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### Using Interest Rates as the Instrument of Monetary Policy: Beware Real effects, Positive Feedbacks, and Discontinuities

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December 2013

#### Abstract

This paper discusses central banks' use of the interest rate as the instrument of monetary policy, in light of a reconsideration of macroeconomic theory induced by the financial crisis and Great Recession. Three main guiding principles for the future conduct of interest rate policy are identified: beware real effects; beware positive feedbacks; and beware discontinuities. The paper also reflects on the use of policy targets as a "quasi-instrument" of stabilization policy.

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## Abstract

This paper discusses central banks' use of the interest rate as the instrument of monetary policy, in light of a reconsideration of macroeconomic theory induced by the financial crisis and Great Recession. Three main guiding principles for the future conduct of interest rate policy are identified: beware real effects; beware positive feedbacks; and beware discontinuities. The paper also reflects on the use of policy targets as a “quasi-instrument” of stabilization policy.

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## 1 Introduction

The context for this paper is a familiar one. Prior to 2008, monetary policy was celebrated as a “science” that had successfully contributed to the Great Moderation (Clarida et al. (1999); Galí and Gambetti (2009)). But events immediately thereafter provided a rude awakening, as the financial crisis and Great Recession plunged first the US economy and then the rest of the world into the severest downturn since the 1930s.

The purpose of the paper follows immediately from these developments. It reflects on use of the interest rate as the instrument of monetary policy in light of a reconsideration of macroeconomic theory induced by the crisis. The discussion is organized as follows. The next section offers some brief reflections on the current state of monetary macroeconomics. In section 3, several lessons for the future conduct of monetary policy are discussed. These include lessons for interest rate policy, and reflections on the possible use of policy targets as “quasi-instruments” of stabilization policy. The final section offers some conclusions.

## 2 Reflections on the current state of monetary macroeconomics

Based on developments in monetary macroeconomics over the last two decades – and in particular the rise of the “new consensus” macroeconomics (NCM) – it is tempting to conclude that “we’re all endogenous money theorists now”, at least superficially. Hence Goodhart (2009) argues that, despite the controversies that accompanied monetarist experiments during the 1970s and 1980s, there is now general acceptance among academic economists that the interest rate (rather than the quantity of money in circulation) is the instrument of monetary policy. But this conclusion is reached in different ways. In Post-Keynesian economics (PKE), there exists a bank-centric theory of endogenous money that shows why the interest rate *must* be the central bank’s policy tool.<sup>1</sup> In the NCM, however, the observed instability of the demand for money makes

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<sup>1</sup>See, for example, Arestis and Sawyer (2006).

it prudent for central banks to *choose* to use the interest rate as their policy instrument (thus rendering the quantity of money circulating an endogenous “residual”).

The theoretical differences between PKE and NCM are only amplified if we consider the key policy question confronting the monetary authority: what should the central bank *do* with its interest rate instrument? In PKE we find concern with real-monetary interactions, instability, and even crisis in a monetary-production economy that has no “natural” center of gravitation. These are potentially treacherous waters, of which the central bank needs to be aware. In the NCM, however, the central bank need only use a Taylor rule for adjusting the interest rate and, in so doing, will find that it can fine-tune the economy to its “natural” level of real activity consistent with an inflation target of its own choosing.<sup>2</sup> This is “monetary policy made easy”.

But the financial crisis and Great Recession revealed the NCM to be a “fair weather” model (Goodhart (2009)). Initially, the NCM could only explain the crisis as a freak “tail event”. Subsequently, it has furnished explanations based on *post hoc* revisions to the basic dynamic stochastic general equilibrium (DSGE) model on which the NCM rests – in other words, by a process of “hypothesizing after the event”. These responses only serve to draw attention to the massive predictive failure the NCM has suffered since the onset of the crisis. Not only did it fail to see the crisis coming (these were events that should not have happened, least of all in the midst of a Great Moderation), but the NCM is still “getting it wrong”. Consider, for example the prediction of strong growth in the US in the decade after 2010 in Feldstein (2010), based in part on the expectation of rapid recovery from the depressed economic conditions in the immediate aftermath of the Great Recession towards the economy’s supply-determined potential output path. In light of this second wave of predictive failure, mainstream macroeconomists now confront the “puzzle” of continued high unemployment in the US (see, for example, Coibion et al. (2013)).

In PKE models, however, the crisis is explicable as an endogenous development of the sort long envisaged by Hyman Minsky and his followers – the product of increasing financial fragility in the course of a long episode of post-war growth that witnessed the gradual unraveling of financial institutions put in place in the aftermath of the Great Depression (Wray (2009)). Macroeconomists associated with the PKE tradition saw the crisis coming, moreover (see, for example, Godley and Izurieta (2002); Palley (2002)). The Great Moderation was understood as concealing a latent financial fragility stemming from building household indebtedness – a source of expenditures that, in turn, concealed the “rotten core” of an aggregate demand generating process hollowed out by rising income inequality (Cynamon and Fazzari (2008, 2013); Barba and Pivetti (2009); Setterfield (2013); Wisman (2013)). From this point of view, the underlying causes of the “puzzle” of continued high unemployment in the US identified by Coibion et al. (2013) are readily apparent: absent the automatic convergence of aggregate demand toward levels consistent with potential output, demand formation must be seen as an innately *historical* process (Cynamon et al. (2013)). On this view, the breakdown in the unsustainable debt-financed, consumption-led aggregate demand generating process that existed prior to the crisis created the possibility of a secular stagnation in aggregate demand formation, leading to a secular stagnation in output and employment. It is the realization of this possibility that explains post-crisis US experience.<sup>3</sup>

The stark contrast between the predictive success and failure of PKE and the NCM over the past 15 years invites the conclusion that PKE models have emerged as the victors in a real-world “trial by forecast”. If this conclusion is accepted, what are the lessons for monetary policy? Specifically, what do PKE macro models tell us about how central banks should approach interest rate manipulations over the coming years?

### 3 Lessons for the future conduct of monetary policy

PKE macro models draw attention to three general principles that should guide the future conduct of central bank interest-rate-setting behavior: beware real effects; beware positive feedback; and beware discontinuities.

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<sup>2</sup>The seeming ability to pursue *two* policy targets (output/employment and inflation) with a single policy instrument in this fashion is sometimes referred to as the “divine coincidence”. See Blanchard and Galí (2005) and, for a critique, Caldentey and Vernengo (2013).

<sup>3</sup>Coibion et al. (2013) do acknowledge the need for a sustained aggregate demand stimulus (via monetary and fiscal policy) to solve the problems confronting the US, even though they fail to identify issues associated with aggregate demand formation as the essential *cause* of these problems.

Each of the principles is discussed, in turn, below.

### 3.1 Beware real effects

The potential real-side effects (on output, employment, and growth) of monetary policy is a well-rehearsed theme in PKE. In short, there being no unique supply-determined equilibrium towards which the real sector of the economy automatically gravitates, PKE models show that monetary policy can permanently affect real-side equilibrium. It is important that this principle be reflected in central banks' mandates – which should extend beyond inflation targeting and include concern with growth and employment<sup>4</sup> – and that central banks be aware of the real effects of their interest rate manipulations in the ordinary course of conducting monetary policy.

There is, however, no need to throw out the baby with the bath water. To the extent that inflation is a problem – and it is a (real or perceived) problem in many contemporary developing economies – it is important to understand that according to PKE, an inflation target can be set and achieved without harming real-sector performance *if* appropriate instruments are utilized (Setterfield (2006b); Lima and Setterfield (2008)). In this context, “appropriate instruments” are those that are sensitive to the underlying structure of a monetary-production economy, and in particular its propensity for non-transitory real-monetary interactions. This approach – which might be called “soft” inflation targeting – is to be contrasted with what Caldentey and Vernengo (2013) identify as “fully fledged” inflation targeting (FFIT), which involves (*inter alia*) exclusive and dedicated use of monetary policy in the pursuit of an inflation target, and which from a PKE perspective risks sacrificing growth and employment at the altar of low inflation.

It is worth remarking at this juncture that to extent that inflation is a problem, and to the extent that this is so because of wage-push mechanisms in the labour market that have effectively been “throttled out” of Anglo-Saxon labour markets by the creation of an institutionalized “incomes policy based on fear” (Setterfield (2006a, 2007)),<sup>5</sup> the need for “soft” inflation targeting is by no means altogether bad news. Hence according to the conflict inflation theory that is compatible with the PKE vision of a monetary-production economy, the same wage-push channel that helps cause or propagate inflation also helps to support the wage share of income. This, in turn, works against the adverse income redistributions that have hollowed out the aggregate-demand generating mechanisms in Anglo-Saxon economies, and resulted in the increasing (and ultimately unsustainable) debt-dependency of households eager to finance increasing consumption expenditures that they are unable to fund from income growth. As noted earlier, from a PKE perspective, these developments were an important underlying cause of the financial crisis and Great Recession (Cynamon and Fazzari (2008, 2013); Barba and Pivetti (2009); Setterfield (2013); Wisman (2013)). The “yin and yang” of the wage-push channel, therefore, is that it simultaneously causes/propagates inflation *and* helps support a more equal distribution of income that is, in turn, *functional to financially sustainable growth and development*. The wage-push channel therefore needs to be properly managed in the course of growth and development, not eliminated – which, every bit as much as ignoring inflation altogether, would also amount to throwing the baby out with the bath water. Once again it is encouraging to note that acknowledgment of these issues has already informed central bank policy in some developing economies, including Argentina (see, for example, Marcó del Pont (2013)).

### 3.2 Beware positive feedbacks

#### 3.2.1 The cost channel

Raising interest rates increases corporate debt servicing costs. Since the pricing decisions of firms are cost-based, this may affect pricing and price dynamics (i.e., inflation), setting up a positive relationship between the interest rate and the rate of inflation. This cost channel of monetary transmission has been widely

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<sup>4</sup>It is encouraging in this regard to note the reforms of the Organic Law outlined by Marcó del Pont (2013), which have had precisely this effect on the mandate of the Banco Central de la República Argentina

<sup>5</sup>The term “incomes policy based on fear” was coined by Cornwall (1990), and formalizes the labour market “fear factor” that former Federal Reserve chairman Alan Greenspan understood to be responsible for holding US inflation in check during the 1990s (Greenspan (1997)).

analyzed in the NCM literature,<sup>6</sup> and with good reason: any self-reinforcing relationship between interest rates and inflation suggests that raising rates in an attempt to combat inflation may be self-defeating.

Economists associated with PKE have also warned central banks about the potentially self-defeating consequences of using interest rate hikes to bring down inflation in the presence of the cost channel (see, for example Wray. (2007)). But as Lima and Setterfield (2011) show, in a monetary-production economy, it is the *choice of policy regime* rather than the existence of the cost channel that affects the success of stabilization policy. As long as the policy regime is a good fit with the underlying structure of a monetary-production economy,<sup>7</sup> stabilization policy is effective regardless of the strength of the cost channel of monetary transmission. This is good news for central bankers. It suggests that if the policy advice outlined in the previous sub-section is heeded, then interest rates can be manipulated without concern that macroeconomic stabilization will be thwarted by the cost channel.

### 3.2.2 Debt servicing and total expenditures

Just as raising interest rates increases corporate debt servicing burdens, so, too, does it increase *household* debt servicing commitments. This redistributes income from debtor to creditor households, which is traditionally understood to act as a *drag* on total expenditures (and hence real activity) in PKE models (Dutt (2005, 2006), Hein (2012, chpt.5)).

According to Setterfield and Kim (2013), however, the way that households service their debt has an important effect on how debt-servicing affects consumption spending and hence aggregate activity. If debt servicing is treated as a household expense rather than a deduction from income (on which, see Cynamon and Fazzari (2012)), and if this expense is treated as a substitute for savings, then redistribution from debtors to creditors will *boost* consumption spending, demand, and aggregate activity. The result is that raising interest rates can stimulate the economy. The risk that this creates is that “contractionary” monetary policy – rate increases in response to an economy that is perceived to be over-heating – can become self-reinforcing (through total expenditures) on the real-side, as higher rates that stimulate activity provoke further rate increases, and so on.

### 3.3 Beware discontinuities

One obvious discontinuity, of which central bankers are only too aware in the wake of the Great Recession, is the zero lower bound. Since the nominal interest rate cannot fall below zero, the capacity of central banks to respond to macroeconomic conditions by cutting interest rates is limited as a matter of logic. The constraint imposed by the zero lower bound is all the more likely to hamper monetary policy if nominal interest rates are low to begin with (so there is less room for maneuver initially) and if household and corporate spending is interest inelastic (so that larger rate cuts are required to create a stimulus to spending of any given size). Under these conditions, it will be difficult for the central bank to offset an initial drop in the demand for loans by lowering rates so as to create a increase in the quantity of loans demanded of equal magnitude.

It is important to note, however, that the zero lower bound is not the only discontinuity of which central banks need to be aware when manipulating interest rates. According to PKE, important discontinuities can arise from *private sector debt accumulation*. The concern here arises from two sources. First, private sector debtors cannot autonomously create money to service their debts: they are, instead, cash-flow constrained with respect to their capacity to meet their debt-servicing obligations. Second, if foresight is deficient due to fundamental uncertainty, it is possible that, as a result, the dynamics of debt accumulation (and hence the consequences of current borrowing) will not be fully anticipated by the private sector. These considerations combine to raise the specter of private-sector *default*.

As emphasized by Goodhart (2009), inattention to the possibility of default is the major “fair weather” problem with the NCM. Hence in the NCM, changes in interest rates are financially benign: they trigger

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<sup>6</sup>See Lima and Setterfield (2010) for a recent survey of this literature.

<sup>7</sup>Once again, “good fit” refers here to the sensitivity of a policy regime to the underlying structure and properties of a monetary-production economy.

no more than optimal, intertemporal substitutions of expenditures by far-sighted households bent on consumption smoothing. In this environment, rate manipulations designed to engineer “soft landings” in the wake of a boom can only help moderate aggregate fluctuations. But according to PKE, raising interest rates and so increasing corporate and household debt servicing burdens after a substantial build-up of private sector indebtedness can trigger discontinuities in expenditures, as private sector debtors default and/or engage in deleveraging.<sup>8</sup> The resulting “sudden stop” in debt-financed expenditures can become cumulative, as assets are liquidated (driving their prices down, antagonizing negative net worth positions, and so stimulating further retrenchment of expenditures and further asset sales) and “animal spirits” collapse (which will decrease expenditures, and so cause further deterioration in macroeconomic performance and hence further deterioration in animal spirits). These outcomes are the real danger presented by the self-reinforcing “contractionary” monetary policy identified in the previous section, which can ultimately *both* inadvertently raise the equilibrium growth rate in a cumulative fashion *and* reduce the likelihood that the growth regime will be sustained. The appropriate analogy here is not simply to a dog chasing its own tail, but to a dog chasing its own tail and, in the process, spiraling towards the edge of a cliff.

### 3.4 An alternative tool for monetary policy?

As befits an environment in which “we’re all endogenous money theorists now” (however superficially), this essay has so far focused on central bank manipulation of the interest rate in the pursuit of monetary policy. But an important lesson of PKE is the potential value of policy targets in the conduct of monetary policy (and stabilization policy in general).

To some extent the NCM has “hijacked” this theme, a development which is, in turn, easily understandable. Hence according to the natural rate hypothesis that is central to the NCM, the equilibrium rate of inflation is indeterminate. In this context, the central bank’s inflation target can create an otherwise non-existent “nominal anchor” for the economy, effectively setting the equilibrium rate of inflation by fiat. As previously noted, the “divine coincidence” then ensures that with the correct interest rate manipulations, the central bank can guide the economy towards an equilibrium consistent with the economy’s “natural” level of real activity and the central bank’s preferred rate of inflation.

However, the importance of policy targets in the conduct of stabilization policy is a theme that finds its fullest expression in PKE. In a monetary-production economy, both real and nominal outcomes depend on expectations. But because of fundamental uncertainty, these expectations have no obvious anchors. As a result, there is always a potentially useful “direction setting” role for policy targets in a monetary production economy: expectations formed under uncertainty are based in part on conventions, and clear and credible policy targets constitute an important source of social conventions. In short, clear announcement of credible policy targets can contribute, through expectations formation, to the social construction of equilibrium outcomes in a monetary-production economy with no “natural” real or nominal anchors.<sup>9</sup> Indeed, Lima et al. (2013) find that in this environment, policy targets can substitute for policy instruments, acting as “quasi-instruments” in the pursuit of stabilization policy. Hence the authors show that even in the presence of a trade-off between inflation and real outcomes, when expectations adjust towards a policy target set by the monetary authorities, manipulation of the interest rate alone suffices to stabilize an equilibrium configuration consistent with the central bank’s target rates of inflation *and* output. Moreover, this resolution of what otherwise appears to be a clear violation of the Tinbergen principle (that there must be as many policy instruments as policy targets) is achieved even when only *some* of the community find the central bank’s policy target credible and adjust their expectations to conform with the target.

## 4 Conclusions

The NCM that has dominated macroeconomics during the last two decades makes monetary policy look easy. The central bank need only set interest rates in accordance with a Taylor rule to “fine tune” the

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<sup>8</sup>This is, of course, a longstanding Minskian theme.

<sup>9</sup>For further discussion, see Smithin (2004).

economy towards its “natural” level of real activity *and* an equilibrium rate of inflation of the central bank’s own choosing. But the NCM is a fair weather model that was discredited by the crisis – an event it failed to foresee and whose aftermath it still struggles to explain.

PKE, on the other hand, saw the crisis coming. Moreover, its “before the event” account of the sources of the crisis provides a ready-made explanation of the persistently poor global macroeconomic performance we have witnessed since. When it comes to the conduct of monetary policy, PKE suggests that the effects on the economy of interest-rate manipulation are complicated, with the potential for (long-term) real-side effects, positive feedbacks, and discontinuities. The main message of PKE is that central banks should pay more attention to these complications as they use interest rates as the main instrument of monetary policy going forward. Central banks should also give careful consideration to the potentially useful role of policy targets as both “direction-setting” devices and “quasi-instruments” of stabilization policy in a monetary production economy, in which decision making is subject to fundamental uncertainty and the economy has no “natural” real or nominal anchors.

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