

Econ 308: Intermediate Macroeconomic Theory
Whitman College
Spring 2011

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Office hours are the following, or by appointment:

Monday 2:30-3:00

Tuesday 11:00-11:30, 2:00-3:00

Wednesday 11:00-11:30, 2:30-3:00

Thursday 2:00-3:00

Friday 11:00-11:30

Office hours will be modified February 28 - March 11 because of major exams.

Macroeconomics is the study of economic activity at the aggregate level. The topics we will cover include national income, employment, growth, business cycles, exchange rates, inflation, and interest rates. The course textbook is Macroeconomics, Seventh Edition by Gregory Mankiw. You are also required to read the *Wall Street Journal* and to keep a collection of articles that you will summarize and hand in periodically. You will use your collection of articles to write a paper. The paper assignment and the requirements for the WSJ articles are attached. There will be three midterm exams (100pts each), a comprehensive final exam (200pts), and eight problem sets (10pts each). The collection of articles from the WSJ counts 50 points, and the paper counts 50 points. You may work with others on the problem sets, but you must write them up individually. All problem set assignments must be turned in at the beginning of class on the day they are due. I will not accept late or illegible assignments. The first three problem sets are attached, and their due dates are indicated on the attached reading list. Because unforeseen conflicts do arise, I will drop your lowest problem set score.

Exam dates are marked on the attached reading list. I will not offer exams at times other than those scheduled. Please arrange your schedule now so that you do not have conflicts with the exam dates. If you have a registered disability that requires special accommodation for exams, see me a week before each exam so that we can make arrangements. All cell phones must be turned off and packed away during exams.

As a courtesy to others, please do not leave class except in emergencies.

The grading scale for the course is as follows. Note that there is no disadvantage to studying with others, as your grade does not depend on anyone else's performance. To help you study, old exams are available at <http://people.whitman.edu/%7ehazlett/econ308/econ308.html>.

Total Points	(% of 670)	Grade	Total Points	(% of 670)	Grade
657	0.98	A+	516	0.77	C+
623	0.93	A	489	0.73	C
603	0.90	A-	469	0.70	C-
583	0.87	B+	449	0.67	D+
556	0.83	B	422	0.63	D
536	0.80	B-	402	0.60	D-

Reading List and Problem Sets for First Section
Exam and WSJ Due Dates

January

- W 19 Introduction
Read the speech the Minneapolis Federal Reserve Bank President gave January 11, 2011.
You can find the speech, entitled "It's a Wonderful Fed", at
http://www.minneapolisfed.org/news_events/pres/speech_display.cfm?id=4607.
- F 21 Measuring gross domestic product and unemployment rates pp. 1-32, 36-41
Read the articles handed out in class:
"Nations Seek Success Beyond GDP" WSJ 1/10/2011
and "Downturn's Ugly Trademark: Steep, Lasting Drop in Wages" WSJ 1/11/2011
Read the article "Degrees of Job Security" by Chung, Davies, and Fitzgerald in the
December 2010 Federal Reserve Bank of Minneapolis *The Region* at
http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=4592
- M 24 Inflation and the Consumer Price Index pp. 32-35 and "A Better CPI"
in the Federal Reserve Bank of San Francisco's *Economic Letter* 2/5/99 at
<http://www.frbsf.org/econsrch/wklyltr/wklyltr99/el99-05.html>
- W 26 Chain-weighted real GDP and the deflator, Okun's Law pp. 3-15, 23-25, 260-263
- F 28 Distributing national income pp. 44-56
- M 31 Example of factor prices changes p. 56

February

- W 2 The Cobb-Douglas production function pp. 56-60 PROBLEM SET 1 DUE
- F 4 The Solow Growth Model: output, consumption, investment, depreciation
pp. 60-66, 191-196
- M 7 Steady state and savings in the SGM pp. 197-203
- W 9 The golden rule steady state pp. 203-211

PROBLEM SET 2 DUE by 3:30pm Thursday, February 10.

Please slip under my office door, Maxey 224.

- F 11 SGM with population growth pp. 211-218, p. 26 "FYI: Percentage Changes"
- M 14 EXAM 1
- W 16 Technological progress in SGM pp. 221-225
WSJ ARTICLES (15) DUE
- F 18 No class
- W 23 World economic growth, accounting for sources of economic growth,
national savings pp. 225-238, 247-254 PROBLEM SET 3 DUE

The second exam will be Friday, April 1.

The second set of WSJ articles (25) are due Friday, April 8.

The third exam will be Monday, April 25.

The WSJ paper and final set of articles (10) are due in my office (Maxey 224) Tuesday, May 10 by 3pm.

The final exam is the afternoon of Friday, May 13.

Wall Street Journal Assignment

Following the macroeconomic news reported in the *Wall Street Journal* (WSJ) will help you understand the theoretical and policy issues we cover in this course. During the semester you are required to collect and summarize at least 50 WSJ articles on the macro economy. You will use these articles to write a paper. The summaries you turn in must be your own work, designed to help you write the paper described in this assignment.

Because the WSJ does not check its op-ed pieces for accuracy, *you will not hand in articles labeled “opinion” or “commentary”*. The opinion pieces are located towards the end of Section A on pages labeled as opinion pages. In the online addition, the opinion pieces have the word “opinion” above the title.

The first **15** articles are due Wednesday, February 16. The next **25** articles are due Friday, April 8, and the final **10** articles are due Tuesday, May 10. You must turn in at least this number of new articles on each date, but you may turn in more. Maintain your collection in a three-ring binder with a divider separating the articles into the following two categories:

(1) **Data Tracking** These articles discuss newly released macroeconomic data. Examples include articles on the current unemployment rate, changes in gross domestic product, inflation, savings rates, labor productivity measures, survey results for consumer and business confidence, balance of payments, and leading economic indicators. (For a definition of leading economics indicators see pages 263-4 of the textbook.) Do not collect the article on the U.S. dollar exchange rate the WSJ publishes daily in its Money and Investing section. Knowing what happened to the value of the dollar over a 24-hour period would not give you a broad enough perspective to help you write a paper covering three months of macroeconomic activity. Similarly, do not collect articles describing stock values changes over the past few days.

Note that macroeconomic data describe the economy in the aggregate. So, do not collect articles on the performance of individual firms or particular industries. For instance, you would collect an article describing how much the Consumer Price Index changed over the past 12 months, due in part to changes in gasoline prices. However, you would not collect an article describing what happened to the profits of steel companies due to changes in oil prices.

(2) **United States Economic Policy** These articles discuss U.S. fiscal or monetary policy and include, for example, articles on federal government spending and taxation, the federal government budget deficit, social security and tax reform and other federal government budget proposals, designing and implementing financial regulatory reform, the money supply, interest rates and Federal Reserve actions. Do not collect any article that merely states how much debt the Treasury has issued or paid off over the past few days, as these articles do not describe economic policy, but simply cover the technical details of how the Treasury finances Congress’s deficit spending.

For each category, add your articles to your binder in chronological order, indicating the date on each article. Put all of your typed summaries of the articles at the **front** of your binder, with the date, article title and WSJ page number listed with each summary. When collecting articles and writing the summaries you should keep in mind the following paper assignment. In particular, you should be careful to collect information on all of the macroeconomic policy proposals discussed at the federal level over the course of the semester.

In the paper, due by 3pm Tuesday, May 10, you will

- (i) summarize U.S. macroeconomic performance over the course of the semester, based on the information from your data-tracking articles,
- (ii) summarize current and proposed U.S. monetary and fiscal policies, based on the information from your policy articles
- (iii) use economic theories from the course to explain the rationale for current and proposed policies, and
- (iv) use economic theories from the course to analyze the likely macroeconomic effects of these fiscal and monetary policies.

In other words, you will use economic models from the course to analyze the performance of the U.S. economy, to explain how this economic performance has influenced policy proposals, and to predict how these policies will in turn affect economic performance. You will need to use multiple economic models in your analysis because some models are better suited to analyzing short-term economic performance, some are better suited for long-term analysis, and some are better suited for very-long-term analysis. Your paper should treat all three time frames. Note that in order to apply the economic models from the course, you will have to draw graphs from these models to support your explanations. Thus, your paper will include several graphs, each of which you explain in the body of the paper. Your paper should be about 10 double-spaced pages, not including the graphs.

As you write your summaries, you should consider them a resource for when you write the paper, so that you do not have to go back and reread the entire WSJ article. You will find that some articles require only one or two sentences in summary, whereas other articles merit longer summaries.

You can subscribe to the WSJ (which gives you both print and electronic access to the WSJ's Western Edition), read the library's print subscription to the Western Edition, or access the library's e-WSJ subscription to the Eastern Edition.

PROBLEM SET 1

For Problem Set 1, answer Questions 1 and 2. Note that Question 2 is continued on the next page.

1. Consider the following information about the goods produced within the borders of a hypothetical country. Answer the following questions, showing all of your work.

Good	Price in 2002	Price in 2003	Amount produced in 2002	Amount produced in 2003
Carrots	\$10	\$12	100,000	110,000
Ambulances	10,000	9,800	10	10
Jeans	20	19	10,000	10,500
Bicycles	200	220	1,000	1,020

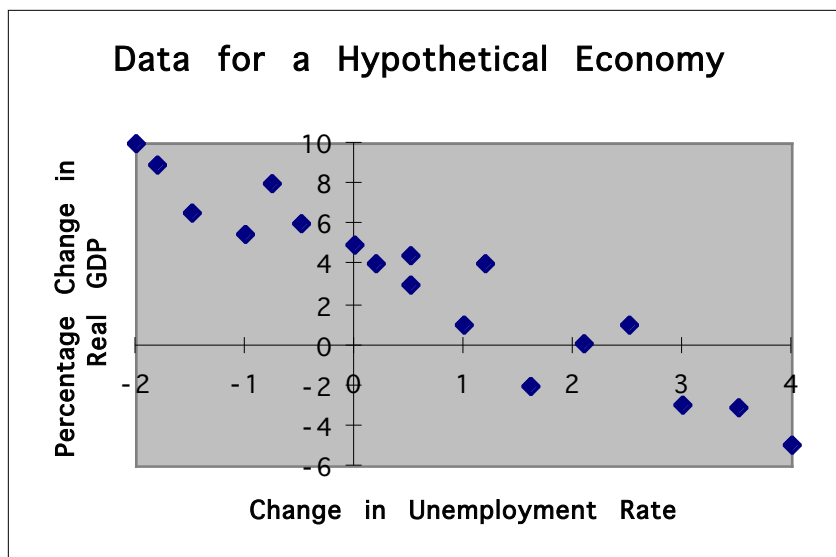
(a) (1pt) In 2002, the typical urban family bought 30 carrots, 8 jeans and 1 bicycle. With 2002 as the base year, calculate the Consumer Price Index for 2003.

(b) (1pt) Use the CPI calculated in part (a) to determine the inflation rate between 2002 and 2003. Suppose the CPI is 120.0 in 2004. What is the inflation rate between 2003 and 2004?

(c) (3pts) What is the Gross Domestic Product deflator for 2003, if 2002 is the base year? Use the geometric mean (chain-weighted) calculation.

(d) (1pt) Use the GDP deflator in part (c) to determine the inflation rate between 2002 and 2003.

2. Consider the following graph of annual data relating the change in the unemployment rate to the percentage change in real aggregate output in a hypothetical economy.



- (a) (2pts) Estimate Okun's Law for this hypothetical economy.
- (b) (1pt) Using your version of Okun's Law, estimate the effect on aggregate output if the unemployment rate in this economy were to fall from 6.5% to 6.0%.
- (c) (1pt) Using your version of Okun's Law, estimate the effect on aggregate output if the unemployment rate in this economy were to rise from 8.25% to 9.0%.

PROBLEM SET 2

1. Consider the Cobb-Douglas production function where real aggregate output Y is given by $Y = A K^\alpha L^{1-\alpha}$, in which $A=2$ is a parameter measuring the productivity of the available technology, K is the amount of capital employed, L is the amount of labor employed, and $\alpha=0.4$ is the share of national income paid as compensation to capital. The depreciation rate in this economy is 0.05, the savings rate is 0.25, and the population is constant.

- (a) (2pts) Find the steady-state level of capital per worker.
- (b) (2pts) Find the steady-state level of national output per worker.
- (c) (2pts) Find the steady-state level of consumption per worker.
- (d) (2pts) Suppose the savings rate changes to 0.20. Find the new steady-state levels of capital per worker, national output per worker, and consumption per worker.

2. (2pts) Find a World Wide Web site that you think provides interesting information about macroeconomics. Describe the information the site provides, who authored the site, and why you find it interesting. Email your description to the Cleo email address for the course. Send the email from your Whitman email address.

PROBLEM SET 3

1. (1pt) Find the golden rule level of capital per person for the economy described in Question 1 on Problem Set 2.

2. Consider the three countries described below. Each country has the Cobb-Douglas production function $Y = AK^\alpha L^{(1-\alpha)}$, where Y is the amount of real aggregate output produced, K is the amount of capital employed, L is the amount of labor employed, A is a parameter measuring the productivity of the available technology, and α is the fraction of national income paid as compensation to capital. There is no labor-enhancing growth in technology in any of the countries. For each country, determine whether the country is producing at, above, or below the golden rule level of capital accumulation.

(a) (3pts) Country A. $K = 100, L = 200, A = 2, \alpha = 0.3$

Depreciation of the capital stock $\delta = 0.05$. The labor force grows at the rate $n = 0.2$.

(b) (3pts) Country B. $K = 50, L = 50, A = 1.5, \alpha = 0.2$

Depreciation of the capital stock $\delta = 0.1$. The labor force grows at the rate $n = 0.2$.

(c) (3pts) Country C. $K = 200, L = 50, A = 1, \alpha = 0.4$

Depreciation of the capital stock $\delta = 0.05$. The labor force grows at the rate $n = 0.15$.