a relative slowdown of growth.

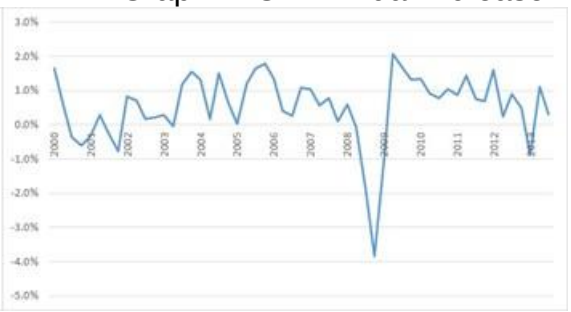
Finally, it is important to note the performance of the product in the period 2007-2009. While In the case of the UK, the Forecasts for GDP in 2009 indicate the largest year-on- year fall in output since around 1930 (Arestis, Sawyer, 2010), Mexico's GDP fell in the first trimester of the year 2009 almost four percentage points (with no mention of the fall in the occupation indicator, etc.). The argument presented by the authority was that the crisis presented features never before experienced in Mexico, because, it said (and in part had some reason) came more from the outside than the inside[9].

Graph 3. GDP



Source: Own Elaboration with data of INEGI from http://www.inegi.org.mx/est/contenidos/proyectos/cn/pibt/tabulados.aspx

Graph 4. GDP Anual Increase



Source: Own Elaboration with data of INEGI from http://www.inegi.org.mx/est/contenidos/proyectos/cn/pibt/tabulados.aspx

Concluding Remarks

The first conclusion is consistent with the statement by Sawyer (2009) Arestis and Sawyer (2010). Even in the pre-crisis period of 2007-2009, monetary policy in isolation has no chance of achieving its objectives. In addition to this, output growth is not part of the monetary targets (but it should be).

[9] Manrique (2011) presents a detailed explanation of the characteristics that presented the several of the most recent important crisis from a national perspective.

The second goes hand with Perrotini (2007): orthodox monetary inflation targeting scheme was implemented once it had reached a low inflation indicator, due to that, it cannot be attributed the decreasing it to that scheme.

The third refers to Mántey (2013), The high dollarization dificults the use of the exchange rate, not only to stabilize the balance of payments, but also for monetary stabilization, because one devaluation has serious implications for the creditworthiness of economic agents.

It is much more convenient then, look to raise competitiveness through financial policies to stimulate growth and productivity by improving the productive infrastructure and strengthening the internal market and give priority to import substitution.

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