NYU STERN

The Global Economy
Professor David Backus

Problem Set #4: Monetary & Fiscal Policy

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You may do this assignment in a group. Whatever you hand in should be the work of your group and include the names of all of the contributors.

1. *The Taylor rule in the Euro Area (50 points).* You are a trader on Deutsche Bank's fixed income desk and have just been transferred from New York to London. You realize, among other things, that you must come to terms quickly with differences between American and European monetary policy. You wonder, given the chaos right now in the Euro Area, whether the Taylor rule is a reasonable guide. You review your Global Economy class notes and do the following:

   (a) Using data from FRED (see data guide below), you plot inflation and GDP growth for the Euro Area. (10 points)

   (b) You also plot the Euro Area interbank rate (a representative short-term interest rate) and the interest rate implied by the Taylor rule for the period 1999-present. Since it's not clear what "potential output" is right now, you use the growth rate version of the rule:

   $$i_t \;=\; r^* + \pi_t + 0.5(\pi_t - \pi^*) + 0.5(g_t - g^*),$$

   where g_t is the growth rate of real GDP. As usual, you use year-on-year inflation and growth rates and set $r^* = \pi^* = 2$. You also set $g^* = 2$, but wonder whether another value would be appropriate. (10 points)

   (c) How does the policy rate compare to the Taylor rule in 2009? Do you think the ECB's policy was appropriate? (10 points)

   (d) How does the policy rate compare to the rule now? What justification does ECB President Mario Draghi give in his most recent press conference? (And note the European dates: day/month/year.) Do you think the policy is appropriate? (20 points)

   Data guide. To implement the Taylor rule, you will need quarterly data for

   - Real GDP (FRED code NAEXKP01EZQ661S): use year-on-year growth rate.
   - Consumer prices (FRED code CP0000EZ17M086NEST): use year-on-year growth rate.
   - Euro area interbank rate (FRED code IR3TIB01EZQ156N): use as is.

   You can download all of them from FRED or generate the graph(s) directly in FRED.

2. *Fiscal policy in Brazil (50 points).* Brazil is the giant of Latin America, with a population of 200 million and a GDP over two trillion US dollars. It's a country of contrasts: enormous ethnic diversity, great music, better soccer, a functioning democracy, significant poverty and inequality, and a challenging regulatory environment. In the recent past it has enjoyed modest economic success, but no more, with per capita GDP growth from 1990 to 2013 of 1.6%. The most recent numbers show the economy in recession, with a second quarter growth rate of −2.4% (annualized).

   One of the longstanding economic policy concerns in Brazil has been the large size of the public sector: government spending of 40% of GDP puts it well above most other countries at similar levels of development. Government programs target a number of issues, including poverty and education, but there has been widespread public dissatisfaction with the quality of government services and perceptions of corruption.

   With recent budget deficits coming in above government forecasts, Standard and Poor's downgraded Brazilian government debt in March. The Economist summarizes: "S&P cited fiscal deficits in recent years, measly growth prospects, and the use of accounting tricks, state-owned banks and one-off revenues (like the sale of a concession for the exploitation of a big oil field) to flatter the budget balance."

   Your mission is to examine the budget yourself and assess the fiscal policy risks to the economy. Having some experience with such situations, you go to the IMF's WEO Database (entries for 2014 and 2015 are forecasts) and find:

	2012	2013	2014	2015
Real GDP growth (percent)	1.03	2.28	1.82	2.65
Inflation (percent)	5.84	5.91	5.85	5.40
Interest rate on debt (percent)	7.98	8.31	8.54	9.12
Govt expenditures (percent of GDP)	40.45	40.48	40.47	39.65
Government deficit (percent of GDP)	7.20	4.44	5.32	4.53
Government primary deficit (percent of GDP)	2.33	–0.71	0.08	–1.11
Government debt (percent of GDP)	68.18			

   You also check the EIU's Country Report and other sources, where you discover:

   - There is a hotly contested election for President in October in which incumbent Dilma Rousseff faces challenger Marina Silva, who entered the race when another candidate died unexpectedly.
   - Large government transfers to the state development bank and other public banks form a parallel budget that is not reflected in the government's quoted debt numbers.
   - Petrobras, the state-owned oil company, continues to be a magnet for corruption. A former executive alleges that a massive kickback scheme involved a cabinet minister, three state governors, six senators, and dozens of congressmen.

The company has also had difficulty extracting oil from so-called "pre-salt" deep-water oil reserves, but expects oil and revenue to come online shortly.

With this information in hand, you start to sketch out your report:

(a) What is the difference between the government's deficit and primary deficit? Why is the latter smaller? (10 points)

(b) Compute the debt-to-GDP ratio for the period in the table. Over the period 2012-2015, what factors account for the change in the ratio? (20 points)

(c) How would your estimate change of the debt-to-GDP ratio at year-end 2014 if (i) the interest rate paid on debt rose by 2% or (ii) the growth rate fell by 2%? (10 points)

(d) After skimming the EIU's Country Risk Report — and using your own good judgement — how would you rate the risk from government debt and deficits to the Brazilian economy? What specific concerns would you point to? (10 points)

Accessing the EIU's Country Risk Reports. Go to NYU's Virtual Business Library and click on, in order: Country Information, EIU Country Risk Service (login as requested if off-campus), Country Risk Service (again), and (in this case) Brazil. Choose the latest report.

Suggestion. If you have Brazilian friends or classmates, ask them what they think.