

## Problem Set #4: Monetary & Fiscal Policy

Revised: November 23, 2013

*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're 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 Taylor rule for the same rate 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 President Mario Draghi give in his most recent [press conference](#)? Do you think the policy is appropriate? (20 points)

Data guide. To implement the Taylor rule, you'll 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. It's not required, but you can also generate the graph(s) directly in FRED.

2. *Fiscal policy in India (50 points)*. After a century or more of poor macroeconomic performance, India began growing rapidly in the 1980s and briefly approached Chinese rates of growth. It remains a poor country, but much less so than thirty years ago. Last year, however, growth dropped dramatically, and analysts fear there could be worse to come. Among their concerns:

- The ruling Congress party has done little to continue the liberalization that led to high growth over the last thirty years.
- Some of the most restrictive labor market regulations anywhere in the world have limited the participation of the large population of unskilled workers, as firms invest in automation and hire skilled workers instead. Think: call centers and software, not manufacturing.
- Infrastructure remains poor across the board.
- The rupee dropped 20% in August, as investors reacted to the prospect of higher interest rates in the developed world and the government's misguided attempt to impose capital controls.
- Major redistribution programs, designed to help the poor and garner votes, have exacerbated a continuing problem with government debt and deficits. The Economist Intelligence Unit puts it this way in their Country Risk Service: "India's sovereign risk rating is constrained by poor fiscal management and high levels of public debt."

Your mission is to focus on the last item: to assess the fiscal policy risks to the economy. Having some experience with such situations, you collect some data:

	2011	2012	2013	2014
Real GDP growth (percent)	7.75	3.99	5.68	6.23
Inflation (percent)	9.30	8.10	7.85	7.35
Interest rate on debt (percent)	6.39	6.61	6.86	7.25
Govt expenditures (percent of GDP)	27.19	27.50	27.78	28.01
Government deficit (percent of GDP)	8.44	8.31	8.31	8.45
Government primary deficit (percent of GDP)	4.20	3.90	3.77	3.68
Government debt (percent of GDP)	66.36			

Entries for 2013 and 2014 are forecasts.

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 India's debt-to-GDP ratio for the period in the table. Over the period 2011-2014, 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 Indian economy? What specific concerns would you point to? (10 points)

Accessing the EIU's Country Risk Reports. Go to NYU's [Virtual Business Library](#), then click on Country Information, EIU Country Risk Service (login as requested if off-campus), Country Risk Service (again), and (in this case) India. Choose the latest report and give it a quick read.