

# **Inflation Targeting: Exorbitant Costs, Meager Benefits**

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*There is a growing recognition that inflation targeting—the dominant macroeconomic policy framework of the past three decade—is inadequate to meet the challenges that were laid bare in the Great Financial Crisis and its aftermath. Within the mainstream, the focus has been on the persistently below target inflation and the appropriate ways to overcome this challenge. Some have argued for higher inflation targets and others for price level targeting or nominal GDP targeting. Increasingly, policymakers, including central bankers, are calling for more active fiscal policy. Yet, most of the arguments for fiscal policy are couched in the context of the unique challenges for monetary policy when interest rates are near the floor. What is little recognized is that inflation targeting—for that matter any aggregate demand management framework predicated largely on monetary policy playing the dominant role—is inextricably linked to the buildup in financial imbalances. The mechanisms by which monetary policy works to stimulate demand inevitably leads to rising private sector debt ratios and a tendency toward asset price bubbles. The stability created by the so-called Great Moderation in reality was an illusion, and it compromised the resilience of the financial system. What is needed is a rethink of the economic policy framework, with an important role for fiscal policy, not just when interest rates are constrained by a floor.*

## **Introduction**

In a conference held in 2014, John Williams, then president of the Federal Reserve Bank of San Francisco and presently the president of the Federal Reserve Bank of New York, summed up his assessment of twenty-five years of inflation targeting and the critical challenges (Williams, 2014).

*My main conclusion is that inflation targeting and related approaches to monetary policy have been remarkably successful at providing a nominal anchor and keeping inflation low and relatively stable during a period of severe turbulence. Nonetheless, recent events have revealed some chinks in the armor of inflation targeting related to the zero lower bound on interest rates and financial instability.*

Much water has flowed since then, with many central banks breaching the zero lower bound (ZLB) by instituting negative interest rates. Indeed, negative effective yields have now spread to corporate bonds in Europe and the value of negative-yielding debt worldwide recently climbed to a record \$17 trillion. Yet, central banks appear to be losing the battle even in the one dimension that President Williams claimed was an unmitigated

success—that is, meeting their respective inflation targets. Five years after his 2014 speech, President Williams acknowledged the shortfall (Williams, 2019).

*Economic developments since this unprecedented monetary stimulus provide valuable insights into the efficacy and limitations of monetary policy. ... And, despite the improvement in the real side of economies, inflation rates have persistently been below central banks' goals. The fact that inflation has been running below target in most advanced countries—the United Kingdom being the most prominent outlier—suggests that this challenge is not due to factors specific to a single country. Instead, there are more systemic factors at play.*

While there is greater recognition that monetary policy is inadequate to meet the economic challenges and there has been greater call for fiscal policy to play a bigger role, many mainstream economists and policymakers remain wedded to the idea that either an expanded set of monetary policy tools or tweaks to the inflation targeting framework can deliver price stability and full employment. For example, economists at the IMF have seriously contemplated mechanisms for instituting deeply negative interest rates to overcome the lower bound on interest rates (Assenmacher and Krogstrup, 2018). Meanwhile, Williams has argued for average inflation level targeting (Mertens and Williams, 2019), wherein the central bank makes up for past shortfalls in inflation. Former Fed Chair, Ben Bernanke, has argued for temporary price level targeting (Bernanke, 2017). Other proposals include price level targeting and the more ambitious nominal GDP targeting (Frankel, 2013).

Underlying the mainstream approach to monetary policy framework are two key assumptions. The first assumption is that low and stable inflation is vital for economic prosperity and that even moderately high inflation imposes enormous costs on society. Much of this is informed by the experience of the 1970s, even though recent empirical work has called into question the costs of high inflation (Nakamura et. al, 2018), and there is no evidence that inflation rates less than 40%, annual rate, matter at all for long-term growth (Bruno and Easterly, 1996). Indeed, the empirical literature is divided as to whether the so-called Great Moderation—the 1984-2007 period, which was characterized by low volatility in inflation and economic growth—was largely an artefact of luck or good policy (Bernanke, 2004).

The second assumption is that financial stability is not the remit of monetary policy but the domain of regulatory and other macroprudential policies. Long before the 2008-2009 financial crisis, economists at the Bank for International Settlements (BIS) argued that even inflation targeting central banks ought to take into account financial imbalances in setting policy.

*In a monetary regime in which the central bank's operational objective is expressed exclusively in terms of short-term inflation, there may be insufficient protection against the build up of financial imbalances that lies at the root of much of the financial instability we observe. This could be so if the focus on short-term inflation control meant that the authorities did not tighten monetary policy sufficiently pre-emptively to lean against excessive credit expansion and asset*

*price increases. In jargon, if the monetary policy reaction function does not incorporate financial imbalances, the monetary anchor may fail to deliver financial stability.* [Crockett, 2003]

However, the BIS line has been resisted by the mainstream economists and policymakers starting from Greenspan to Bernanke to Williams. In fact, Williams (2019) has argued that a single-minded pursuit of inflation targeting can actually reduce financial instability and that taking account of financial stability considerations in forming monetary policy could be detrimental to both objectives.

While the BIS view that financial imbalances matter and should be taken into account in policymaking is sound, it does not go far enough. The main argument of this paper is that inflation targeting, or for that matter any policy framework predicated on monetary policy dominance and overemphasizing low and stable inflation, will lead to build-up of leverage, and stoke asset price bubbles, thereby accentuating Minskian financial cycles. I argue that monetary policy works through balance sheets by encouraging leveraging and boosting asset prices rather than through conventional cost of capital channels. Moreover, a promise of low and stable inflation by central banks has the perverse consequence of inducing increasingly fragile balance sheet structures, thereby imperiling economic stability and eventually undermining price stability. Thus, the rise of leverage and the serial asset bubbles in the Great Moderation era was not a coincidence but intricately related to the monetary policy framework. Hitting the ZLB was but a natural culmination of the process.

The paper is laid out as follows. In the next section, I briefly review the history and logic of inflation targeting and evaluate its record. In the subsequent section, I sketch out the feedback loops of monetary policy and show how controlling inflation is often at conflict with financial stability. The next section deals with the guarantee implicit in inflation targeting and the financial incentives fostered by it. I conclude with some thoughts on the goals of macroeconomic policy and a framework for attaining those goals.

## **Inflation Targeting: History and Record**

### *How we got to inflation targeting*

Although the inflation targeting era officially began when the Reserve Bank of New Zealand formally adopted an explicit inflation target in 1990, the genesis of the framework goes back much farther. The high inflation of the 1970s left an indelible mark on economists and policymakers, and the imperative of quelling inflation found resonance in Milton Friedman's dictum that monetary policy should focus on delivering price stability (Friedman, 1968). Interestingly, the Humphrey-Hawkins Act of 1978 laid down inflation targets—4% in the interim and 0% to be achieved by 1988—long before inflation targeting entered the lexicon.

While the imperative of quelling inflation was widely agreed upon, the methods and the goals have evolved over time. Friedman was skeptical about targeting prices directly and preferred targeting growth in monetary aggregates. However, the experiment in targeting monetary aggregates in the United States under Paul Volcker was short-lived

and abandoned as the previously stable relationship between monetary aggregates and nominal GDP turned highly unstable (Bernanke, 2006). The Fed went back to interest-rate-setting as the main instrument of monetary policy by 1983 (Benjamin Friedman, 2005). It turns out that even the redoubtable Bundesbank was effectively not targeting monetary aggregates. Svensson (2008) has argued that the “...Bundesbank’s legacy should not identified with monetary targeting. Instead, Bundesbank is better described as an early (although disguised and nontransparent) inflation targeter.”

Meanwhile, even as inflation-fighting became the major goal of monetary policy, the dual mandate of fostering full employment remained. With fiscal policy increasingly losing favor as a tool of aggregate demand management, policymakers increasingly looked to monetary policy to fill that role. While the dual mandate for monetary policy may seem at odds with Friedman’s critique of the Phillips curve paradigm, New Keynesian models found a way to square the circle. The trick was to introduce inflation expectations into the Phillips curve model and the nirvana of dual mandate and adherence to Friedman doctrine was achieved. The New Keynesian Phillips curve is based on the following general form

$$\pi_{t+1} = E_t \pi_{t+1} - \beta y_t$$

where  $E_t \pi_{t+1}$  represents the expected rate of inflation and  $y_t$  is some measure of output gap (economic slack). When output gap is zero—equivalently, the unemployment rate is at the nonaccelerating inflation rate of unemployment (NAIRU)—inflation will converge with inflation expectations. In other words, there is no long-run trade off between unemployment and inflation, consistent with Friedman. Under inflation targeting, central banks announce an inflation target in order to anchor inflation expectations. Credibility requires that the central bank take actions to keep actual inflation close to the target. Here it is worth quoting Dan Thornton (2012):

*Because the only thing that determines inflation, given inflation expectations, is the degree of slack in the economy, policymakers have to adjust their policy instrument to changes in the measure of slack even if they have no specific objective of stabilizing the economy—even if they are what the then deputy governor of the Bank of England, Mervyn King, referred to as “inflation nutters.”*

The appeal of this framework is that it rationalizes active policy by central banks to spur output even while adhering to rules and not falling foul of Friedman. No wonder policymakers have been so enamored with and attached to this framework.

### ***Is better monetary policy responsible for the Great Moderation?***

But has the inflation targeting framework delivered the goods? Is the policy framework the main factor delivering the so-called Great Moderation? More importantly, has the Great Moderation been as great as touted? Let us take stock.

While central bankers are often wont to assign substantial credit for the Great Moderation to the enlightened monetary policy framework since the 1980s, empirical evidence is decidedly mixed (see for example Bernanke, 2004, for a review of the then

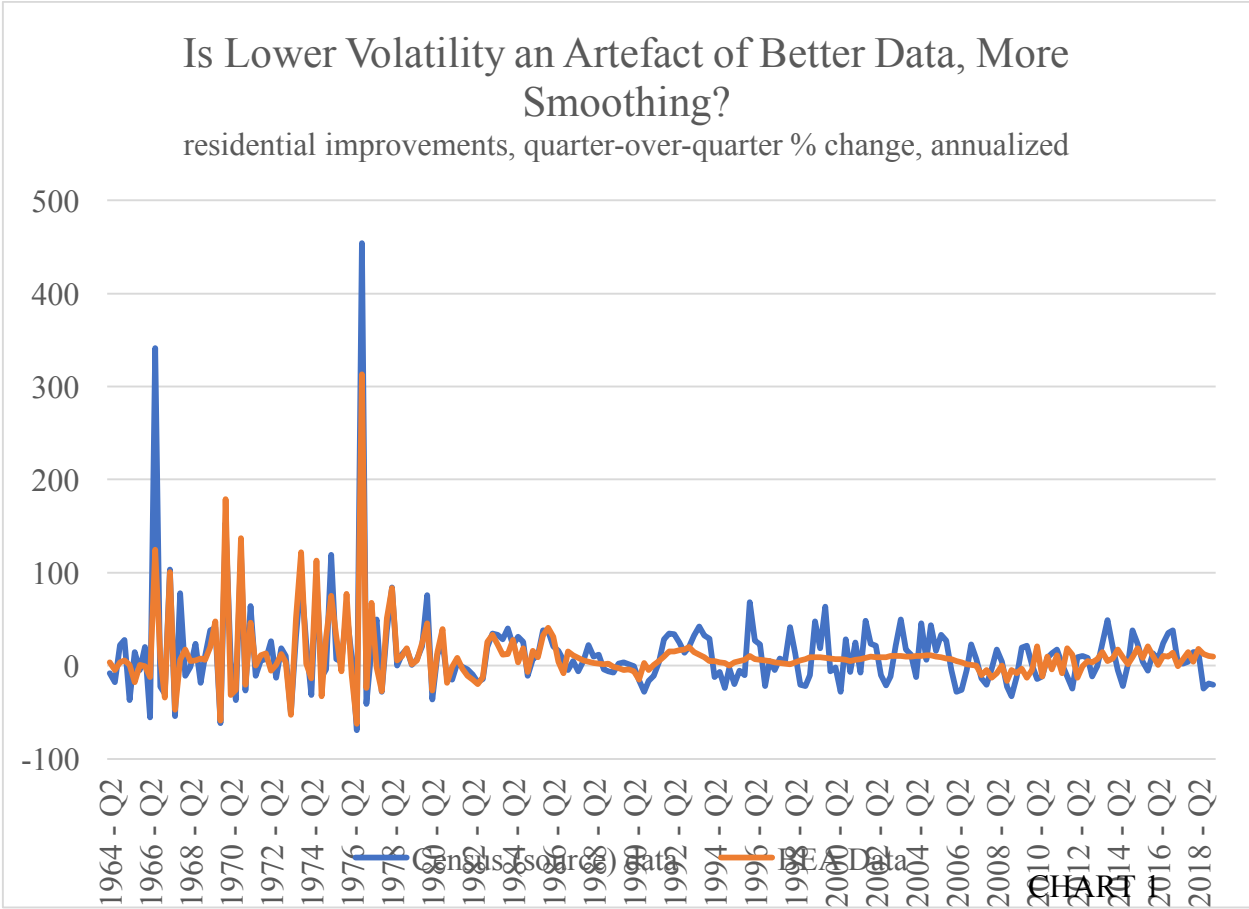
extant literature). Empirical work since 2004 has tended to place the Great Moderation to luck (Fernandez-Villaverde et. al., 2010) and structural changes, such as better inventory management techniques (Morley and Singh, 2016), that have little to do with better monetary policy. Indeed, Fernandez-Villverde and co-authors (2010) find:

*Our main findings are that while there is strong evidence of changes in monetary policy during Volcker's tenure at the Fed, those changes contributed little to the great moderation. Instead, changes in the volatility of structural shocks account for most of it. Also, while we find that monetary policy was different under Volcker, we do not find much evidence of a big difference in monetary policy among Burns, Miller, and Greenspan. The difference in aggregate outcomes across these periods is attributed to the time-varying volatility of shocks. The history for inflation is more nuanced, as a more vigorous stand against it would have reduced inflation in the 1970s, but not completely eliminated it.*

The notion that monetary policy before the 1980s was not passive or even inadequate in the face of surging inflation is also belied by Bullard and Eusepi (2005), Minford and Ou (2014), and Hirose et al. (2019). As in Fernandez-Villaverde et al. above, these papers find that monetary policy response before the Volcker was consistent with the Taylor Rule and far from passive. Thus, the idea that the change in monetary policy framework contributed substantially or even significantly to the Great Moderation is far from convincing.

The lack empirical evidence for policy being the main driver of the Great Moderation is not hard to understand. A substantial portion of the decline in volatility in output has to do with developments for which policy can hardly take credit. First, the global economy, and especially developed economies have increasingly shifted away from good to services. Business cycles are inherently about overproduction of goods and structures; it is hard to overproduce haircuts and massages. It is true that service sector volatility has also declined in the Great Moderation era. However, that decline in volatility has to do with increasing proportion of the services being either not market-determined—for example, healthcare, imputed rent on owner-occupied housing, imputed services for which no money is exchanged. In fact, imputed proportion of GDP has increased steadily over the past four decades and is now about 16%.

Second, even in the goods producing part of the economy, better inventory management has eliminated the large inventory swings of cycles past (Morley and Singh, 2016). Inventory investment used to account for a significant part of goods sector volatility pre 1980.



Third, at least in the U.S. context, some of the dampening of volatility is an artefact of data collection, processing, and massaging. The source data has become less volatile—probably reflecting better data collection—and data produced by the Bureau of Economic Analysis (BEA) has become significantly smoother than the source data. For example, consider residential improvements. The source data used to be highly volatile, as was the final BEA data (chart 1). While the source data has become less volatile, the BEA data has become far less volatile and appears to be an attempt to smooth the source data.

***Great Moderation or Great Slack?***

The Great Moderation's claim rests on having delivered lower volatility in GDP and inflation. The two distinct claims—low inflation and low output volatility—are often seen of one piece, with the former contributing to the latter. Yet, causal link between the two is tenuous. Moreover, to the extent policy contributed to the Great Moderation, it may have been by causing greater damage in the form of persistent slack in the labor market and thereby lost output.

One of the core claims of those who extol the virtues of inflation targeting is that a low and stable inflation contributes to lowering output volatility (Bernanke, 2004). Yet, this core claim itself is suspect. Recent empirical work suggests that the shocks that “account for the bulk of the business-cycle fluctuations in unemployment, hours, GDP, investment,

and, to a somewhat lesser extent, consumption” are “orthogonal to TFP [total factor productivity] and inflation at all horizons.” (Angeletos et. al., 2018). This is not an isolated finding. Another paper, using multi-country data spanning 140 years, found that (Keating and Valcarcel, 2017) :

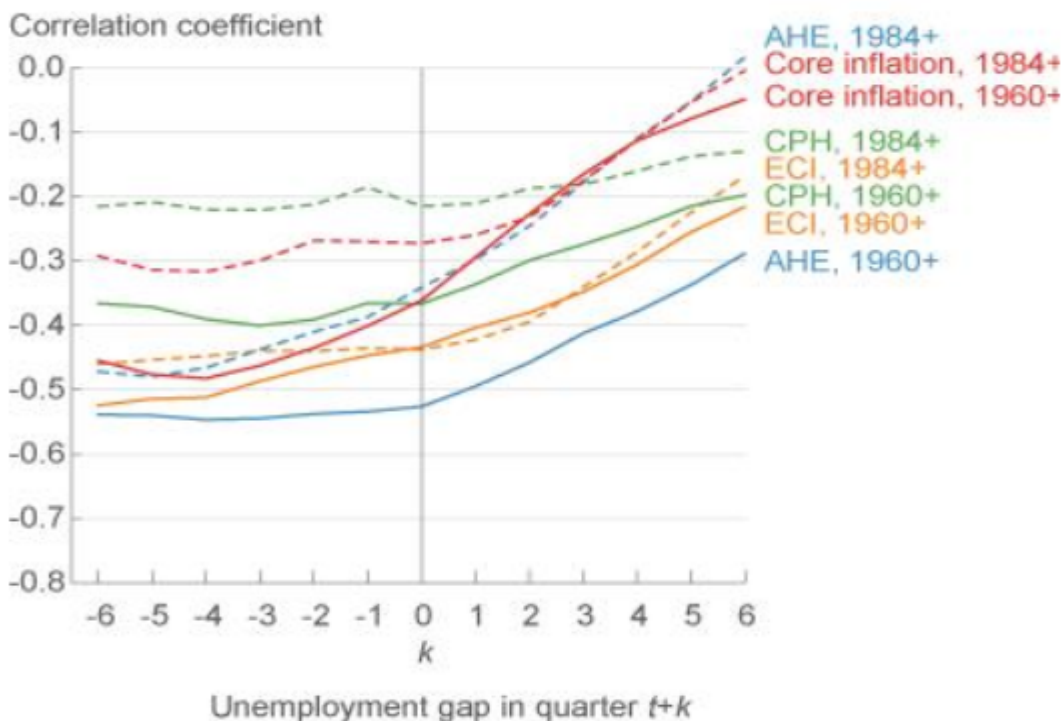
*Based on our structural VAR identification, permanent shocks to output account for nearly all of the fluctuations in the volatility of output growth while shocks that have only a temporary effect on output explain most of the fluctuations in inflation volatility. These last two findings suggest that changes in the volatility for each variable are primarily driven by a fundamentally different type of disturbance.*

The New Keynesian model that lies at the heart of inflation targeting is predicated on inflation and output gap being joined at the hip. The empirical rejection of the key New Keynesian tenet undercuts the core claims of inflation targeting.

More important, even the stability in inflation may well have been purchased by keeping the labor market perennially weak. The Great Moderation era has also generally been associated with prolonged periods of slack in the labor market. *The unemployment rate has been above NAIRU 63.4% of the time since 1984. In contrast, in the 1949-1978 period—which includes the much maligned 1970s—the unemployment rate was above NAIRU only 32.5% of the time.* The difference is stark. Granted that NAIRU is an imperfect measure of labor market slack, but other indicators, such as duration of unemployment, show persistent slack in the Great Moderation era.

The chronic labor market slack via old-fashioned labor market bargaining dynamics has likely more to do with keeping inflation low and stable rather than the purported benefits of anchoring expectations. The relationship between labor market slack and wage inflation is pretty solid, as the figure below from the Cleveland Fed shows. To be sure, correlations have weakened in the post-1984 era, reflecting possibly the institutional context—the decline in unionization and the growing degree of monopsony in labor markets, which have depressed labor bargaining power. Having said that, the still significant link between labor market slack and wages suggests that extended periods of labor market slack have played a role in keeping wage inflation subdued.

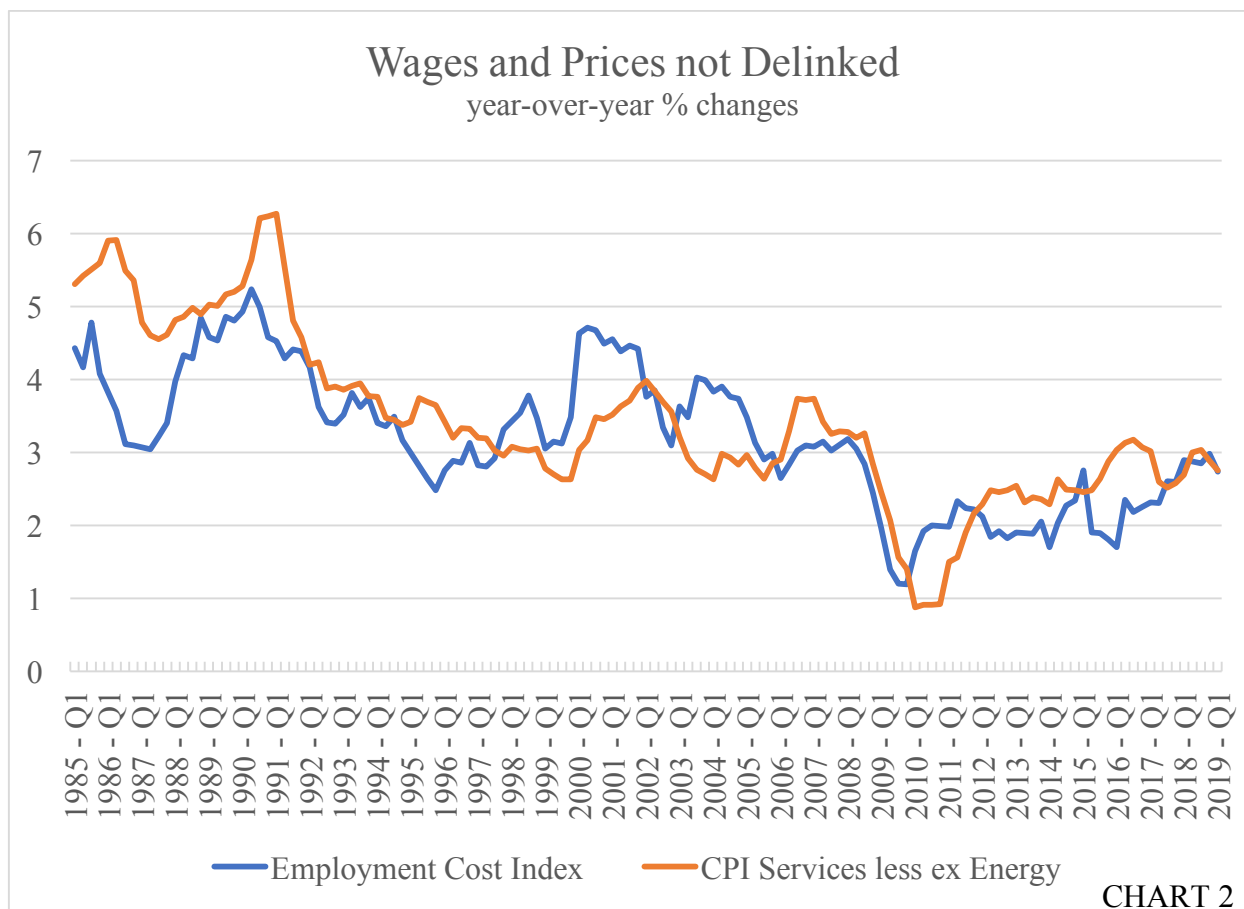
## Figure 4. Unemployment Gap Cross-Correlations



Let us now turn to the wage-price link. There is a positive feedback loop: higher wages lead to higher prices, which in turn lead to demands for higher wages. Once again, the broader economic and institutional context matters. For example, automatic indexation of wages accentuates the feedback, whereas, globalization and increasing international competition attenuate the feedback. Changes in the context are the main reason why many studies find no link between wages and prices (for example, Bidder, 2015). Indeed, the figure above from Cleveland Fed also shows a weaker relationship from labor market slack to prices in the post 1984 era. Yet, a closer look reveals the wage-price link. Chart 2 shows the employment cost index (ECI) against CPI services. Since in the tradeable sector the ability of domestic producers to pass on cost increases will be constrained by competition from imports, especially in the era of global glut, I have used CPI-services ex-nergy to isolate the prices of domestic non-tradeables. Even a casual look at chart 2 shows that ECI leads CPI<sup>1</sup>.

<sup>1</sup> I ran a rough two-way Granger causality test and the results reject the null hypothesis of no causality from wages to prices.





The usual Monetarist response is that the feedback loop between wages and prices would never get started unless the Fed accommodated the process by allowing money supply to increase. True, but the only way to curb the feedback loop is to weaken the real economy and the labor market. Immaculate control of inflation (a phrase coined by Karl Smith, 2011) does not exist. In fact, there is evidence that in the Great Moderation era, the Fed has acted to snuff out any incipient inflationary pressures. Hirose et. al. (2019) find that post-1982 the Fed’s policy response has become less sensitive to output gap, and more sensitive to output growth. Yes, expectations do matter, but more likely in the context of high inflation. At low levels of inflation, the expectations fairy is just that. In reality, inflation has been kept stable by keeping the labor market in chronic slack, imposing an enormous cost on society. As Gadia-Revas and Gomez-Roscós note (2015), “Perhaps the benefits associated with an apparent increase in stability are paid for at a very high price. Feeble expansions may be the price to pay for low volatility.”

### Monetary Policy and Financial Instability

The conventional view of how monetary policy works is summed up well by Bernanke and Gertler (1999), “...monetary policymakers use their leverage over short-term interest rates to influence the cost of capital, and consequently, spending on durable goods, such as fixed investment, housing, inventories, and consumer durables.” However, they then quickly dismiss the conventional channel arguing that, “empirical studies of supposedly

interest-sensitive components of aggregate spending have in fact had great difficulty in identifying a quantitatively important effect of the neoclassical cost-of-capital variable.” Canzoneri et. al. (2007) show that the empirical relationship between interest rates and consumption (the so-called Euler equation) is the opposite of what we would expect, thus driving a stake into the heart monetary policy models. Meanwhile, survey data of CFOs also shows that capital spending decisions are insensitive to interest rates (Sharpe and Suarez, 2014).

So, how does monetary policy work? Bernanke and Gertler offer two mechanisms: balance sheet channel and the bank lending channel. According to them, the balance sheet channel of monetary policy works by impacting “borrowers’ balance sheet and income statements, including variables such as borrowers’ net worth, cash flow, and liquid assets.” While this framing is in the right direction it is inadequate in that it ignores wealth effect on consumption and the influence of stock prices on business fixed investment. Most important, the financial instability engendered by monetary policy remains obscured.

To understand how money policy influences the economy, it is helpful to look at a schematic representation of the various interactions (feedback loops) operating in the economy (Figure 1). Red arrows are positive feedback loops (destabilizing) and blue arrows are negative feedback loops (stabilizing), By no means is this a comprehensive rendering of all interactions in the economy, but it is good enough to illustrate monetary policy dynamics, the inherent instability of the system (Minsky, 1986), and why a single interest rate that stabilizes the system is unlikely to exist.

Start with the bottom loop in Figure 1, which represents the conventional view of the real economy. Economic activity picks up, slack diminishes, inflation rises, and the Fed hikes rates, which, in turn, increases the cost of the capital and debt-service costs and slows the economy. In this world of New Keynesian economics, there exists a single rate, the natural rate, that delivers stable economy growth with steady inflation.

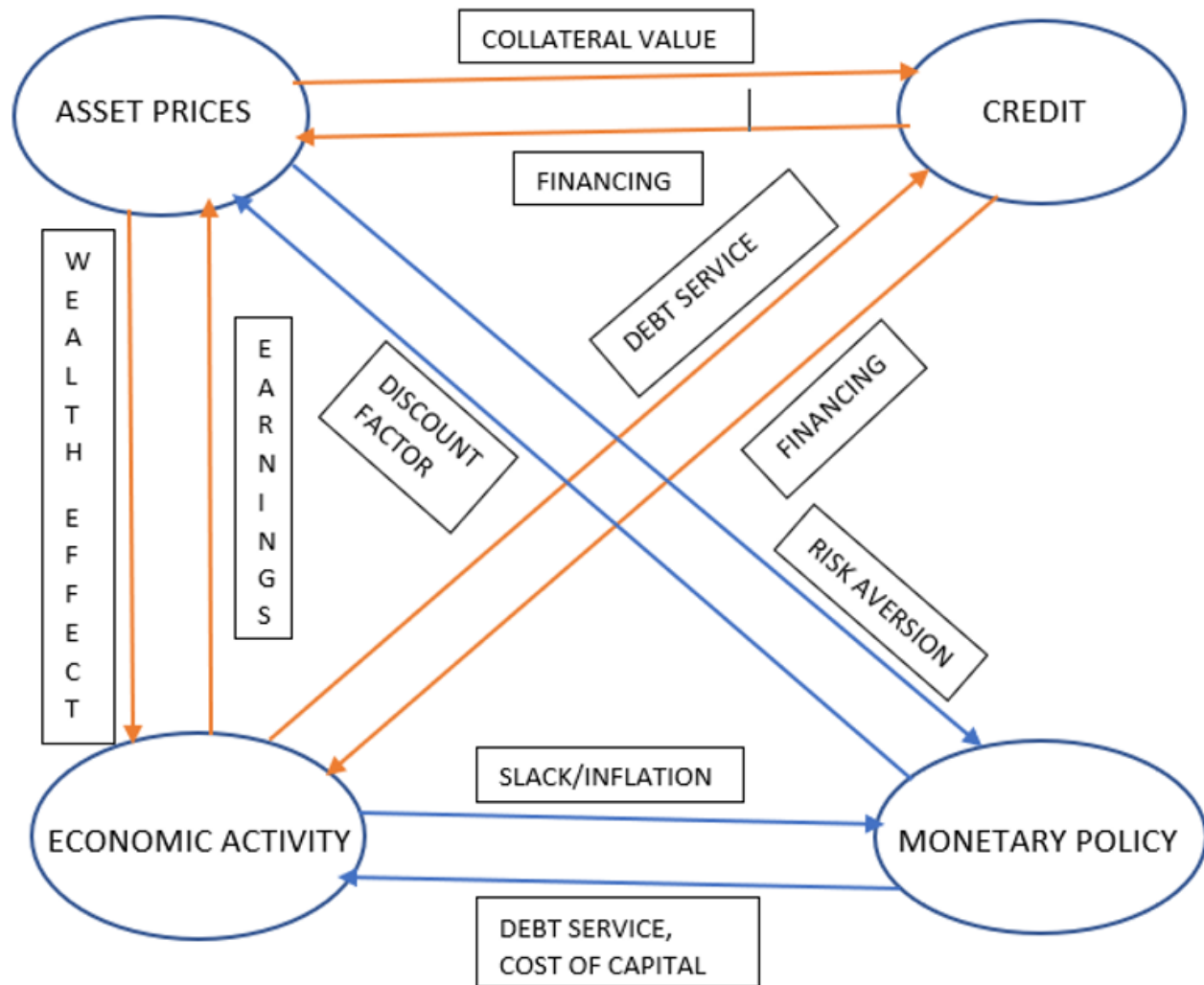


FIGURE 1

Let us now consider the credit loop. There is a positive feedback loop between credit and the economy. Greater availability of credit boosts the economy, and increased economic activity, in turn, supports debt-service and validates the credit decisions. The central bank usually does not interfere with the credit channel directly. In crises, central banks step in directly to provide liquidity to the credit markets via lender-of-last-resort operations. In theory, central banks have tools other than interest rates to control credit. In practice, monetary policy assumes that the interest rate that stabilizes economic activity also stabilizes credit via debt-service.

Finally, let us incorporate the asset side of the economy. As with credit, there is a positive feedback loop between asset prices and the real economy. Higher asset prices spur greater economic activity through wealth effects on consumption (Duca, 2001 and Zandi et. al. 2018). Moreover, the stock market influences business confidence (Zandweghe, 2019), which in turn affects business capital spending (Khan and Upadhyay, 2017). In fact, the empirical evidence suggests that the wealth effect on consumption has

increased over time (Zandi et al. 2018), likely reflecting growing income inequality and the expansion of wealth relative to income. Growing economic activity in turn validates asset prices, thereby fostering a positive feedback loop.

Thus, in the overall economy there are three positive feedback loops: 1) between the real economy and credit, 2) between credit and asset prices, and 3) between asset prices and the real economy. There are two negative feedback loops—but the second one between monetary policy and asset prices is not directly operative to the extent the Fed eschews "targeting asset prices." So, essentially there is one negative feedback loop to stabilize the economy against three potentially destabilizing dynamics. In the perfect world of rational expectations and common knowledge, this is not a problem. If financial market participants bid up asset prices, credit would become more available, the cost of capital would drop, and firms would be incentivized to invest, which would then strengthen the economy, leading to higher policy rates and lower asset prices.

However, in the real world, the expectations of financial market participants can diverge from the expectations of business executives making capital spending decisions (Davidson, 1968). So, if financial market participants take a rosier view of the future, they can bid up asset prices, but to the extent business capital spending decisions are driven less by cost of capital and more by demand, business executives may see limited opportunity for fixed investment. In that case, the economy may remain tepid, the central bank will remain accommodative, indirectly supporting the asset price speculation.

When the real economy has considerable slack, the Fed has the freedom to address financial market turmoil with alacrity and thereby buy insurance for the economy. To use a market parlance, the so-called Fed Put is closer to the money. In some ways, this describes the situation for most of this expansion as well as the early parts of the previous two expansions.

On the other hand, if the real economy is booming and/or inflation is rising, the Fed may be constrained in its willingness to pay obeisance to every market hiccup. The Fed Put would be further out of the money. For example, in 2000, as the Nasdaq was declining sharply, the tight labor market prevented the Fed from cutting aggressively until it was too late. One could say the same in 2007-2008—home prices were falling and the positive feedback loops from home prices to housing credit were beginning to look ominous, threatening the entire financial system—but soaring oil prices and their potential inflationary effects prevented the Fed from aggressively cutting rates.

Central banks face a dilemma when confronted by rising inflation and increasing financial stresses. The interest rate that stabilizes inflation may be too high to stabilize financial conditions. In such circumstances, the central bank has two choices, ignore inflation and focus on credit market stability or tackle inflation and allow a recession to occur. The idea that they can strike balance—find a rate path that delivers stable inflation and stable credit—is implausible in a Minskian world, unless there is heavy-handed and continuously evolving regulatory suasion (Minsky, 1986).

Consider three separate episodes in the postwar period in the United States. First, the credit crunch of 1966-67. Core inflation had surged from a sub-2% level in early 1966 to over 3.5% by late 1966. The economy was slowing but not enough to cool the labor market and wage pressures. However, a severe credit crunch was developing (Minsky, 1986). The Fed had two choices: ease policy to address the credit crunch or focus on inflation. The Fed eased, and a downturn was averted but inflation kept climbing<sup>2</sup>.

Now consider 1990. The Fed had started easing in 1989 as bank and S&L failures were soaring and the economy was clearly weakening. But in early 1990, surging inflation stayed the Fed's hand despite growing financial stresses. Eventually, the Fed eased in the second half of 1990, but the economy was already in recession. In hindsight, the inflation threat was a false signal, or was it? If the Fed had arrested banking sector problems, then credit flow would have not stopped, the economy would not have weakened, and in the absence of the magic expectations fairy, inflation likely would not have come down.

Let us now fast forward to 2008. Those who were "hawks" on the Federal Open Market Committee in 2008 have been pilloried since then. However, consider the situation in mid-June 2008 (before the collapse of Lehman Brothers). Retail sales had rebounded strongly, real GDP growth had bounced back in the second quarter, and the global economy was solid. Of course, not everything was fine—the labor market was worsening for instance. Meanwhile, core inflation was accelerating, and oil was skyrocketing toward \$150 per barrel. While financial stresses remained, the Fed had successfully engineered the absorption of Bear Stearns by JP Morgan, and Merrill Lynch and Countrywide by Bank of America, and the VIX, the TED-spread, and high-yield spreads had all declined. The Fed had already cut rates by 325 bps. So, is it such a blunder that the hawks resisted further easing in June-July? Without the advantage of hindsight, what makes easing in 1967 a blunder and the decision to not ease in 2008 a blunder too? Yet, many economists, especially Monetarists, hold both views (see for example Sumner, 2017).

There was likely no right path: easing would have validated the hawks and not easing further validated the doves. As it were, the second path was chosen and the doves seem prescient, but like Schrodinger's cat, both views were right ex ante, but whichever view was implemented would have been proved to be wrong ex post! The real problem is that Fed was operating upon models of the real economy where balance sheets were an epiphenomenon.

Many would consider the Fed's actions in 1990 and 2001 as successful instances of threading the needle in contrast to its policymaking in the 1960s and 1970s or 2008. Yet, the recessions of 1990-91 and 2001 had long-lasting effects. The early 1990s was when the term jobless recovery was first coined<sup>3</sup>. The Fed cut rates for a year and a half into the

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<sup>2</sup>Thanks to which two people won Nobel prizes, and due to which the economics profession became madly obsessed with inflation.

<sup>3</sup> According to Wikipedia, the term was coined by the economist Nick Perna in the early 1990s.  
[https://en.wikipedia.org/wiki/Jobless\\_recovery](https://en.wikipedia.org/wiki/Jobless_recovery)

recovery. Federal deficits remained wide until 1994. Growth was mediocre and productivity weak—Krugman called it the age of diminished expectations (Krugman, 1994). It was not until the second half of the 1990s that the economy kicked into a higher gear. The 2001 recession did not have financial sector complications, but the employment recovery took much longer and private sector employment growth through the expansion was one of the worst ever. Business capital spending remained depressed through the recovery. In fact, through the past 25 years, barring the Dotcom bubble phase, capital spending has never been robust<sup>4</sup>.

To the extent the last thirty years appear to have delivered stability, it is because the economy has been operating under considerable slack the bulk of the time. Persistent slack has meant that the Fed has kept interest rates low for extended periods of time but also that the feedback loops from balance sheets to the economy have been weaker than they would have been. As a result, rising asset prices or easy credit have failed to stoke the real economy commensurately, keeping interest rates low, supporting balance sheets, and fostering the perception of stability. In turn, this validated balance sheet structures and encouraged further risk taking, thereby increasing aggregate leverage and valuations in the economy. In other words, interest rates were not low enough for the real economy but too low to rein in financial market exuberance. However, with the passage of time, the feedback loops from balance sheets to economy strengthened—wealth effects in the 1990s or home equity extraction in the 2000s—diminishing the slack. At that point, the relationship flipped. The interest rate high enough to stabilize the real economy was too high to stabilize collapsing balance sheets.

### **Inflation Targeting Promotes Leverage**

In the previous section, we discussed the challenges of stabilizing the macroeconomic system using just monetary policy. This section explains how inflation targeting in particular encourages rising leverage and engenders financial instability.

Over the past thirty years, the nature of the government involvement has changed from establishing a floor to smoothing fluctuations. The original mandate of central banking was to act as a lender of last resort in financial crises. In the post-war era, it expanded to business cycle management. In the inflation targeting era, it has morphed into promising low volatility. In financial jargon, we have gone from selling a put to reducing volatility. Yet, the attempt to deliver low volatility—unlike the attempts to provide a floor—is self-defeating. By promising low and stable inflation, central banks have effectively encouraged excessive leveraging.

Creditors, especially investors in fixed-rate instruments, are basically selling a straddle. The option of default gives borrowers a put on the underlying asset, and the fixed payment on a loan gives an implicit call option on the asset if inflation comes in higher than anticipated. If economic activity craters (and inflation plummets or worse, leads to deflation), nominal incomes will fall below what debtors had anticipated, causing defaults

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<sup>4</sup> <https://ftalphaville.ft.com/2017/06/06/2189480/us-capex-investment-and-growth/>

and resulting in losses for creditors. On the other hand, if economic activity and inflation are too hot, creditors stand to lose as well, if not on an absolute basis at least on a relative basis. By promising to keep inflation close to a target, the central bank is implicitly assuring credit investors that they will not be disadvantaged.

Unsurprisingly, the inflation targeting era has witnessed explosive growth in private sector debt across the developed world. Moreover, hitting the ZLB and central banks efforts to circumvent the constraints imposed by ZLB have made matters worse. Lucas et al. (2017) investigate bank business models at zero interest rates. They find that banks respond to changes in the yield curve. In particular, lower long-term interest rates lead to increased size, leverage, complexity and a less stable funding base for banks.

Notwithstanding the promises of central bankers, there is a strong human tendency to overpay for lottery like payouts (Eraker and Ready, 2015), which is why equity investors are loath to give dilute their stake. Inflation targeting, by lowering the implicit option premium charged by credit investors, has only made it easier for investors to indulge in their biases for lottery-like payouts. This may well have been a factor in the serial bubbles we have experienced in the past 30 years.

Meanwhile, the explosive growth in private sector debt makes the financial system unstable and prone to deflationary bias. Even as volatility of economic activity and inflation has gone down, the skew in financial markets has actually worsened in the past thirty years. (I would argue that the skew in economic activity has also worsened, but it is harder to present strong statistical evidence.) S&P 500 earnings declines during recessions have become progressively worse<sup>5</sup>. Corporate bond defaults have also displayed a trend of progressively higher peaks<sup>6</sup>. As a result, each successive crisis has forced policy rates progressively lower. In effect, inflation targeting may at least partly be implicated in causing the ZLB crisis.

## Conclusion

The major benefit of low and stable inflation is predicated on the notion that high inflation leads to inefficient price dispersion, which according to standard New Keynesian models imposes enormous welfare costs—much more than business cycle fluctuations. Yet, as Nakamura et al (2018) report, “We find no evidence that the absolute size of price changes rose during the Great Inflation. This suggests that the standard New Keynesian analysis of the welfare costs of inflation is wrong and its implications for the optimal inflation rate need to be reassessed.” Imaginary demons have led policymakers on a quixotic quest over the past thirty years. Don Quixote was a fictional character, but the pointless obsession of policymakers has imposed exorbitant costs on real people.

Great Moderation purchased lower volatility for a marked worsening in skew. To borrow an analogy from ecology, in curbing brush fires policymakers have created greater potential for forest fires. We need to reorient policy toward building a resilient system not

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<sup>5</sup> <https://macromyths.blogspot.com/2017/10/socializing-risk-is-bedrock-of.html>

<sup>6</sup> [https://www.researchpool.com/download/?report\\_id=1751185&show\\_pdf\\_data=true](https://www.researchpool.com/download/?report_id=1751185&show_pdf_data=true)

chasing the unattainable goal of stability. As Minsky said, stability leads to instability. Price stability is inimical to the resilience of the economic system and ultimately a futile quest. Instead, a goal of moderate inflation with moderate variability would discourage risky financial structures and enhance the resilience of the financial system.

Most important, a framework reliant on monetary policy for aggregate demand management is likely to create the dilemmas that we are facing. In contrast, fiscal policy mechanisms promote resilient balance sheet structures. Countercyclical fiscal policy not only boosts aggregate demand directly but also accommodates the demand for safe assets, making private sector balance sheets more resilient and less prone to financial instability. In contrast, monetary policy, which works by encouraging leveraging and increasing asset valuations through lower discount rates, exacerbates the financial instability inherent in capitalism.

Unquestionably, monetary policy will remain important. It is too powerful a tool to be left in the toolbox (Palley, 2014). What is needed is a comprehensive policy framework that combines fiscal, monetary, and macroprudential policies.

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