

# A Brief Review of New Neoclassical Synthesis of Monetary Policy

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## Abstract

This article reviews the central tenants of the New Neoclassical Synthesis of monetary policy. Starting with the optimising behaviour of central banks, this article reviews different theoretical developments like the role of expectations, the Taylor Principle, time-inconsistency, central bank independence and the importance of financial markets for monetary policy. The article concludes by highlighting the challenges faced by policymakers.

## Keywords

Monetary policy, new neoclassical synthesis, inflation, output, expectations

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## Introduction

Economies are often prone to various internal and external shocks. These shocks are often, though not always, destabilising. Amid these shocks, attaining and sustaining long-term economic goals is difficult. To tackle these problems, some policies<sup>1</sup> are used to deal with such shocks without hampering the smooth functioning of the economy. Among the available policies, monetary policy has emerged as the most popular and effective. In this context, it may be pertinent to note that the guiding principles of monetary policy these days are largely based on the ‘New Neoclassical Synthesis’ and the ‘New Keynesian Models’. The basic premise of these models is that monetary policy influences real economic activity better than any other policy. In academic literature, the policy prescriptions from these foundations are commonly known as ‘flexible inflation targeting’ (Svensson, 1997).

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The basic idea of optimal monetary policy is based on the optimisation of an objective function subject to constraints. The underlying objective function is a welfare function represented in terms of twin objectives of price stability and employment (or output), which are at the heart of monetary policy practised worldwide. The constraint subject to which the objective function is to be optimised represents the existing economic structure. The literature on monetary policy thoroughly discusses various dimensions of the objective function of monetary policy. The first component of this objective function is price stability. By price stability, we mean the minimum divergence of inflation from its pre-determined desired level or target inflation. The second component of this objective function is output stability. This involves minimising fluctuations in output at the potential output level. The constraints subject to which the objective function is to be optimised is based on the available information about the workings of the economy. This set of information is crucial in making decisions regarding the monetary policy. Policymakers need to know whether there is a trade-off between unemployment and inflation, the role of expectations in influencing the behaviour of economic agents, the effectiveness of monetary transmission mechanisms, the degree of effectiveness of various channels of transmission and the importance of characteristic features of institutions like the independence of the central bank. All this information is necessary for policymakers to have a clear and better understanding of the workings of the economy.

This article aims to review of these basic theoretical foundations, which form the basic information set for central banking. The next sections of this article review the studies that form the basis of NNS and conclude by highlighting the recent developments and issues faced by the present state of central bank policymaking.

### *New Neoclassical Synthesis of Monetary Policy*

The role of monetary policy in ‘New Neoclassical Synthesis (hereafter NNS)’ can be broadly summarised as follows:

1. NNS suggests that due to gradual adjustments in the general price level because of short-run price stickiness, real economic activity is influenced by monetary policy actions.
2. There is a limited trade-off between employment and inflation.
3. There are consequential gains in price stability.
4. Central bank credibility (or policy credibility) is pivotal for understanding the impact of monetary policy on the macroeconomy.

These conclusions about the role of monetary policy mainly stem from the main theoretical underpinnings of NNS (Goodfriend & King, 1997). We will briefly review the foundations of these theoretical developments, which are believed to be the basic guiding principles of monetary policy by academicians and policy practitioners (Mishkin, 2011).

## *Inflation as a Monetary Phenomenon and the Benefits of Price Stability*

After the Great Depression, economists converged to a general consensus based on Keynesian theory, which reasoned the lack of aggregate demand was the source of the Great Depression and thus implied that, generally, changes in aggregate demand were the reasons for macroeconomic fluctuations. In contrast, to the classical view, this consensus argued for a greater role of fiscal policy (and thus downplayed the importance of monetary factors) in explaining the macroeconomic fluctuations. However, the monetarists contested the Keynesian explanation of the Great Depression and put the onus of the sufferings on poorly managed monetary policy during the depression (Friedman & Schwartz, 1963a, 1963b; Friedman & Meiselman, 1963). Additionally, the monetarists argued that changes significantly influence economic activity in aggregate in the money supply, and in particular, money supply growth is a key determinant of inflation.

By the end of the 1960s, 'Monetarism' became the dominant school of macroeconomics as it could explain the reason for high-interest rates and high inflation during the 1960s, which the monetarists argued was due to expansionary monetary policy at the time (Friedman, 1968). This led to the birth of the famous adage by Friedman that 'Inflation is always and everywhere a monetary phenomenon' (Friedman & Schwartz, 1963a). Thus came the belief that monetary factors play the most important role in stabilising the price level. Hence, monetary policy is pivotal in containing inflation. However, this view is valid only if there is no fiscal dominance. In the presence of fiscal dominance, governments force monetary authorities to finance their large budget deficits, usually through expansionary monetary policy. Thus monetary policy can be held responsible for stabilising price levels only as long as there is fiscal discipline on the part of the government. Fiscal dominance is usually a common phenomenon of developing countries as these countries run large deficits and central banks in these countries are not so independent in pursuing monetary policy (Hasan & Isgut, 2009; Zoli, 2005). However, recent literature points out that fiscal dominance is not only a phenomenon in developing but also developed countries as well (Mishkin, 2011).

Governments around the world and particularly in developing countries, are adopting stringent measures for fiscal discipline. Such measures give a clear mandate to the central banks to keep a check on price stability because, in the absence of fiscal dominance money, the supply is the most vital information about inflation. This puts the responsibility of keeping inflation under control on the central banks.

By the early 1960s, the case for exploiting policy trade-offs as suggested by Phillips curve (Phillips, 1958) was being advocated (Samuelson & Solow, 1960). The Phillips curve suggested that 'there was a trade-off between unemployment and inflation'. This meant that the policy objectives of monetary authorities were competing, that is, higher inflation rates meant lower unemployment and vice-versa.

However, Phelps (1968) and Friedman (1968) contested the policy trade-off proposition, arguing that no such trade-off exists between inflation and unemployment in the long run. They suggested that in the long run, irrespective of the rate

of inflation, economy converges to some natural unemployment rate. Hence, the Philips curve would be vertical in the long run. They argued that policymakers could not exploit any such trade-off because, as they suggested, the Philipp's curve, in the long run, would be vertical, so any attempts to increase employment or, in other words, attempts to decrease unemployment below the natural rate of unemployment would result only in an increase in inflation. The natural-rate hypothesis was vindicated by the economic record of the 1960s and 1970s, which was not a happy one. The inflation rates in advanced economies were very high during this time, which was known as 'The Great Inflation'.

The high inflation rates in the 1960s and 1970s brought the issue of high inflationary costs to the forefront (Anderson & Guren, 1995; Fischer, 1993). The high inflation rates acted as a tax on cash holdings and raised questions about the medium of exchange function of money. All the stakeholders—the public, businessmen, policymakers and academicians began to discuss the seriousness of the issue. In order to avoid the costs of inflation, the financial sector began to see overinvestment (English, 1996). Correspondingly, because of the uncertain environment about price levels, economic efficiency decreases because, under an uncertain environment caused by inflation about prices, firms cannot make appropriate investment decisions (Feldstein, 1997; Lucas, 1972). The high inflationary conditions distort the picture of borrowing costs and hence may boost the cost of borrowing and thus adversely affect economic efficiency. Additionally, financial planning on the part of the household becomes difficult in an inflationary environment. Because in an inflationary environment it is difficult to understand the trend in general as well as in relative price levels, there is greater possibility of suffering from 'money illusion', which adversely affects financial planning.

The overall impact of the distortionary costs of inflation during the 1970s led to a consensual view that price stability is important for increasing the overall efficiency of the economy. The pernicious effects of inflation on economic efficiency suggested that tolerating higher inflation rates does not generate higher employment, as was believed to be the case. Thus, refuting the policy trade-off between inflation and employment and leading to the possibility of complementarity between inflation and employment. Thus, the twin objectives or 'dual mandate' of monetary policy—economic growth and price stability—came to be seen as complementing each other rather than competing with each other. Coupled with Friedman-Phelps natural rate hypothesis, which suggested no long run trade-off between inflation and unemployment and the benefits of price stability in improving economic efficiency, central banks adopted the complementarity view of the 'dual mandate' in their monetary policy frameworks. For more on 'dual mandate', see Debortoli et al. (2017) and Ajello et al. (2020).

### *The Role of Expectations*

The rational expectation theory developed by Lucas (1972, 1973, 1976) advanced the hypothesis of the natural rate proposed by Friedman and Phelps. One main aspect of natural rate hypothesis was that because of inflationary expectations,

prolonged inflation wouldn't allow for employment boosting as economic agents would gradually adjust price rises. Building on the same reasoning, the rational expectation theory argues that expectations of economic agents about policy actions have a considerable impact on the economy. Since the actions of economic agents are based on optimising behaviour, the rational expectations theory suggest that economic agents utilise all available information and make an optimal forecast about the expectations of the variables. The optimising behaviour warrants that as new information pours in, it results in a change in expectations. This immediate response of expectations to the new information suggests that any attempt to reduce unemployment below the natural rate may result in higher inflation. Thus, an important insight of the rational expectation theory is that forward-looking expectations are pivotal for economic activity. Thus, anticipated or systematic monetary policy actions are important for the optimal conduct of monetary policy. This makes the expectation management about future monetary policy actions an important part of the monetary framework, as highlighted by Woodford (2003).<sup>2</sup> The expectations management by monetary policy brings the issue of credibility to the forefront. Thus, consistent and systematic behaviour on the part of policymakers increases their credibility, which in turn helps manage the expectations well. The good management of expectation, in turn, is conducive to economic growth and overall macroeconomic stability, pointing to the recent evidence that central banks have started targeting inflation expectations (see Adrian et al., 2018).

### *The Taylor Principle and Monetary Policy*

The rational expectations theory highlights the importance of expectations about monetary policy for the outcome of economic variables. This warrants the evaluation of monetary policy as gauged by economic performance. However, different monetary policy rules can capture the stance of monetary policy. One such rule is the Taylor rule (Taylor, 1993), some form of which is used by central banks around the world. The Taylor rule simply says that short-term or policy interest rates should be related to deviations of output their potential levels and deviations of inflation from their present target levels. The Taylor rule suggests that monetary authorities should 'lean against the wind' or, to put it simply, the rule suggests that when output is higher than its potential level, the central bank should raise the interest rate. The rule suggests a same response to increasing inflation that is central bank should increase the policy rates in response to an increase in actual inflation rate than its target level. However, if inflation is higher than the target level, simply leaning against the wind does not give the desired results. Therefore, Taylor rule suggests that monetary authorities must raise the real short-term interest rate (policy rate) to reduce inflation. Which, in other words, means a more-than-proportional increase in the nominal policy rate. This policy of increasing nominal policy interest rate more than proportionally in response to an increase in inflation is known as the 'Taylor principle'.

The empirical evidence accentuated the importance of the Taylor principle for price stability. The estimates of the Taylor principle by Clarida et al. (2000)

suggested that ‘The Great Inflation’ during the 1970s was due to the violation of this principle by the central banks of advanced economies. Further evidence on the importance of the Taylor principle for monetary policy can be seen in recent literature such as Angeletos & Lian (2021); Cornand & Heinemann (2022).

### *Time Inconsistency and Central Bank Independence*

Time inconsistency problem (Calvo, 1978; Barro & Gordan, 1983; Kydland & Prescott, 1977) is an important concept stemming from rational expectation theory. The problem of time inconsistency suggests that rule-based monetary policy leads to better outcomes in the long run as compared to discretionary monetary policy. In other words, discretionary monetary policy leads to sub-optimal economic outcomes. The discretionary monetary policy tries to exploit the policy trade-off between inflation and unemployment, as suggested by the short-run Phillips curve. But as the rational expectation theory suggests that economic agents adjust their expectations to the anticipated policy changes and hence render any attempts on part of policymakers in vain that is attempts on part of policymakers to boost employment or lower inflation in short-run will only result in higher inflation or no increase in employment. Thus discretionary monetary policy doesn’t allow policymakers to follow an optimal plan consistently over time; hence, the plan becomes time-inconsistent. The problem of time inconsistency has led to a number of developments in the design of the optimal monetary policy. One such development is ‘reputational equilibria’—the importance of central bank reputation on policy outcomes.

The other development stemming from the time inconsistency problem is that it has propelled the importance of institutional design. The main feature of the institutional design is the provision of a commitment mechanism to the central banks by the government, which helps them pursue a monetary policy with greater degrees of freedom. Research on institution design has shown that central bank independence favours overall macroeconomic stability, particularly because it helps the central bank maintain price stability. One important feature of central bank independence is that central banks become instrument independent—‘control the setting of monetary policy instruments’. This instrument independence allows central banks to adopt a rule-based monetary policy and avoid discretionary policy actions, which lead to time inconsistency problems. Hence, central banks can avoid sub-optimal economic outcomes from discretionary monetary policy (Mishkin & Westelius, 2008). There is ample evidence to support the conjecture that more independent central banks improve macroeconomic performance. In particular, countries with more independent central banks have a good record of maintaining price stability (Alesina & Summers, 1993; Cukierman, 1993, 2006; Fischer, 1994; Forder, 2000).

All the above-mentioned theoretical developments of monetary policy, like gains of price stability, the role of rational expectations, time inconsistency problem, institutional design, and so on, requires that there should be a nominal anchor for better monetary policy outcomes. And central banks should be committed to stabilising

such anchors while pursuing their monetary policy. There are various nominal anchors like management of money supply, price stability, exchange rate management, and so on. The most widely acknowledged and pursued nominal anchor is price stability or pursuing an inflation target. Committing to nominal anchors, like price stability, helps central banks avoid the time inconsistency problem and forces the government to take measures for fiscal discipline. Fiscal discipline on the part of the government is necessary for price stability. Evidence from the literature shows that in absence of a commitment to a nominal anchor by a central bank, governments force central banks to pursue the irresponsible monetary policy. For example, governments call for expansionary monetary policy in prolonged deficits, mainly through issuing or printing new money to monetise the deficits that result in more inflation. There are other benefits of nominal anchoring, like successful expectation management (Goodfriend, 1993), which leads to more price stability and less output volatility (Fatás et al., 2007; Mishkin & Schmidt, 2002, 2007).

### *The Importance of the Financial Sector for Monetary Policy*

The link between the financial system and economic activity is widely acknowledged as the jugular vein of an efficient economic system. Research suggests that information asymmetry hinders the proper functioning of the financial system which has an adverse impact on overall economic performance (Akerlof, 1970, Mishkin, 1978; Myers & Majluf, 1984). The basis of this devastating impact of financial instability on economic activity stems from Fisher (1933), which highlighted the role of financial instability in the Great Depression. Although the importance of financial stability on overall macroeconomic performance and in particular over business cycles is widely acknowledged (Bernanke & Gertler, 1999, 2001; Mishkin, 1978), however, the financial frictions did not find a place in models used for policymaking at central banks until recently (Mishkin, 2011). This led to what has been dubbed as ‘policy dichotomy’ where monetary policy is directed to stabilise inflation and output volatility and macroprudential policies and regulation are directed to ensure financial stability.

However, the recent financial crisis (2007) brought the issue of the costs of financial distortions to the forefront, and central bankers around the world started taking financial stability more seriously and hence adopting it into the monetary policy framework.

## **Conclusion**

All the above-mentioned theoretical underpinnings of monetary policy form the basis of the ‘New Neoclassical Synthesis’ of monetary policy. These theoretical developments have stood the test of time. Mishkin (2011) points out that ‘None of the lessons from the financial crisis in any way undermines or invalidates the basic principles of the science of monetary policy developed from New Neoclassical Synthesis’. However, the changing economic structures coupled with external



shocks and new developments, in theory, make it imperative to revisit and modify the policy framework as necessitated. For example, price stability is widely considered as primary objective of monetary policy, but questions can be raised about its feasibility and practicality.

Some important theoretical advancements raised some important concerns regarding the use of 'New Neoclassical Synthesis' in monetary policy frameworks. First, the Keynesians brought up the issue of shocks, particularly supply-side shocks.<sup>3</sup> These shocks are out of the control of monetary authorities; hence, stabilising in such an environment may not yield desired results. Since these shocks are temporary and out of the control of policymakers, the question is how monetary policy accommodates such shocks.

Second, the monetarists question the inflation-targeting framework of central banks based on leads and lag in the transmission mechanism. Milton Friedman and others from the US monetary history provide evidence of this.

Third, the New Keynesian School suggests a trade-off between inflation and output variability (Taylor, 1993). This contrasts one of the basic tenets of 'New Neoclassical Synthesis', which is based on the premise of the non-existence of any such trade-off.

Fourth, there are debates over the preference for various policy instruments central banks use in conducting the monetary policy. The ambiguity around a standard policy instrument affects the overall transmission mechanism. For example, price-based and quantity-based monetary policy instruments yield different policy outcomes.

Fifth, the importance of market rigidities on monetary policy transmission-like interest rate rigidities, price rigidities, imperfect competition, etc. These factors have important implications for the overall performance of monetary policy, and hence, warrants for an in-depth investigation.

Finally, the limited scope of monetary policy to have a meaningful impact on the supply side has again been accentuated by COVID-19.

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1. Here policies refer to macroeconomic, trade and overall regulatory policies used during disturbances.
2. However, under flexible prices and wages, one main implication of rational expectations theory is what has been dubbed as 'Policy Ineffectiveness Proposition'. According to it, 'if monetary policy was anticipated, it would have no real effect on output;



only unanticipated monetary policy could have a significant impact'. But there is weak empirical evidence for this proposition (Barro, 1977; Mishkin, 1982, 1983).

3. Like, oil price shocks, COVID-19, etc.

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