

# Discussion of “Fiscal Policy and the Inflation Target”\*

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What is the optimal inflation rate? Several prominent economists have argued that central banks should entertain higher inflation targets in light of the zero-lower-bound (ZLB) constraint on nominal interest rates (e.g., Blanchard, Dell’Ariccia, and Mauro 2010; Ball 2013). This would raise steady-state nominal interest rates and thus give more “room to cut” before the ZLB becomes a binding constraint. However, as noted in Tulip’s paper (this issue), this debate has largely considered the role of monetary policy at the ZLB in isolation, while in practice many countries have also used discretionary fiscal stimulus to aid economic recovery in recent years.

This paper is one of the few that jointly analyze monetary and fiscal policy at the ZLB<sup>1</sup> with a focus on the optimal inflation target. In particular, Peter Tulip asks if the renewed “fiscal activism” at or close to the ZLB can substitute for a higher inflation target to deal with the ZLB constraint.

The paper begins by postulating a fiscal rule that is meant to capture this contingent behavior,

$$\text{stimulus deficit}_t = \beta \sum_{k=1}^4 \frac{\max\{2 - i_{t-k}, 0\}}{400}, \quad i_t = \bar{r} + 1.5(\pi_t - \bar{\pi}) + x_t. \quad (1)$$

According to this rule, fiscal stimulus is switched on whenever the interest rate implied by the Taylor rule,  $i_t$ , drops below 2 percent.

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<sup>1</sup>Werning (2012) is another notable exception.

For instance, if  $i_t = 0$ , then the deficit in the following four quarters will be  $\frac{\beta}{2}$  percent above normal. Thus,  $\beta$  governs the strength of this contingent policy. In his baseline calibration, Tulip sets  $\beta = 0.7$ . This implies that each year at the ZLB triggers a minimum of 1.4 percent of (annual) GDP in cumulative stimulus. This calibration can match the size of the fiscal stimulus from 2008–12 (9.9 percent of GDP), but it cannot capture the 2001–5 stimulus (6.6 percent) of GDP.

Tulip adds this rule to the FRB/US model, a large-scale macroeconomic model at the Federal Reserve, and conducts stochastic simulation to determine the benefits of a higher inflation when fiscal activism is taken into account. He concludes that raising the inflation target above 2 percent is not very effective at reducing unemployment volatility. By contrast, if contingent fiscal stimulus was ignored, then one would (incorrectly) conclude that raising the inflation target to 4 percent would be quite helpful in stabilizing the macroeconomy.<sup>2</sup> Thus, the nature of fiscal policy at and near the ZLB is an important consideration for the efficient conduct of monetary policy.

I will spend some time discussing why this fiscal rule performs so well relative to the inflation target, because I think it is insightful and Tulip devotes relatively less time to this issue. As shown in the paper, the fiscal multipliers at the ZLB are middle of the road. For a twelve-quarter ZLB episode, the spending multiplier is just above one and the tax cuts and transfer multipliers are around 0.5. Standard DSGE models typically produce much higher multipliers when the ZLB binds that long, but they typically produce smaller multipliers in normal times (e.g., Christiano, Eichenbaum, and Rebelo 2011). Thus, from a New (or old) Keynesian perspective, there is nothing particularly unusual about the effectiveness of a given amount of fiscal stimulus.

Instead, I believe it is the nature of the policy rule (1) that makes it so effective at dealing with the ZLB problem. For instance, the more binding the ZLB constraint is—i.e., the more negative the Taylor rule interest rate  $i_t$ —the larger is the stimulus package. For each year with  $i_t = 0$  we get at least 1.4 percent in cumulative stimulus, but when  $i_t = -2$  percent we get twice that size. The

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<sup>2</sup>This references figures 4 and 5 in Tulip's paper (this issue).

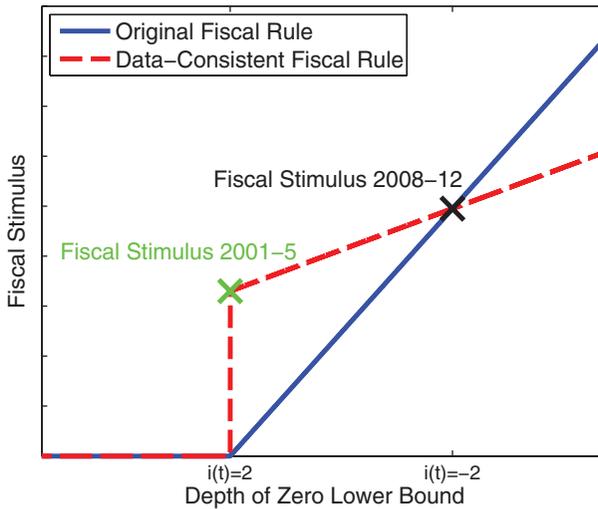
rule also responds to the duration of the ZLB: The longer the ideal interest rate is below 2 percent, the longer will there be fiscal stimulus. Finally, it is typical in these models that any amount of fiscal stimulus is more effective the more severe the ZLB constraint (e.g., Erceg and Lindé 2012). It is these endogenous properties of the fiscal rule that make it a well-designed tool to deal with the ZLB.<sup>3</sup> In the words of Larry Summers, a stimulus should be timely, targeted, and temporary, and this rule very much follows these principles.

Before reading this paper, I was skeptical that fiscal activism could make much of a dent in the optimal inflation rate. But this paper has convinced me otherwise. Thus, in my view there is a lot to like in this paper. It studies an important topic that unfortunately does not get enough attention today. It makes us think hard about alternatives to a higher inflation target. It also uses the right tools to answer the question at hand. The FRB/US is much better suited to analyze the efficacy of transfers and tax cuts than standard DSGE models, which typically feature Ricardian equivalence. But no paper is perfect, and my suggestions below would, I believe, improve the analysis. However, I also doubt that addressing these concerns would substantially affect the results in this paper.

My first and most important concern is that the fiscal policy rule may be too aggressive given empirical evidence. As it is calibrated in the paper, the rule matches the stimulus size from 2008–12, but it predicts essentially zero stimulus in the early 2000s. As shown in figure 1, this implies that fiscal policy will ramp up quite quickly as the ZLB constraint becomes more severe. An alternative would be to specify a contingent rule that matches both stimuli. Figure 1 shows how this could be achieved. The rule that matches both data points features a jump in fiscal stimulus at the 2 percent threshold and then raises fiscal stimulus at a slower pace as the ZLB constraint becomes more severe. Relative to the rule in this paper, this “data-consistent” rule wastes too much stimulus in times that are not too bad, but conducts too little stimulus in times of dire need. As a result, this rule is less well designed to deal with the ZLB, and it may not fully eliminate the case for a higher inflation target.

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<sup>3</sup>In a sense, these properties resemble the Taylor principle in monetary rules.

**Figure 1. Alternative Fiscal Rules**

**Notes:** “Original Fiscal Rule” denotes the rules used in Tulip (this issue). “Data-Consistent Fiscal Rule” denotes an alternative rule designed to match the 2001–5 stimulus and the 2008–12 stimulus.

Similarly, I worry that the model may not accurately capture the behavior of state and local governments (SLGs) during this recession. The analysis assumes that these entities behave “as usual” given the economic circumstances, but there are reasons to believe that cutbacks at SLGs have been more severe. For instance, I have run this forecasting model from 1985:Q1 to 2007:Q4,

$$\Delta e_t = \sum_{k=1}^4 \Delta e_{t-k} + \sum_{k=0}^4 \Delta \tilde{y}_{t-k} + \sum_{k=0}^4 \Delta I_{rec,t-k} + \text{trend} + \epsilon_t,$$

where  $e_t$  is SLG expenditure as a fraction of GDP,  $\tilde{y}_{t-k}$  is the output gap, and  $I_{rec,t-k}$  are recession indicators. It suggests that SLG expenditures are below normal by 0.85 percent of potential GDP (or 8–9 percent of their own level). Taking these cutbacks into account would imply less fiscal stimulus than the rule (1) predicts.

Finally, a concern with the analysis is that ZLB episodes are quite short in the FRB/US model. The median ZLB duration in the simulations is five quarters at 2 percent trend inflation. Thus, the

analysis may understate the cost of the ZLB and therefore the case for a higher inflation target. However, if that is the case, then the benefits of fiscal activism are also understated. According to the rule (1), fiscal stimulus will be larger in longer and deeper ZLB episodes, and any amount of fiscal policy will be more effective because of larger multipliers. Without an explicit analysis, it is difficult to judge whether this concern materially affects the analysis. My own sense is that it is somewhat less important than the other issues I raised.

Despite these quibbles about the analysis, I believe the paper makes a compelling case that the benefits from raising the inflation target are not particularly large given realistic fiscal activism. This is also in part because I believe the benefits from a higher inflation target are not particularly large to begin with. As Tulip shows in his figure 5, if we update our estimates of volatility and extrapolate from past Federal Reserve choices, then the inflation target only rises by 0.6 percent, even when we completely ignore fiscal activism. Thus, the original case for a significantly higher inflation target is not particularly strong.

This accords with the analysis I conducted with Olivier Coibion and Yuriy Gorodnichenko (Coibion, Gorodnichenko, and Wieland 2012). In that paper we explicitly incorporate the ZLB constraint and trend inflation into standard DSGE models. We calibrate these models so that the ZLB episodes are very costly and occur at historical frequency. Then we show that a permanently higher inflation target is a relatively blunt policy to deal with the ZLB problem. Unlike fiscal activism, a higher inflation target does not respond endogenously to the duration and severity of the ZLB constraint. Furthermore, since it is a permanent policy, the economy has to bear the cost of higher inflation every period, even when ZLB is not a problem. In contrast, we show that policies targeted specifically at the ZLB (e.g., nominal GDP, or NGDP, targeting) are much more effective, because they endogenously respond to the severity of the ZLB constraint. Thus, even though we use different models and analyze different policies, our results are very much in line with Tulip's findings.

In sum, notwithstanding my minor concerns about the implementation, I think this paper largely gets it right: Well-designed fiscal policy rules can significantly attenuate the case for a higher inflation target. And this conclusion emerges even though the analysis

abstracts from the many other tools that can combat the ZLB (quantitative easing, forward guidance, NGDP targeting). Going forward, it strikes me as an important avenue for future research to incorporate and analyze all these policies jointly, in order to understand their relative merits in dealing with the ZLB and in stabilizing the economy in general.

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