Measuring the role of automatic stabilizers in the U.S. business cycle[*]

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Abstract

Most countries have automatic rules in their tax-and-transfer systems that are intended, at least partly, to stabilize economic fluctuations. We measure how effective these automatic stabilizers are in a modern business-cycle model. We consider the effect of the stabilizers on aggregate demand, on the incentives to work and save, and on the distribution of income across households, all of which affect output. Our first finding is that most of the effectiveness of the stabilizers comes through the redistribution of resources across groups in the population. Our second finding is that, in the existing tax code and transfer system, some features attenuate the business cycle but others accentuate it; overall, the effect is only mildly stabilizing. Our third finding is that small changes to some social programs could make the automatic stabilizers significantly more effective.

1   Introduction

A pillar of the Keynesian macroeconomic models of the second half of the XXth century was the notion of automatic stabilizers. Some features of fiscal policy guaranteed that, when output fell, aggregate demand would automatically get a boost from fiscal policy, raising private spending and so attenuating fluctuations. While lamenting the retreat of Keynesian principles behind fiscal policy, Solow (2004) singles out automatic stabilizers as a legacy that has endured.

In discussions of policy, the automatic stabilizers have always been popular. The IMF (2009) recommends that countries should enhance the scope of these fiscal tools as a way to reduce macroeconomic volatility. The recession of 2007-09 led to an increasing number of economists reconsidering the role of countercyclical fiscal policy. Auerbach (2009) and Feldstein (2009) provide different perspectives on the resurgence of activism in fiscal policy, but they both agree that automatic stabilizers are a more effective approach to the stabilization of the business cycle. Similarly, Auerbach (2002) and Blinder (2006) summarize the theoretical and empirical argument for and against countercyclical fiscal policy, but they agree on one thing: that automatic stabilizers are valuable. In spite of this enthusiasm, as Blanchard (2006) noted: "very little work has been done on automatic stabilization [...] in the last 20 years."

This paper re-examines the role of automatic fiscal stabilizers in a modern business-cycle model. The model has three crucial ingredients. First, aggregate demand plays a role in the business cycle because there are nominal rigidities. Our model therefore captures the most common justification for the automatic stabilizers. Second, agents in our model intertemporally optimize, so incentives and relative prices matter as well. This includes the distortions in the allocation of labor and capital induced by the tax and transfer system, which may affect behavior in a way that either attenuates or accentuates fluctuations. Third, households are heterogeneous in their wealth and income and there are incomplete insurance markets, so that inequality interacts with aggregate dynamics. Many of the automatic stabilizers imply a redistribution of resources across households,

and in our model these have an effect on the aggregate economy.

With these elements in place, we ask the following question: how strongly do automatic stabilizers affect the volatility of aggregate output? We answer the question both for the overall system of fiscal stabilizers in the United States, as well as for individual tax and transfer programs. We isolate the mechanisms through which these programs operate and, in some cases, we prove general results on their ineffectiveness. This allows us to explore ways in which the programs could be modified to enhance their effectiveness as stabilizers. Finally, we calculate the cost of this stabilization in terms of the average level of economic activity.

While there is an old literature asking this question, there are very few recent papers using modern intertemporal models. Christiano (1984) uses a modernconsumption model, Gali (1994) a simple RBC model, and Andres and Domnech (2006) a new Keynesian model to ask a similar question. However, they typically consider the effects of a single automatic stabilizer, the income tax, whereas we comprehensively evaluate several of them. Moreover, they assume representative agents, therefore missing out on the redistributive channels of the automatic stabilizers. Cohen and Follete (2000) are closer to our paper but their model is very simple and only qualitative, whereas our goal is to provide quantitative answers. Kaplan and Violante (2012) are closer to us in terms of modeling, but they focus on the effect of discretionary tax rebates, whereas our goal is to look at the automatic features of the fiscal code.

Empirically, both the OECD (van den Noord, 2000) and the IMF (2009a) have tried to thoroughly measure automatic stabilizers across developed countries. Blanchard and Perotti (2002) and Perotti (200x) use these estimates to identify the effects of fiscal policy in a vector autoregression. In turn, Darby and Melitz (2007) discuss automatic stabilizers on the side of government spending, rather than government revenues, as the literature typically does. None of these papers provides a comprehensive estimate of the effect that the automatic stabilizers have on the volatility of aggregate activity.

In the public finance literature, Auerbach and Feenberg (2000), Auerbach (2009) and Dolls et al (2010) use micro-simulations of tax systems to compare the volatility of household income, before and after taxes. Their results are an input into our analysis. We look instead for the effects on aggregate output, taking into account the effects on relative prices and on general equilibrium.

Finally, our paper is methodologically, we believe, the first to include aggregate shocks, nominal frictions and heterogeneous agents in an analysis of aggregate fluctuations. With perfect insurance markets, our model is close to the neoclassical synthesis models in Clarida Gali and Gertler (1999). Without nominal rigidities, it is similar to the celebrated model by Krusell and Smith (1998). Using methods developed by Reiter (2009), we show how to solve the model numerically in a tractable way, so that we can easily compute transition dynamics in response to shocks, as well as the second moments for the key macroeconomic aggregates. We build on recent work by Oh and Reis (2011) and Guerrierri and Lorenzoni (2011) to try to incorporate business cycles and nominal rigidities into what Storesletten et al (2010) call the "standard incomplete markets." Close to our paper in emphasizing tax and transfer programs are Alonso-Ortiz and Rogerson (2010), Floden (2001), and Horvath and Nolan (2011), but they focus only on the effects on average output and employment.

The paper is organized as follows. In section 2, we define automatic stabilizers, and discuss the mechanisms that a model must include to answer our question. Section 3 presents our model and discusses in detail how it includes the elements identified in the previous section. Section 4 analyzes the role of economic stabilizers with complete insurance markets, with and without nominal rigidities. Section 5 presents our main results on the effectiveness of automatic stabilizers. Section 6 concludes.