

INFLATION TARGETING IN HIGH INFLATION EMERGING ECONOMIES**Makhmadazizov Eldorjon Marifjon o'g'li***Master of National University of Uzbekistan*

This talk emphasizes the connection between inflation targeting and monetary policy rules. Inflation targeting is not enough. You need to have a policy procedure – a policy rule – to achieve the target. And one cannot design or evaluate a monetary policy rule without a target inflation rate. Hence, there is a symbiotic relationship between inflation targeting and monetary policy rules. Initially, the instrument in the policy rule was a monetary aggregate – a quantity, usually the money supply. It was only later that research on monetary policy rules focused on another instrument of monetary policy – the interest rate, as velocity became more volatile so the interest rate was more reliable as instrument, at least for low levels of inflation. Interest rate rules work best within a band between very high inflation and deflation. Outside that band, the central bank should rely more on money growth rules.

In this article, I would like to emphasize the connection between inflation targeting and monetary policy rules. The article is thus related in several ways to the recent change in the monetary policy rule at the National Bank of the Republic of Uzbekistan – from an interest rate rule to a monetary base rule.

A number of years ago in a speech on inflation targeting in emerging economies, I argued that “there is an interesting symbiotic relationship between inflation targeting and monetary policy rules. And like many symbiotic relationships in nature, it is a beneficial relationship.” At a most basic level, “[o]ne cannot design or even evaluate a monetary policy rule without a target inflation rate....” And you cannot reliably achieve an inflation target without a policy rule. Thus, “[e]ver since the 1970s, research on policy rules has taken the target rate of inflation as given” (Taylor, 2000a, p. 9).

To see this relationship, consider a typical monetary policy framework. The goal includes an inflation target and the aim of policy is to reduce inflation to that target, and then to keep it low and near that target, without having a severe adverse effect on real variables such as real gross domestic product (GDP) or unemployment. The goal can be represented mathematically by an objective function which penalizes large fluctuations of inflation from the target inflation rate along with deviations of real GDP from its potential. In the models that I built over the years, there is a trade-off between the fluctuations from these targets which could be sketched out on a piece of paper, as I will come back to later in this talk. That trade-off existed in the data too and could be estimated. The purpose of the research on monetary policy rules was to find a good rule for the instruments of monetary policy to achieve the goals, including the inflation target.

The relationship between policy rules and inflation targets can also be illustrated with some statements by those who served in official policy positions at the central banks in high inflation emerging economies that first introduced inflation targeting.

Donald Brash, who served as Governor of the Reserve Bank of New Zealand from 1988 to 2002, said: “In many respects, it is a mistake to think of inflation targeting as some kind of new approach to monetary policy All the debates about how to formulate monetary policy in order to deliver the best outcomes are still relevant. Should we use monetary aggregates? Should we use Taylor rules? Should we simply adjust interest rates so that the direct price effects of the change in the exchange rate produce the desired effect on the domestic price level?” (Brash, 1999), pp. 9–10 and 12.

Jose De Gregorio, who served on the Board from 2001 to 2007 and as Governor from 2007 to 2011 of the Central Bank of Chile, stated that “[t]he inflation target is an efficient framework to conduct monetary policy. The issue then is how to operationalize this framework. When should monetary policy be tightened or loosened? The most traditional answer is the Taylor rule A good policy rule is one in which the fluctuations around the target inflation rate are small” (De Gregorio, 2014, p. 29).

Thus, inflation targeting is not enough. You need to have a policy procedure – a policy rule – to achieve the target.

It may come as a surprise to many who know about the Taylor rule that from the beginning of my research (Taylor, 1968), the instrument in the policy rule was a monetary aggregate – a quantity, usually the money supply. For example, in a paper (Taylor, 1979) that I worked on during the time CEMA was being founded, I built and estimated a model with staggered price/wage setting and rational expectations, and with the model I calculated a numerically specified monetary policy rule for the growth rate of the money supply. According to the policy rule, which took the form of a mathematical equation:

- The central bank *increases* the money growth rate by specified amounts if inflation *falls* below the inflation target or if real GDP *falls* below potential GDP.
- The central bank *decreases* the money growth rate by specified amounts if inflation *rises* above the inflation target or if real GDP *rises* above potential GDP.

Interest rate rules and inflation targeting

It was only later that research on monetary policy rules focused on another instrument of monetary policy – the interest rate. This came about as velocity became more volatile and, at least for low levels of inflation, the interest rate was thus more reliable as instrument. Research with Nicholas Carozzi on international monetary policy (Carozzi and Taylor (1983, 1985)) considered simulations with interest rate rules noting that “interest rate rules ... are possible characterizations of monetary policy.”

The paper that was the origin of the Taylor rule, and brought increased attention to the interest rate instrument, was published in December 1993, exactly 25 years ago this month. So, in effect, I have spent nearly equal time on money growth rules and interest rate rules. According to the Taylor (1993) rule,

- The central bank *decreases* the interest rate by certain amounts if the inflation rate *falls* below the inflation target or if real GDP *falls* below potential GDP.
- The central bank *increases* the interest rate by certain amounts if the inflation rate *rises* above the inflation target or if real GDP *rises* above potential GDP.

The inflation target was taken to be 2 percent, and the real interest rate in equilibrium was taken to be 2 percent, yielding a nominal interest rate of 4 percent on average. The response of the interest rate was 0.5 times the GDP gap and 1.5 times the inflation rate.

McCallum (2015, p. 2) later pointed to some side benefits of stipulating policy as a rule for the interest rate back then: "... previously suggested rules ... had all been expressed in terms of the monetary base or some other aggregate as the instrument variable ... Both officials and economists in central banks, by contrast, thought of monetary policy in terms of interest rate control. Partly as a result of this, there was in 1993 very little interaction between academics and central banks. But then Taylor's paper showed academics by example that a sensible activist policy could be formulated in terms of an interest rate instrument and at the same time showed central bankers...that a maintained rule could lead to good policy choices! ... over the next few years there came to be much more interaction between academic and central bank economists."

But as I stressed many times, such as at a meeting at Bank Indonesia which included many emerging market central banks – Brazil, Chile, Czech Republic, New Zealand, Korea, and Thailand: "In my view it is mistake to think of inflation targeting and money base targeting as mutually exclusive alternatives The important point here is *that it is possible for an inflation targeting central bank to use the monetary base as the instrument to achieve that target*. The correct question is: 'Should we use the interest rate or monetary base?' not 'Should we use inflation targeting or the monetary base?'" (Taylor, 2000b, p. 2). Or at a meeting at the Bank of Mexico, "In most recent research on policy rules the instrument has been a short-term overnight interest rate, but it is important to point out – especially in a discussion of emerging market economies – that the instrument in a policy rule could be the monetary base, or some other monetary aggregate" (Taylor, 2001, p. 4).

Even with the increased attention paid to interest rate rules in recent years, it is a mistake to give up on money rules. To emphasize this, I included a section, "The Similarity Between Money Rules and Interest Rate Rules" in Taylor (1996). To see the connection, consider first the case of a constant growth rate rule for the money supply. If the demand for money balances depends negatively on the interest rate and

positively on nominal GDP – the product of real GDP and the price level – then an increase in real GDP will imply an increase in the interest rate, and a decrease in real GDP will cause a decrease in the interest rate. This is exactly what would be called for with an interest rate rule like the Taylor rule. In addition, an increase in inflation would call for an increase in the interest rate, and a decrease in inflation would call for a decrease in the interest rate. Again, this is exactly what is in the Taylor rule. To be sure. The connection does not depend on this example of fixed money growth: Nelson (2003) emphasized that an interest-rate policy rule implies a pattern of behavior for monetary growth.

This close connection between money rules and interest rate rules is very important. First, it helps one design good rules, because the good properties on one type of rule can be copied in another rule. Second, it helps make rules more robust: That interest rate rules mimic, in certain ways, money supply rules, gives one more confidence in interest rate rules. Third, if interest rate rules are unreliable because of high inflation, then one can emphasize money rules. As I stated in Taylor (1996, p. 37), “interest rate rules need to be supplemented by money supply rules in cases of either extended deflation or hyperinflation.”

Nevertheless, as many central banks, including the Federal Reserve, have focused more on the interest rate as an instrument, they have focused less on money aggregates in their models. For a long time, I have pushed back against the trend of central banks to ignore money growth.

Belongia and Ireland (2014) recently noted that my work on policy rules in the 1970s was in terms of money growth rules. They also noted that my 1993 paper “showed how well the Fed adjusted its funds rate target in response to movements in output and inflation during the late 1980s and early 1990s. The debate was closed. A new consensus, prevailing to this day, placed interest rates instead of money at the heart of all monetary policy discussions.”

But that Fed decisions were close to that interest rate rule during that short span of time was not my rationale for a proposed interest rate rule. Rather, research in monetary theory was the rationale. The proposed rule was the implication of empirically estimated structural monetary models (with rational expectations and staggered price setting) that I was developing and working with in the 1980s. The models had exchange rates and long-term interest rates as well as short term interest rates with both internal and external dynamic stochastic shocks.

These models showed that interest rates rules would work better within the range of observed shocks. Different types of models and views on the monetary transmission mechanism led to similar conclusions, so it was a robust result. In one of his last research papers, Milton Friedman argued that the Taylor rule for the interest rate worked well because it was a way to keep the growth rate of the money supply

constant, another way to make the connection between money growth rules and interest rate rules.

To go from the interesting empirical results of Belongia and Ireland (2017) to a policy strategy for the money supply, more modelling research on money growth rules would be useful. Are there structural models where alternative policy rules with money growth would work better? What are those rules? Are they robust to other types of models? Such research led to the types of policy rules that are now the focus of so much attention. In my view, it will lead to improvement in these rules.

Transitions from too high inflation.

It is also important to distinguish the operation of a policy rule in a relatively low inflation regime from the transition from a high inflation rate to a lower inflation rate. Recall that in the United States, price stability was achieved in early 1980s by focusing on the money aggregates. Gradually over time, the Federal Reserve moved to focus more on the interest rate.

Another issue for interest rate rules – though not currently an issue in Argentina – is the lower bound on the interest rate. Recently, there has been an increased interest in money supply rules because of concerns in a number of “center” countries that the policy rules will take the interest rate below zero or below an effective lower bound on the nominal interest rate.

In some sense, this is not a new concern for monetary research. In simulating multi-country empirical models in the 1980s, we took account of the zero bound on the interest rate, switching to money growth when the lower bound was near. And this is what I recommended in 2009 for the Federal Reserve. However, the series of on-and-off quantitative easings that began in 2009 in the United States was never aimed at keeping money growth steady or at keeping it from falling, which is clear in the erratic behavior of M2.

In situations where the interest rate hits the lower bound, or more generally in situations of deflation, I have argued that central banks need to focus on a policy rule which keeps the growth rate of the money supply steady. This approach has also been suggested by Christiano and Rostagno (2001), Christiano and Takahashi (2018), and Bias (2018).

More generally, interest rate rules work best within a band between very high inflation and deflation. Outside that band the central bank should rely more on money growth rules.⁶

On September 13, the President of the Republic of Uzbekistan Shavkat Mirziyoyev signed the decision "On measures to further improve monetary policy". In order to ensure macroeconomic stability and improve the standard of living of the population, the document notes the need to fundamentally revise the existing instruments of monetary policy.

⁶ <https://www.tandfonline.com/doi/full/10.1080/15140326.2019.1565396>

With the decision, the mechanisms and principles of achieving the goals of the Central Bank's monetary policy in the medium-term perspective, the inflation targeting procedure used by central banks in the world to ensure internal price stability (Inflation targeting is the setting of the inflation goal in the medium-term perspective and monetary policy regime aimed at achieving) was approved.

The set of measures developed by the Central Bank, the Ministry of Finance and the Ministry of Economy for the period of 2017-2021 on the further improvement of the monetary policy and gradual transition to the inflation target regime was approved.

The task of developing and approving the medium-term concept of implementation and development of the monetary policy and the "roadmap" for the implementation of the concept in 2018-2021 was assigned to the Central Bank by March 1, 2018.

It should include a gradual transition to the inflation target regime in the following ways:

to improve the practice of coordination of macroeconomic, tax-budgetary and monetary policies, to pay special attention to ensuring the compatibility and interrelationship of the goals of economic growth, the balance of the state budget and the stability of the price level in the economy;

expansion of interest-rate monetary policy tools that effectively use liquidity provision and attraction operations;

widespread use of market mechanisms for interest rate formation by commercial banks, including loans;

improvement of macroeconomic analysis and forecasts in accordance with the best foreign experience models;

strengthening relations with the public in order to increase the transparency and predictability of monetary policy, including information about the tools used and the main goals of the policy.

By October 1 of this year, the project of the concept of further development of the financial market of the republic, including the market of state securities in the medium and long term, should be developed.⁷

⁷ <https://kun.uz/uz/80777753>