Learning the fiscal theory of the price level: Some consequences of debt-management policy

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**Abstract**

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This paper examines the consequences of the scale and composition of the public debt in policy regimes in which monetary policy is ‘passive’ and fiscal policy ‘active’. This configuration of policy is argued to be of both historical and contemporary interest, in economies such as the US and Japan. It is shown that higher average levels and moderate average maturities of debt can induce macroeconomic instability for a range of policies specified as simple rules. However, interest-rate pegs combined with active fiscal policies almost always ensure macroeconomic stability. This suggests that in periods where the zero lower bound on nominal interest rates is a relevant constraint on policy design, a switch in fiscal regime is desirable.

**1. Introduction**

The conventional characterization of stabilization policy is that monetary policy stabilizes inflation while fiscal policy stabilizes debt through an appropriate adjustment in current or future taxation. The
resulting equilibrium is Ricardian, so that debt-management policy has no monetary consequences. In the language of Leeper (1991) monetary policy is ‘active’ and fiscal policy is ‘passive’.

The appropriateness of this view as a general description of policy can certainly be questioned. Both recent events and certain historical episodes adduce evidence. In response to the US financial crisis 2007–2009 many economies have found monetary policy constrained by the zero lower bound on nominal interest rates. At the same time, there has been substantial fiscal stimulus that, at least initially, was provided without overt concern for the consequences of the level of the public debt. This policy configuration can reasonably be characterized as an interest-rate peg combined with an exogenous fiscal surplus. Here monetary policy is ‘passive’, fiscal policy ‘active’, and the resulting equilibrium non-Ricardian – debt-management policy has monetary consequences.

Outside this recent episode, there is evidence of changing configurations of policy regime in the US in the post-war period that include passive monetary policy and active fiscal policy – see Davig and Leeper (2006). During the 1940s, a special case of this policy configuration was actively pursued. Called a ‘bond-price support’ regime, interest rates on short-term treasury bills were pegged, with fiscal policy assuming the role of active stabilization. Woodford (2001) argues that inflation data from this period are consistent with the fiscal theory of the price level. Outside the US, the Japanese economy has clearly experienced a prolonged period of low interest rates since the mid 1990s, with frequent attempts to spur economic activity through fiscal stimulus. Again, this experience seems better characterized by a policy regime with passive monetary and active fiscal policy.¹

And even if such depictions of policy are deemed inappropriate, it is not implausible to think households and firms may entertain policy configurations of this kind. Indeed, Bianchi (2010) and Sims (2011) demonstrate that even if agents only maintain the possibility of an alternative regime in expectation, without that regime ever occurring, there can be important implications for dynamics. As well-known from Sargent and Wallace (1975), passive fiscal policy combined with an interest-rate peg delivers indeterminacy of rational-expectations equilibrium. Periods in which nominal interest-rate policy is constrained by the zero lower bound might be periods in which expectations are particularly susceptible to drift. As such it is worth exploring the stabilization consequences of this kind of policy regime.

To this end we consider a standard New Keynesian model of the kind frequently used for monetary policy evaluation, in which agents have incomplete knowledge about the structure of the economy. Incomplete knowledge is introduced to capture uncertainty about the prevailing policy regime, a characteristic of recent policy responses during the US financial crisis, particularly given the substantial uncertainty about the scale, scope and duration of various fiscal policy initiatives. Households and firms are optimizing, have a completely specified belief system, but do not know the equilibrium mapping between observed state variables and market clearing prices. By extrapolating from historical patterns in observed data they approximate this mapping to forecast exogenous variables relevant to their decision problems, such as prices and policy variables. Because agents must learn from historical data, beliefs need not be consistent with the objective probabilities implied by the economic model. The analysis is centrally concerned with conditions under which agents can learn the underlying rational expectations equilibrium of the model. Such convergence is referred to as “expectations stabilization” or “stable expectations”. A situation of unstable expectations is referred to as expectations-driven instability.

In this environment we study the stability properties of various configurations of monetary and fiscal policy, specified as simple rules. Monetary policy is given by a Taylor-type rule for the conduct of nominal interest-rate policy as a function of some measure of inflation. Fiscal policy is given by a

¹ The characterization of the Japanese policy regime has been a matter of active debate. Particularly given that stabilization policy appears to have failed, at least from the perspective of delivering robust and sustainable output growth. An important issue is the treatment of long-term fiscal expectations – which would be no less important in a Ricardian characterization of dynamics. Standard models place tight structure on long-term beliefs regarding fiscal solvency. Failure to cover issued debt with appropriate future taxation will induce an adjustment in goods price to revalue public debt. That resumption of normal economic activity has not occurred with little evidence of inflation in Japan questions the passive monetary and active fiscal policy assumption. However, this likely reflects the inconsistent fiscal policy framework adopted by Japanese authorities. Each fiscal expansion was soon followed with promises of consolidation. Appropriately modeling these announcement effects on household expectations remains as important future work.
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