Francisco Adame

PhD candidate · University of Western Ontario

Thesis abstracts

Domestic Default, Financial Intermediaries, and the Dynamics of Investment (Job Market Paper)

Sovereign default events followed by distress in domestic credit markets are distinguished by a deep drop in output and protracted recovery. In these events, most of the public debt is issued through domestic markets and a significant share of domestic banks' assets are government bonds. I study whether the dynamics of output during a default can be associated with a disruption of credit markets which affects capital accumulation. A sovereign default, decreases banks' assets and the collateral that can be used to raise deposits from households; hence, banks face a reduction in resources available for investment in capital. I develop a quantitative model that features capital accumulation, financial intermediation and endogenous sovereign default. I calibrate the model to match the fraction of banks' assets held as government bonds, the mean investment to GDP, and investment volatility for economies that experienced distress in domestic credit after a default. The model is able to reproduce the untargeted observed dynamics of output, investment, consumption, deposits, and bank's assets around default events. I use the model to quantitatively assess how governments' borrowing on bonds and financial frictions affect capital accumulation and the volatility of investment. First, an increase in the ratio of bonds to total assets in the balance sheet reduces capital accumulation even when it lowers the probability of default. The model predicts that an increase of 25 % in the fraction of assets held in government bonds from the benchmark calibration reduces the default rate by 50 %. However, this change produces a reduction in the level of investment to GDP of 18 % and an increase in investment volatility relative to GDP of 40 %. Second, a reduction in financial frictions allows a higher flow of savings to banks. Consequently, banks have more resources to invest in capital and to buy bonds. A reduction in financial frictions that increases the ratio of deposits to GDP by 20 % from the benchmark calibration reduces the default rate by 14 %. In this case, it leads to an increase in the investment to GDP of 50 % and the volatility ratio of investment to GDP decreases by 6 %. Therefore, the model predicts that financial development of the credit market can increase capital accumulation and reduce sovereign risk.

Contagion, sovereign debt, and non-fundamental risk

During the European sovereign debt crisis of 2011, several countries faced higher interest rate spreads, despite very different patterns of underlying fundamental shocks. In addition, governments' interest rate spreads were highly correlated even when they faced different dynamics in their output. For instance, Italy had difficulty rolling over a large stock of debt, which was followed by sharp increases in interest rate spreads in Spain, Portugal and Ireland. Eventually, interest rate spreads decreased once the ECB intervened to alleviate Italy's debt roll over problems. In this episode, Italy had problems rolling over its debt even when its stock of debt was sustainable. The episode showed that interest rate spreads are highly correlated and non-fundamental shocks can be transmitted across countries. In this paper, I build a quantitative model of sovereign default with two countries that share a risk averse investor. The assumption of a risk averse investor allows the existence of correlation between the interest rate spreads of different countries. In the model, an investor has a portfolio of sovereign debt in two countries. The value of the portfolio is negatively correlated with the price of the bond issued in each country. In equilibrium, given the risk aversion, the bond price of the marginal investor is positively correlated with the value of the investor's portfolio. Therefore, bad states that increase the spread of government bonds in one country can affect the bond price of the other country. I calibrate the model to match the moments of Spain and Italy. The model is able to match 90 % of the untargeted correlation of the interest rate spreads observed between Italy and Spain. I extend the model to include non-fundamental risk to default. By introducing a probability of 1 % to states in which the government defaults if lenders are not willing to roll over its debt. In this extension I find that 5.1 % of the correlation reproduced by the model can be associated to non-fundamental risk.

Financial intermediation, trade, and sovereign default.

This paper studies the effects of sovereign default on trade-oriented firms. By using a panel of 20 emerging economies, I document that the output of trade-oriented industries drops in episodes of default. Most of these industries depend on external sources of finance from domestic banks. Firms in these industries use loans from banks for working capital. In turn, domestic banks hold an important share of their assets as government bonds. During sovereign defaults, the interest rate for loans increase in these economies. To study whether the drop in output of trade-oriented industries can be affected by the contraction in credit that arises after a default affects bank's balance sheets, I develop a quantitative model of endogenous sovereign default with tradeble and non-tradeble sectors. The tradeble sector uses domestic credit for working capital operations. Financial intermediaries buy government debt and lend to trade-oriented firms. After a default, banks' assets decrease and the interest rate for working capital loans increase. The model is calibrated to match moments for emerging economies with an important tradeble that experienced a default. The model is able to reproduce 70 % of the decline in the tradeble sector and 45 % of the non-tradeble sector.