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Inflation targeting and volatility: Panel evidence

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Abstract. *This article studies the effect of the transition to the regime of inflation targeting on the economic performance of the country and its ability to ensure better price stability. In order to verify the performance of this passage, we examine four factors: fiscal position, trade openness, financial openness and financial depth. The results show that the state of monetary, fiscal and financial system in emerging and developed countries plays a major role in controlling the dynamics. These results also show that the adoption of inflation targeting reduces the volatility of inflation in many countries.*

Keywords: Inflation targeting, economic performance, volatility.

JEL Classification: E31, E42, E52, E58.

1. Introduction

Although the global economic conjuncture knew very high inflation rates in the early 1980s, the last two decades were marked by significant declines of its volatility. This performance was also remarkable in some economies in Latin America or Eastern Europe which have experienced high inflation rates in the past years. This improvement testifies to the world economic and budgetary stability. Despite the convergence towards macroeconomic stability, international monetary economic situation present some heterogeneity between economies. Indeed, the developed countries have a volatility of inflation controlled and weaker than that experienced by the rest of the world.

In this context, various factors can be identified and often depend on the economic and financial structure of the country. According to most economic studies, each economy with low fiscal and monetary institutions will be unable to achieve its objective. For Pétursson (2009), there are many factors that influence the volatility of inflation: the economic structure(1) of the country, the volatility of output and exposure to various economic crises and geopolitical effects. According to Feridun et al. (2005), the inflation target should be well studied and well defined while conducting monetary policy, in order to prevent negative results on the volatility of inflation and exchange rate.

In this work, we will try to determine the factors that may influence the volatility of inflation. Thus, we can mention the successful tools of the adoption of the inflation targeting policy in some countries more than in others.

The methods used to study the volatility of inflation and success of inflation targeting tools and the results obtained differ from one study to another. In the study of Pétursson (2009), after eliminating the insignificant variables, the author focuses on indicators of fluctuations in the exchange rate and performance of the monetary regime. Pétursson (2009) showed that the adoption of inflation targeting allows strengthening the nominal stability in emerging economies.

In other works, probit models were used to determine the factors of inflation volatility. The analysis of Amato and Gerlach (2002), for example, was based on a probit model that includes a set of structural indicators and other variables related to the dynamics of real shocks. Among these, we focus on the rate of trade openness or the measure of credibility. The authors find that the exchange rate targeting in inflation targeting countries can affect the performance and success of this strategy. In 2007, Mishkin and Schmidt-Hebbel used other indicators measuring the independence and credibility of the central bank. The results of their study indicated a significant negative relationship between inflation targeting and price growth. However, this relationship becomes insignificant when the sample is composed only of industrialized countries. Indeed, when the sample countries are emerging as followers of inflation targeting, the relationship remains negative and significant.

Carare and Stone (2006) tried to introduce, in their work, financial and fiscal indicators. The goal is always the same: to test their influence on the stability of inflation and thus the choice of inflation targeting regime. The results obtained by Carare and Stone (2006) present a positive and significant relationship between financial development indicators(2) and the likelihood of pursuing a country of inflation targeting strategy. Another study was

developed by Hu (2006) in which the author used a regression in panel. This study joined certain macroeconomic indicators and other institutional indicator like the tax position. Hu (2006) gave great importance to the control variables, such as the consumer prices index (CPI) or also the Gross Domestic Product (GDP) growth rate. The author showed that a healthy fiscal situation is significantly and positively associated with the choice of inflation targeting. Besides, a central bank is more likely to adopt inflation targeting with higher financial performance, institutional capacity and a system of flexible exchange rates.

In this article, we will analyze the volatility of inflation through four factors namely: the tax position, trade openness, financial openness and financial depth. This work is made up of two parts. The first presents the methodology and data. The second reveals the results, the interpretations and the effects of the transition to inflation targeting policy on price dynamics.

2. Methodology and data

2.1. Data description

Our area of the study countries include Australia, New Zealand, the United Kingdom, Chile, Canada, South Africa, Indonesia, Sweden, Brazil and Turkey and the period of analysis ranges from 1997 Q1 till 2010 Q12. This choice is made due to the unavailability of data in some countries, particularly certain European countries. Our objective is to investigate if the stability of inflation reflects the image of a new world economic conjuncture or if it is the new monetary rule which allowed the achievement of these objectives.

In this study, we have differentiated our sample(3) as follows:
1st sample: all countries: [AUS (1993Q2) + CAN (1991Q1) + NZ (1990Q1) + SWE (1993Q1) + UK (1992Q4) + SA (2000Q1) + BRZ (1999Q2) + CHL (1999Q3) + IND (2005Q3) + TUR (2006Q1)]
2nd sample: emerging countries: [SA (2000Q1) + BRZ (1999Q2) + CHL (1999Q3) + IND (2005Q3) + TUR (2006Q1)]
3rd sample: all industrialized countries: [AUS (1993Q2) + CAN (1991Q1) + NZ (1990Q1) + SWE (1993Q1) + UK (1992Q4)]

All variables in these countries are collected from the database of the IFS (International Financial Statistics).

2.1.1. Fiscal position (PB_t)

It is the result of the budgetary balance weighted by GDP. The fiscal position is in surplus when the variable is positive and in deficit when it is negative. Indeed, in the case of a negative balance, the central bank will suffer pressure from the authorities to finance this insufficiency. Thus, the consolidation of the fiscal balance of the government causes a deviation of monetary authorities in their central objective of price stability. In this case, they adopt an expansionary monetary regime. Unfortunately, this policy promotes inflation following the increase of currency in circulation. However, when the budget balance is in surplus, the monetary authorities are free from any pressure. They can therefore apply their monetary regime in an independent and autonomous way. We expect the change of sign of this coefficient for a negative value.

2.1.2. Trade openness (OC_t)

This variable is measured by the ratio of exports and imports relative to GDP. Trade openness is an indicator of inflation. Indeed, the more this degree is important the more the economy is exposed to exchange rate risk and therefore it is under the threat of inflation. However, if central banks take into account this trade openness in the transition to inflation targeting strategy, the stability of inflation volatility will be guaranteed. For this reason, we expect the sign of this indicator to be negative for the countries that have opted for inflation targeting.

2.1.3. Financial openness (OF_t)

It is the ratio of external debt by the GDP, we use the empirical idea, applied by Lane and Milesi-Ferretti (2001), given the absence of data for some countries. According this approach, the stock of external debt is estimated by grouping all of the investment in debt "investment debt portfolios." In this case, the sign of this indicator must be positive. Indeed, the inflation control becomes a difficult process to achieve when the country enjoys financial openness.

2.1.4. Financial depth (PF_t)

Financial depth is measured by the ratio of M2 by GDP. This is an indicator reflecting the level of the monetization of the economy (Williamson and Mahar 1998). From this ratio, we can judge the financial system's ability to raise funds and react to economic shocks. If this ratio is important, the economy is more able to finance its insufficiencies. Indeed, the independence of central banks and their capacities to achieve price stability are returned by this variable. Therefore, the expected effect of this indicator is negative.

The estimation by ordinary least squares method revealed some problems related to violations of fundamental assumptions effectiveness estimates. It is for this reason that the correction heterosedasticity or the correlation requires switching to another model. In this study, we will use a random effects model which appears fundamental to identify the factors that may affect the inflation dynamics.

2.2. Random effects model

In this study, we used a random effects model defined as:

$$y_{i\,t} = \alpha + \beta' x_{i\,t} + \mu_{i\,t}$$

$$i = 1, \dots\dots\dots N, \quad t = 1 \dots\dots\dots\dots T \quad \text{et} \quad \mu_{i\,t} = \mu_i + \varepsilon_{i\,t}$$

In such a model, the explanatory variables are supposed to be strictly exogenous. Then, we proceed to a composition of the hazard in two terms of errors not correlated between them:

- μ_i is a first stable hazard but which includes the influence of the variables. These variables, despite their stability over time, are specific to each individual. For this reason, it is assumed that:

$$E(\mu_i / x_{1\,i\,t}, \dots\dots x_{K\,i\,t}) = 0$$

$$E({\mu_i}^2 / x_{1\,i\,t}, \dots\dots x_{K\,i\,t}) = \sigma_u^2$$

$$E(\mu_i\, \mu_j / x_{1\,i\,t}, \dots\dots x_{K\,i\,t}) = 0, \qquad i \neq j$$

- a hazard $\varepsilon_{i\,t}$ that takes into account the specific omitted variables to each individual, but this time those vary over time. For that, we suppose that:

$E(\varepsilon_{i\,t}\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = 0$

$E(\varepsilon_{i\,t}{}^{2}\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = \sigma_{\varepsilon}^{2}$

$E(\varepsilon_{i\,t}\ \varepsilon_{j\,t}\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = 0, \qquad i \neq j\ \ ou\ t \neq t'$

Thus, we have:

$E(\mu_i\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = 0, \qquad E(\mu_i{}^{2}\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = \sigma_u^2 + \sigma_{\varepsilon}^{2}$

$E(\mu_{i\,t}\ \mu_{i\,t'}\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = \sigma_u^2, \qquad t \neq t'$

$E(\mu_{i\,t}\ \mu_{j\,t'}\ /x_{1\,i\,t}, \dots \dots x_{K\,i\,t}) = 0, \qquad i \neq j\ \ et\ \ t \neq t'$

According to our assumptions, the covariance matrix between μ_i and μ_j is zero. We require as long as the random are not heteroscedastic. That is why there is no correlation of random variables among individuals but in parallel there is a correlation for each individual random. Under these assumptions noted above, the variance of the random is:

$var\ (\ ) = \ \mu^2 + \varepsilon^2$

At first, our estimates should take into account the variance components. Then, with the (GLS) method (generalized least squares), we use these estimates to estimate the following equation:

$y_{i\,t}\ = \ \alpha + \beta' x_{i\,t} + \ \mu_{i\,t}$

In conclusion, we must begin by testing a model with only one individual effect. It appears interesting in our basic model to define the periods before and after the transition to inflation targeting regime. But before approaching the empirical part, we need to verify the correlation problems by resorting the Hausman test.

2.3. Hausman test (1978)

The goal of this test is double: to try, while being based on the null hypothesis that the regressions are strictly exogenous and to differentiate between fixed and random effects. To summarize, the effectiveness of the estimator is synthesized by this hypothesis. In other words, the idea of Hausman tends to find any correlation between the parameters or even going to look for defects in specification.

$$\begin{cases} H_0 : la\ variable\ X\ est\ exogène \\ H_1 : la\ variable\ X\ est\ endogène \end{cases}$$

The two estimators for model parameters studied can then be written as follows:

- The first estimator is unbiased. In this case, we note an absence of correlation, since it is under the null hypothesis of correct specification of the model.
- The second estimator, conversely, is assumed to be biased in both cases.

The terms of covariance between the two estimators appear finally in its matrix. In this case, the Lemma is the most appropriate way to avoid this problem and we will thereafter:

- $\hat{\beta}_1$ reached the asymptotic Cramer Rao bound;
- $\sqrt{N}\left(\hat{\beta}_1 - \beta\right)$ et $\sqrt{N}\left(\hat{\beta}_2 - \beta\right)$ are asymptotically distributed according to the normal laws of covariance matrix respects V0 and V1;
- asymptotic distributions known by $\sqrt{N}\left(\hat{\beta}_1 - \beta\right)$ and the difference given by $\sqrt{N}\left(\hat{\beta}_2 - \beta_1\right)$ are not correlated.

N is the sample size. $\hat{\beta}_1$ and $\hat{\beta}_2$ are two estimators. β is a convergent supposed vector and asymptotically normally distributed with $\beta \in R^K$.

Therefore, we will have:

$$var\left(\hat{\beta}_1 - \hat{\beta}_2\right) = var\left(\hat{\beta}_1\right) - var(\hat{\beta}_2)$$

Following this lemman, Hausman defines its specification test as follows:

$$H = \left(\hat{\beta}_1 - \hat{\beta}_2\right)'\left[var\left(\hat{\beta}_1 - \hat{\beta}_2\right)\right]^{-1}\left(\hat{\beta}_1 - \hat{\beta}_2\right)$$

Before turning to modeling, we must remeber that this statistic follows a Chi squared of *K* degree of freedom. That is why this parameter is distributed asymptotically.

2.4. Empirical analysis

The choice of all countries which will constitute our study appears fundamental. However, this has led us to minimize our choice of method estimation. When we have more temporal data than individuals forming the sample of our model, it is preferable to proceed to panel data estimation. Through this method, the two dimensional factors will be incorporated via a temporal and individual method of data. Also, this use takes into account the heterogeneity between the various individuals in the sample. However, in most cases, this type of model is used to identify the actors influencing the inflation dynamics. It is mainly used to analyze the effect of the transition to inflation targeting between countries which adopt it and those which adopt other monetary regimes.

$INFVOL_{i,t}$ [(4)] reflects the dynamics of inflation at the moment "t" and for every country "i". We can write it as:

$$INFVOL_{i,t} = \mu + \gamma_1 OF_{i,t} + \gamma_2 PF_{i,t} + \gamma_3 OC_{i,t} + \gamma_4 PB_{i,t} + \gamma_5 D_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t} +$$

where:

μ represents a constant;

γ_i are coefficients with i ranging from 1 to 5;

α_i reflects a fixed effect of the dimension of the economy;

δ_t represents a fixed effect for the time dimension;

$\varepsilon_{i,t}$ is the error term;

The dummy variable $D_{i,t}$ is equal to 1 if the country adopt inflation targeting, if not it is equal to 0;

$PB_{i,t}$ is a fiscal position;

$OC_{i,t}$ reflects trade opening;

$PF_{i,t}$ represents the financial depth;

$OF_{i,t}$ is financial openness.

We will try to promote an estimate random effects rather than a fixed effects model. The disadvantage of the latter model lies in the fact that α_i and δ_t representing non-random constant effects. These effects are used to change the value of μ following two dimensional parameters *"i"* and *"t"*. In the case of random effects models, we assume that the two variables identified α_i and δ_t represent two random words. Thus, they have an important effect on the entire model and not on the constant model.

3. Results and interpretations

Our model is based on the panels random effects method. The results are summarized in Table 1. These results will be classified into three groups. The first contains an estimate of the total sample (ToT), the second includes all developed countries (Dev), and finally, the last group gathers emerging countries (EmE).

Table 1. *Random effects estimation*

	Total sample (I)			With inflation targeting (II)			Without inflation targeting (III)		
	ToT	EmE	DeV	ToT	EmE	DeV	ToT	EmE	DeV
μ	0.1754	0.506*	0.892**	0.413	0.465	0.806	0.825	-	-
	(-0.224)	(0.367)	(0.457)	(0.223)	(0.312)	0.4425)	(1.786)	-	
$OF_{i\,t}^{a}$	-0.035*	0.217***	-0.0717***	-0.036*	0.2117***	-0.0817	-121975.2	-	-
	(0.0214)	(0.045)	(0.019)	(-0.0215)	(0.0579)	(0.0217)	(112978)	-	
$PF_{i\,t}^{b}$	0.197***	0.015	0.306***	0.106***	0.0213	0.2396***	1.1212	-	-
	(0.063)	(0.0085)	(0.068)	(0.071)	(0.096)	(0.088)	(1.217)	-	
$OC_{i\,t}^{c}$	0.007	-0.0473	-0.638	0.055	-0.0456	-0.0463	-1.0643	-	-
	(0.193)	(0.245)	(0.549)	(0.217)	(0.2517)	(0.503)	(1.003)	-	-
$PB_{i\,t}^{d}$	-3.0396***	-2.35**	-3.896***	-2.796***	-2.425**	-3.49***	-4.865	-	-
	(0.384)	(1.26)	(0.89)	(0.782)	(1.3786)	(0.9867)	(4.382)	-	
$D_{i\,t}^{e}$	0.1417	-0.213	0.0713	-	-	-	-	-	-
	(0.178)	(0.274)	(0.113)	-	-	-	-	-	
R^2									
within	0.132	0.0508	0.1851	0.1273	0.0699	0.185	0.1583	-	-
between	0.0327	0.7343	0.5861	0.0021	0.7172	0.4931	1.000	-	-
overall	0.0769	0.1123	0.2113	0.0653	0.1325	0.2130	0.1903	-	-
No. of observations	310	180	130	255	130	125	45	-	-
Hausman test	1.73	12.60	2.87	2.67	10.54	2.432	0.89	-	-
	$[0.8215]^{p}$	$[0.0136]^{p}$	$[0.436]^{p}$	$[0.000]^{p}$	$[0.1203]^{p}$	$[0.502]^{p}$	$[0.3672]^{p}$	-	-

The standard deviations of the coefficients are shown in brackets.
***: Significance threshold to 1%.
**: Significance threshold to 5%.
*: Significance threshold to 10%.
p: p-value of the Chi2 statistic (p).
a: financial openness.
b: Fiscal position.
c: trade openness.
d: budgetary position.
e: dum.

In the first part of Table 1, we classify the estimates for the entire sample. Thus, we find the developed and emerging countries adopting or not inflation targeting. The second part contains only the countries having chosen this new monetary rule. The last class contains countries opting for other monetary regimes. By studying the degree of trade openness, we notice a variation of coefficient of a group of countries to another. This coefficient is

negative in the case of emerging countries. It is the same for the developed economies of the groups (I) and (II), and also for the total group (III). Indeed, during the transition to inflation targeting, an important commercial opening has a remarkable negative effect on inflation volatility. Moreover, the M2/GDP ratio reflecting the "financial depth" shows a positive and significant sign at a threshold of 1%. This sign is detected both for the entire sample and the developed countries of groups (I) and (II). However, in the case of emerging countries, this indicator, although positive, is not significant. These coefficients are opposed to the initial hypothesis advanced by Hu (2003) who linked the stability of the low level of inflation to the importance of M2/GDP ratio.

The results show that the indicator of "financial openness" is generally significant apart from countries that practiced inflation targeting. However, the sign of this coefficient varies from one subgroup to another. In the first sample, i.e. the totality of the countries, it is negative. It is the same for developed countries (DeV) of the groups (I) and (II). This sign becomes positive for the case of emerging economies (EmE) of groups (I) and (II). It appears to us that, in the case of emerging economies, external debt affects positively the volatility of inflation. In the case of industrialized economies, this impact is clearly negative. In order to explain this phenomenon, we notice that the debts of developed economies are in local currencies, and therefore they are less exposed to the risk of exchange rate compared to the emerging economies. Therefore, we conclude that the external debt acts but weakly on the inflation dynamics.

The indicator of "fiscal position" informs us about the fiscal situation of the country. For a 5% threshold, the coefficient reflects a negative and significant sign. According to our results, in the case of economies with inflation targeting, 1 million dollars more leads to a decline of 2.42% of the inflation volatility in emerging countries. The same variation entailed its decrease of 3.49% in developed countries.

Such a result confirms the first hypothesis which stipulates that the monetary and financial development facilitates the transition to any monetary regime whose main objective is the inflation stability. Similarly, any positive fiscal balance allows the government to cope with these unforeseen shocks. The economy does not need to resort to the financing of the central bank through expansionary policies which can lead to greater inflation. In the case of countries which have not opted for the inflation targeting regime, all the coefficients are not significant. Because of a lack of information and data for subgroups of emerging and developed economies, we could not carry out our estimations. Indeed, there is a strong similarity between the results of the two samples (I) and (II). Therefore, the coefficients are the same for developed economies whether the first or the second group. Thus, all countries and emerging countries have the same results. This similarity can be explained by the high number of countries included in the sample and which passed to inflation targeting compared to the others. This result is confirmed by the non significance of the results of group (III) and explained among others by the lack of observations and data.

To validate these coefficients, we use the Hausman test. This test is applied to the specification tests of the individual effects in panel to distinguish between fixed and random effects. By applying it to all the countries in the sample, we identified any

existing correlation or any defect specification. We validated the first null hypothesis. Thus, we can check the absence of estimation bias between the coefficients and the absence of autocorrelation problem.

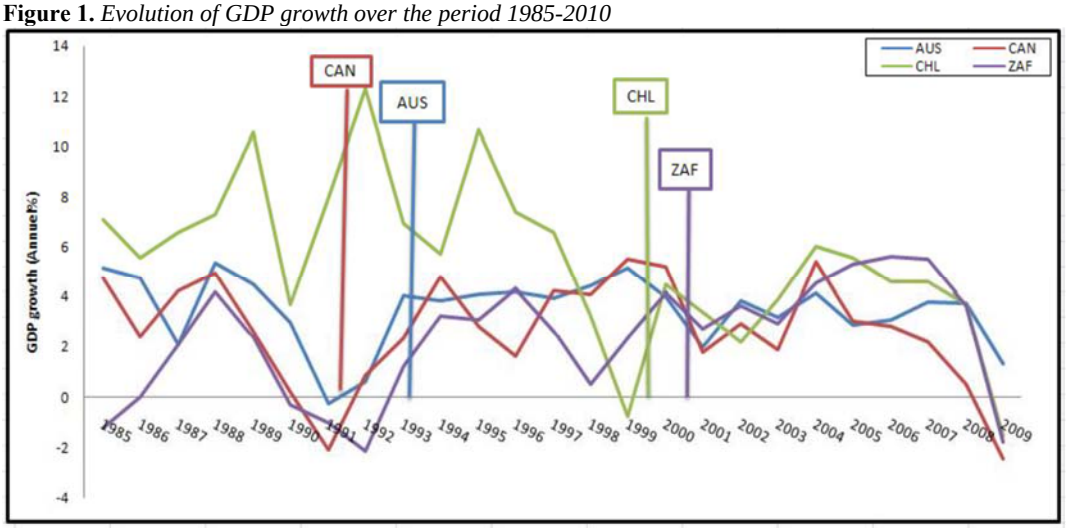
In our case, according to the results found, the null hypothesis is that covariance accepted, except for sample (I) for emerging countries as well as the total group countries (II).

We present in the following graphs (Figure 1, Figure 2 and Figure 3) the evolution of the GDP growth, domestic credit to the private sector and the commercial openness of Australia, Canada, Chile and South Africa(5) in order to see the effect of inflation targeting the evolution of these variables.

According to the first graph, we can see that, between 1991 and 1993, the change is not only positive but also largely steady for the four countries. This is explained by the introduction of new monetary regime which ensured a stable financial and economic environment. In the second graph, we have shown the importance of domestic credit provided to the private sector, defined by Leyva (2008), as the most relevant financial indicator. We also note a positive and stable development for the Australian and Canadian experience between 1991 and 1993.

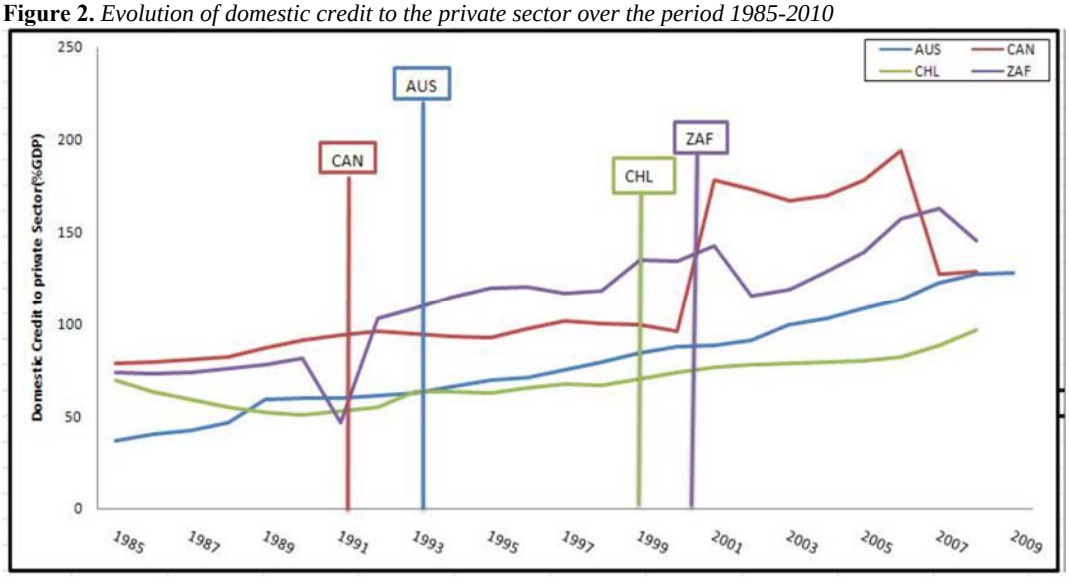
According to the first graph, we can see that between 1991 and 1993, the change is not only positive but also largely steady for the four countries. This is explained by the introduction of a new monetary regime which ensured a stable financial and economic environment. Already, Tugcu and Ozturk (2015) reported in their macroeconomic effects of inflation targeting studies that adopting this new regime increases real GDP. In the second graph, we showed the importance of domestic credit provided to the private sector, defined by Leyva (2008) as the most relevant financial indicator. We also note a positive and stable development for the Australian and Canadian experience between 1991 and 1993.

Figure 1. *Evolution of GDP growth over the period 1985-2010*



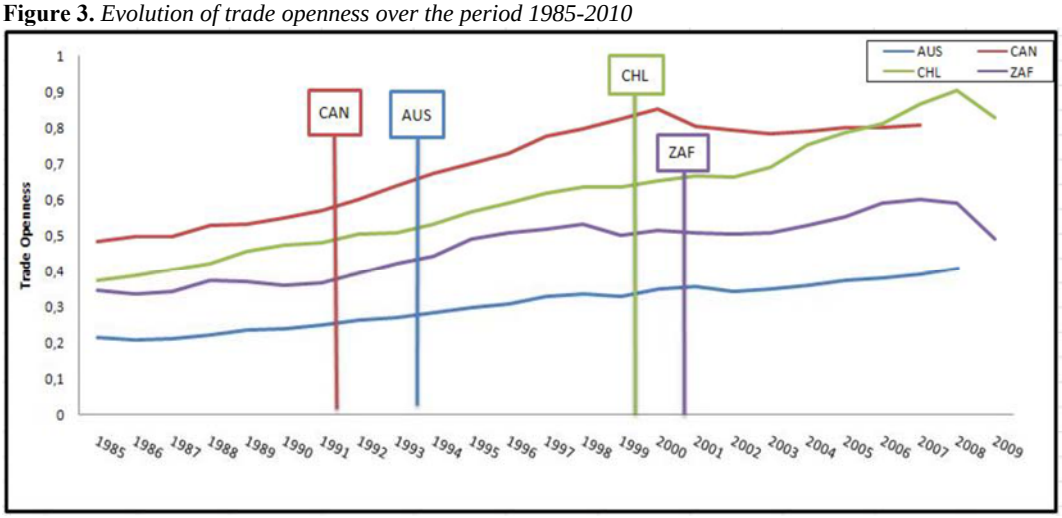
Source: WDI Database (2009).

Figure 2. *Evolution of domestic credit to the private sector over the period 1985-2010*



Source: WDI Database (2009).

Figure 3. *Evolution of trade openness over the period 1985-2010*



Source: WDI Database (2009).

Concerning trade openness, we could show, by our model, an improvement of this parameter during the period after transition to the new regime. Similarly, GDP per capita recorded remarkable growth.

Conclusion

The study of inflation volatility over a set of countries allowed us to verify the positive effect of inflation targeting the economic performance. The results of the analysis of inflation rates fluctuations show that the transition to the new monetary regime of inflation targeting has improved the economic growth for the countries concerned with

the study. In this sense, we have to prove the idea defended by Hyvonen (2004), Vega and Winkelried (2005) and Batini and Laxton (2007). Therefore, the state of the monetary system, budget and finance plays a major role in controlling the inflation dynamics in developed and emerging countries. This conclusion is demonstrated in both emerging and developed economies. However, these results are more important in the emerging world for the high vulnerability of their markets likely to have high rates of inflation.

The results were in favor of the existence of a strong negative relationship between the surplus and inflation volatility for countries using inflation targeting. However, it is easier to put pressure on central banks in the case of budget surplus in order to allow automatically a stabilization of inflation volatility. The approach that defines the relationship between external debt and inflation dynamics, is verified in this study and specifically for the case of emerging economies. Indeed, these are increases in debt securities in foreign currencies that cause a high risk of exchange and lead eventually to large shocks and fluctuations in inflation dynamics. Already, Bildirici and Ersin (2007) reported that the credibility and fiscal stability of developed countries play a crucial role in price stability.

In addition, we could prove the existence of an ambiguous effect of trade dependence on the volatility of inflation in the transition to inflation targeting regime. The financial depth variable has helped us to find a strong relationship between the financial situation of the country and its inflation rate. Indeed, the volatility of inflation tends to drop, whenever the financial system is more solid. Hence, the macroeconomic importance of the financial system that continues opt for to protect the country's economy by providing funds to cope with any shock or disturbance.

Notes

(1) The income per capita or the size of the economy can be evoked.

(2) The two financial development indicators used are the liquid liabilities reported in the financial system to GDP and market capitalization as a percentage of GDP.

(3) AUS : Australia, NZ : New Zealand, UK : United Kingdom, CHL : Chile, CAN : Canada, SA : South Africa, IND : Indonesia, SWE : Sweden, BRZ : Brazil, TUR : Turkey.

(4) The volatility of inflation is calculated by using standard deviation sliding over twelve months.

(5) We chose these countries because they are considered as reference country in the success of inflation targeting.

References

Amato, J.D. and Gerlach, S., 2002. Inflation targeting in emerging market and transition economies: Lessons after a decade. *European Economic Review*, 46, pp. 781-790.

Batini, N. and Laxton, D., 2007. Under What Conditions Can Inflation Targeting Be Adopted? The Experience of Emerging Markets. *Working Papers Central Bank of Chile*, No. 406, pp. 1-45.

Bildirici, M. and Ersin, O.O., 2007. Domestic debt, inflation and economic crises: a panel cointegration application to emerging and developed economies. *Applied Econometrics and international development,* Vol. 7, No. 1, pp. 31-47.

Carare, A. and Stone, M., 2006. Inflation targeting regimes. *European Economic Review,* Vol. 50, No. 5, pp. 1297-1315.

Feridun, M., Folawewo, A. and Osinubi, T., 2005. Monetary policy and macroeconomic instability in Nigeria: a rational expectation approach. *Applied Econometrics and international development*, Vol. 5, No. 2, pp. 69-90.

Hu, Y., 2003. Empirical Investigations of Inflation Targeting. *Peterson Institute for International Economics Working paper*, No. 03-6, pp. 1-42.

Hu, Y., 2006. The choice of inflation targeting - an empirical investigation. *International Economics and economics policy,* Vol. 31, No. 1, pp. 27-42.

Hyvonen, M., 2004. Inflation convergence across countries, Reserve Bank of Australia, *Discussion paper*, No. 2004 04, pp. 1-27.

Lane, P. and Milesi-Ferretti, M., 2001. The external wealth of nations: measures of foreign assets and liabilities for industrial and developing countries. *Journal of International Economics,* No. 55, pp. 263-294.

Leyva, G., 2008. The Choice of Inflation Targeting. Central Bank of Chile, *Working paper*, Nr. 475, pp. 1-43.

Mishkin, F.S. and Schmidt-Hebbel, K., 2007. Does inflation targeting make a difference?. National Bureau of Economic Research. *Working paper*, No. w12876, pp. 1-64.

Pétursson T.G., 2009. Inflation control around the world: Why are some countries more successful than others?. Central Bank of Iceland, No. 42, pp. 1-35.

Tugcu C.T. and Ozturk S., 2015. Macroeconomic effects of inflation targeting: evidence from the middle and high-income countries. *Theoretical and Applied Economics,* Vol. 22, No. 4 (605), pp. 105-112.

Vega, M. and Winkelried, D., 2005. Inflation Targeting and Inflation Behavior: A Successful Story?. *International Journal of Central Banking,* No. 3, pp. 153-175.

Williamson, J. and Mahar, M., 1998. A Survey of Financial Liberalisation. *Essays in International Finance,* No. 211, pp. 1-84.