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Research Paper

How are Fiscal and Monetary Policy Shocks Transmitted Internationally?

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ABSTRACT
This paper examines the features of the main channels of international transmission of fiscal and monetary policy shocks in the literature. The findings show the following: (i) The channels of transmission of fiscal and monetary policy shocks involve fiscal and monetary quantities (e.g. trade and loan) and prices (e.g. terms of trade and interest rate). (ii) The financial market channel is a common transmission channel for both fiscal and monetary policy shocks. (iii) The channels of transmission of fiscal policy shocks involve both "real" and financial variables, while the channels of transmission of monetary policy shocks mainly involve financial variables.
KEY WORDS: *International transmission of shocks, fiscal shocks, monetary shocks*

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I. INTRODUCTION

The literature shows that fiscal and monetary policy shocks in individual economies are transmitted into other economies through certain channels. One of the key determinants of the effectiveness of shock-related policies is correct identification of the mentioned channels, considering the increasing interlinkages and interdependencies among the countries of the world. Globalization has changed the magnitude and structures of cross-country interactions and comovements (Frankel, 2000; Kose and Prasad, 2010), hence external developments have become key factors to consider in designing national policies. The objective of this paper is therefore to examine the main transmission channels of fiscal and monetary policy shocks shown in the literature, in order to identify the features of the channels. The paper proceeds as follows: Sections 2 and 3 of the paper are devoted to examining the transmission channels of fiscal and monetary policy shocks respectively, before concluding remarks are made in section 4.

II. CHANNELS OF TRANSMISSION OF FISCAL POLICY SHOCKS

Fiscal policy shocks in individual economies can be transmitted as spillovers to other countries. The shocks occur due to changes in variables such as government expenditure, government revenue, and government budget balance. The spillovers associated with the shocks are of various forms (Weyerstrass et al., 2006; Belke and Osowski, 2016):

i. External versus Internal Spillovers: External spillovers are the ones transmitted from abroad, due to general trade and financial linkages. That is, "internal" factors such as membership of a trade bloc are not the reasons for the spillovers. On the other hand, internal spillovers occur among countries that are members of economic integrations or between the sectors of individual countries. For example, internal spillovers can occur among the members of the Euro Area or between the oil sector and the other sectors of an oil-exporting country such as Nigeria.

ii. Direct versus Indirect Spillovers: Direct spillovers are the ones working via fiscal variables and trade linkages. Increases or decreases in domestic demand originating from fiscal shocks are transmitted directly among trade partners through exports and imports. On the other hand, indirect spillovers work via non-fiscal (i.e. monetary) variables such as interest rates and exchange rates.
iii. Positive versus Negative Spillovers: Positive spillovers are the ones that enhance the macroeconomic welfare of origin and recipient countries, while negative spillovers are the ones with negative impacts. For

example, a fiscal-related recession that originates from a large economy such as the US will have negative effects on the US and smaller countries, implying that the spillovers associated with the recession are negative ones.

iv. Policy-Induced versus Shock-Induced Spillovers: Policy-induced spillovers occur due to the direct effects of fiscal policies in individual countries. That is, fiscal measures in a country can lead to large and unexpected changes in its fiscal policy variables and spillovers in other countries. However, other macroeconomic shocks, such as oil shocks, can also lead to sudden and large changes in fiscal policy variables in a country and spillovers in other countries. Spillovers that have fiscal-policy origins can then be distinguished from spillovers whose origins are non-fiscal macroeconomic shocks.

According to Alcidi, Määttänen and Thirion (2015), three main channels through which fiscal policy shocks are transmitted internationally are demand channel, competitiveness channel, and financial markets channel:

i. Demand Channel: Fiscal shocks in individual countries affect domestic demand and demand for imported goods, due to their impact on output. Export demand will change in the economies of trade partners because of the change in the demand for imports. This will lead to the transmission of fiscal shocks from source countries into their trade partners. The demand channel is also called the trade channel because of the role of trade in its operation. The channel is particularly important in trade-dependent countries, such as African countries (Kose and Riezman, 2001). Generally, empirical evidence shows that trade is the dominant channel of international transmission of business cycles (Baxter and Kouparitsas, 2005; Dées, Mauro, Peseran and Smith, 2007). Basically, trade is a quantity that is different from price-related variables such as terms of trade.

ii. Competitiveness Channel: Fiscal shocks lead to changes in inflation in source countries and in the economies of their trade partners. This causes changes in relative prices and hence the terms of trade, leading to spillover effects through the competitiveness channel, which is also called the terms of trade channel. For example, the findings of Mendoza (1995) give important insight on the competitiveness channel for developing countries. The author shows through a model of a small open economy that terms of trade shocks account for about 50% of GDP variations in developing economies.

iii. Financial Markets Channel: This channel consists of various financial mechanisms of cross-country spillovers involving financial prices, such as interest and exchange rates. Fiscal shocks in one country can cause changes in interest and exchange rates of other countries, leading to interest and exchange rates spillovers. The traditional small open-economy literature (i.e. Fleming, 1962; Mundell, 1963; Dornbusch, 1976) shows that small economies in particular are susceptible to such spillovers from large economies such as the US. For example, economic boom in the US can lead to increased public spending and increased demand for oil imports, which will eventually lead to changes in the exchange rate of the Dollar in terms of the currencies of oil exporters, consequently leading to positive changes in the business cycles of oil exporters via the exchange rate channel. The financial markets channel is also associated with agent sentiments. Fiscal shocks can be triggered in a country by financial news, such as the announcement of government spending forecasts (Callegari, Cimadomo and Ricco, 2016). Such news can cause agent sentiments and cross-country spillovers through financial contagion effects. The stock markets channel is also a potential financial channel of international spillovers (Karayalcin, 1996), hence fiscal spillovers may also occur through stock markets.

III. CHANNELS OF TRANSMISSION OF MONETARY POLICY SHOCKS

Monetary policy shocks are transmitted via mechanisms relating to financial market prices and quantities (Taylor, 1995). Examples of the prices are short-term interest rates, long-term interest rates, exchange rates, etc. On the other hand, examples of the quantities are bank credits, bank loans, etc. The theories of the transmission channels of monetary policy shocks associated with financial market prices and quantities may be classified into the following main categories (Boivin, Kiley and Mishkin, 2010; Endut, Morley and Tien, 2015):

i. The "Money" View: Theories under the money view relates primarily to the interest rate and exchange rate channels, hence this category can also be tagged the financial market prices view. Since the theories under the category deal with the effects of shocks on prices, they explain the spending behaviours of firms and households associated with variations in the prices. The interest rate plays a key role in the spillover effects of the theories. For example, a restrictive monetary policy in a country will increase interest rates and the cost of capital, hence investors will seek to invest in other countries. This will eventually increase investment and interest rates in other countries. On the other hand, the exchange rate affects the transmission of monetary policy shocks via international trade, based on a mechanism involving net exports. For example, a restrictive monetary policy

shock will make real interest rate to increase and lead to capital inflow into the economy. Domestic currency will appreciate due to the increase in capital inflow. The appreciation of currency will increase imports and decrease exports, consequently leading to a decrease in net exports.

ii. Credit View: There are two main transmission channels under this view, namely the bank-lending and balance sheet channels:

a. Bank-Lending Channel: There are no perfect substitutes for retail bank deposits in the private markets where banks supply loans. Therefore, a shock, say an expansionary monetary policy shock, will increase bank deposits and the quantity of bank loans in the economy where the private markets operate, leading to an increase in investment by domestic firms, particularly small firms, that rely on loans as the main source of finance because they cannot get funds from other sources (e.g. stock markets). The shock will also attract firms from other economies to invest in the domestic economy, which may lead to reduction of investment in the foreign economies, implying positive investment effects in the domestic economy and negative effects in foreign economies. Shimokawa and Kyle (2003) show that monetary policy shocks transmitted through the bank-lending channel can be of two forms: spillover effects from creditor banks in advanced economies to debtors (developing countries); and common creditor effects involving spillovers between debtor countries due to common creditors. For example, a shock in a debtor country may reduce the profitability of a creditor, leading to reduction of credit and investment in other debtor countries.

b. Balance Sheets Channel: The status of the balance sheets of commercial banks in a country, which points to the stock of assets and liabilities of the nation, affects the way the economy responds to a monetary policy shock and consequently affects the balance sheets of other countries due to their financial links with the first country. For example, firms and governments of developing countries borrow funds from banks in developed countries. Therefore, a shock to the interest rate in the creditor country due to an internally generated financial crisis will affect the balance sheets of banks in the country and eventually affect the level of their assets, such as loans. The desire to limit the level of deterioration of their balance sheets can make the concerned banks to reduce the loans given to borrowers in foreign countries, which will consequently affect the balance sheets of the concerned foreign countries, making the shock to be transmitted internationally via balance sheets (Allen, Rosenberg, Keller, Setser and Roubini, 2002).

IV. CONCLUSION

This paper examines the main channels of international transmission of fiscal and monetary policy shocks identified in the literature. Key conclusions are derivable from the discussion of the paper regarding the international transmission of fiscal and monetary shocks. First, the transmission channels of fiscal and monetary policy shocks involve fiscal and monetary quantities and prices respectively. For example, trade and loans are fiscal and monetary policy quantities respectively. On the other hand, terms of trade is a price-related fiscal policy variable, while interest rate is a monetary policy price. Second, the financial market channel is a common channel for both fiscal and monetary policy shocks. That is, fiscal and monetary policy shocks can both be transmitted internationally via interest and exchange rates.

Third, the transmission channel of fiscal policy shocks involves both "real" (e.g. trade) and financial variables (e.g. interest rate), while the transmission channel of monetary policy shocks involves only financial variables. Finally, the findings of the paper has a very important policy implication, namely the effectiveness of policies designed to buffer the effects of internationally transmitted fiscal and monetary policy shocks depends largely on accurate identification of their channels of transmission.

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