Econ 308
Final Exam
May 13, 2011

Write all answers in your blue book. Show **all** of your work. The exam ends at 5:00.

1. Consider a hypothetical economy with a Cobb-Douglas production function and competitive factor markets. In this economy, labor becomes more productive at a rate of 1% per year. The population grows at a rate of 3% per year. People save 9% of output. The fraction of the capital stock that depreciates each year is 8%. The marginal product of capital is currently 0.10. Workers currently earn 60% of national income.

Use the Solow Growth Model with labor-augmenting technology to consider each of the following questions. If you have enough information to answer the question, then do so, showing your work. If you do not have enough information, then state what information you would need and describe how you would use that information to answer the question.

(a) (5pts) In the steady-state, at what rate would per-person real aggregate output change?

(b) (5pts) In the golden-rule steady-state, at what rate would real aggregate output change?

(c) (10pts) Is this economy currently at, below, or above the golden-rule level of capital accumulation?

(d) (5pts) What is the rental price of capital?

(e) (5pts) How does the share of national income earned by workers change?

(f) (5pts) How does the share of national income earned by capital owners change?

2. (10pts) Consider the article "Degrees of Job Security" by Wonho Chung, Phil Davies, and Terry J. Fitzgerald in the December 2010 Federal Reserve Bank of Minneapolis *The Region*. The authors pose the question below. How do they answer their question?

> High-wage workers are not spared job loss during recessions; their unemployment rate rises substantially, largely mirroring those of medium- and low-wage workers. This sharing of pain is seen, with some variation, in all recessions over the past 30 years.
>
> How can this be, in light of the low unemployment rates of college graduates – all those corporate executives, software engineers and economists earning high salaries?

3. (30pts) Consider the table below of information about a hypothetical country. Fill in the table.

Public (i.e. government) Savings	-300
Private Savings	500
Investment	350
Exports	100
Imports	
Consumption	1500
Government Expenditures	600
Aggregate Output	
Taxes	

4. Consider the following excerpts from the Wall Street Journal.

WSJ January 24, 2011

Is Yield Curve Signaling a U.S.-Rating Trim?

By Deborah Lynn Blumberg

Some bond experts believe yields in the Treasurys market are signaling the U.S. could one day be stripped of its triple-A status as it confronts a bloated budget deficit with no clear plans to reduce debt.

Earlier this month analysts at Moody's and S&P warned that the U.S. could be downgraded if it doesn't make progress in shrinking its elevated debt levels. The U.S. is grappling with a debt of about $14 trillion and rising. Its debt is 66% of gross domestic product and is projected to hit 85% by 2015. The consequences of a U.S. credit-ratings downgrade could devastate the economy, pushing up borrowing costs and threatening the dollar.

Even if the U.S. were to be downgraded, a default is highly unlikely. The Fed would be prompted to step in to buy more [Treasury] bonds, analysts said. Such a move could potentially spark runaway inflation and raise concerns that the government was monetizing the debt, or paying off government debt by rolling out the printing presses.

(a) (20pts) Use the Quantity Theory of Money to explain how elevated federal government debt levels could "spark runaway inflation" if the Federal Reserve acted to prevent default on the debt.

(b) (20pts) Use Purchasing Power Parity and the Quantity Theory of Money to explain how elevated federal government debt levels could threaten the dollar.

5. Consider the following excerpts from the Wall Street Journal.

WSJ MARCH 1, 2011

Inflation Queries Ahead for Bernanke

By Sudeep Reddy

Under current law, the Fed has a dual mandate to keep both inflation and unemployment low. The central bank's current policy aims to spur stronger economic growth, and thus more job creation, by holding short-term interest rates near zero and by buying $600 billion in Treasury bonds through June.

Some lawmakers have questioned whether the Fed's bond-buying program would pump so much extra money into the economy that it could cause consumer prices to soar. Top GOP lawmakers, such as House Budget Committee Chairman Paul Ryan of Wisconsin, have ramped up pressure on the Fed since Republicans won control of the House in the November elections, pushing for a single mandate focused mostly on inflation.

Many lawmakers acknowledge that the Fed still could have supported its current bond-buying program even under a single mandate due to concerns about the risk of deflation.

(30pts) Use the Keynesian fixed nominal wage Aggregate Supply – Aggregate Demand model to explain how the risk of deflation made it possible for the Federal Reserve to have “supported its current bond-buying program even under a single mandate” focused on inflation.

6. Consider the following excerpts from the Wall Street Journal.

WSJ.com MAY 12, 2011, 8:49 AM ET

Fed's Plosser Highlights Inflation Risks

The Federal Reserve continues to confront risks of rising inflation and must be ready to tighten monetary policy should conditions warrant it, a top Federal Reserve policy maker said Thursday. "While my expectation is that oil price increases will level off and that the currently elevated inflation measures will reverse, the risks to the inflation outlook are tilted to the upside," Federal Reserve Bank of Philadelphia President Charles Plosser said in a speech.

Plosser, who is a voting member this year of the policy-setting Federal Open Market Committee, said "if the economy continues to make progress, then monetary policy will need to exit from its extraordinary accommodation in the not-too-distant future."

The hawkish nature of Plosser's remarks weren't unusual for the policy maker, who has been critical of the central bank's efforts to stimulate the economy via zero-percent interest rates and an ongoing $600 billion bond-buying program aimed at goosing growth and lowering the unemployment rate. While the official hasn't offered a formal dissent to what the Fed is doing, he has nevertheless been on the leading edge of those who argue some form of tighter monetary policy will soon be needed.

(a) (25pts) Use the Keynesian fixed nominal wage Aggregate Supply – Aggregate Demand model to explain Mr. Plosser's policy position.

The Wall Street Journal article goes on to quote Mr. Plosser saying "the public and the markets may not have as much confidence in the Fed's ability or willingness to keep its price stability mandate clearly in focus."

(b) (15pts) Suppose that after the economy has made more "progress," the Federal Reserve does "keep its price stability mandate clearly in focus" and tightens monetary policy, but the public lacks "confidence in the Fed's ability or willingness" to do so. Thus the public does not believe that the Fed is tightening. Use the Lucas Aggregate Supply – Aggregate Demand model to explain what would happen to the macroeconomy.

(c) (15pts) Use Phillips Curve analysis to explain the situation you described in part (b).