Name

Instructions. You have one hour and twenty minutes to complete this exam. Please read the whole text carefully and then write legibly in the allotted space. I wish you good luck. I hope you will do well. Notice: these questions were part of a test administered in May 2011.

1. Spain. Spain is one of the victims of the sovereign debt crisis that characterized the Eurozone in the last 18 months. What makes Spain’s case peculiar is that in 2010 the central government’s debt was only approximately 65% of GDP. This statistics is considerably lower than the data for the US or the average for the European Union. Spain’s crisis is mostly the result of excessive private sector’s borrowing.

   (a) The enclosed article entitled “Nightmares for residents trapped in Spanish ghost towns” reminds us that “Up until four years ago, there was barely any difference between how markets treated Germany and Spain. Given that the two countries are part of the same monetary zone, that made sense.” Do you agree that it indeed made sense? After all, the two countries are still in the same monetary zone. Furthermore, four years ago the boom in mortgage lending and real estate prices was in full swing. Please explain what caused yield spreads between German and Spanish Treasury Bonds to increase by as many as 200 basis points (for 10-year securities). (10 points)

   Answer. At the inception of the Euro, yields on Spanish Treasury Bonds dropped to the levels of German Bonds because inflation expectations and default risk were assessed to be the same in Germany and Spain. Inflation expectations became the same because the bonds are denominated in the same currency and the market assessed as negligible the probability that Spain exited the Eurozone in the medium run. The Spanish Treasury’s default risk declined because (1) Spain’s economic was growing (and expected to keep on growing) faster than the EU average, (2) Spain’s debt to GDP ratio was low and (3) without a major recession (which virtually nobody
expected), it was thought to be unthinkable that the Eurozone would let any of the member countries default.

The event that led to a rather sudden change in expectations was the deep recession that affected the EU, and in particular Spain, along with the emergence of very high levels of private sector’s indebtedness. Spanish banks have a huge amount of non–performing loans in their balance sheets: house prices have dropped, but the nominal value of mortgages stayed the same. The downward rigidity of wages is making the recession larger and longer. Both problems would be addressed if Spain exited the Eurozone, reverting to their own currency, and inflate. This is why inflation expectations are now different. An alternative course of action for the Spanish government is to take charge of non–performing bank liabilities, similarly to what happened in Ireland. In turn, that may lead to default – in particular if considering that the rest of the Eurozone, given the enduring recession and the size of the Spanish economy, may not be in the position of bailing Spain out. This is why the default risk increased.

(b) According to the article “Nightmares for residents trapped in Spanish ghost towns,” Spain’s government officials resent the acronym PIGS because it likens Spain to other European countries – Italy, Portugal, and Greece – who are notorious for their lax fiscal policy, large government budget deficits, and mounting national debts. Which economic policies, if any, should Spain’s government and/or Central Bank have implemented in order to prevent the current crisis? What side effects would those policies have caused? (10 points)

**Answer.** Spain’s central bank obviously had no access to open market operations or other standard monetary policy measures. However, it could have used its regulatory powers to try to restrain banks’ role in the mortgage market and their lending to the construction sector. This could have been accomplished, for example, by raising capital requirement for banks, or limiting their ability to borrow on the wholesale market. The government could have set more stringent standards on the mortgage market, with the intent of limiting the eligibility of borrowers.

(c) Several observers project that, should the speculative attacks on its national debt continue, Spain will request a bailout along the lines of other Eurozone countries before it. Some fear, however, that Spain is “too big to save.” That is, the size of the required loan would be too large for the European Financial Stability Facility (the European bailout fund that assisted Greece and Ireland) or its post–2013 successor, known as the European Stability Mechanism. What policy options would be left in such scenario? What would their effects be? (10 points)

**Answer.** One possibility is that the IMF will intervene, similarly to what
happened with Portugal for example. The IMF is likely to condition its help to Spain’s government willingness to go ahead with a series of reforms, among which a cut in public spending. Another possibility is for Spain to restructure its debt and stay in the Eurozone. Restructuring means partial default. This is likely to impair the borrowing ability of the Spanish Treasury in the foreseeable future. Yet another possibility is for the European Central Bank to purchase large quantities of Spanish Treasury bonds on the secondary market. This may undermine the credibility of ECB’s commitment to a low and stable inflation. Finally, Spain may decide to exit the Eurozone. This choice would return control of monetary policy to the Bank of Spain. In such scenario, there would be a burst of inflation in Spain, accompanied by a devaluation of the Peseta with respect to the Euro.

(d) Spain is a federation of autonomous regions. The 17 regional governments are in charge of providing many important services to the population. For example, they are in charge of schools and hospitals. According to the enclosed article entitled “Regions to be worried,” in recent years the regional governments have incurred in sizeable budget deficits. In its effort to lower the overall public sector deficit and regain the bond market’s confidence, the central government pledged to limit their ability to borrow. Catalonia’s finance minister, Andreu Mas–Colell, argues that he’s being asked to cut his region’s budget by 20%. What would be the aggregate effects of such a large cut in the government’s purchase of goods and services? (10 points)

**Answer.** The cut in government’s purchases will likely lead to a drop in GDP with respect to the counterfactual scenario in which such cut did not take place. However, the drop in GDP is likely to be less than 1 for 1. The reason is that interest rates will drop, which in turn is going to have a positive impact on private consumption and corporate investment.

2. **QE2.** In a speech delivered at Jacksonville University on November 5, 2010, Federal Reserve Chairman Ben Bernanke argued that the large-scale asset purchase program known as QE2 is not inflationary. Here is an excerpt from his speech: "Well, this fear of inflation is way overstated. One myth that’s out there is we’re printing money. We’re not printing money. The amount of currency in circulation is not changing. The money supply is not changing in any significant way. What we’re doing is lowering interest rates by buying treasury securities. And by lowering interest rates we hope to stimulate the economy to grow faster."

(a) Carefully describe the impact of the QE2 program on reserve balances, monetary base, and M2. (10 points)

**Answer.** Every dollar spent by the Fed in the QE2 program amounts to an increase in reserve balances and monetary base. The extent of the impact on M2 depends on banks’ lending behavior, which in turn is influenced by the rate that the Fed pays on reserve balances.
(b) Federal Reserve Bank of Philadelphia President Charles Plosser repeatedly argued that an early end to QE2 may be required to help limit inflation pressures. Under what conditions is Bernanke right to play down the fear of inflations? Under what conditions is Plosser right in arguing the opposite point of view? (10 points)

**Answer.** Bernanke's assessment is based on (1) the fact that there appears to be a lot of slack in the US economy – capacity utilization is low and the unemployment rate is high – and (2) the Feds' ability to limit M2 expansion by increasing the interest it pays on reserves. Plosser's assessment is based (1) on the expectation that the expansion is going to accelerate and (2) on the conjecture that the slack is concentrated in declining industries, while labor market conditions are quite tight in relatively new and fast-growing sectors.

3. Miscellany.

(a) Assume that the marginal income tax rate for the top bracket is to the right of the peak of the Laffer curve. Who would benefit from a decrease in such tax rate? Who would lose? Why? (10 points)

**Answer.** Nobody would lose. Taxpayers whose income is in the top bracket would be better off because of lower tax rates. Since tax revenues would increase, the other citizens will also be better off.

(b) The Central Bank of Latvia currently lets its currency, the Lat, float within 1% of the central rate of 0.7 per 1 Euro. Latvia's Net Foreign Assets are roughly −26 billion Euros and the Bank's foreign reserves are 5.1 billion Euros. In 2010, the current account was in surplus for roughly 3.6% of GDP. Preliminary data for January and February 2011 hints that the current account balance should record a surplus for the first quarter of 2011 as well. Several observers noted that the Central Bank's ability to maintain the floating peg hinges dramatically on the country maintaining a current account surplus in the foreseeable future. Do you agree? Why? (10 points)

**Answer.** In order to maintaining the floating peg, the Central Bank of Latvia needs to keep a substantial amount of Euros and Euro-denominated assets in portfolio. Running consistently a current account surplus is the way of insuring a constant net inflow of such assets into the country.

(c) At the end of March 2001, one US dollar was worth 2,309.83 Colombian Pesos. Ten years later, the exchange rate was 1,888.0. Compute the average yearly appreciation of the Peso during this period. In March 2001, the CPI indexes were 64.77 for Colombia and 176.1 for the US. In March 2011, the same indexes were 107.12 and 223.47, respectively. What was the average yearly rate of change in the real exchange rate between the two currencies? Was this change to the benefit of US residents traveling to Colombia? (10
points)

**Answer.** The US dollar depreciated at average yearly rate of 2%: \( \frac{1}{10} \log\left(\frac{1,888}{2,309.83}\right) = -0.0202 \).

Average inflation in Colombia was roughly 5%: \( \frac{1}{10} \log\left(\frac{107.12}{64.77}\right) = 0.0503 \).

Average inflation in the US was roughly 2.4%: \( \frac{1}{10} \log\left(\frac{223.47}{176.1}\right) = 0.0238 \).

The dollar’s real exchange rate depreciated at average yearly rate of 4.67%: 0.0202 + 0.0503 − 0.0238 = 0.0467. This change was not to the benefit of US residents traveling to Colombia.

(d) At the beginning of 2001, El Salvador abandoned its own currency. The US Dollar became legal tender. What are the costs and benefits of such strategy, often referred to as dollarization? (10 points)

**Answer.** The main benefit of dollarization is discipline in fiscal policy. Deficit monetization is not an option any longer. Another benefit is the elimination of exchange rate risk with a major trade partner. Among the costs, is the loss of seigniorage revenues and of monetary policy as a means of influencing aggregate demand.