

Problem Set #1: Macroeconomic Data

Revised: December 13, 2011

You may do this assignment in a group of up to five people. Whatever you hand in should be the work of your group.

1. National accounts in Margaritaville (40 points). Jimmy Buffett has decided to apply for membership in the European Union on behalf of his newly sovereign nation, Margaritaville. As part of his application, he must provide the EU technocrats with a complete set of national accounts. You have been hired as the Chief National Accountant. Your first day on the job, you receive an official Coral Reefer Crew™ t-shirt and the following information about local economic activity:
 - Local Cheeseburger in Paradise™ cafes sold \$50,000 worth of cheeseburgers to local consumers. Their expenses were: imported beef and sesame seeds (\$7,000), locally produced catsup (\$10,000), wages and benefits (\$20,000), and rent (\$3,000). Hint: you will need to compute the profit earned by the cafes.
 - Local tomato growers sold \$8,000 worth of tomatoes to domestic catsup producers and exported another \$2,000 to the US. They paid land rent (\$1,000) and wages (\$9,000).
 - Local producers of the Margaritaville Frozen Concoction Maker™ sold \$100,000 worth of blenders. 40% were exported to Europe, the remainder to local consumers. Their expenses were \$15,000 worth of imported metal, \$15,000 for a new CNC machine imported from Germany, and \$70,000 in wages.
 - The domestic catsup industry sold \$10,000 worth of product to local cafes. They purchased \$8,000 worth of tomatoes from domestic growers and paid \$2,000 in wages.
 - The newly-formed government collected \$10,000 in taxes from its citizens and paid \$10,000 to government regulators, who oversee food and beverage safety.

Your mission is to use this raw data to construct national income and product accounts for Margaritaville. Specifically:

- (a) Compute GDP and its expenditure components (consumption, investment, government purchases of goods and services, exports, and imports). (10 points)
- (b) What are saving and investment? Why are they different? Where does the difference go? (10 points)

- (c) Compute the contribution of each production unit to GDP. (10 points)
- (d) Jimmy looks over your calculation in (a) and is worried that you made a mistake. Over a couple Land Shark LagersTM you explain to him that GDP can be computed three different ways: the sum of expenditure components, the sum of value-added across production units, and the sum of payments to labor and capital. You do the remaining one, payments to labor and capital, and show him that you get the same answer. He buys you a margarita to show his appreciation. (10 points)
2. Inputs and outputs (20 points). Specify the most likely direct impact of each of the following on the components of the production function:
- (a) A new office building in Wuhan, China. (5 points)
- (b) A reduction in the minimum wage that leads more people to work. (5 points)
- (c) A more efficient air-conditioning system in the Kaufman Management Center. (5 points)
- (d) A reduction in tariffs in Brazil on imported computer equipment. (5 points)
3. Investment and saving in China and India (40 points). China and India have both grown rapidly in the recent past, but there are a number of differences. One of the investment rate, which is much higher in China. Our mission here is simply to document the facts.

Using one of the sources mentioned below, download the expenditure components of GDP (measured at current prices) for both countries for the period 1990-present. Use them to

- (a) Graph investment, saving, and net exports as ratios to GDP. Define saving here as $S = Y - C - G$. How does investment compare in the two countries? Saving? (20 points)
- (b) How important are foreign sources of funds to investment in the two countries? Informed speculation is sufficient here. (10 points)
- (c) Why do you think the two countries show such different patterns? (10 points)

Online data guide. One good source is the EIU's CountryData, which you can access with these steps:

- Go to NYU's [Virtual Business Library](#), then click on Country Information, EIU Country Data, and CountryData.
- Once there, click on Data Selection to choose the countries, time period, and series of interest.

The IMF has a new interface, too:

- Go to the IMF's [eLibrary](#). (I think this requires an NYU ip address.)

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- Look for Query Builder, click on Country (China, PR: Mainland), then under Concept choose National Accounts, Expenditures, Nominal, etc. Then check the series you need and download them.

Let me know which one you like best and I'll tell everyone.