

# Discussion of “Fiscal Policy and Financial Stability” by Philip Lane

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Prepared for the International Conference at the Bank of Korea

May 2011

- ① Summary of Main Results
- ② Comments on Empirical Results
- ③ Simulation Result of a Simplified Theoretic Model

## 1 An Example of Regression Results

$$B_t = 0.19Y_t^{***} + 0.26CA_t^{***} + 1.63CRE_t^{***} + 0.01D_t^{***} + 0.63B_{t-1}^{***}$$

$$B_t = 0.15Y_t^* + 0.21CA_t^{***} + 1.37CRE_t^{***} + 0.02D_t^{***} + 0.75B_{t-1}^{***}$$

$$B_t = 0.23Y_t^{***} + 0.32CA_t^{***} - 1.44CRE_t + 0.01D_t + 0.48B_{t-1}^{***}$$

- 2 Fiscal balance is countercyclical vis-a-vis output cycle.
- 3 Fiscal balance is acyclical vis-a-vis absorption cycle.
- 4 Current account is significantly positive in IV estimates.
- 5 Private credit is significantly positive in full sample and advanced countries, but negative and insignificant in emerging countries.
- 6 Lagged level of public debt is positive (but small) and significant in advanced countries, but not significant in emerging countries.
- 7 Line 1 corresponds to full sample; line 2 is a set of advanced countries; line 3 is a set of emerging countries.

# Regression Results: Advanced Countries

## 1 OLS Results

$$\begin{aligned} B_t &= 0.18Y_t^{***} + 0.11CA_t + 1.30CRE_t^{***} + 0.02D_t + 0.75B_{t-1}^{***} \\ R_t &= 0.53Y_t^{***} - 0.08CA_t^{***} - 0.36CRE_t + 0.02D_t^{***} + 0.53R_{t-1}^{***} \\ E_t &= 0.05Y_t - 0.13CA_t^{***} + 0.12CRE_t - 0.02D_t^{**} + 0.61E_{t-1}^{***} \\ C_t &= 5.03Y_t + 0.04CA_t + 0.82CRE_t + 0.02D_t^{**} + 0.79C_{t-1}^{***} \end{aligned}$$

- 2 Revenues are strongly procyclical vis-a-vis output cycle, while government spending is acyclical.
- 3 Revenues and expenditures are significantly negatively associated with current account balance. The coefficient on public spending is larger in absolute terms.
- 4 Private credit is not significant for revenues and expenditures, but significant for cyclically-adjusted general government balance.

- Very Interesting and Very Important Topics with Very Interesting Results
  
- Part of Author's Research Agenda

# Robustness Check for Results

- ① Focus on the Great Moderation Period (Sample Period: 1980 - 2007)
  - Potential Role of Regime Changes: Possibility of Asymmetric Relation between Fiscal Policy and Financial Instability
  - Weak Implications for the Great Recession Period
- ② Fiscal Equation Approach
  - Analysis of Feedback Mechanism: Inclusion of Structural Equations and Cross-Equation Restrictions
- ③ Potential Possibility of Other Important Channels
  - Incorporation of Expectations Channel: Importance of Forward-Looking Components in the Interaction between Fiscal and Financial Factors
  - Measure of Sustainable Fiscal Policies: Use of Government's Present-Value Budget Constraint
  - Possibility of Cost Channel for Fiscal Stimulus
- ④ Choice of Variables
  - Financial Market Measures of Sovereign Risks and Bank Risks: Risk Premium or Credit Default Swaps

# Financial Volatility and Fiscal Expectations

- ① Importance of anchoring fiscal expectations:
  - Unanchored fiscal expectations can undermine the ability of monetary policy to control inflation and influence real economic activity in usual ways.
- ② Examples of news that could cause revaluations of government debt.
  - After the U.S. government took over control of Fannie Mae and Freddie Mac in 2008, the CBO began to include budgetary costs of the two institutions in its baseline projections [Congressional Budget Office (2010a)]. CBO puts the potential costs at \$389 billion, but Bloomberg reports that the worst-case scenario may be close to \$1 trillion [Woellert and Gittelsohn (2010)]. News that house foreclosures continue to rise could lower expected surpluses, requiring higher inflation to reduce the value of debt.
  - As confidence recovers and investors are willing to take on more risk, the flight to quality that reduced discount rates will be reversed, reducing demand for treasuries and raising discount rates. This is equivalent to bad news about the present value of surpluses, raising inflation and economic activity.
- ③ Reference: *Monetary Science and Fiscal Alchemy*, Leeper (2010).

## 1 Example Specification of Regression Equation

$$FGAP_t = \beta_1 FGAP_{t-1} + \beta_2 RP_t + \beta_3 CRE_t + \beta_4 CA_t + \gamma Z_t$$

$FGAP_t$  denotes the fiscal gap at period  $t$ ,  $RP_t$  is the sovereign risk premium at period  $t$ , and  $Z_t$  is a set of other control variables.

- 2 Fiscal gap is defined as a country's excess of total expenditures (including those arising from its commitments to spend in the future) over available current and future resources in present value sense.
- 3 A non-zero fiscal gap implies that the federal government is violating its inter-temporal budget constraint, meaning that it will not be able to finance its expenditures at some point in the future.



# Financial Volatility and Cost Channel for Fiscal Responses to Financial Crisis

- 1 Fiscal stimulus may increase the cost of servicing the public debt.
- 2 An increase in public debt may lead to a higher interest rate in the future, thereby increasing the burden of serving the future debt.
- 3 The size of the cost channel can be measured by evaluating the flow cost of serving the public debt as a percentage of the GDP, equals to (real interest rate - real GDP growth rate) times the public debt/GDP ( $= (r - g)d$ ).
- 4 Financial volatility can affect the real interest rate and the GDP growth rate.
- 5 Reference: *The role of fiscal policy in response to the financial crisis* Aizenman and Jinjark (2010).

# Different Results Between Advanced and Emerging Market Countries

- ① Positive Correlation between General Government Balance and Private Sector's Credit in Advanced Countries and Negative Correlation between General Government Balance and Private Sector's Credit in Emerging Market Countries
- ② Consumption sprees backed by increases in government spending can help expand the aggregate amount of private credits with the deterioration of general government balance.
- ③ Government can use its expenditures to bail out financial intermediaries when their credits are high and their balance sheets deteriorate.
- ④ Revenues from property taxes might be relatively small.

# Fiscal Restructuring in Emerging Markets during the Great Moderation

- 1 The growing financial integration exposed emerging markets to fast moving, but deep crises, starting with the Mexican 1994-5 Tequila, continuing with the East Asian, Russian, Brazilian and other crises.
- 2 These events forced emerging markets to deal with fundamental deficiencies, consolidating their fiscal positions, reducing their overall balance sheet exposure, and buffering their positions with remarkable accumulation of reserves.
- 3 Consequently, emerging markets earned the drop in their risk premium by solidifying their tax base and rationalizing their public expenditure.
- 4 Reference: *The role of fiscal policy in response to the financial crisis* Aizenman and Jinjark (2010).

# Financial Market Measures of Sovereign Risks and Bank Risks

- 1 Acharya, Drechsler, and Schnabl (2011) present empirical evidence for two-way feedback between financial and sovereign credit risk using data on the credit default swaps of the Eurozone countries for 2007-10.
- 2 Bailouts transmitted risk from the banks to the sovereigns and triggered a rise in sovereign credit risk across a broad cross-section of developed countries.
- 3 Bailouts induced increases in sovereign credit risk.
- 4 Reference: *A Pyrrhic Victory? – Bank Bailouts and Sovereign Credit Risk*, Acharya, Drechsler, and Schnabl (2011).

- 1 It is possible to augment a prototypical New Keynesian model by incorporating interactions between sovereign risk premium and the level of public debt into the model.
- 2 Modelling Assumptions
  - Sovereign risk premium rises with the level of public debt in a country with high public debt.
  - Household cannot borrow at a rate below which the government does.
  - Financial frictions are modelled in terms of the responsiveness of banks' lending rates with respect to changes in the sovereign risk premium.
  - Monetary policy target responds to inflation and output gap alone.

# High Public Debt Period versus Low Public Debt Period

- 1 Public debts in the advanced economies have surged in recent years to levels not recorded since the end of World War II, surpassing previous peaks reached during World War I and the Great Depression.
- 2 Banking crises most often either precede or coincide with sovereign debt crisis.
- 3 Public debt follows a lengthy and repeated boom-bust cycle; the bust phase involves a markedly higher incidence of sovereign debt crises. Public sector borrowing surges as the crisis nears.
- 4 Reference: *A Decade of Debt* Reinhart and Rogoff (2011).

# Specification of an Augmented New Keynesian Model

## 1 Aggregate Demand and Supply Equations

$$x_t = E_t[x_{t+1}] - \sigma(r_{h,t} - E_t[\pi_{t+1}])$$

$$\pi_t = \beta E_t[\pi_{t+1}] + \kappa_x x_t + \kappa_r r_{f,t}$$

## 2 Government's Budget Constraint

$$d_{t+1} = r_{g,t} + \beta^{-1}(d_t - \pi_t) - \frac{1 - \beta}{\beta} s_t$$

## 3 Determination of Interest Rates

$$r_{h,t} = r_t + \psi_{h,t} \exp(d_t) - \psi_h$$

$$r_{f,t} = r_t + \psi_{f,t} \exp(d_t) - \psi_f$$

$$r_{g,t} = r_t + \psi_{g,t} \exp(d_t) - \psi_g$$

## 4 Monetary Policy Rule

$$r_t = r_{n,t} + \phi_p \pi_t + \phi_x x_t$$

# Dynamic Effects of Temporary Increases in Financial Frictions due to Rises in Sovereign Risk Premium

