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Stellenbosch Economic Working Papers: 12/13  
July 2013

KEYWORDS: NOMINAL INCOME TARGET, INFLATION TARGET, MONETARY POLICY  
JEL: E52, E58

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A WORKING PAPER OF THE DEPARTMENT OF ECONOMICS AND THE  
BUREAU FOR ECONOMIC RESEARCH AT THE UNIVERSITY OF STELLENBOSCH

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# Should inflation targeting be abandoned in favour of nominal income targeting?

STAN DU PLESSIS AND MALAN RIETVELD<sup>1</sup>

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## ABSTRACT

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In the wake of the international financial crisis nominal income targeting has received renewed attention from a number of leading macroeconomists as alternative to inflation targeting. The case for nominal income targeting has been built on both positive and negative arguments. The negative case relates to perceived inadequacies of inflation targeting, including: the presumed lack of robustness of inflation targeting to aggregate supply shocks, inadequate concern with financial stability, as well as concerns with the accountability of inflation targeting central banks. The positive case for nominal income targeting is that it will better suit current macroeconomic circumstances and policy needs, without sacrificing the gains made by inflation targeting. A thorough evaluation of these arguments is presented in this paper with the conclusion that the case for nominal income targeting is weak compared with the way in which inflation targeting has been implemented internationally.

Keywords: Nominal income target, inflation target, monetary policy  
JEL codes: E52, E58

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## **1. Introduction**

In a modern economy where the value of money is not linked to the value of any underlying commodity, such as gold, the central bank has to accept direct responsibility for monetary conditions, i.e. the amount of money in circulation, credit conditions, inflation and financial stability. A monetary policy framework is designed to enable a central bank to assume that responsibility. In practice, this monetary policy framework comprises a combination of formal and informal rules, most significantly the adoption of a set of rules or other limits to the discretion of a monetary authority, called the nominal anchor. These limits have received much attention from scholars and policymakers since the seventies, for reasons both practical and theoretical. It was the time-inconsistency of monetary policy identified by Kydland and Prescott (1977) that motivated theorists to reconsider the merits of nominal anchors while practitioners were encouraged in the same direction by the poor record track record of monetary policy in their absence (Goodfriend 2005).

Following experiments with various alternative nominal anchors, such as exchange rate and monetary targets, many countries have adopted inflation targets since the early 1990s, whether implicitly or through a “fully fledged” or “formal” inflation-targeting regime. Within the framework of inflation targeting, the central bank adopts a target or target range for inflation as a nominal anchor. A comparison between the forecasted inflation rate and the target range, together with the requirement that the central bank explains how it uses its policy instruments to keep forecasted inflation on track, provides an effective limit on the central bank’s discretion. At the same time, proponents of inflation targeting, for example Mishkin and Schmidt-Hebbel (2007), argue that the central bank’s adoption of an inflation target anchors public expectations of future price developments, thereby reducing the magnitude of the trade-offs the central bank face in meeting other objectives, such as minimising the volatility of output and promoting full employment.

It is a remarkable testament to the strength of the consensus around the appropriate goals of monetary policy, and inflation targeting’s apparent success in promoting the achievement of these goals, that no country that adopted inflation targets has chosen subsequently to abandon them in favour of alternative nominal anchors or policy frameworks (Rose 2007). At the same

time, a number of central banks, including the US Federal Reserve, the European Central Bank and the Bank of Japan, have taken such decisive steps in the direction of inflation targeting that significant differences in the way leading central bank operate and communicate are hard to identify in practice<sup>2</sup>, as Alan Greenspan observed almost ten years ago:

“...the actual practice of monetary policy by inflation-targeting central banks now closely resembles the practice of those central banks, such as the European Central Bank, the Bank of Japan, and the Federal Reserve, that have not chosen to adopt the paradigm.” (Greenspan 2004: 39)

However, inflation targeting is not without its critics. While some of the opposition to inflation targeting predates the global financial crisis,<sup>3</sup> there is no doubt that the disruption to global financial markets and consequently global growth since 2007 has resulted in heightened scrutiny of the framework as currently practiced. Indeed, a number of prominent economists have been making the case for a move away from inflation targeting in favour of nominal income/GDP targeting as the anchor for monetary policy, whereby a target for forecasted nominal GDP takes the role of inflation under inflation targeting. Among the notable recent<sup>4</sup> proponents of this shift are Romer (2011), Sumner (2012), Frankel (2012), and Wren-Lewis (2013); while more qualified and tentative support has been offered by Nobel laureate, Paul Krugman (2011), and leading monetary economist, Michael Woodford (2012). Prominent central bankers too have expressed qualified support for the idea, while suggesting further research is required around the costs and benefits of adopting nominal income targeting (Carney 2013).

The proponents of nominal income targeting make their case with both positive and negative arguments. The negative case for the adoption of nominal income targeting relate to the

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<sup>2</sup> Woodford (2007) argued that the conduct of the Fed would have been little different under formal inflation targeting, but added that inflation expectations would probably have been better anchored.

<sup>3</sup> Notable earlier sceptics of inflation targeting include Benjamin Friedman (2004a; 2004b) and Donald Kohn (2003).

<sup>4</sup> Earlier proponents, whose views in favour of income targeting predate the emergence of inflation targeting, include Meade (1978) and Bean (1983).

perceived inadequacies of inflation targeting. Among these is the presumed lack of robustness of inflation targeting to aggregate supply shocks and financial stability concerns, that the costs of adopting inflation targeting outweigh the benefits and, more generally, that inflation targeting undermines the accountability of central banks by obfuscating the central bank's true intentions (Kohn 2003; Friedman 2004a; Friedman 2004b). Frankel (2012) has recently added the more fundamental criticism that inflation targeting is based on the delusion that monetary policy can influence inflation as distinct from nominal income growth. In Frankel's view, it is the sum of real income growth and inflation that responds to monetary policy in his argument, not the breakdown between these two macroeconomic outcomes.

The positive case for nominal income targeting is that it will better suit current macroeconomic circumstances and policy needs, without sacrificing the gains made by inflation targeting. It is argued, by for example Frankel (2012), that the change in the nominal anchor will provide economic stimulus at a time when developed economies are in or near recessions and help boost economic growth by stimulating aggregate demand through lower real interest rates. This is to be achieved by temporarily raising inflation expectations with an automatic reduction in those expectations as soon as real growth returns to the economy. Medium-term inflation will remain anchored and the gains of a generation of prudent monetary policy protected, while providing much needed stimulus in the short run.

Before turning to an evaluation of the positive and negative cases for nominal income targeting, it is instructive to consider the many challenges that confront monetary authorities in the wake of the international financial crisis, and to consider the most salient unresolved controversies in monetary economics today. These challenges and controversies provide the context for the current debate on nominal income targeting.

## **2. Current challenges in central banking and monetary economics**

The international financial crisis of 2008-09 undermined a remarkable consensus on the goals and conduct of monetary policy in both developed and developing countries. Most prominently, financial stability has returned to the core of the research programme and policy debate in monetary economics in particular (as well as to the broader debate around the role of

modern central banking). Charles Goodhart (2010) has argued that the international financial crisis marked the end of an epoch that started in the early 1980s in which the primary role of the central bank was to conduct monetary policy and the assumption was that financial stability would follow from the achievement of price stability and the self-regulatory property of the financial markets. In Goodhart's view, the next epoch of central banking will be marked by a search for new tools and frameworks for maintaining financial stability – a return to what he describes as “the essence of central banking”.

This has brought with it new questions, but also cast new light on older questions. There are five dimensions to the challenge of returning financial stability to the core of monetary economics: (i) substantial revisions to workhorse theoretical models, (ii) changes to the formulation and understanding of the policy model, particularly in light of the extensive use of “unconventional policy measures” and attempts to identify appropriate policy tools for addressing asset price bubbles, (iii) adjustments to the regulatory framework, including the institutional arrangements around the regulation and oversight of the financial systems as a whole, (iv) renewed concerns over the management of potentially volatile short-term capital flows to emerging market economies, and (v) the emergence of new questions around measurement, including most prominently the measurement and detection of asset price bubbles, financial fragility and assessment of the impact and success of the use of policy instrument, particularly unconventional ones. We discuss these challenges briefly in order to demonstrate that the proposal to adopt nominal income targets will not contribute in any way to their resolution.

Starting with the revisions to theoretical models, the nature of the financial crisis and the inability of policy models to anticipate the risks involved imply a severe criticism of the theoretical foundations of modern monetary policy. Asset markets generally, and the financial sector in particular, played no relevant role in these models prior to the crisis (Du Plessis 2010). The major theoretical challenge for monetary economics at this juncture is to write a new generation of models where assets and financial markets play a central role, where financial fragility as a possible outcome and where the impact of monetary policy on asset markets and financial stability can be studied.

While policy models need not follow every development in theory, the advances in macroeconomics and monetary economics since the seventies have substantially influenced the models used by monetary policy makers, though with a lag (Chari and Kehoe 2006). In addition to theoretical developments policy models are also influenced by the actions of central banks. During and after the financial crisis, central banks have implemented far-reaching policy changes without having explicit policy models to help them anticipate the intended and unintended consequences of their actions. These decisions include a much more explicit use of “forward guidance” to manage expectations about the future stance of monetary policy. This is a dramatic evolution of a theme that had received considerable attention in monetary economics prior to the crisis and where more effort is now needed (Campbell et al. 2012). Central bank balance sheets have also undergone unprecedented peace-time expansion, a development that stirred considerable controversy, not least because it undermines expectations about monetary policy independence that had been cherished for a generation (Cúrdia and Woodford 2011).

A second area where revisions to the policy model are required regards the appropriate policy response to asset price bubbles.<sup>5</sup> Miskhin (2008) has argued for a distinction between capital-market and credit-fuelled bubbles. In his view, the former is much less dangerous to economic and financial stability, while the latter is considerably more so and may therefore require intervention through regulatory measures (and possibly even through conventional interest rate increases). While the views of certain prominent economists and central bankers before the crisis that the modern financial markets had developed the instruments and diversity of agents to essentially self-regulate or self-correct has been shattered by the crisis,<sup>6</sup> the tentative consensus remains that the asset price bubbles (and indeed other elements within the financial

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<sup>5</sup> We assume here that policy makers are able to detect asset price bubbles in a timely manner, and that the challenge revolves solely around which policy tools to use to address them – and how. As discussed below, however, the measurement and identification issues around asset price bubbles, the use of policy instruments to address them, are significant.

<sup>6</sup> Alan Greenspan (2008: 36-37), the former chairman of the Federal Reserve, captured the sense of incredulity in testimony to the US Congress: “Those of us who have looked to the self-interest of lending institutions to protect shareholders’ equity, myself included, are in a state of shocked disbelief.” Greenspan added that “whole intellectual edifice” of modern financial risk management had collapsed under the weight of the 2007-08 crisis.

stability framework) require distinct policy tools from those used for the achievement of price stability (i.e., the interest rate). Among the notable dissenters on this point Jeremy Stein (2013: 16-17), a Governor of the Federal Reserve, recently departed from his central bank's oft-stated view that interest rates are an ineffective tool for dealing with asset prices by arguing "If the underlying economic environment creates a strong incentive for financial institutions to, say, take on more credit risk in a reach for yield, it is unlikely that regulatory tools can completely contain this behaviour." Stein added, "While monetary policy may not be quite the right tool for the job...changes in [interest] rates may reach into corners of the market that supervision and regulation cannot."

A consensus on the appropriate tool and procedures to respond to asset price bubbles remains out of reach, but the framework for financial regulation has become an important part of that discussion. While central banks control some policy instruments outright, such as the policy interest rate and the size and composition of its balance sheet, it is also an important voice in the discussion about financial regulation. In many countries, central bank are charged with implementing such regulation, at the microprudential (or institution-specific) and/or the macroprudential (or systemic) level. That inappropriate financial regulation had contributed to the financial crisis is now accepted, but there is much less agreement on the appropriate reforms to prevent a repetition and how regulation is best coordinated with the other functions of a central bank, or indeed between other regulatory and supervisory authorities, both nationally and across borders. Two factors stand out as major causes of the international financial crisis, high gearing and the increasingly interlinked nature of modern financial institutions. New ideas in financial regulation are required to manage these risks, particularly in the area of macroprudential supervision (Borio and Drehmann 2009; Bank for International Settlements 2012).

A number of important measurement issues have arisen as a consequence of the theoretical, policy and regulatory questions mentioned above. The identification of the monetary policy stance, for example, requires the accurate identification of inflation expectations and the unprecedented use of balance sheet policies by central banks bring measurement and analytical questions of their own (Gagnon et al. 2010; Krishnamurthy and Vissing-Jorgenson 2012).



Further, the return of financial stability to the core of modern central banking, both its integration with the monetary policy process and due to the need to improve and update micro- and macroprudential supervision, has brought to the fore considerable difficulties around measurement, analysis and the formalisation of policy objectives (Goodhart and Tsomocos 2010). Of particular concern are the extreme epistemological challenges around the (timely) *identification of asset price bubbles*, which is a separate issue from the above-mentioned challenges around the use of policy tools, if we assume they can be positively identified (Borio and Drehmann 2009). Older research topics in monetary economics, such as the measurement of inflation, the measurement and classification of international capital flows, international imbalances and capital controls have become more important to the extent that they complement the themes already mentioned.

Finally, capital flows have raised new concerns especially for emerging market economies. Of course, issues around capital flows – particularly the imposition of capital controls in an attempt to reduce the volatility and potentially distortionary effects of capital flows – are not new and were, for example, fiercely debated in the aftermath of the emerging market debt and financial crises of the 1990s (for example, Stiglitz 2000). This time it is the policy decisions in developed economies, with their suspected knock-on effects in the world capital market that has pushed capital flows to the top of the macroeconomic policy debate in emerging market economies. A number of policy makers from emerging market economies have suggested that the unconventional monetary policies, notably the Federal Reserve’s policy of quantitative easing, has had the unintended consequence of leading to excessive short-term capital flows to emerging market economies<sup>7</sup>. This phenomenon has rekindled concerns over the threat of sudden stops, a loss of export competitiveness due to an (unwanted) appreciation of the real exchange rate, and a potential overheating of emerging market economies. The most striking features of the renewed debate around capital flows is the re-evaluation of effectiveness and efficiency of capital controls, where there has been a notable softening of the view against the imposition of such measures (IMF 2012). Regardless of the ultimate outcome of the discussion

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<sup>7</sup> These capital flows have contributed to appreciating exchange rates for many emerging market economies. Guido Montega, Brazil’s Finance Minister, referred to the adverse impact on emerging market economies due their appreciating exchange rates as a new “currency war” (Wheatley 2010) .

around capital controls, it is clear that capital flows are regarded as a critical element of the wider concerns over financial stability for emerging market economies in particular (IMF 2011; Brookings Institution 2012; IMF 2012).

It is striking that the debate on nominal income targeting addresses none of the pressing issues around the return of financial stability issues to the core of modern central banking – that is, nominal income targeting does not provide any guidance or solutions to the problems around returning to Goodhart’s “essence of central banking”. It is correct to observe that inflation targeting itself does not solve these problems either, which is why new thinking is needed in central banking, but it is not a shortcoming that recommends nominal income targeting as an alternative.

The proposals around the adoption of nominal GDP targets are, however, motivated by attempts to address three long-standing debates in monetary economics: (i) the appropriate monetary policy response to an adverse aggregate supply shock, (ii) the possible inclusion of history-dependent considerations into monetary policy decisions, and (iii) the well-known challenges of monetary policy at the zero lower bound given concerns over the liquidity trap and the risk of deflation. The negative case for nominal income targeting suggests that inflation targeting is an inappropriate framework for dealing with these challenges, while the positive case suggests that a move to a framework of nominal income targeting will enable policy makers to more effectively deal with them.

### **The negative case for nominal income targeting**

As noted earlier, the case against inflation targeting has in large part rested on the argument that an adherence to the framework in the face of adverse supply shocks, such as an increase in the global oil price, encourages central banks to tighten monetary policy inappropriately. Critics argue that this happens because inflation targeters focus narrowly on headline inflation, which rises in the wake of the supply shocks, and neglect real growth, which declines (Friedman 2004a; Friedman 2004b; Frankel 2012). It is unsurprising that nominal income targeting was introduced by James Meade (1978) in his Nobel acceptance lecture on “internal balance” where his concern was precisely with the joint attainment of full employment and price stability.

Targets for the money supply – since this was the alternative nominal anchor in the late seventies – would encourage policymakers to deflate the economy perversely following an aggregate supply shock, Meade (1978: 429) argued, while a target for nominal income would not<sup>8</sup>.

Proponents of inflation targeting have long since countered that the framework has never implied a disregard for real output in the deliberations of the monetary authorities. For more than two decades practitioners and scholars of inflation targeting have distinguished flexible from strict inflation targeting, a distinction which turns on the presence (flexible) or absence (strict) of real output in the objectives of the policymaker – a distinction that Svensson (2009) updated in light of the experience and reaction of inflation targeting central banks during the international financial crisis. All known cases of inflation targeting are examples of flexible targeting. In practice this means that the central bank has at least two objectives, the first is to keep inflation close to the numerical inflation target or target range, and the second is to keep the economy growing at or near its potential growth rate (as determined by the expansion of capital and labour and the rate at which productivity is expanding).

There is an abundance of evidence for the flexibility of actual inflation targeting based on direct statistical estimates of the policy behaviour of central banks (in the South African literature an example is: Ortiz and Sturzenegger 2007), as well as indirect evidence based on the length of the horizon over which inflation expectations are meant to cohere with the target, with longer horizons indicating more flexibility. The prominent role of core measures of inflation (Walsh 2009: 226) (which strip away the impact of the supply shocks that so concern the critics) is further evidence of the flexibility of inflation targeting. The observed tolerance by inflation targeting central banks for inflation beyond the target range over substantial durations when the headline inflation is thought to be driven by supply shocks (Roger 2009), adds to the weight of evidence that practical inflation targeting is always flexible inflation targeting.

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<sup>8</sup> Corden (1981) and Tobin (1981) were other early proponents of nominal income targets while Argy (1991) surveyed the early literature.

In order to formalise these elements of flexibility in the framework, a number of inflation targeting central banks have specific institutional arrangements that allow for temporary deviations of headline inflation from target. In the United Kingdom, for example, deviations from the formal target is permitted, but require the governor of the Bank of England write a public letter to the Chancellor of the Exchequer explaining (i) the nature and causes of the breach, (ii) measures taken to correct it, and (iii) the time horizon over which the Bank expects inflation to return to within the formal target range. A number of other inflation targeting central banks, including those in Iceland, Israel, Brazil, Thailand, Norway and New Zealand, have adopted similar arrangements. The Bank of Canada is officially permitted to “look through” transitory changes in headline inflation by focusing on core measures that are considered to better reflect the underlying trend in inflation. Under these circumstances, the Bank of Canada is required to demonstrate why external supply shocks are the reason for the above-target rise in prices of domestic goods and services, and why the breach is not expected to persist beyond the time it takes for monetary policy to have its full effect.<sup>9</sup>

Proponents of inflation targeting argue that far from restricting the central bank’s ability to respond to fluctuations in output, the existence of formal inflation targets in fact reduces the costs and trade-offs of doing so (Mishkin and Schmidt-Hebbel 2007). For example, in response to a supply side shock, public knowledge of the central bank’s formal inflation preference helps to keep inflation expectations anchored and prevents a self-fulfilling increase in expectations over future price developments. Further, the requirement that central banks clearly explain why breaches have occurred – and how and when inflation will return to within the acceptable range – enhances the clarity over the central bank’s expected course of action in response to the shock (will simultaneously promoting transparency and accountability of independent monetary authorities).

The practical question for inflation targeting central banks, then, is how much weight to give to inflation and how much to output. Too much weight on inflation exacts an unbearable cost in

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<sup>9</sup> It should be noted that this arrangement places a considerable burden on the central bank to effectively communicate the complex time- and state-varying emphasis on different measures of inflation, and risks a loss of credibility if headline measures remain elevated above the target level for extended periods of time.

terms of output volatility, while an overemphasis on output undermines the credibility of the central bank's commitment to low and stable inflation. This introduces a second theme in the negative case against inflation targeting, Frankel's claim that central banks cannot make this decision about the relative importance of inflation and real output since they cannot influence these two macroeconomic aggregates separately.

This argument by Frankel effectively takes us back to a troubled era in monetary economics, namely the 1970s, when policy makers and economists doubted the ability of central banks to control inflation. But a generation of evidence has since dispelled those earlier concerns, with the theoretical arguments of especially Lucas (1976) and Lucas and Sargent (1981) borne out by the experience of the Volcker disinflation (Goodfriend 2007). The evidence that inflation itself is a policy outcome and that prudent monetary policy leads to sustained lower and stable inflation with no output cost is now a matter of historical record. The pursuit of prudent policies by central banks in the industrialised countries since the early 1980s, followed by an increasing number of central banks in emerging market economies, has resulted in an unprecedented period of price stability for the post-War era, and demonstrated that policy authorities should take responsibility for controlling inflation and can do so with the tools of monetary policy. This vast improvement in the conduct of monetary policy benefitted from theoretical and institutional breakthroughs. These include the identification of incentive problems (time inconsistencies under principal-agent models) in monetary policy; and the institutional solution to these problems through the delegation of the responsibility for price stability to central banks that are operationally independent, yet rule-based to the extent that they face clear constraints on the discretion with which they use powerful policy tools and are subjected to a transparent framework for accountability and public evaluation.

The successes of central banks over the past three decades also owe a considerable amount to a deeper understanding of the critical role of inflation expectations in the process of inflation. As noted earlier in reference to the logic of inflation targeting, the critical insight from this vast

body of work<sup>10</sup> is that by anchoring expectations, the central bank creates the focal point for private sector price decisions that deliver low and stable inflation on a sustained basis. Frankel (2013) has recently challenged this result, claiming instead that it is nominal income and not inflation that responds to changes in the stance of monetary policy<sup>11</sup>. If true, his claim overturns the well-established causal relationship between monetary policy, inflation expectations and realised inflation. Logically, this break requires either (i) that inflation is not driven by inflation expectations, or (ii) that monetary policy does not affect inflation expectations. Neither of these two arguments can be sustained in the face of the evidence of thirty years though (Woodford 2005; Goodfriend 2007).

Since the negative case against inflation targeting based on its perceived rigidity in response to supply shocks, fails both in theory and when held up to the light of central banks' experience and behaviour over the past three decades, we now consider whether inflation targeting contributed to the inability of central banks to solve two remaining controversies in monetary economics: the possible inclusion of backward-looking factors in policy decisions; and the problems of monetary policy under conditions of the zero lower bound, the liquidity trap and the attempt to escape from deflationary pressures.

The first issue has been extensively debated in the monetary economics literature, with seminal contributions by leading monetary economists Lars Svensson (1999) and Michael Woodford (2011; 2012). At the heart of the issue is whether monetary policy should take past periods of over- or under-achievement of key economic variables (whether expressed as inflation relative to target, or a persistent positive or negative output gap) into account when setting policy in a forward-looking manner. In short, should monetary policy “compensate for past errors” or should it “let bygones be bygones”?

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<sup>10</sup> This work started with the application of the rational expectations theory, as pioneered by Muth (1961), to monetary policy by the likes of Lucas (1972), Sargent and Wallace (1975), Barro (1977) and Kydland and Prescott (1977).

<sup>11</sup> In Frankel's words: “Much public speculation would ensue, as to how the 5.5% breaks down between real growth and inflation. The truth is that the central bank has no control over that - monetary policy determines the total but not the breakdown...” (Frankel 2013).

For an inflation targeting central bank, the adoption of the “compensation approach” would imply that periods of undershooting the inflation target should be offset by attempts to generate a comparable period of overshooting the inflation target (and *vice versa*); while the “bygones approach” suggests that the central bank simply continues to try and bring forecasted inflation back in line with the target as soon as possible and at the smallest possible cost in terms of output volatility. Woodford (2011) has argued in favour of the former and demonstrated its optimality through a stylised model. In terms of practical proposals for the design of the monetary policy framework, proponents of the compensation view have called for central banks to consider replacing their inflation targets with price-level targets – a proposal the Bank of Canada took sufficiently seriously to initiate a large research project to investigate the merits of such a transition (of which the outcome was ultimately to stick with inflation targeting). When governor Carney of the Bank of Canada speculated about a possible nominal income target for the United Kingdom, he specifically referred to a level-target, i.e. a form of nominal income target analogous to a price-level target for inflation, where bygones are not treated as bygones (reported in Jones 2012).

While the appropriate offsetting response under inflation targeting to protracted periods of over- or undershooting the inflation target is still a matter for further debate and analysis in monetary economics, central banks have resisted the call to abandon inflation targets for price-level targets. The reasons for this resistance hold great relevance to the discussion around the practical problems of potentially moving to nominal income targeting (discussed below). They include: (i) that the communication of the transition to price-level targeting would be difficult to explain and certainly involve some costs and risks to the anchoring of inflation expectations; (ii) that, even beyond such a transition period, inflation is simply an easier concept to understand and communicate about, which is critical for the effectiveness and efficiency of monetary policy<sup>12</sup>, (iii) the difference in outcome between inflation- and price-level targeting is minimal if breaches to the target are not consistently biased in one direction or another, (iv) the results of

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<sup>12</sup> A basic tenet of sound institutional design is also that the public is able to understand the policy process and the rules that govern policy makers’ decisions, in order for policy makers to be evaluated in real time. While building this public understanding is always a work in progress under inflation targeting, it is highly questionable that this project will be enhanced by a move to price-level targeting (or nominal income targeting).

an optimal policy response under price-level targeting is hugely dependent of the specification of the model through which it is evaluated, and (v) the widespread agreement that inflation targeting has been remarkably successful of anchoring inflation expectations and delivering price stability without entailing a cost in real output or volatility (Mishkin and Schmidt-Hebbel 2007; Walsh 2009). Further, at a broader level, it is important to note that the debate around inflation- versus price-level targeting essentially amounts to one of *rates of change* versus *levels*. A move in favour of nominal income targeting does nothing to resolve this: a decision around the targeting of *nominal GDP growth rates* versus *the level of nominal GDP* would still have to be made.

A final concern for critics of inflation targeting is that it is a singularly ineffective framework for the particular circumstances and policy challenges encountered with monetary policy is at (or near) the zero lower bound, a liquidity trap encumbers the transmission of policy and the economy faces significant deflationary pressures (including below-target inflation expectations). There is an enormous body of work around this combination of challenges, as well as on the specific individual elements, which has been comprehensively surveyed (Eggertsson and Woodford 2003; Svensson 2003; Eggertsson 2008).

Since Keynes's General Theory, macroeconomists have sought alternative policy instruments to step in when interest rate policy runs out of scope at the zero lower bound. Accommodating fiscal policy was an early candidate and has returned to centre stage in the wake of the international financial crisis. Central banks also have alternatives to interest rate policy though and their use of balance sheet policies has raised difficult practical and theoretical questions. The critical question is whether the expansion the central bank's balance sheet through asset purchases (such credit and quantitative easing, and the Federal Reserve's "Operation Twist" programme), are effective at providing an additional degree of monetary easing once interest rates are at or near the zero lower bound? There is no consensus yet on the effectiveness of the various balance sheet policies used during the crisis.

Both inflation targeting and nominal income targeting provide anchors for the central bank's interest rate policy. With the exception of foreign exchange market interventions monetary policy has, over the last thirty years, become identified with interest rate policy (Buiter 2012).



Indeed, Svensson (2012) distinguishes between the modern usage of “monetary policy, which he identifies narrowly with interest rate policy and “financial policy” which comprises balance sheet policies by the central bank. It follows that substituting nominal income targeting for inflation targeting resolves none of the outstanding questions about the alternative policy tools required at the zero lower bound.

Given the track record of inflation targeting in delivering price stability over the past two decades, the burden of proof lies with opponents of the framework to demonstrate (i) that it is inflation targeting, specifically, that is preventing what would otherwise have been a more rapid recovery from the post-financial crisis recession, rather than other factors that would not cease to exist with the adoption of a new policy framework (such as the deleveraging of households and corporations, large debt overhangs in the public and private sector, low levels of investment and technological progress, etc.), and (ii) that the contribution of any alternative monetary policy framework would solve these problems at a reasonable cost (including the potential erosion of the central bank’s credibility and an secular increase in long-term inflation expectations).

To summarise, the negative case for replacing inflation targeting as currently practiced with nominal income targeting based on the perceived inflexibility of the former framework fails on both theoretical and empirical grounds. Further, the case against inflation targeting based on the sub-optimality of its compensation for past errors has been effectively challenged on a number of critical points – and, nominal income targeting would face precisely the same difficult choice. Finally, we have argued that the problems associated with the zero lower bound, the liquidity trap and the prevalence of deflationary forces have less to do with the choice of anchor for interest rate policy than with the search for effective policy tools once the limits to the power of the conventional interest rate tool have been reached. We now turn to the positive case for nominal income targeting.

### **The positive case for nominal income targeting**

Frankel’s positive case for nominal income targeting is based on the need for aggregate demand stimulus in recession or near-recession circumstances. With policy interest rates near the zero

lower bound and no inflationary pressure, he argues that real interest rates could be lowered if only inflation expectations were pushed higher (Frankel 2012). By announcing a nominal income target of say 4% for the United States in a period of zero expected GDP growth, inflation would have to rise to 4% to satisfy the target. The expectations of higher inflation would, in turn, lower the real interest rate, providing the demand stimulus needed to get the economy growing again. As real GDP growth rises, inflation expectations would automatically adjust down towards say 2%, thus leaving long run inflation expectations anchored at an appropriate level, while providing the required demand stimulus.

It is striking that this positive case for nominal income targeting is based on an aggregate demand stimulus via the interest rate channel, while the theoretical difference between nominal income and inflation targeting is meant to turn on the greater robustness of income targeting relative to aggregate supply shocks (Frankel 2012). The theoretical support for this claim was provided by Frankel and Chinn (1995) in a comparison of four alternative nominal anchors: a monetary target, a price level target, a nominal income target and an exchange rate target. In their model the nominal target dominated the alternatives relative to a standard loss function for the monetary authorities. But that result does little to inform the current debate: the price level target modelled in Frankel and Chinn (1995) disregards any response to the output gap (analogous to an inflexible inflation target) and, as mentioned above, that is the crucial difference between all inflation targeting regimes as implemented and the version of inflation targeting that has long since raised theoretical concerns.

In Frankel and Chinn's (1995) model a flexible price level target would be indistinguishable from their nominal income target. This result holds more generally. At normal levels for the policy rate there is simply no difference between the policy reaction function of a flexible inflation targeting and a nominal income targeting central bank. Under both systems authorities respond to an objective function driven by the gap between forecasted and targeted inflation on the one hand and the forecasted real output gap on the other.

It is not correct, therefore, to expect any difference in the demand side impact between the two policy anchors in general. However, proponents such as Frankel argue that important

differences arise at the zero lower bound as mentioned above. These circumstances arose in Japan during the 1990s and have become more common in the wake of the international financial crisis. Policy makers have responded with two additional strategies to their arsenal since the international financial crisis: forward guidance and quantitative easing.

Forward guidance reflects a commitment by the central bank to keep the interest rate very low for a protracted period with the purpose of raising inflation expectations. The Federal Reserve has used forward guidance to a considerable extent in recent years, as indeed have a number of noted formal inflation targeting central banks.<sup>13</sup> The extent of the Federal Reserve's forward guidance has increased since the start of the crisis. In December 2008 the Federal Open Market Committee said "The committee anticipates that weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time." In March 2009, it replaced "some time" with "an extended period", before giving greater specificity to the phrase by announcing that the committee expected the funds rate to remain exceptionally low until "at least...mid-2013." The January 2012 statement increased the anticipated period of exceptionally low rates further to "late 2014" (Campbell et al. 2012: 2).

Note, however, that forward guidance is not a policy tool or an adjustment of a policy tool – rather, it is a commitment to a particular setting for one policy tool, the short-term interest rate. The intended demand side stimulus arrives only if private inflation expectations rise in response to the forward guidance. By contrast, quantitative easing introduces a new policy instrument – the balance sheet of the central bank through direct asset purchases – and uses it to provide direct stimulus to the economy along a number of asset market channels.

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<sup>13</sup> In April 2009, the Bank of Canada (2009: 1) noted: "With monetary policy now operating at the effective lower bound for the overnight policy rate, it is appropriate to provide more explicit guidance than is usual regarding its future path so as to influence rates at longer maturities. Conditional on the outlook for inflation, the target overnight rate can be expected to remain at its current level until the end of the second quarter of 2010 in order to achieve the inflation target." A few other inflation targeting central banks, such as the Reserve Bank of New Zealand (since 1997), Norges Bank (since 2005), the Swedish Riksbank (since 2007) and the Czech National Bank (since 2008), have gone even further in providing quantitative forward guidance by publishing their own projection or conditional forecasts of the future path of policy rates.

The positive case for nominal income targeting is, therefore, analogous to the case for forward guidance: if successful it will raise inflation expectations, thus providing the hoped for demand stimulus. But how inflation expectations are meant to rise without an adjustment of the interest rate, the use of the central bank's balance sheet or the use of some other policy instrument is not clear. The difficulty in a recessionary economy with very low inflation is precisely to get inflation expectations higher and announcing a higher inflation target (which is implied by nominal income targeting) is not sufficient, since the authorities have not indicated the policy tools they will use to generate the inflation.

Svensson (2003) proposed a “foolproof” exit from deflation a few years ago that worked via a currency depreciation to raise the domestic price level and propel the process of inflation via a balance sheet intervention in the foreign exchange market. The point of Svensson's method is that the anchor for interest rate policy (inflation targeting in his example) alone cannot determine the path to higher inflation expectations and that a balance sheet policy is required to bring about higher inflation expectations. Additional instruments are required at the zero lower bound, with balance sheet policies at the central bank or fiscal policy the main alternatives. In these circumstances the success or failure of the demand stimulus lies not with the nominal income target as an alternative to an inflation target, but with the success of the alternative instruments. While there is considerable uncertainty over the effectiveness of these new instruments, as well as around the calibration of their impact on real and nominal outcomes, it is clear that the mere announcement of a higher inflation target as implied by a move to nominal income targets has little chance of success. What is needed is a credible commitment around the achievement of the targets through a detailed explanation of how instruments will be used.

### **Practical considerations around nominal income targeting**

The arguments presented in this article thus far have focused largely on the theoretical support for the primacy of inflation targeting as a monetary policy framework over that of nominal income targeting (and other frameworks built around other nominal anchors). However, the case against nominal income targeting is further supported by a series of practical challenges

that would attend its implementation. These have been discussed elsewhere (Goodhart et al. 2013), but it is instructive to briefly consider how a number of operational challenges that would emerge from the adoption of nominal income targets would affect monetary policy in South Africa. These challenges are universal, but we are specifically concerned with their implications locally.

First is a concern about the quality and timeliness of data that is critical to the analysis of monetary policy and the communication of the monetary policy stance. In most countries, inflation data is produced on a monthly basis, while GDP data is only available on a quarterly basis. Moreover, GDP data usually arrives with a significant lag, with considerable and obvious negative implications for the conduct of forward-looking monetary policy. Finally, GDP data is more prone to revision once published than inflation data (van Walbeek 2007), increasing the risk of a policy error as a result of wrong information about the state of the economy. Frankel and Chinn (1995) acknowledged this practical problem in their theoretical analysis of nominal income targeting.

Second, the clarity and ease of communication is likely to be reduced with a switch to nominal income targets. Nominal income targeting places an extra burden of communication on a central bank. Not only must the public understand the concept and process of inflation, but this has to be expanded to nominal income or GDP growth. Inflation and the Consumer Price Index are reasonably well-understood concepts and indicators. By contrast, the central bank is likely to face not only significant difficulties in communication around the transition period to a nominal income, but also to find that communication around concepts like nominal GDP to be more difficult on a more permanent basis.

Third, nominal income targeting may obfuscate ultimate responsibility for economic outcomes and consequently reduce the accountability of independent monetary authorities. A considerable part of the appeal of inflation targeting lies in the fact the central bank is charged with achieving an objective ultimately under its control. With such a target the central bank can be held accountable for its policy decisions and important consideration given the degree of independence enjoyed by central banks in the interest rate policy. The same is not true with a

nominal income target, which combines inflation (over which the central bank has ultimate control) and real output growth (over which the central bank has no control in the long run). Adopting a nominal income target would, therefore, diminish the accountability of the central bank and undermine the political base for independent interest rate policy.

Finally, policymakers' uncertainty and political sensitivity over real growth potential of the economy could significantly undermine the effectiveness of nominal income targeting in practice. The implementation of a nominal income target requires an estimate of the long-run growth potential of the economy (i.e., the sustainable non-inflationary real GDP growth rate). In South Africa, econometric studies suggest this rate to be in the range of 3-4% per annum (Kemp 2012). If one assumes a continuation of the current 3-6% band for inflation the implied nominal GDP growth target would be a range from 6-10%.

However, the estimation of the non-inflationary real GDP growth rate is controversial and highly uncertain (Kemp 2012). Moreover, it is probable that it will be the subject of considerable political controversy (as noted by Goodhart et al. 2013). In South Africa government has a stated growth target of 6% real growth per year, which will have to be revised downward if government is to avoid having contradictory growth targets. Alternatively, and this seems more likely, the nominal income target will have to incorporate the higher real growth target of 6% (which would imply a nominal GDP growth target of 9-12%). Since the central bank cannot deliver on the growth component of this target, they will be forced to deliver higher average inflation. The proponents of nominal income targeting favour the policy for reasons of stabilisation policy during a severe downswing, but in South Africa the risk is that it becomes part of the discussion about the long-run sustainable growth rate of the economy, pushing monetary policy far beyond its prudent reach.

## **Conclusion**

This article has presented a number of arguments about the current debate on nominal income targeting. The first point is that there are many open challenges in monetary policy and central banking to which a switch between inflation targeting and nominal income targeting contributes little. Second, the negative case for nominal income targeting turns on either (i) a

misrepresentation of the role real output plays in a flexible inflation targeting system; or (ii) the claim that monetary policy cannot influence inflation as distinct from nominal income. This negative case for nominal income targets falls foul of the historical record and theory. Third, the positive case for a nominal income target turns on the ability to raise inflation expectations in a deflationary period, without specifying how the monetary authorities will use their policy tools (interest rates and especially their balance sheet) to that end. Finally, we have argued that in addition to the largely theoretical arguments for the primacy of inflation targeting over monetary policy frameworks built around alternative nominal anchors, any potential switch to nominal income targets would also suffer from significant practical drawbacks. The challenge in implementing policies that address the difficulties of the zero lower bound, the liquidity trap and pervasive deflationary forces lies with the alternative policy tools and the many shortcomings we have discovered in their management in recent years, not with the choice of a nominal anchor.

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