

Comments on Ball “Policy responses to exchange-rate movements”

Mark Wynne¹
Federal Reserve Bank of Dallas
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Let me start by thanking the organizers of this conference for inviting me to participate in this conference on “International Experience with the Conduct of Monetary Policy under Inflation Targeting” and discuss this paper by Larry Ball.

Inflation targeting as a framework for monetary policy has grown in popularity since it was pioneered by New Zealand, Canada and the UK in the early 1990s.² At last count, as best I could tell some 20 to 30 central banks around the world employed some variant of inflation targeting as the guiding framework for their conduct of monetary policy. At the ASSA meetings last January, Andrew Rose presented a paper looking at the durability of monetary regimes and showed that, despite its relatively recent arrival on the scene, inflation targeting was by far the most durable of the regimes that countries have tried in the post WWII period (see Mihov and Rose (2007)). And indeed the performance of central banks that have adopted inflation targeting has been impressive, prompting some to ask whether this is indeed the holy grail of central banking.³

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² Bernanke, Laubach, Mishkin and Posen (1999) stress that “...inflation targeting is not a policy rule in the classical sense” (p. 22) and note that “inflation targeting as it is actually practiced confers a considerable degree of discretion on policy-makers.” (p. 22)

³ See for example Genberg (2002).

As I was preparing these comments I took down my copy of Bernanke, Laubach, Mishkin and Posen's (1999) excellent analysis of inflation targeting, and came across a note I had scribbled when I first read the book almost a decade ago. It had to do with the contrast between what the Bundesbank and the Swiss National Bank did to maintain price stability, and the practices of the inflation targeting banks as documented by Bernanke et al. Bernanke et al characterized the Bundesbank and the SNB as pursuing "hybrid" policies, or specifically, as being hybrid inflation targeters and monetary targeters. When I read that chapter of the book, I thought to myself, given the striking success of both banks at preserving the purchasing power of the currencies that are (or, in the case of the Bundesbank, were) their responsibilities, and given the way they did this, does this not suggest that perhaps all of the emphasis in the inflation targeting literature on having a clearly articulated, simple, transparent etc. strategy or framework for monetary policy might be misplaced? Those of us who come from an academic background have, I think, a natural attraction for simple rules or frameworks. Milton Friedman famously persuaded much of the economics profession that the key to price stability was a simple money targeting rule, and we all know how well that turned out. Indeed, towards the end of his life even Friedman himself conceded that "The use of [the] quantity of money as a target has not been a great success...I'm not sure I would as of today push it as hard as I once did." (see London, 2003) While the performance of inflation targeting has been impressive so far, I have at times wondered whether it too might eventually be destined for the same fate as the many other strategies that have been tried over the years.⁴

⁴ Indeed, Larry himself has raised some challenging questions about the extent to which inflation targeting regimes have made a difference: see Ball and Sheridan (xxxx).

So it is appropriate to take stock, especially at the current juncture when central banks around the world are confronted with an environment that is more challenging than anything seen since the 1970s. The period since the invention of inflation targeting has been a relatively tranquil one, at least until recently, and it has been difficult to determine with any great degree of confidence the extent to which the greater tranquility of the past decade and a half or so has been due to better monetary policy frameworks or simply good luck. However, the way the current cycle plays out is likely to be far more informative about what works and what doesn't than anything we have seen since the early 1990s, and will in no small part help determine whether the popularity of inflation targeting as a regime or framework for monetary policy survives. What does it mean to say that a country is an inflation targeter if it alters its targets in response to repeated inflation shocks? Just how long can inflation be allowed to remain outside the formal bands or target range before a central bank is no longer considered to be serious about hitting its target?

One feature that the inflation targeting central banks have in common is that they are all operating in very open economies, and continually have to confront the issue of how to respond to movements in exchange rates and Larry's paper deals with this specific question. Larry sketches out a very stylized model of a small open economy and makes two strong policy prescriptions: First, monetary policy should respond differently to changes in the price of commodity exports and changes in the demand for manufactured exports; second, output at the sectoral level should be stabilized, and not just aggregate output.

The analysis in this paper is based on a very stylized textbook model of a small open economy. Indeed, the first part of the paper (“What type of model?”) is given over to a defense of this style of theorizing, and specifically to the use of non-microfounded models for thinking about policy questions. Larry lays out the pros and cons of different modeling strategies and comes down strongly in favor of traditional textbook models for the purposes of thinking about these questions. I am more sympathetic to the use of simple non-microfounded models for thinking about policy questions than I was when I began my career, and I think Larry makes some good points in their defense. Over my years with the Federal Reserve System I have developed a greater appreciation for the insights that can be gleaned from such models and their value to policymakers.

However, for the question at hand, namely how should central banks respond to exchange rate shocks, I am not convinced that this is the right way to go. One of my first reactions on reading Larry’s paper and his defense of this style of theorizing was that perhaps models of the sort he employs in this paper are OK for positive analysis, but can we really rely on them for normative analysis, for advice about what policies governments and central banks ought to pursue? To me the analysis of policy is inherently tied up with considerations of the welfare of individual households and consumers. To get a handle on how policy ought to be conducted, surely we need to think in more detail about the environment in which consumers and firms operate, the nature of the shocks they have to deal with, and, most importantly, their ability to insure against those shocks.

In reading Larry's methodological section, I was reminded of Bob King's (1993) discussion of whether New Keynesian economics (as it was then conceived – the New Keynesian economic models of the 2000s are quite a bit different from the New Keynesian models of the early 1990s: see, for example, King (2000)) would resurrect the IS-LM model. King argued that “every macroeconomic model contains some set of equations that can be labeled as its IS and LM components, since these are just conditions of equilibrium in the goods and money markets,” going on to stress that “while some of us may choose to use the IS-LM framework to express results that have been discovered in richer models, it is not a vehicle for deriving those results.” (p. 68, emphasis added) King's concern was with the importance of expectations in thinking about policy questions and the treatment of expectations in the IS-LM model. I think much the same point can be made about the analysis in Larry's paper. I am sympathetic to the style of theorizing presented there, but I would have been a lot more convinced of the results if I had seen a more elaborated version of the model that contained workers, households and businesses seeking to make economic decisions in an environment in which the future is uncertain, households and firms take explicit account of this uncertainty in their decision making and think in intertemporal as well as intratemporal terms, and central banks have to worry about their credibility.

Indeed, for the class of questions that Larry addresses in his paper, namely, how should central banks in open economies respond to exchange rate shocks, there are abundant examples of models with the sort of microfoundations I mention here that provide useful insights that help answer these questions. The papers of Faia and Monacelli (2006), Galí and

Monacelli (2005) and Devereux and Engel (2003, 2007), to mention just a few, stand out as good examples. Now one of Larry's criticisms of models of this sort has to do with their counterfactual implications. He highlights the problems with the original version of the New Keynesian Phillips Curve, relating inflation to expected inflation and output, which shows up in many microfounded models, as an example. But there is nothing inherent in microfounded models that requires that they have some variant of the New Keynesian Phillips Curve. One could just as easily employ the sticky information assumption of Mankiw and Reis (2002) to introduce nominal rigidities, or some other friction. The empirical shortcomings of the New Keynesian Phillips Curve are not, in my opinion, sufficient grounds for dismissing an entire class of models or style of theorizing.

It is certainly a lot more difficult to come up with reasonable models of small open economies than it is to model large closed economies. Larry mentions some of the unrealistic assumptions that are often made in open economy analytical frameworks, such as interest rate parity, or purchasing power parity. While these assumptions are commonly made in textbook models of open economies, there are plenty of examples of models in the recent research literature with detailed microfoundations that relax them by employing the idea of a shock to the uncovered interest parity condition suggested by Kollmann (2002), or the local currency pricing assumption introduced by Betts and Devereux (1996) and employed by numerous authors since.

Enough on methodology. What of the substantive prescriptions that come out of Larry's analysis?

The core model is

$$Y = D(Y, r) + X(Y, e) \quad (0.1)$$

$$X(Y, e) = F(r, e) \quad (0.2)$$

Real output, Y , is determined by domestic spending D and net exports X . Domestic spending in turn depends positively on aggregate output and negatively in the real interest rate r . Net exports depend negatively on aggregate output and the real exchange rate, e , with all variables being interpreted as deviations from long run levels. Net exports in turn are identically equal to net capital outflows, which depend negatively on the real interest rate and positively on the real exchange rate.

Two alternative assumptions are used to close the model. First, the central bank is assumed to keep the real interest rate constant, which yields

$$Y = D(Y) + X(Y, e) \quad (0.3)$$

$$X(Y, e) = F(e) \quad (0.4)$$

Alternatively policy can be assumed to stabilize output, in which case the system becomes

$$0 = D(r) + X(e) \quad (0.5)$$

$$X(e) = F(E, r) \tag{0.6}$$

(Recall that Y is defined as the deviation of output from its long run equilibrium level)

Shocks are modeled as shifts in the $D(\bullet)$, $X(\bullet)$ and $F(\bullet)$ functions.⁵

Here a problem with this sort of analysis becomes immediately apparent. In a traditional microfounded model, when addressing the effects of shocks one is immediately confronted with the need to specify whether the shocks are anticipated or unanticipated, and whether they are transitory or permanent. Implicitly what seems to be assumed in Larry's model is that the shocks are unanticipated, but in a microfounded model where households and firms know they are living in an uncertain environment one would expect agents to take whatever actions they could to insure against the possibility of such shocks. Implicitly Larry seems to be assuming that there is no scope for risk sharing internationally. Or even domestically – even if one wants to shut down international capital markets, one would still expect households to avail of capital accumulation technology to build up precautionary balances against the possibility of various shocks. Now I am not assuming that full insurance, or anything close to it, is feasible in all cases, but I think it is important to address this issue, and in particular that factors that may preclude it, before prescribing a course of action for government policy.

⁵ See King (2000) for a discussion of the limitations of curve shifting analyses in a rational expectations setting.

The second part of Larry's analysis considers the issue of sectoral stability. He motivates his discussion here with the observation that "By any reasonable welfare criteria, it is better to have output in all sectors at long run levels than to have booms in some sectors and recessions in others, even if the deviations from long-run output average to zero." (p. 14) This seems like a reasonable enough statement, although again I guess I would think that the extent to which it is true would again very much depend on the extent to which it was possible to diversify idiosyncratic risk within the economy. Again, I am not so naïve as to think that all sector specific risk can be insured against, but I do think that it is important to know just how much can be diversified before one advocates activist fiscal policy to smooth sectoral fluctuations. Larry motivates the objective of stabilizing sectoral output in part with an observation on the difficulties faced by Canadian exporters of manufactured goods as a result of the recent strength of the Canadian dollar. But how do we balance those very real pains against what I am sure are equally real gains of Canadian importers of goods and services? I doubt that very many Canadian visitors to the United States at the moment are complaining about the strength of the Canadian dollar.

For sectoral stability to be feasible in this model one needs to introduce fiscal policy. The algebra is straightforward and Larry then goes on to address whether this is practical, addressing the well known issues of inside lags and so on. Personally I think he is too sanguine about the prospects for welfare improving coordination between the fiscal and monetary authorities aimed at stabilizing sectoral output. Missing from the analysis is any discussion of what such coordination might mean for the independence of the central bank, or more precisely, the ability of the central bank to

maintain price stability. (There is some acknowledgement of this problem in passing on page 16 of the paper, but that's about it.) Within the context of the simple model presented here this is not an issue, but in reality I think it would be, and I also think that were one to address this question in a more microfounded model one would be forced to confront this issue head on by being explicit about institutional arrangements.

Larry also considers a distinction between commodity and non-commodity exports and how policy should be calibrated to deal with booms in the demand for each. Booms in commodity prices are associated with the Dutch disease, but the discussion in the paper left me wondering whether reduced output in manufacturing is not an optimal response to higher commodity prices. Does it not make more sense to shift resources into a sector that is booming in response to market signals?

A more substantive concern is the opening of the door to what I see as very dangerous mission creep for fiscal and monetary policy that is implicit in this paper. If one is going to argue for stabilization of output at the sectoral level, how does one go about setting limits to the sectoral level at which output will be stabilized? Why limit oneself to a distinction between traded and nontraded goods sectors, or manufacturing and commodity producing sectors? Why not stabilize output within different manufacturing sectors? Why not stabilize not just the level of overall commodity production, but also the level of oil, gas and lumber production? Indeed, why not stabilize output at the level of individual plants or even workers?

If we have learned anything in macroeconomics over the past quarter century, surely it is that some fluctuations in real economic activity are efficient and do not need to be offset by policy. This is not to say that all fluctuations are efficient, but if one is going to propose policy rules or responses to offset fluctuations, I think it is important to specify in some detail the source of the welfare losses that accompany fluctuations, whether at the aggregate or sectoral level.

So, to conclude, I think that Larry raises some interesting questions in his paper, but I am not convinced that he provides compelling answers. As I noted at the outset, I am sympathetic to the uses of simple non-microfounded models for conveying results that have been derived in more fully articulated frameworks, but I am very skeptical of the ability of these models to uncover new knowledge, especially as concerns welfare questions. Microfounded models can indeed be criticized for empirical shortcomings, but the discipline of building them forces one to think hard about issues that I believe are crucial to the design of good policies. Finally, even if we take Larry's model on its own terms, I believe that it glosses over very important practical issues (having to do with the ability of the private sector to insure to some extent against certain kinds of shocks, information about the state of the economy and of individual sectors, the institutional requirements for the sort of fiscal and monetary coordination that some of his policy prescriptions call for, and so on). And I remain very skeptical about the desirability or feasibility of stabilizing output at the sectoral level.

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