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## ORIGINAL ARTICLE



# Whither monetarism?

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# **Abstract**

This article explores the changing fortunes of different approaches to monetary policy, which are linked to what is happening to inflation at the time. The author discusses ways in which monetarism might be revived, and offers some thoughts on inflationary prospects for the 2020s.

#### **KEYWORDS**

monetarism, monetary policy, New Keynesianism

### JEL CLASSIFICATION

E51, E52, E58

# 1 | INTRODUCTION

During the 1960s and 1970s, monetarist ideas gained increasing prominence. After 1982, however, monetarism went into decline. New Keynesian economics absorbed many of the best monetarist ideas. After 2008, monetarism declined even further as more traditional versions of Keynesian thought were revived.

Section 2 of this article looks at the relationship between money growth and inflation, which is a cornerstone of traditional monetary theory. This relationship can change over time as a result of shifts in money demand. Furthermore, the relationship is different for narrow definitions of the money supply such as base money from that for broader definitions of money that include checking and saving account balances. Section 3 examines how inflation affects the demand for base money (as a share of GDP.)

In section 4, I argue that changes in the relationship between base money and inflation largely explains the time-varying popularity of monetarism, traditional Keynesianism, and New

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Keynesianism. The monetarist framework is at its most popular during periods when inflation and monetary base growth rates are relatively high and also positively correlated over both time and space. The New Keynesian framework is most popular when monetary base growth and inflation rates are relatively low and uncorrelated. The traditional Keynesian framework is most popular when monetary base growth rates are high and negatively correlated with inflation, typically during periods of near-zero nominal interest rates. During these periods, misconceptions about the money-inflation relationship have led to the premature dismissal of monetarist analysis, and have contributed to real world monetary policy failures.

In section 5, I discuss some ways in which monetarism might be revived. These include policy innovations such as eliminating interest on bank reserves, switching to 'level targeting', and shifting from backward-looking policy approaches such as the Taylor Rule to forward-looking approaches such as forecast targeting. In section 6, I offer some concluding thoughts on the prospects for inflation during the 2020s.

# 2 | MONETARY BASE GROWTH AND INFLATION

At least as far back as David Hume (1752), the traditional Quantity Theory of Money posited a strongly positive correlation between money growth rates and inflation. Because it was assumed that the public's demand for money was a function of real cash balances, causality was assumed to go from money growth to inflation. During the high inflation decades after World War II, there did seem to be a strong correlation between growth rates in the monetary base and inflation. Table 1 looks at average growth rates of the monetary base and the price level over a multi-decade period (mostly 1950–90).

Even during this period, however, the money/inflation correlation (while still positive and significant) was much less obvious for relatively low-inflation countries. For example, inflation rates were somewhat equalised by purchasing power parity under the Bretton Woods regime. Any inflation differentials that do occur under a fixed exchange rate regime will reflect changes in the real exchange rate, which may or may not be strongly linked to differences in money growth rates.

During the so-called New Keynesian era, many central banks adopted a 2 per cent annual inflation target. To achieve that goal, policymakers had to adjust the monetary base to accommodate shifts in the demand for base money. In that case, money supply growth would be uncorrelated with inflation. This is the famous 'thermostat problem' discussed by Milton Friedman (2003). If a policy instrument is employed successfully to stabilise a goal variable, then changes in the instrument become uncorrelated with the goal variable.

Monetarism became popular in the 1960s and 1970s precisely because policy became excessively expansionary and unstable. The growth rate of the monetary base increased despite there being no significant increase in the demand for base money. The result was higher inflation.

# 3 | INFLATION AND MONEY DEMAND

Until 2008, the US Federal Reserve paid no interest on bank reserves. Under this type of policy regime, the entire monetary base is 'high-powered money' and the nominal interest rate is the opportunity cost of holding base money. At positive nominal interest rates the demand for base

TABLE 1 Money growth, inflation, and real growth during the Great Inflation

Country	Inflation rate	Rate of growth of money supply	Rate of growth of real GDP	Real rate of growth of money	Rate of growth of nominal GDP
Brazil	77.8	77.4	5.6	-0.4	83.4
Argentina	76.0	72.8	2.1	-3.2	78.1
Bolivia	48.0	49.0	3.3	1.0	51.3
Peru	47.6	49.0	3.3	2.1	50.6
Uruguay	43.1	42.4	1.5	-0.7	44.6
Chile	42.2	47.3	3.1	5.1	45.3
Yugoslavia	31.7	38.7	8.7	7.0	40.4
Zaire (Congo)	30.0	29.8	2.4	-0.2	32.4
Israel	29.4	31.0	6.7	1.6	36.1
Sierra Leone	21.5	20.7	3.1	-0.8	24.6
Turkey	20.1	22.9	5.9	2.8	26.0
Ghana	19.3	18.6	2.5	-0.7	21.8
Iceland	18.8	18.4	4.3	-0.4	23.1
Mexico	18.7	23.2	5.4	4.5	24.1
Colombia	13.9	18.5	4.7	4.6	18.6
South Korea	12.8	22.1	7.6	9.3	20.4
Paraguay	12.5	16.9	4.8	4.4	17.3
Sudan	12.0	16.3	2.3	4.3	14.3
Costa Rica	11.8	16.5	4.6	4.7	16.4
Ecuador	11.6	15.7	4.7	4.1	16.3
Jamaica	11.2	15.7	4.7	4.5	15.9
Nigeria	10.8	14.2	4.1	3.4	14.9
Portugal	9.9	11.5	4.7	1.6	14.6
Iran	9.9	18.5	4.7	8.6	14.6
The Gambia	9.8	11.5	3.2	1.7	13.0
Guyana	9.8	13.8	-0.4	4.0	9.4
Greece	9.5	14.9	4.7	5.4	14.2
Madagascar	9.5	8.8	1.5	-0.7	11.0
Spain	9.2	13.1	4.5	3.9	13.7
Senegal	8.7	12.2	1.1	3.5	9.8
Mauritius	8.6	12.7	3.9	4.1	12.5
Dominican Republic	8.6	13.2	4.7	4.6	13.3
Trinidad and Tobago	8.5	10.5	1.9	2.0	10.4
Egypt	8.0	12.0	4.1	4.0	12.1
Nepal	8.0	14.4	3.1	6.4	11.1

TABLE 1 (Continued)

TABLE I (Commuea,	<b>,</b>				
Country	Inflation rate	Rate of growth of money supply	Rate of growth of real GDP	Real rate of growth of money	Rate of growth of nominal GDP
Venezuela	8.0	10.7	4.4	2.7	12.4
Philippines	7.8	11.3	4.8	3.5	12.6
Gabon	7.6	10.0	5.3	2.4	12.9
New Zealand	7.6	6.4	2.6	-1.2	10.2
El Salvador	7.6	8.1	3.3	0.5	10.9
South Africa	7.5	10.1	3.7	2.6	11.2
Cameroon	7.5	10.7	5.5	3.2	13.0
Ivory Coast	7.3	12.0	5.0	4.7	12.3
Italy	7.3	10.3	4.6	3.0	11.9
Ireland	7.2	7.9	3.3	0.7	10.5
India	7.2	10.7	4.2	3.5	11.4
Pakistan	6.8	10.7	4.7	3.9	11.5
Syria	6.7	15.0	5.3	8.3	12.0
Finland	6.7	8.6	4.2	1.9	10.9
Togo	6.6	13.8	4.4	7.2	11.0
United Kingdom	6.5	6.4	2.4	-0.1	8.9
Australia	6.4	8.5	3.9	2.1	10.3
France	6.2	7.0	4.1	0.8	10.3
Sweden	6.2	7.4	2.9	1.2	9.1
Denmark	6.1	7.7	3.0	1.6	9.1
Norway	6.1	6.4	3.8	0.3	9.9
Burkino Faso	5.9	10.1	3.6	4.2	9.5
Sri Lanka	5.9	10.6	5.0	4.7	10.9
Niger	5.8	9.9	3.2	4.1	9.0
Saudi Arabia	5.5	15.0	6.1	9.5	11.6
Morocco	5.5	11.1	3.9	5.6	9.4
Tunisia	5.5	11.0	6.1	5.5	11.6
Libya	5.4	25.0	5.7	19.6	11.1
Guatemala	5.4	9.1	3.9	3.7	9.3
Thailand	4.9	9.4	6.8	4.5	11.7
Honduras	4.9	9.5	3.6	4.6	8.5
Haiti	4.8	9.8	1.8	5.0	6.6
Japan	4.7	11.2	6.9	6.5	11.6
Iraq	4.7	14.1	6.6	9.4	11.3
Canada	4.6	8.1	4.2	3.5	8.8
Austria	4.5	7.1	3.9	2.6	8.4

TABLE 1 (Continued)

Country	Inflation rate	Rate of growth of money supply	Rate of growth of real GDP	Real rate of growth of money	Rate of growth of nominal GDP
Cyprus	4.5	10.5	5.2	6.0	9.7
Netherlands	4.2	6.4	3.7	2.2	7.9
United States	4.2	5.7	3.1	1.5	7.3
Belgium	4.1	4.0	3.3	-0.1	7.4
Malta	3.6	9.6	6.2	6.0	9.8
Singapore	3.6	10.8	8.1	7.2	11.7
Switzerland	3.2	4.6	3.1	1.4	6.3
West Germany	3.0	7.0	4.1	4.0	7.1

Note: The exact period under consideration differs from one country to another, depending on data availability. In most cases it is 1950–1990, and in some cases it is a slightly shorter period. In all cases the data set includes the worst years of the Great Inflation. Source: Barro (1993)

money largely consists of currency demand. Commercial bank balances at the central bank were relatively modest prior to 2008, roughly 2 per cent of the monetary base. The other 98 per cent was currency held by the public and vault cash.

Because (prior to 2008) the opportunity cost of holding base money was equal to the nominal interest rate, base money as a share of GDP was inversely related to the nominal interest rate. As nominal interest rates approach zero, the demand for base money often increases sharply. Central banks typically accommodate that higher demand with large increases in the supply of base money. In countries with the very lowest inflation rates, such as Switzerland and Japan, even longer-term interest rates fall close to zero (or even go negative) and demand for base money can rise to well over 100 per cent of GDP. In contrast, in a typical developed economy with positive interest rates and no payment of interest on reserves, base demand remains below 10 per cent of GDP. In countries with hyperinflation, base money demand is lower still.

Because base money demand is very elastic when nominal rates are near zero, base money is often injected into the economy at a very high rate during periods of low or negative interest rates, a process called 'quantitative easing' (QE). During these periods, the normally positive correlation between base growth and inflation breaks down, and even reverses. Rapid money growth becomes associated with very low inflation.

Critics of monetarism often point to large increases in the monetary base that are associated with low inflation, and ask, "How much more QE would be needed to hit the inflation target?" The correct answer is often *less than zero*. At the zero bound, a credible monetary policy that generates higher inflation expectations will lead to far *less* demand for base money. If the Bank of Japan shifted from a regime of roughly 1 per cent inflation to a regime targeting inflation at 10 per cent, then demand for base money in Japan would fall from over 140 per cent of GDP to less than 10 per cent of GDP. They would be forced to shrink their monetary base in order to avoid overshooting the 10 per cent inflation target.

This misconception has led many pundits wrongly to assume that monetarism is not useful at the zero lower bound. In fact, the problem is not that central banks are unable to target

inflation when rates fall to zero; rather, the problem is that central banks have stumbled into the zero-rate trap with Keynesian policies of interest rate targeting. Interest rates cease to be a reliable policy instrument when the nominal interest rate falls to zero. Keynesians use a flawed approach to monetary control, and when it breaks down at the zero lower bound they often suggest the situation discredits non-Keynesian approaches to monetary control, approaches that were not tried.

# 4 | MONEY, INFLATION AND IDEOLOGY

The tendency of QE to occur during periods of very low inflation and/or nominal interest rates leads to a confusing pattern, where during some periods (say 1970) base growth is strongly and positively correlated with inflation, while in other periods (say 2010) base growth is negatively correlated with inflation, at least for developed economies.

During periods of strongly positive correlation between base growth and inflation typically seen during very high inflation periods such as the 1960s and 1970s, as seen in Table 1, quantity theoretic explanations for high inflation tend to be increasingly popular. This is even true of individuals that might otherwise take a relatively non-monetarist approach to policy. Thus, both Knut Wicksell and J. M. Keynes switched from an interest rate-oriented approach to a more quantity-theoretic approach during the early 1920s, when a number of European economies were hit with hyperinflation (see Sumner, 2015).

Keynesian models that equate 'easy money' with low interest rates are not persuasive during periods of high inflation, when the Fisher effect dominates movements in interest rates. The post-war revival of the quantity theory, led by Friedman, Schwartz, Meltzer, and Brunner, among others, gained traction as ever higher inflation rates seemed to discredit traditional Keynesian models of monetary policy. Friedman (1975, p. 176) suggested that "Double-digit inflation and double-digit interest rates, not the elegance of theoretical reasoning or the overwhelming persuasiveness of serried masses of statistics massaged through modern computers, explain the rediscovery of money".

The opposite extreme occurs during periods of near-zero interest rates, such as the 1930s, the 1940s, and the 2010s, when traditional Keynesian models seem more persuasive. Near-zero interest rates lead many observers to (wrongly) conclude that monetary policy is ineffective. And the fact that large increases in the monetary base are associated with low inflation tends to further discredit monetarist analysis.

An intermediate case occurs during periods of relative monetary stability, such as 1924–29, or the 'Great Moderation' (1984–2007). When central banks succeed in holding inflation at close to 2 per cent, the correlation between money and inflation may be weak. However, unlike during the zero lower bound periods, nominal interest rates are positive and monetary policy continues to be viewed as effective at stabilising aggregate demand and inflation.

During these periods, New Keynesian policies such as the Taylor Rule hold sway among many central bankers. Interest rate targeting is used to stabilise inflation and reduce output instability. Unlike traditional Keynesians, however, New Keynesians view monetary policy as effective and indeed superior to fiscal stabilisation policy. Unlike during monetarist periods, money supply growth rates do not play a major role in policy evaluation or implementation.

It should be clear that the time-varying popularity of models is not a desirable state of affairs for macroeconomics. We would like to have robust structural models that can apply to a wide

range of macroeconomic conditions. Thus, we need to consider whether the reasons for the time-varying popularity of various models are actually sound. More specifically, is the rejection of monetarism during periods of low inflation actually justified? In my view, critics of monetarism dismiss the theory too easily. While there are some problems with traditional monetarist policy recommendations, the underlying model still provides the best framework for evaluating and guiding monetary policy.

After the death of Milton Friedman in 2006, Paul Krugman (2007) wrote an essay that was somewhat dismissive of Friedman and Schwartz's *A Monetary History of the United States*, 1867–1960 (1963). Krugman pointed to the rapid growth in the US monetary base during 1930–33 and asked whether in light of that fact it made sense to speak of the Fed causing the Great Contraction with a tight money policy. Krugman did acknowledge that Friedman and Schwartz had focused their analysis on the broader aggregates (roughly M1 and M2), which did decline sharply during the early 1930s, but viewed those declines as errors of omission, not contractionary monetary policies. Indeed, Krugman suggested that it is not obvious that the Fed could have prevented the aggregates from declining.

Nelson and Schwartz (2008) were sharply critical of Krugman's essay, pointing out that the Fed had been created specifically to prevent the sort of banking panic that occurred in the early 1930s, and also that Krugman had glossed over some specific actions taken by the Fed that made the contraction more severe.

During the 2010s, we saw something of a repeat of this debate. Critics of monetarism pointed out that rapid growth in the base did not lead to high inflation, as simple versions of the quantity theory might have predicted. They also pointed to some inflation warnings made by conservative economists in the early 2010s that did not pan out.

There are several problems with any attempt to dismiss monetarism by pointing to the relationship between rapid increases in the monetary base (i.e. QE) and low inflation. First, at no time during recent decades have either monetarists or non-monetarists pointed to the monetary base as the proper indicator of the stance of monetary policy. Monetarists typically focused on the broader monetary aggregates, while non-monetarists looked at interest rates and other indicators. So it is not clear why injections of base money in QE programmes should have been equated with a highly expansionary monetary policy.

Even worse, if the monetary base actually were the correct indicator of monetary policy, then this would imply that monetary policy became extremely tight in late 2007 and early 2008, just as the US tipped into recession. Base growth in the US (which is typically about 5 per cent per year) came to a complete halt between July 2007 and May 2008.<sup>2</sup> So if the monetary base actually were the right indicator, then the profession should have been warning in late 2007 that a lack of growth in the base was pushing the economy into recession.

In fact, few economists even commented on the fact that base growth had ceased in late 2007 and early 2008. Nominal interest rates were falling, and thus most of the profession seemed to assume that policy was 'expansionary'. In retrospect, those making that assumption were wrong, but not because base growth is the right indicator; indeed, *neither* base growth *nor* interest rates (real or nominal) are a reliable indicator of the stance of monetary policy.

It is often assumed that the US fell into recession in late 2007 because of a reduction in the velocity of base money. This is false. Between the summer of 2007 and the spring of 2008, nominal GDP continued to grow slowly, even as the monetary base plateaued. Thus, in an accounting sense the problem was the dramatic slowdown in base growth; velocity was actually increasing.

In fairness, later in 2008 the velocity of circulation did fall sharply (because of near-zero interest rates). This pattern is actually pretty similar to the Great Depression, however, when the monetary base in the US fell during the first year of the contraction and then rose sharply in response to the banking crisis, as the Fed (partially) accommodated a fall in base velocity during the banking panics.

There is another problem with focusing on growth in the monetary base. The original monetarist model was based on the assumption that the monetary base was 'high powered money'. That assumption was accurate until October 2008, when the Fed began paying interest on reserves. At that point the nominal interest rate was no longer the opportunity cost of holding base money, and there was no reason to assume that the traditional 'money multiplier' would continue to link movements in the base and the broader monetary aggregates.

Friedman and Schwartz (1963) argued that the doubling of reserve requirements in 1936 and 1937 had made policy much more contractionary, reducing the money multiplier and the broader monetary aggregates. As with higher reserve requirements in 1936–37, the Fed's decision to pay interest on bank reserves in October 2008 tended to boost the demand for reserves and reduce the money multiplier. Not only is monetarist analysis not irrelevant in this new environment, monetarists were among the first to warn that monetary policy was becoming too contractionary. Tim Congdon (2014), Robert Hetzel (2009), David Beckworth (2017) and Scott Sumner (2016) all warned that money was too tight in late 2008, whereas Keynesian criticism of Fed policy typically didn't become prominent until well into the following year.

A third problem is that many central banks refused to commit to a 'whatever it takes' approach to achieving a higher inflation rate. Sumner (1993) argued that traditional monetarist analysis of money and inflation applied to changes in the money supply that were expected to be permanent, and that temporary monetary injections would not be inflationary. Krugman (1998) reached the same conclusion using a formal model. An injection of base money that is not expected to be permanent will not lead to a significant rise in the price level.

Thus, in 2006 the Bank of Japan (BOJ) sharply reduced the monetary base, reversing large increases that had occurred earlier in the decade. Those previous injections of base money had relatively little impact on the Japanese price level, due to the public's belief that the BOJ was committed to near zero inflation and would remove excess cash balances if necessary to prevent any significant inflation. And that is exactly what it did in 2006 (see Krugman, 2018). Although Krugman's, 1998 paper is often viewed as a defence of the concept of a liquidity trap, the model actually shows that even at the zero lower bound a permanent injection of base money will be expansionary.

# 5 | THE FUTURE OF MONETARISM

There is no single, universally accepted definition of monetarism. Nonetheless, certain ideas are generally viewed as fundamental to the monetarist approach to policy:

- Under a fiat money regime, central banks can control the money supply and thereby determine the path of nominal aggregates such as inflation and nominal GDP (NGDP).
- Monetary policy should be constrained by a policy rule, such as a stable rate of growth for a monetary aggregate.
- Monetary policy remains effective when nominal interest rates fall to zero.

- One-time changes in the money supply are non-neutral in the short run and roughly neutral in the long run. There is no long run trade-off between unemployment and inflation.
- Interest rates are not a reliable indicator of the stance of monetary policy (due to the income and Fisher effects).
- Money affects the economy with long and variable lags.
- The market economy is stable if not disturbed by monetary shocks. In many cases, recessions that are blamed on the 'inherent instability of capitalism' are misdiagnosed, and are often caused by inappropriate monetary policy.

Monetarism is often equated with a money supply rule for central banks, and this policy approach came under widespread criticism in the 1980s when velocity seemed to become less stable. Nelson (2020), however, argued that money supply targeting is not the most fundamental part of the monetary analysis of Milton Friedman. Indeed, late in his life, Friedman (2006) suggested that the inflation targeting policies of Alan Greenspan, then Chair of the Federal Reserve, seemed to have been quite successful. In 1992, Friedman endorsed Robert Hetzel's (1990) proposal to target treasury inflation-protected securities (TIPS) spreads (the difference in the yields between US treasury bonds and TIPS).

Contrary to the view of many non-monetarists, monetarism was never actually tried in the US. The Fed never stabilised the money supply growth rate over an extended period of time. Thus, the monetarist claim that velocity would be relatively stable if money growth was stabilised was never actually tested.

Nonetheless, I do not believe that targeting any specific monetary aggregate is the best way to implement monetarist principles. The theoretical case for money supply targeting is weak, and there is a real danger that financial shocks that destabilised velocity could discredit the entire monetarist programme. Instead, I'll argue that we should focus on the other aspects of monetarism. Central banks should adopt a policy rule aimed at stabilising a variable closely linked to the goals of policy. In the US, those goals include stable prices and high employment.

In the ultra-low interest rate environment of the twenty-first century, policy must overcome several challenges:

- The policy regime must be effective when nominal interest rates fall to zero, without the need for assistance from fiscal policy.
- Policy should avoid creating an excessively large central bank balance sheet.
  - Central banks must be able to address the problem of policy lags.
  - The policy goal should provide nominal stability and reduce unnecessary cyclical instability.

The problem of making policy effective at near-zero interest rates can be addressed in a number of ways. Svensson (2001) suggested a 'foolproof' plan for the Japanese to escape from their liquidity trap, which involved a policy that sharply devalued the yen and then pegged the yen to the dollar. At the time, American interest rates were positive, and thus a fixed exchange rate policy would have actually involved higher nominal interest rates in Japan (due to interest parity). Despite the rise in nominal rates, however, Svensson's proposed policy would be expansionary, and indeed real interest rates would have declined.

It seems unlikely that exchange rate manipulation is a feasible strategy for a large economy, particularly the US or the Eurozone. Such a policy might well lead to accusations of 'currency

manipulation'. While it is not clear that such accusations would be justified, they nonetheless could result in this sort of policy approach being politically infeasible.

Krugman (1998) suggested that at the zero lower bound central banks needed to 'promise to be irresponsible', by which he meant promise to increase inflation to above-normal levels after exiting the liquidity trap. This phrasing was unfortunate, as policies termed 'irresponsible' would not generally appeal to conservative central bankers.

Nonetheless, Krugman's basic idea was sound, and could be implemented with policy rules that were actually quite responsible, properly understood. Woodford (2012) suggested a policy rule such as NGDP level targeting, which would allow for extra catch-up growth in nominal spending after a shortfall such as the 2008–09 recession. Former Chair of the Federal Reserve Ben Bernanke (2017) suggested a policy of temporary price level targeting, which would be implemented whenever the economy reached the zero lower bound.

All three of these proposals share the aim of boosting inflation expectations at the zero lower bound, and thus making monetary policy more expansionary by reducing long-term real interest rates. Fed Vice Chair Richard Clarida recently indicated that the Fed's new flexible inflation targeting regime is close to the level targeting proposals described above:

I believe that a useful way to summarize the framework defined by these five features is temporary price-level targeting (TPLT, at the ELB [effective lower bound]) that reverts to flexible inflation targeting (once the conditions for liftoff have been reached). (Clarida, 2020a, emphasis in original)

The second issue (bloated central bank balance sheets) can be addressed in several ways. A good place to begin is the elimination of the practice of paying interest on bank reserves (IOR). Without IOR, the size of most central bank balance sheets would fall to less than 10 per cent of GDP when nominal interest rates are positive. To achieve this, central banks should set their inflation or NGDP growth rate target path high enough to assure that nominal interest rates remain above zero during most periods. The goal is to avoid the persistent near-zero rates now seen in Japan and much of Europe.

There is of course a trade-off here. Higher inflation and NGDP growth increases the welfare costs of inflation, while lower inflation leads to bloated central bank balance sheets. It is important to recall, however, that one of the biggest welfare costs of inflation is excessive taxation of nominal capital income. And if nominal interest rates are near zero, then that problem is less severe, regardless of the rate of inflation.

The problem of policy lags can best be addressed with a policy regime that targets the market forecast of the goal variable. While monetary policy affects nominal aggregates with a lag, there is no lag in its impact on *market forecasts* of future inflation or NGDP growth. Thus, if the goal is 2 per cent inflation, then the monetary policy instrument should be adjusted until the consensus market forecast calls for 2 per cent inflation.

In the case where market forecasts are viewed as being not entirely reliable, the central bank can target a hybrid inflation forecast, involving both market indicators such as the TIPS spread and also forecasts made by surveying professional economists. Indeed, this is similar to what the Fed is already doing. Once again, here is Richard Clarida (2020b, p. 13):

Market- and survey-based estimates of expected inflation are correlated, but, again, when there is divergence between the two, I place at least as much weight on the survey evidence as on the market-derived estimates.

To address the Fed's dual mandate (price stability and maximum sustainable employment), NGDP targeting has clear advantages over price-level targeting. When there are adverse supply shocks, NGDP provides a better indicator of macroeconomic conditions than the price level. For instance, during mid-2008 the inflation rate had risen far above the Fed's implicit 2 per cent target, while NGDP growth had slowed to far below the roughly 5 per cent trend of recent decades. At the time, the Fed put more weight on inflation than NGDP growth and refused to cut interest rates, even in the meeting after Lehman Brothers failed in September 2008.

In his memoir, Bernanke (2015) admitted that the Fed erred in not easing policy at this time. In retrospect, NGDP provided a much clearer reading on monetary conditions than the inflation rate, which was distorted by spiking oil prices.

# 6 | CONCLUDING REMARKS

In 2020, the Fed adopted 'flexible average inflation targeting' (FAIT), which is a watered-down version of price-level targeting. At the time, there were three possible outcomes: the average inflation rate might fall short of 2 per cent during the 2020s (as during the 2010s), or the policy might have been successful, or the inflation rate could overshoot 2 per cent during the 2020s.

While it is too soon to draw any firm conclusions, the third outcome looks increasingly likely. Financial market indicators suggest that policy is on track to overshoot the 2 per cent average inflation target during the 2020s. That is not what many pundits expected in 2020, and it is not what the financial markets seemed to be forecasting, based on the very low TIPS spreads during mid-2020.

Even in 2020, however, there were economists warning of excessive stimulus, including monetarists such as Robert Hetzel (2020) and Tim Congdon (2020). By 2021, New Keynesians such as Larry Summers (2021) also began expressing concern that policy was too expansionary, and warned of relatively high inflation in the medium term.

As of late January 2022, ten-year TIPS spreads in the US were 2.46 per cent. Because TIPS are adjusted using the consumer price index (CPI), this is equivalent to roughly 2.2 per cent personal consumption expenditures (PCE) inflation over the next decade. While that is only modestly the Fed's 2 per cent target for PCE inflation, under average inflation targeting the Fed should be aiming for less than 2 per cent inflation over the next decade, to offset the much higher-than-target inflation of 2021. In the past, market indicators have been far from perfect, but it's not clear that we have anything better.

The Fed's unexpectedly rapid success in raising the average inflation rate back up over 2 per cent was associated with the US unemployment rate plunging from 14.8 per cent in April 2020 to just 3.9 per cent in December 2021, a far more rapid decline than occurred during the recovery from the Great Recession. Thus, FAIT succeeded in avoiding the agonisingly slow recovery from the Great Recession, but at the cost of overshooting to excessively high inflation. In my view, the Fed has lost credibility by its recent failure to clearly commit to lower than 2 per cent inflation going forward, as required to implement the FAIT regime.<sup>3</sup>

If the Fed is able to bring inflation back to 2 per cent without triggering another recession, then FAIT can still be judged a partial success. If not, then further adjustments will need to be made to the Fed's inflation targeting policy. In either case, monetarist analysis should play an increasing role in policy formation and evaluation going forward.

#### NOTES

- <sup>1</sup> De Long (2000) pointed out that New Keynesian economics incorporated a number of monetarist insights.
- <sup>2</sup> https://fred.stlouisfed.org/series/BOGMBASE (accessed 15 May 2022).
- <sup>3</sup> At a 26 January 2022 press conference, Fed Chair Jerome Powell (2022, pp. 22–3) was asked, "Do you want to go below 2 percent, so that on average you get a 2 percent inflation rate?" Powell responded, "So, no there's nothing in our framework about having inflation run below 2 percent so that we would do that, try to achieve that outcome. So the answer to that is 'no'." Oddly, he then went on to commit to average inflation targeting, "What we're trying to do is ... keep inflation expectations well anchored at 2 percent. That's always the ultimate goal. And ...we get to that goal by having inflation average 2 percent over time."

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