

Research on Government Expenditure Multiplier under Financial Friction, Zero Lower Bound and Macro Prudence

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Abstract

Based on the dynamic stochastic general equilibrium model, this paper discusses the problem of fiscal expenditure multiplier by introducing financial friction, zero interest rate lower limit and macro prudence. It is found that:(1) The fiscal multiplier in the benchmark model with financial friction is larger than the fiscal multiplier without considering financial friction.

Keywords

Fiscal Multiplier; Macro-prudential Policy; Financial Frictions; Zero Lower Bound; Dynamic Stochastic General Equilibrium Model.

1. Introduction

After the 2008 financial crisis, the economy in the developed countries in the recession, many literatures as bank credit expansion leads to the outbreak of the crisis, so after the financial crisis, the international banking regulation has made important progress, at the end of 2017 the Basel I final plan, focus on Macro-prudential policy to financial stability and raise welfare effect, and special attention Synergy between macroprudential supervision and monetary policy. After the promulgation of the plan, the financial risks of countries adopting Macro-prudential supervision have been effectively controlled, and Macro-prudential supervision has played an important role. With the acceleration of China's capital market opening process, some scholars expressed concerns about the excessive capital opening of emerging markets. Liu et al. (2019) believed that the excessive capital market opening process would undermine the stability of domestic economy and be detrimental to the stability of the financial system of fragile developing countries. Ostry et al. (2012) argues that developing countries can adopt Macro-prudential policies to deal with capital inflows and achieve financial stability. But some emerging economies, such as Brazil, Thailand, South Korea and Indonesia, have adopted stricter capital controls. Ghosh et al.

(2017) argues that in the face of capital inflows, policymakers in some emerging economies have tightened Macro-prudential regulation and capital controls. Korinek and Sandri (2016) compared the Macro-prudential policy and capital control, think that these two kinds of policies and measures can make the economy more stable, reduce the severity of the crisis, the contractionary devaluation risk is relatively limited in developed countries, weakened the function of capital controls, and Macro-prudential regulation is very important to alleviate the rise and fall of asset prices. Kitano and Takaku (2020) included the banking industry with balance sheet friction into the model of small open economy and compared the effectiveness of capital control and Macro-prudential supervision. They found that if the degree of financial friction between domestic banks and foreign investors is high, the welfare improvement effect of capital control is greater than that of Macro-prudential supervision. When the degree of financial friction is low, the welfare improvement effect of Macro-prudential regulation is greater than that of capital control. The welfare ranking of these two policies depends on whether an economy suffers from the foreign currency of debt (hereinafter collectively referred

to as dollarization). As the study of Hory et al. (2018) shows that the proportion of foreign debt in foreign currency of developing countries is three times that of developed countries, so the representation of foreign debt in foreign currency has a certain impact on economic stability, and also plays a key role in the study of fiscal multiplier.

At present, China is striving to promote the supply-side structural reform and improve the interaction between the real economy and the financial market, so as to achieve the goal of sustained economic growth and financial market stability. Financial friction exists in some small enterprises, and the accumulation of government debt is serious. In this sense, it is difficult to prevent systemic financial risks with a single Macro-prudential policy, and monetary policy and Macro-prudential policy "double pillar" regulation are needed to deal with financial cycles. Therefore, the report of the 19th National Congress of the Communist Party of China clearly calls for improving the dual-pillar regulation framework of monetary policy and Macro-prudential policy. Many literatures have evaluated the effects of such policies currently adopted in China, and found that Macro-prudential policies play a positive role in economic and financial stability, so Macro-prudential policies have positive effects on economic and financial stability. In particular, after the financial crisis, nominal interest rates in many countries are close to zero. The space for policy operation is limited. Can fiscal policy play a greater role in the framework of Macro-prudential policies? In this paper,

It is to study the size of fiscal policy multiplier and the impact of fiscal policy on macro economy under the Macro-prudential policy framework. In order to study.

2. Literature Review

Macroprudential policies are mainly proposed from the perspective of maintaining financial stability. Early studies mainly focus on the synergistic effect of macroprudential policies and monetary policies on the stability of the financial system. For example, Rubio and Carrasco-Gallego (2014) embedded financial friction into the DSGE model to search for the optimal monetary and Macro-prudential policy rules. Their research showed that counter-cyclical Macro-prudential tools could help form a more unified monetary policy in the eurozone. From the perspective of financial friction, Quint and Rabanal (2014) adopted the setting of Bernanke et al. (1999) and concluded that the introduction of macroprudential policies reduced macroeconomic fluctuations and increased welfare. Angelini et al. (2012) believed that Macro-prudential policies adopted by the central bank and Macro-prudential cooperation could stabilize economic fluctuations caused by real estate prices and financial market shocks.

Macroprudential and monetary policies have only recently focused on the fiscal footprint, and Reis (2016) argues that central banks can play a key role in the ability to implement stability policies while ensuring the sustainability of government public debt. Leeper and Leith (2016) believes that central banks can directly affect the government's ability to repay debts through interest rate setting, and indirectly affect economic growth, inflation and tax revenue through interest rate regulation. After the financial crisis, the interaction between monetary policy and debt sustainability became particularly important. When the risk-free interest rate approached the zero lower bound (ZLB), the role of fiscal policy as a stabilizing tool was strengthened (Coenen et al., 2012). However, this positive role of fiscal policy has renewed concerns about the sustainability of public finances and its impact on financial stability and the stability of economic activity (Fatas and Mihov, 2012; Bi et al., 2018); In particular, the normalization of monetary policy casts further doubts on the sustainability of the massive public debt accumulated by many developed countries during the crisis. Therefore, Reis (2020) believes that monetary policy has left a fiscal footprint. In some cases, easing fiscal burden becomes the main goal of monetary policy, while controlling inflation is secondary. For example, when the central bank reduces the policy interest rate, this footprint appears through a variety of

channels. First, the demand for money increases, so the central bank issues money to meet the demand, which creates coin income. The increase of money circulation leads to inflation and reduces the real value of public debt. Second, with inflation, as the price of newly issued bonds rises, it is cheaper to roll over those debts. Finally, as economic activity expands, monetary policy can use its fiscal footprint to generate revenue with minimal distortion. But central-bank independence can be problematic. When fiscal authorities do not collect enough revenue to pay for spending, a monetary authority that wants to prevent a sovereign default must sacrifice control of inflation in favor of creating the necessary fiscal footprint. Fiscal footprint size and signs show the countries all over the world for the fiscal targets of temptation may be larger, increasing the demand for government bonds, bank directly lower the cost of public debt rollover, but reduces the loans, real activity and tax revenue, reduce the incidence of the financial crisis and financial costs, but may lead to increase the probability of financial crisis. Macroprudential policy can effectively avoid the fiscal footprint of monetary policy and play a positive role in fiscal balance. First, macroprudential policy affects the issuing price of national debt, and then the rollover cost of national debt. Second, the impact of macroprudential policies

3. DSGE Model in Open Economy

This paper adopts the DSGE model of a standard small open economy, but there is a financial accelerator mechanism similar to Bernanke et al. (1999). It is composed of domestic economy (H) and foreign economy (F). There are five types of agents in the model, namely households, final product production departments, intermediate product manufacturers, capital product manufacturers and entrepreneurs. The final goods production sector, intermediate goods producers and capital goods producers are owned by households, and the population of each country is made up of the same households, but for the purpose of illustrating the financial accelerator mechanism, entrepreneurs are different entities. The households in the model are normalized to 1, and the synthetic goods (C,) consumed by the household consists of domestically produced goods (C,) and foreign-produced goods (C,). The household can purchase domestic debt and foreign bonds, and also carry out domestic borrowing and foreign borrowing. The government follows a balanced budget rule, and the central bank adjusts nominal interest rates according to inflation, the output gap and the exchange rate.

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