



Fiscal policy and default risk in emerging markets ☆, ☆☆

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ABSTRACT

Emerging market economies typically exhibit a procyclical fiscal policy: public expenditures rise (fall) in economic expansions (recessions), whereas tax rates rise (fall) in bad (good) times. Additionally, the business cycle of these economies is characterized by countercyclical default risk. In this paper we develop a quantitative dynamic stochastic small open economy model with incomplete markets, endogenous fiscal policy and sovereign default where public expenditures and tax rates are optimally procyclical. The model also accounts for the dynamics of other key macroeconomic variables in emerging economies.

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1. Introduction

We study theoretically and quantitatively the links and cyclical behavior of fiscal variables, sovereign interest rate spreads and default risk in emerging market economies. In most middle and low income economies, fiscal policy follows a procyclical behavior. A procyclical fiscal policy implies higher (lower) public spending and lower (higher) tax rates in good (bad) times. Developing economies also have more volatile business cycles and are more crisis prone than developed economies.¹ In addition, these countries face countercyclical interest rate spreads in international credit markets: sovereign bond yields over US Treasuries increase (decrease) in expansions (recessions), making external credit more (less) expensive in bad (good) times. This behavior of spreads is closely linked to countercyclical default risk.

In this paper we rationalize these stylized facts on fiscal variables, interest rates and default risk in emerging market economies. For this purpose we develop a dynamic stochastic model of a small open economy with incomplete markets, endogenous fiscal policy and endogenous default risk.

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¹ In the last decades emerging economies have experienced several debt crises, such as the Latin American debt crisis at the beginning of the '80s, the Mexican episode of 1994–1995 and later events such as the Russian crisis in 1998, Ecuador in 1999, Argentina in 2001 and Uruguay in 2003, among others. Sovereign debt crises usually take place in bad times, when output growth is low or even negative. See Uribe (2006) for a comparison of business cycle properties of developed and developing economies.

The benchmark model features an economy with domestic households, a domestic government and foreign lenders. Households value private consumption, public spending and leisure. Public spending provides direct utility to the private sector, which prefers a smooth path of public spending over a volatile one. The government collects consumption taxes from households and borrows abroad to finance public expenditures. Asset markets are incomplete since the only asset available to the government is a one period discount bond that pays the same in any state of nature next period provided the country does not default. Sovereign debt contracts are unenforceable and the government has the option to default on the outstanding debt every period. In case of default the economy experiences an output loss and is temporarily excluded from international credit markets. Foreign lenders charge a risk premium that accounts for the default risk they face. Hence, interest rate spreads reflect the sovereign default risk. Since the repayment of non-contingent loans is more costly in recessions, the incentives to default are higher in bad times. Thus, in recessions the government faces higher interest rate spreads due to higher default risk and finds it optimal to rely more heavily on taxation to finance public expenditures. On the other hand, in expansions the cost of international credit is lower so there is an increase in financing through borrowing, while taxes play a lesser role. Thus, tax rates are procyclical. Additionally, since the one period non-contingent bond is not a good instrument for consumption smoothing purposes, the government is not able to smooth public spending, so public expenditures are highly procyclical. Therefore, the government optimally implements a procyclical fiscal policy.

The private sector's participation in international credit markets has increased especially since the 1990s, and it is well documented that in emerging countries private credit expands during consumption booms.² The empirical literature also documents that the cost of public debt generally represents a floor for the cost of private borrowing. Durbin and Ng (2005) and Borensztein et al. (2006) among others find that the credit rating for government debt constitutes a ceiling for the credit ratings of the great majority of firms in the private sector. Some studies as early as Arrow and Lind (1970) have argued that the public sector can handle risk better than the private sector because it can pool risk over a large number of projects and spread risk over a large number of taxpayers, making the real costs for government borrowing lower than for private borrowing. This is reflected in government bond rates that are generally lower than the market rate for private borrowing.

In order to take into account the effects of private foreign borrowing on the benchmark results, we develop a two period model where both the public and the private sector have access to foreign financing and may optimally default. The magnitude of the economic loss experienced by the country in a default event depends on whether it is the government, the private sector or both that decide not to fulfill the credit obligations. We find that fiscal policy is still procyclical and we also generate the procyclicality of private credit observed in the data.

In this vein, our paper studies the dynamic interaction between endogenous fiscal policy and sovereign debt financing, and their impact on the behavior of several key macroeconomic variables in emerging economies. Additionally, our work provides insight on the behavior of the private sector's participation in international financial markets. The dynamics of taxation, public expenditures, default, interest rate spreads and net exports in the model are thus derived as an equilibrium result from the interaction between the domestic government, the private sector of the small open economy (which are both competitive agents in the credit market taking as given the bond price functions), and lenders in international credit markets.

In a quantitative analysis, we calibrate the model to the Mexican economy, a typical emerging market country. The results show that the calibrated model can mimic several empirical patterns for the macroeconomic variables previously described for emerging economies.

The paper proceeds as follows: the link to the literature is provided in Section 2, the economic environment and the benchmark theoretical model are presented in Section 3, the equilibrium is defined in Section 4, and the quantitative implications of the benchmark model are analyzed in Section 5. Section 6 discusses the robustness of the benchmark results to different assumptions regarding the economic environment. The impact of the private sector's access to international credit markets on the behavior of fiscal variables is studied in Section 7, where we develop and compute a finite horizon model where both the government and the private sector have access to foreign financing. The conclusions are presented in Section 8. The algorithms for the benchmark model and the extensions are described in Appendix A.

2. Link to the literature

The empirical regularities for emerging economies addressed in this paper are well documented in the literature. Gavin and Perotti (1997) (from now on GP) document that fiscal policy is procyclical in Latin America. Talvi and Vegh (2000) argue that far from being a particular feature of Latin American countries, a procyclical fiscal policy appears to be the norm among developing economies. They are also among the first to document that public spending is highly procyclical in the developing world and acyclical in the G-7 economies. More recently, Kaminsky et al. (2004) review the empirical evidence on the procyclicality of macroeconomic policy analyzing countries grouped by income level. They report that OECD countries seem to implement either countercyclical or acyclical fiscal policies while low and middle income countries appear to apply predominantly procyclical fiscal policies. Ilzetzki and Vegh (2008) analyze a quarterly dataset for 49 countries covering the

² IMF Financial Stability Report, 2007, Fig. 1.17. See also Copelman (1996).

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