Journal of Economic Growth and Entrepreneurship
Spatial and entrepreneurial development studies laboratory

Year : 2019 Vol.2 No.2

The Strategy Of The Inflation Targeting And The Efficiency Of The Monetary Policy

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ARTICLE INFO

Article history:
Received: 22/02/2019
Accepted:06/03/2019
Online:30/08/2019

Keywords:
Inflation Targeting
Monetary Policy
Efficiency
JEL Code:E52, E58

ABSTRACT

It is widely recognized that the strategy of the inflation targeting is the basic component of the monetary policy in many countries. The reason behind the widespread of this approach refers to the capability of the target process to enhance the efficiency of the monetary policy both in terms of objectives and execution. However, it should be noticed that the targeting framework is not an absolute panacea to the obstacles facing the policy makers, and this issue comes from the nature of the monetary policy per se. The latter could be considered more discretionally than a pure framework to apply because of the differences of the financial circumstances of the countries and their economic and social welfare. This paper attempts to highlight the pros and the cons of the inflation targeting strategy and its impact on the monetary efficiency paradigm.

- INTRODUCTION

The inflation targeting framework (IT) is labeled as one of the most interesting adopted policies of the monetary economics. By definition, the inflation targeting refers to the discretionary power and a forward looking strategy of the central bank to follow an explicit target of the inflation rate generally for the medium term. This gravitation around a specific inflation target deemed acceptable attempts to conduct better the other determinants of the monetary policy based on a clear and a sound transmission mechanism of the monetary policy determinants. In this context, the inflation targeting process aims to formulate and manage *efficiently* and *rationally* the quadruple composed of rate of money, inflation, and growth rate and unemployment level. This attempt raises the issue of the transparency and the accountability even the independence of the central bank both in terms of defining the target objective and incorporate it in the design of the monetary policy. The time horizon of targeting has its clear impact on the success or the failure of the inflation targeting policy because it embodies *implicitly* the envision of an appropriate expectation of the inflation (anchoring inflation), and as a consequence the capacity of this policy is conducted primarily by the accuracy of the nexus inflation-inflation expected and the other monetary and macroeconomic variables. The success of this network maintains the credibility of the monetary policy as the issue here is how to make people convinced by the stability of the inflation rate whatever happens to the economy. This vision is scrutinized by Bernanke et al to highlight the degree of the symbiosis exactness between the inflation rate and the targeted inflation and financial stability as a sign of the good governance of the other macroeconomic indicators:

> A framework for monetary policy characterized by the public announcement of official quantitative targets (or target ranges) for the inflation rate over one or more time horizons, and by explicit acknowledgement that low, stable inflation is monetary policy's primary long-run goal. Among other important features of inflation targeting are vigorous efforts to communicate with the public the plans and objectives of the monetary authorities, and, in

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many cases, mechanisms that strengthen the central bank's accountability for attaining those objectives.

Louis-Philippe Rochon et *al* in *Inflation Targeting, Economic Performance, and Income Distribution: A Monetary Macroeconomic Analysis*, p. 618

The inflation targeting by this sense advocates the necessity for the central bank to be transparent and a sound intuition in terms of accountability and transparency in order to increase the performance of this policy.

- **INFLATION TARGETING BETWEEN PROPENENTS AND OPPENENTS:**

A useful debut point to analyse the inflation targeting policy is to determine accurately its ultimate objective. Undoubtedly, in almost countries the last objective of the monetary policy is to safeguard the price stability and the value of currency because the latter is considered as the intrinsic value of the capitalist economy (David Copham et al, p.14). The position held by the price stability as the prime driver of the monetary policy is attributed to the subtler and the surer impact of the price on the other economic forces both in terms of demand and supply mechanisms. According to this view, many questions should to be scrutinized about the effectiveness of the inflation targeting in stabilizing prices and maintaining the growth rate and lowering the unemployment. Here we talk about a network comprising two stages of analyses all conducted by a strong and a transparent transmissions between inflation rate and expectation anchor as well as the price stability at the first stage; and between the price stability and the other macroeconomic variables (output, unemployment, exchange rate, currency value). The better impact movements between two stages ensure and enhance as well the constrained discretionary framework of the central bank along with the inflation targeting advocated by Ben S. Bernanke:

> Constrained decision attempts to strike a balance between the inflexibility of strict policy rules and the potential lack of discipline and structure inherent in unfettered policymaker discretion. Under constrained discretion, the central bank is free to do its best to stabilize output and employment in the face of short-run disturbances, with the appropriate caution born of our imperfect knowledge of the economy and of the effects of policy (this is the "discretion" part of constrained discretion).However, a crucial proviso is that, in conducting stabilization policy, the central bank must also maintain a strong commitment to keeping inflation—and, hence, public expectations of inflation—firmly under control (the "constrained" part of constrained discretion).

Ben S. Bernanke in *A Perspective on Inflation Targeting: Why it Seems Work*, p. 9

The clash between the advocates and adversaries of the inflation targeting regime reside in the idea of how robust this strategy is to maintain the *appropriate* inflation target in accordance with stronger growth, low level of unemployment and a good capacity of economic exploitation resources as well as finding the suitable remedies to the unbalanced functionality of the economic forces. The proponents of the inflation targeting regime is centered on the idea this the targeting per se leads to more transparency in setting objectives and more accountability in their implementation. Indeed, the inflation targeting regime is strongly advocated because setting interest rate within this framework is *practically* easier as it allows identifying the variation of prices and as a consequence the decision of the economic agents both as consumers and producers will be efficient and rational. In this context we talk about a *clear scheme* by which the resource allocation process is balanced on behalf of the objectives of the economic agents (inflation targeting versus objectives' targeting). In addition to this, the inflation targeting regime diminishes the heavy wave of the speculative spirit of the risk-lover agents because the interest rate is conducted inside a snake tunnel by the expected rates of inflation and this leads inevitably to increase the production process according to the speculation fighting paradigm. By this sense, the inflation targeting permits to consolidate the soundness and the credibility of the monetary policy in fighting inflation, but this goal is not comprehensively accomplished without obvious rules and mechanisms adopted by central banks in evaluating the variation of the inflation rates, setting cleverly the expected anchor of the inflation rate and understanding the transmission mechanisms between inflation rate, interest rate and prices. This advantage is added to the desire to decrease the social cost of inflation in accordance with reducing the sacrifice ratio of the inflation targeting regime. The table below shows some experiences with the inflation targeting regime:

TABLE.1. OPERATIONAL ASPECTS OF INFLATION TARGETS

Country (date of adoption)	Target Series Definition	Target Level (percentage annual inflation)	Time Horizon
Australia (1993)	Underlying CPI (excluding fruit and vegetables, petrol, interest costs, public sector prices and other volatile prices)	2–3	Ongoing
Canada (February 1991)	Core CPI (excluding food, energy and first-round effects of indirect taxes)	1–3	18 months
Finland (February 1993)	Underlying CPI (excluding government subsidies, indirect taxes, housing prices and mortgage interest payments)	about 2	Ongoing
Israel (December 1991)	CPI	8–11	1 year

New Zealand (March 1990)	Underlying CPI (excluding changes in indirect taxes or government changes, significant changes in import or export prices, interest costs and natural disasters)	0–2 (until November1996; 0–3 thereafter)	1 year
Spain(January 1995)	CPI (excluding first-round effects of indirect tax changes)	below 3	Through 1997
Sweden(January 1993)	CPI	2±1	Ongoing
United Kingdom (October 1992)	RPIX (RPI excluding mortgage interest payments)	lower half of 1–4 until spring 1997; 2.5 or less thereafter	Until the end of this Parliament

SOURCE: Frederic Mishkin in Monetary Policy Strategy, p. 208

The table above shows some astounding experiences of inflation targeting in some economies. It is implicitly understood that the targeting issue is not a rule *firmly* speaking but an evolving framework combining inside economic variants and interactions. Almost all the countries adopt CPI (Consumer Price Index) as an ultimate target of the inflation targeting regime as the major goal of the monetary policy is to gain the stability of prices; and this primary objective is conducted by three basic levels: level of time (assess the suitable span of time to reach a level where prices are nearly stable), level of interactions (the appropriate mechanisms of transmissions between inflation and prices) and level of level of feedback (How easy is the approach to remedy the deviations may occurred between real inflation and targeted one). The opponents of the inflation targeting regime at the other side advocate the difficulty of this regime in the sense that it hurts the credibility of the central bank as an independent institution responsible for setting the schemes of the monetary policy. The *credibility threat* may come from the hazardous and unanticipated shocks of the price, the fact that leads inevitably the prices to move inconsistently with the targeted inflation. The inconsistency comes out from the uncertain shocks that hit the inflation target on one hand and imperfect information especially in a case when the inflation is faulty conceived. This fact challenges the mission of the central bank in targeting inflation and *constraining* the monetary policy towards this goal.

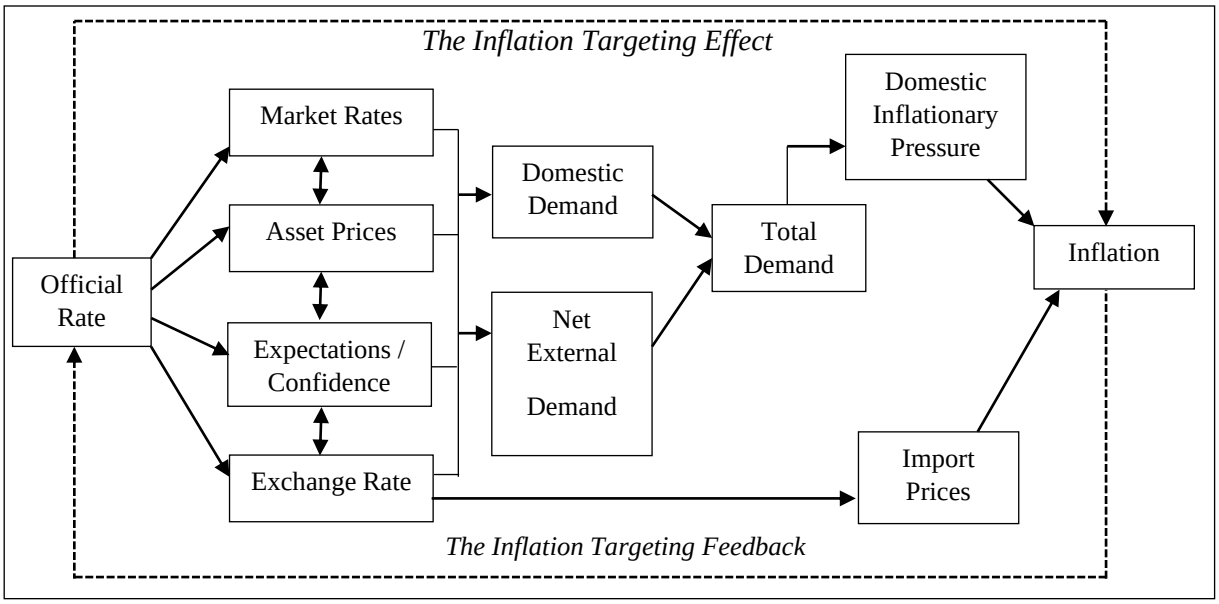
- **INFLATION TARGETING AND THE MONETARY TRANSMISSION MECHANISM:**

The monetary policymakers attempt by targeting the inflation to increase the performance of the monetary policy per se in attaining the preset goals. It is of common sense that the primary objective of the tools and policies of the monetary economics is to gain a level of price stability. As a consequence, the inflation targeting regime is efficient only in a case when the other macroeconomic variants are impacted and have influence on the targeted inflation. This issue paves the way for questioning the soundness and the transparence of the transmission mechanism between the components of the monetary policy already preconceived as goals. In this context, the performance of the inflation targeting regime is assessed by the success level of meeting the inflation objectives by the targeting regime and how well the other macroeconomic variables are performing under the targeting regime compared with the other alternative monetary policies. In this context, Bernanke et al advocate that the inflation targeting regime should cope with the internal and the external shocks:

> One of the main benefits of inflation target is that they may help to 'lock in earlier disinflationary gains', particularly in the face of one time inflationary shocks…In each case, the re-announcement of inflation targets helped to anchor the public's inflation expectations and to give an explicit plan for and direction to monetary policy
>
> Bernanke et *al* in *Inflation Targeting: Lessons from the International Experience*, p. 288

It is well understood from the inflation targeting that it is a regime comprising the announcement of target and the commitment of the responsible authorities to achieve the objectives of the monetary goal in general. This is no longer possible if the transmissions between interest rates, inflation, prices and the other macro variables are clearly set and predicted. The forecast analytics in this sense is twofold: the forecast based on time horizon and forecast based on magnitude and impact. The former implies the possibility of the targeted inflation during a specific period to conduct the intermediary monetary variables towards the achievement of the pre-set goal (price stability and output enhancement). This forecast is considered as a *shock absorption effect* in the sense that the targeted inflation conducted by the time horizon should absorb the both the internal and external unpredicted shocks (interest rate and general macroeconomic indicators as an example). The forecast based on magnitude and impact implies the interconnection accuracy and the causality direction in terms of weights between the actual inflation, the targeted one and the other objectives of the monetary policy. These two types of forecast pave the way – if they exist – for the right policy action which means changing the right amounts at the right moments, and the related communication by the policymakers is well effective in order to anchor the private sector's expectations about future inflation and economic decisions accordingly (Ben S. Bernanke, 2003).

FIGURE. 1. THE INFLATION TARGETING PROCESS AND THE TRANSMISSION MECHANISM



SOURCE: The researchers based on Keith Bain et *al* in *Monetary Economics, Policy and Its Theoretical Basis*, p. 178

The transmission effect of the monetary policy is divided into two channels: the effect exercised on the aggregate demand and this effect is pushed ahead to influence the aggregate output, employment and prices. Within the framework of the inflation targeting regime, the economic agents reshape their behaviour of spending choices and price setting decisions according to future inflation by a recursive movement. The latter is highly difficult to be conducted because the economic agents may show consensus or disagreement over the level of the targeted inflation. In a case when the agents (households and firms) indicate a high disagreement about the level of the future inflation, the emanating behaviour will become irrational in the sense that it increases the level of the targeted inflation and destabilize the policy process of the central bank. This case leads the monetary policy makers to support the cost of the agents 'disagreement and this fact may hurt the credibility of the central bank and the targeting policy in general.

- **INFLATION AND PRICE LEVEL TARGETING:**

It is undoubtedly claimed that the ultimate objective of the monetary policy is to set prices stable. This goal does not mean that the prices which the policymakers want to achieve are free from the inflation, but instead they move steadily above or below the inflation target path preconceived as a goal of the targeting regime. This fact leads to question the performance of two interrelated paths and which one should take much care: the inflation target path or the price target path. This issue depends on expectations of the economic agents and the persistence of the growth. According to the expectation paradigm, the agents are switching around two alternative behaviours according to level of the targeting and its time horizon. The central bankers strive to target the inflation in a way that it ensures an acceptable harmony between the inflation and the interest rate. The latter is conversely correlated with the inflation and as a consequence, the targeting process should be at a level which does disturb the investment decisions and the output creation accordingly. On the other hand, the expectation of the agents plays a pivotal role in maintaining or sweeping away the expected targets of inflation and prices from their desired points. If the expectations are rational, both the price path and the inflation one move in tandem in accordance with the pre-set objectives of the inflation targeting regime; and if the agents follow a herd and an irrational behaviour, then the policymakers miss the objective of the monetary policy based on the inflation targeting regime. Under this consideration, the coupled targeting regime (inflation – Price) needs to be designed within an optima horizon over which the prices can be set at their desired path and the same goes for the inflation. The focal point of analysis arising through the hybrid targeting regime comes out from the degrees and the society preferences as well as the frequency of both inflation and prices and their impacts on output variability and persistence. The price targeting regime aims to reduce the price volatility according to the target average but this may lead to higher short term variability of the inflation and the output than the average. In this part, we attempt to develop the model in which we try to analyse the interaction between the inflation target and the price target in reducing the output volatility. The approach adopted is based on the volatility frequency, the response degree and the trade-off possibility between inflation targeting and price targeting regimes. Under the inflation targeting regime, the output is represented by the following model:

$$y_t = \varphi y_{t-1} + \alpha \int_{t-1}^{t} \left(I_t - I_{t|t-1} \right) d_t + V_{t|t-1}(x)$$

Where y_t is the level of growth at time t based on the level recorded in t-1 (y_{t-1}), the relationship between y_t and y_{t-1} is partially conducted by the expectation behavior both in terms of quality and accuracy φ, I_t is the inflation rate targeted for the period t based on the real inflation rate at that period, the latter is also determined according to the behavior of the agents and their expectations at t-1 $\left(I_{t|t-1}\right)$, α denotes the dynamic impact of the inflation trend on the consumption and the investment decisions of the individuals, $V_{t|t-1}(x)$ is the indirect loss function that the economy is supposed to deal with in case of lag occurrence between the targeted inflation and the real inflation represented by :

$I_t = E_{t-1}\left(I_{t|t-1}\right)$ Is linked by the expectation at time E_{t-1} supposed to be rational. Under these circumstances, the responsible of the monetary authority strives to minimize the loss function according to movement of the inflation rates both targeted and real and according to the level of the rational expectations:

$$y_t = \begin{cases} \min V_{t|t-1}(x) / V_{t|t-1}(x) = \int_{t-1}^{t} \beta x^t dt \\ under \\ \left(I_{t|t-1} \approx I_t\right) \wedge \left(y_t^* \approx y_{t|t-1}\right) \end{cases}$$

Where y_t^* the targeted level of growth, this level is may be diminished by the possible inconsistencies occurred at the inflation rate (change of consumption behavior due to agents' euphoria) and the change of the investment decisions according to the impact of the cost-push factor. The system above could be written as follow :

$$y_t = \begin{cases} \min V_{t|t-1}(x) = \left[\frac{1}{t+1} \beta x^{t+1} \right]_{t-1}^{t} \\ under \\ \left(\max I_{t|t-1} \approx \sum_{t-1}^{\infty} E_{t-1} I_{t-1} \right) \wedge \left(\max y_t^* \approx \sum_{t-1}^{\infty} \varphi y_{t-1} + \alpha \int_{t-1}^{t} \left(I_t - I_{t|t-1} \right) d_t + V_{t|t-1}(x) \right) \end{cases}$$

And then the policy makers as well as the economic agents strive to make their rational expectations at the highest level of accuracy which means that:

$$\left\{ \begin{array}{l} E_{t-1} = \varphi_1 E_t \\ E_t = \varphi_2 E_{t+1} \\ E_{t+1} = \varphi_3 E_{t+2} \\ \vdots \\ E_n = \varphi_{\phi+1} E_{n+1} / (\phi \succ 0 \wedge \lim_{\phi | \phi_1, \phi+1 \to \infty} = 1 \end{array} \right\} \wedge \left\{ \lim_{t \to \infty} y_t^* = 0 \right\} \wedge \left\{ \lim_{x \to \infty} V_{t|t-1}(x) = 0 \right\}$$

Then the efficiency of the inflation targeting regime is guaranteed only by attaining the levels at which the expectation is absolutely rational, the loss function at its lowest point and the growth target at the highest one. The point of the monetary efficiency under the targeting regime is represented by:

$\lim_{x,t\to\infty}\int_{t-1}^{\infty}\varphi y_{t-1}+\alpha\int_{t-1}^{t}\left(I_t-I_{t|t-1}\right)d_t+V_{t|t-1}(x)=0$ This is the target function of the inflation targeting regime; but this is not resolved only under the condition of the behavioral function:

$\lim_{x,t\to\infty}V_{t|t-1}(x)/E_n=\varphi_{\phi+1}E_{n+1}=0$. By disaggregating the system according to the above considerations, we get implicitly that:

$\left(VAR\left[y_t-y_t^{*}\right]\to 0\right)\wedge\left(\lim_{t\to\infty}\left(y_t-y_t^{*}\right)=0\right)$, and accordingly we get:

$$\frac{\sum_{1}^{t}\left(\left[\int_{t-1}^{\infty}\varphi y_{t-1}+\alpha\int_{t-1}^{t}\left(I_t-I_{t|t-1}\right)d_t+V_{t|t-1}(x)\right]-y_t^{*}\right)^2}{t-1}\to 0$$ This implies that:

$$\Rightarrow\frac{\sum_{1}^{t}\left(\left[\int_{t-1}^{\infty}\varphi y_{t-1}+\alpha\int_{t-1}^{t}\left(I_t-I_{t|t-1}\right)d_t+V_{t|t-1}(x)\right]^2-2\left(y_t^{*}\right)\left[\int_{t-1}^{\infty}\varphi y_{t-1}+\alpha\int_{t-1}^{t}\left(I_t-I_{t|t-1}\right)d_t+V_{t|t-1}(x)\right]+\left(y_t^{*}\right)^2\right)}{t-1}\to 0$$

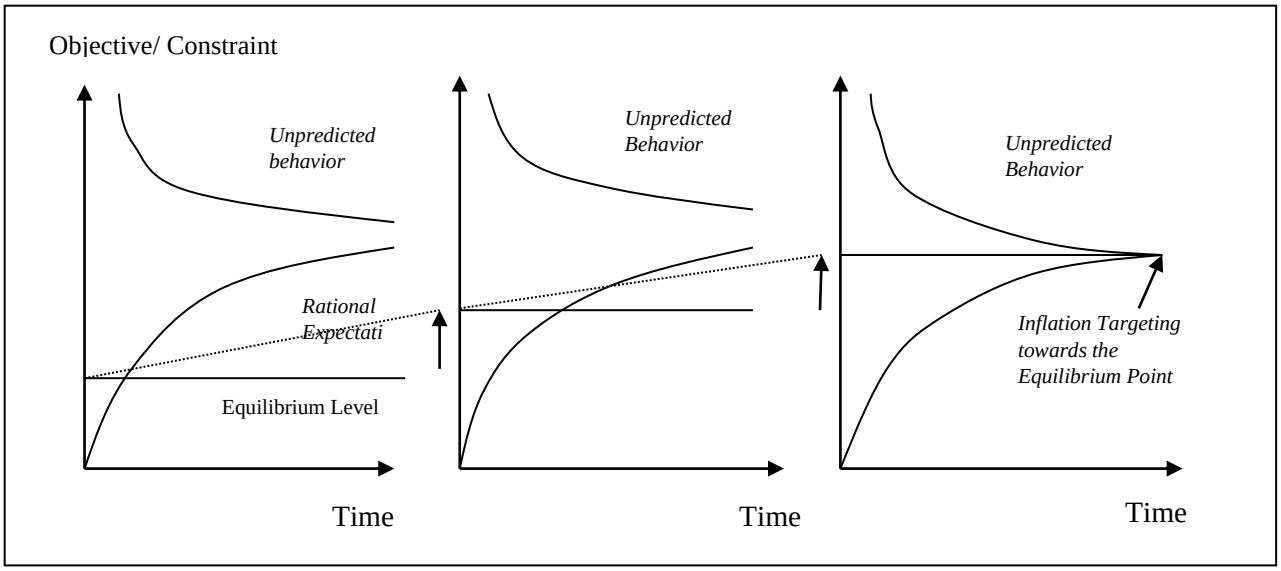
This means that the components of the variation are all equal to zero as follow:

$$\begin{cases}\sum_{1}^{t}\left[\int_{t-1}^{\infty}\varphi y_{t-1}+\alpha\int_{t-1}^{t}\left(I_t-I_{t|t-1}\right)d_t+V_{t|t-1}(x)\right]^2\to 0\\ \wedge\\ \sum_{1}^{t}\left(y_t^{*}\right)\left[\int_{t-1}^{\infty}\varphi y_{t-1}+\alpha\int_{t-1}^{t}\left(I_t-I_{t|t-1}\right)d_t+V_{t|t-1}(x)\right]\to 0\\ \wedge\\ \sum_{1}^{t}\left(y_t^{*}\right)^2\to 0\end{cases}\Rightarrow\begin{cases}\varphi=\lim_{t\to+\infty}\frac{y_t-y_t^{*}}{t}=0\\ \alpha=\lim_{t\to\infty}\frac{I_t-I_t^{*}}{t}=0\\ x=\lim_{t\to\infty}\frac{V_{t|t-1}(x)-V^{*}{}_{t|t-1}(x)}{t}=0\end{cases}$$

This represents the condition by which the monetary authority gets the highest efficiency through the inflation targeting regime in fulfilling the preset objectives of the monetary policy. The inflation target regime is a useful strategy of the monetary policy if the policymakers are able to pinpoint accurately the rational expectations of the economic agents (individuals and institutions) and the movement of prices is absolutely identical both in terms of values and trends to the goal preset by the targeting regime; but it should be noted that the second condition cannot be fulfilled only if the monetary policy responsible are accurately able to predict the level of the agents' rational expectation. The third condition for the monetary efficiency under the targeting regime is represented by the best conduct of the central bank loss function in cases when the targeted inflation deviates slightly from the real one and this issue forwarded the idea that under the efficient inflation targeting regime, the value of the sacrifice ratio is at its lowest level. In this context, it should be noticed that the three condition of the monetary efficiency under the inflation targeting regime are sequential and inclusive which means that the behavioral parameter of the monetary policy in conducting the objectives of the monetary scene is primordial. This is followed by the operational parameter (the intrinsic procedure of the targeting process), but the success of this step is conditioned by how far the monetary authority is able to set and predict accurately and rationally the agents' behavior

whether offensive or defensive. This pattern enables the policymakers to reduce the dysfunctions may occurred within the framework of the inflation represented by the low level of the sacrifice ratio:

FIGURE. 2. THE CONDIRTIONS SEQUEL OF THE MONETARY POLICY UNDER THE TARGETING REGIME



SOURCE: The Researchers

The exhibit portrays the continual and gradual development of the targeting inflation regime towards the equilibrium point on which the monetary policymakers get the optimum of the process undertaken both in terms of objectives (Inflation target regime versus prices stability) and the process management (the manner of how the rational expectation and the sacrifice paradigm are understood and handled). The striking observation is that the three conditions (behavioral, technical and general) are general and inclusive, and the success of the monetary policy under the targeting regime depends on the success of the three conditions management and handling.

- **CONCLUSION:**

This paper attempts to highlight the issue of the monetary policy under the inflation targeting regime through the objectives preset by the policymakers and the management of the monetary policy mechanisms. The targeting regime is undertaken in order to increase the efficiency of the monetary policy in attaining the objectives of prices' stability, considerable growth level and diminished rate of unemployment. However, these objectives cannot be realized if the monetary authority is not able to conduct the trend of the rational expectations of the agents (behavioral condition) and to target the inflation according to the expectation and the objectives (technical objective) and conduct the other economic and monetary variables within the framework of the targeting and the expectation (general objective).

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