Masters Macroeconomics Fall 2015
Homework Assignment Due: 30 September

1. In 2010, per-capita real GDP in the United States was $41 627 whereas in Slovakia it was $18 905. In 1995, the U.S. figure was $34 060 (for a 15-year accumulated growth of 22.2%) and in Slovakia it was $11 490 (growing by a much-larger 64.5%). Use the model described by Figure 2 on page 473 of the Easterlin paper on the reading list (reproduced below), to answer the following questions:

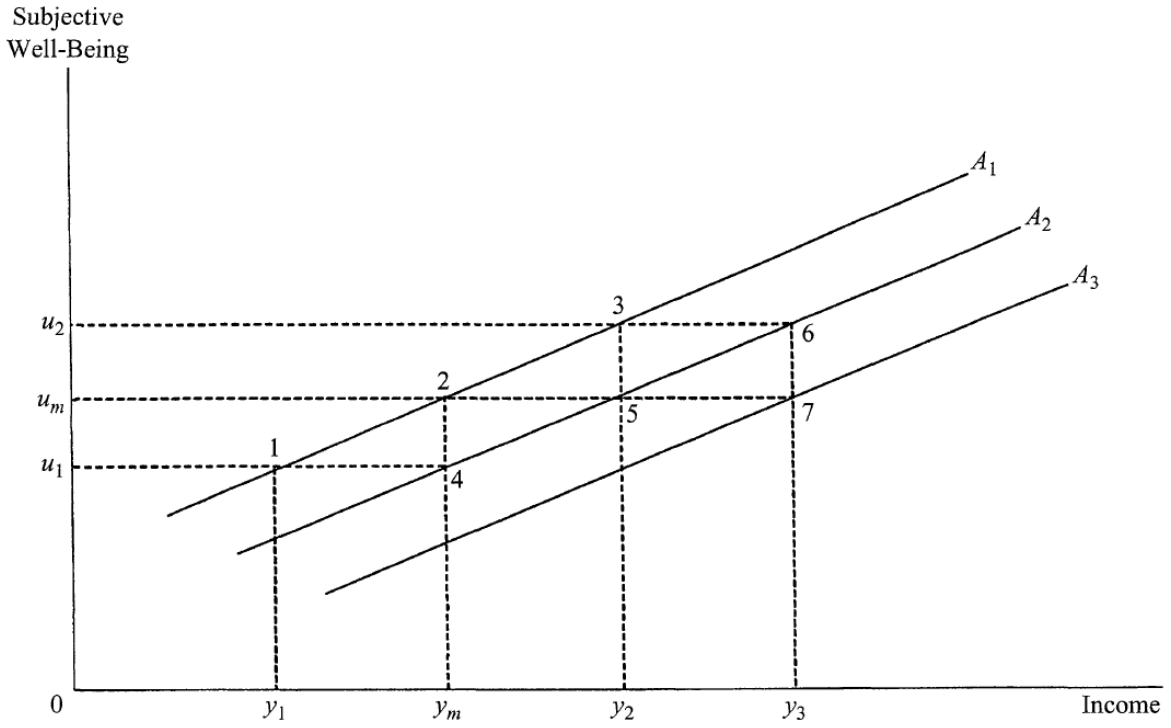

Fig. 2. *Subjective Well-Being* (u) *as a Function of Income* (y) *and Aspiration Level* (A)

a. How would the "aspiration level" of the average person in 2010 in the United States differ from that of the average Slovak due to the differences in GDP? What effect would the more rapid growth in Slovakia in the previous 15 years have on 2010 aspirations in Slovakia *vis-à-vis* the United States?

b. Based on your answers to the previous questions, would you expect the average person in the United States to be happier than the average person in Slovakia in 2010, other things equal? Why or why not?

c. If an individual who earned the average income in Slovakia in 2010 moved to the United States and immediately earned the average U.S. income, do you think she would be happier initially? Why is this not the same question as part b? How would you expect her happiness to change over time as she became accustomed to living in the United States?

2. Table 2.1 of Mankiw and Taylor's European edition gives the estimates shown at right for the size of the informal or "black" economy as a percentage of GDP in various countries.

a. If statutory (by law) tax rates were the same in Greece and Austria, what difference would you expect in the amount of tax collections in the two countries as a share of GDP due to the difference in the size of the informal economy? Why?

b. Looking at Table 2-1 and Table 16-1 (below), discuss the correlation between having a large informal economy and having high government debt? Are there exceptions to the general pattern?

c. Discuss how the size of the informal economy might affect the policy analysis of the EU, IMF, and other international agencies in considering whether to provide bail-out funds to highly indebted countries, and what conditions to attach to them?

TABLE 2-1

Estimated Size of the Black Economy for Selected Countries (per cent of GDP)

Austria	8.6
Belgium	22.2
Denmark	18.2
France	14.8
Germany	14.8
Greece	30.1
Ireland	16.0
Italy	27.2
Netherlands	13.8
Norway	19.4
Portugal	22.8
Spain	23.0
Sweden	19.5
United Kingdom	13.0
United States	8.8
Japan	11.3

Source: Friedrich Schneider and Dominik H. Enste, 'Shadow Economies: Size, Causes, and Consequences', *Journal of Economic Literature*, 2000, vol. 38, pp. 77–114.
The black economy varies from country to country, but can represent a sizeable proportion of GDP.

TABLE 16-1

How Indebted Are the EU-27 Governments?

Country	Government Debt as a Percentage of GDP (2012)
Greece	156.9
Italy	127.0
Portugal	123.6
Ireland	117.6
Belgium	99.6
France	90.2
United Kingdom	90.0
Cyprus	85.8
EU (27 countries)	*85.3*
Spain	84.2
Germany	81.9
Hungary	79.2
Austria	73.4
Malta	72.1
Netherlands	71.2
Poland	55.6
Slovenia	54.1
Finland	53.0
Slovakia	52.1
Denmark	45.8
Czech Republic	45.8
Lithuania	40.7
Latvia	40.7
Sweden	38.2
Romania	37.8
Luxembourg	20.8
Bulgaria	18.5
Estonia	10.1

Source: Eurostat.
Note: Data are based on estimates of general government gross debt and nominal GDP for 2012.

3. The U.S. Bureau of Labor Statistics now calculates six different measures of the unemployment rate for the U.S. economy. The table below is from the current release of unemployment statistics.

HOUSEHOLD DATA
Table A-15. Alternative measures of labor underutilization
[Percent]

Measure	Not seasonally adjusted			Seasonally adjusted					
	Aug. 2014	July 2015	Aug. 2015	Aug. 2014	Apr. 2015	May 2015	June 2015	July 2015	Aug. 2015
U-1 Persons unemployed 15 weeks or longer, as a percent of the civilian labor force	2.8	2.0	2.1	2.9	2.3	2.4	2.2	2.1	2.2
U-2 Job losers and persons who completed temporary jobs, as a percent of the civilian labor force	3.0	2.7	2.5	3.1	2.6	2.7	2.6	2.6	2.6
U-3 Total unemployed, as a percent of the civilian labor force (official unemployment rate)	6.3	5.6	5.2	6.1	5.4	5.5	5.3	5.3	5.1
U-4 Total unemployed plus discouraged workers, as a percent of the civilian labor force plus discouraged workers	6.7	6.0	5.6	6.6	5.9	5.8	5.7	5.7	5.5
U-5 Total unemployed, plus discouraged workers, plus all other persons marginally attached to the labor force, as a percent of the civilian labor force plus all persons marginally attached to the labor force	7.5	6.7	6.3	7.4	6.7	6.6	6.4	6.4	6.2
U-6 Total unemployed, plus all persons marginally attached to the labor force, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all persons marginally attached to the labor force	12.0	10.7	10.3	12.0	10.8	10.8	10.5	10.4	10.3

NOTE: Persons marginally attached to the labor force are those who currently are neither working nor looking for work but indicate that they want and are available for a job and have looked for work sometime in the past 12 months. Discouraged workers, a subset of the marginally attached, have given a job-market related reason for not currently looking for work. Persons employed part time for economic reasons are those who want and are available for full-time work but have had to settle for a part-time schedule. Updated population controls are introduced annually with the release of January data.

a. Focus first on the definitions in the left column (and in the note at the bottom). Give a rationale for why economists might be interested in each of the alternative measures as well as the official rate (U-3).

b. Comparing the figures for August 2014 with those for August 2015, do all of the measures tell the same story about the U.S. labor market or are there important differences?

c. The table gives both "seasonally adjusted" and "not seasonally adjusted" figures. What kinds of seasonal variations in unemployment might make such adjustment necessary? Does seasonal adjustment matter when you are comparing August 2015 with August 2014? Explain.

4. (This is problem #8 from Mankiw's Chapter 2) Consider an economy that produces and consumes bread and cars. In the following table are data for two different years.

	2000	2010
Price of a car	€50 000	€60 000
Price of a loaf of bread	€1	€20
Number of cars produced	100	120
Number of loaves of bread produced	500 000	400 000

a. Using 2000 as the base year, compute the following statistics for each year: nominal GDP, real GDP, the implicit price deflator for GDP, and a fixed-weight price index such as the CPI.

b. By how much have prices risen between year 2000 and year 2010? Compare the answers given by the Laspeyres and Paasche price indexes. Explain the difference.

c. Suppose that the government is thinking of indexing state retirement pensions, so that it will increase the pension paid to offset changes in the cost of living. The government minister responsible asks you for your advice as to whether to use the GDP deflator of the CPI. Which do you advise her to use? Why?