Monetary/Fiscal Policy Mix and Agents’ Beliefs*

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1 Abstract

Over the past two years the US economy has gone through one of the most severe recessions of its history, and possibly the worst one since the Great Depression. In an attempt to mitigate the effects of the recession exceptional measures have been taken by the US Government and the Federal Reserve. The stimulus package has implied a substantial increase in government expenditure and the Federal Reserve has injected a significant amount of liquidity into the market and created an entire set of new tools to conduct monetary policy.

As a result of these important changes the debt-to-gdp ratio is expected to increase to levels that are comparable to the ones inherited after World War II. Furthermore, the relevant changes in the composition of the Fed’s balance sheet has induced some economists and practitioners to wonder if the Fed’s independence is at risk (Sims (2009a)). Taken together these facts have potentially important consequences for the Fed’s ability to control inflation. According to the Fiscal Theory of Price Level (FTPL), the monetary policy authority is able to control inflation only under the assumption that the fiscal authority is committed to move taxes and government expenditure in order to repay the debt. When this commitment is absent, monetary policy can have perverse and surprising effects. For example, an increase in the Federal Funds Rate (FFR) can imply an increase in inflation (Sims (2009b)).

Nevertheless, when studying the evolution of inflation and output, the role of fiscal policy has often been neglected. The standard assumption is that the fiscal authority moves a

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*I am grateful to Cosmin Ilut for useful comments and discussions. This is a preliminary version. Please do not circulate it without permission. Correspondence: Duke University, 213 Social Sciences Building, Box 90097, Durham, NC 27708-0097. E-mail: francesco.bianchi@duke.edu.
lump-sum tax (or provides a subsidy) to balance the fiscal deficit. This is not an obvious assumption, but rather a strong one. Decisions regarding taxation and government expenditure are usually highly scrutinized by the public. Furthermore, the political process leading to tax increases is often long and subject to compromises. In other words, there is no reason to assume that the Government is committed to passively adjusting the fiscal instruments in order to accommodate the decisions of the monetary authority. When this assumption is relaxed, existence and uniqueness of an equilibrium in a rational expectations general equilibrium model depend on the parameters characterizing the behavior of the monetary authority and the fiscal authority, as shown by Leeper (1991).

As pointed out by Cochrane (1998), there are some interesting facts that link the interaction between fiscal and monetary policy and the behavior of inflation over the past fifty years. In particular, the largest primary deficit occurred in 1975 and coincided with the beginning of the Great Inflation. Cochrane (1998) also points out important changes in the maturity structure of Government debt. Maturities were short in the ’60s, but they became longer starting from the ’70s. Longer maturities imply important fluctuations in the return of Government debt and consequently in the present value of debt. This implies that modeling changes in the term structure of government debt might be important when thinking about the evolution of inflation.

The potential role of fiscal policy in explaining the rise of inflation in the ’70s has been highlighted by Sims (2009b) and Cochrane (1998), as well as by the current Fed chairman. In a 2003 speech (Bernanke (3 Feb 2003)), Bernanke claimed that the role of oil shocks in explaining the rise of inflation has probably been overvalued. In his opinion, a more important role has been played by the (real or perceived) lack of fiscal discipline that characterized those years. In order to shed some light on the validity of this hypothesis, I consider a Dynamic Stochastic General Equilibrium model in which the monetary/fiscal policy mix and the volatilities of the structural shocks are allowed to change over time. These changes are modeled as two independent Markov-switching processes. In the model agents are aware of the possibility of regime changes and they take this into account when forming expectations. Therefore, the law of motion of the variables of interest depends not only on the traditional microfounded parameters, but also on the beliefs around alternative regimes.

Two main results emerge from the estimates. First, the model supports the idea that the monetary/fiscal policy mix has evolved over time. Specifically, three distinct regimes can be identified. Under the first one, that prevails over the early years of the sample and after the ’90s, monetary policy satisfies the Taylor principle\(^1\) and fiscal policy accommodates monetary

\(^1\)The Taylor principle asserts that central banks can stabilize the macroeconomy by moving their interest rate instrument more than one-for-one in response to a change in inflation.
policy decisions. This is what Leeper (1991) would call an Active Monetary/Passive Fiscal regime (AM/PF). If taken in isolation, this regime implies a standard behavior for the economy. Under the second regime, that prevailed over the ’60s and ’70s, fiscal policy is active, whereas monetary policy is passive (PM/AF). For the dynamic behavior of the economy, it is in this case crucial that agents are well aware of the possibility of regime changes (as assumed in this paper). If this is not the case, an increase in the FFR determines an increase in inflation. Finally, the third regime is one in which both fiscal policy and monetary policy are active and dominates the transition period from the PM/AF regime of the ’60/’70s to the more recent AM/PF regime. These results corroborate the widespread belief that the appointment of Volcker marked a change in the stance of the Fed toward inflation. In fact, around 1980, right after his appointment, the Fed moved from passive to active monetary policy. However, as mentioned above, this change has not immediately been followed by a switch in the behavior of the fiscal authority.

The second main result consists of showing that if the AM/PF regime had prevailed over the entire sample, inflation would have been substantially lower. This result differs from previous contributions and suggests that to understand the high inflation of the ’70s, it might be important to model both fiscal and monetary regime changes. I then consider counterfactual simulations that revolve around agents’ beliefs about the evolution of the monetary/fiscal policy mix. In particular, I ask how things would have changed if the transition period represented by the AM/AF regime had been replaced with an immediate switch from the PM/AF regime to the AM/PF regime. Even in this case, the level of inflation is reduced and we do not observe dramatic costs in terms of output.

These last results point toward two important conclusions. First, beliefs about alternative regimes can go a long way in modifying equilibrium outcomes. Specifically, in the present model, the effective sacrifice ratio faced by policy makers depends on the alternative scenarios that agents have in mind. Second, monetary policy does not need to be active all the time in order to achieve the desired goal of low and stable inflation. What is truly necessary is a strong commitment to reverse quickly to the AM/PF regime as soon as adverse shocks disappear. These considerations are important in light of the current economic situation that implies that policy makers will have to find an exit strategy once the state of the economy is back to normal. Section ?? presents some results that show how important agents’ beliefs are in determining the effectiveness of policy makers’ actions.
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