Whitman College
Econ 308
Final Exam
May 9, 2013

Write all answers in your blue book. Show all of your work in your bluebook. The exam ends at 11:30.

1. Consider the November 15, 2012 speech "Solving the Too Big to Fail Problem" by William Dudley, President of the Federal Reserve Bank of New York, which you read for class.

(a) (4pts) According to Mr. Dudley, what is a "too big to fail" (TBTF) firm?

(b) (3pts) What is the TBTF problem?

(c) (3pts) What does Mr. Dudley propose for solving the TBTF problem?

2. The nonpartisan Congressional Budget Office (CBO), in its *Budget and Economic Outlook* (February 2013) discusses its projections for the size of the federal government debt and the likely macroeconomic effects of that debt. On page 7 the CBO states that "because federal borrowing generally reduces national saving, the stock of capital assets such as equipment and structures will be smaller and aggregate wages will be less than if the debt were lower."

For parts (a) and (b) assume the United States macroeconomy has competitive markets and a Cobb-Douglas production function. Suppose the labor-augmenting technology version of the Solow Growth Model (SGM) describes the United States macroeconomy.

(a) (20pts) Use the SGM to show how lower national savings reduces "the stock of capital assets such as equipment and structures." Show and explain your work.

(b) (25pts) Show how a reduction in capital would reduce aggregate wages. Thoroughly explain and support your reasoning, with reference to a graph of the production function and a graph of the factor market for labor.

3. Consider the following excerpt from the Wall Street Journal.

Why Aren't Smartphones Making Us More Productive? May 1, 2013, p. B1

By DENNIS K. BERMAN

> ...There's something bizarre going on. Even as an estimated 130 million smartphones roam the U.S. streets, economists can't quite find them. By that I mean they can't find how these mobile devices are improving worker productivity, which computers have been doing quite ruthlessly for the last 70 years. Productivity is the reason living standards rise. It's why we have more goods and services than our grandparents could imagine. The official U.S. productivity numbers are low when compared with the stunning 3% yearly gains of the first Web era, roughly 1995 to 2004. In fact, annual productivity growth since 2004 is about 1.5%, below even the long-term average of 2.25%. It's as if a time-wasting flock of Angry Birds has buried productivity like a worm…

For parts (a) - (c) below, assume the labor-augmenting technology version of the Solow Growth Model (SGM) describes the United States macroeconomy.

(a) (5pts) Suppose that productivity growth in the United States continues to average only 1.5% per year. In the steady-state, at what rate would real per-person income rise in the U.S? Explain your work.

(b) (5pts) Suppose that productivity growth in the United States returns to the long-term average of 2.25% per year. In the steady-state, at what rate would real per-person consumption rise in the U.S? Explain your work.

(c) (5pts) With reference to the SGM, explain how it is that "productivity is the reason living standards rise."

4. Consider the following excerpts from the Wall Street Journal (WSJ).

Fed Banker Backs Dialing Down Easy Money March 26, 2013 pA2

By VICTORIA MCGRANE

> A member of the Federal Reserve's inner circle Monday promoted a plan for the central bank to scale back the pace of its bond-buying program as the jobs market improves, though he stressed that a decision on how to proceed is far from imminent. William Dudley, president of the Federal Reserve Bank of New York…one of the chief advocates of the bond-buying programs, appeared decisively in favor of tapering off purchases in the future. "At some point, I expect that I will see sufficient evidence of economic momentum to cause me to favor gradually dialing back the pace of asset purchases," he said, speaking to the Economic Club of New York. Echoing Mr. Bernanke, he said the Fed could dial purchases back up if economic conditions worsened. Mr. Dudley stressed the labor market and broader economy are still not healthy enough to begin scaling back the bond buying…

Mr. Bernanke, in a separate speech in London on Monday, rejected the charge that the Fed's easy-money policies are provoking global currency tensions, arguing low-interest rates in the U.S. and other advanced economies are designed to boost domestic demand, not depress currency valuations to make exports more attractive. The easy-money policies being pursued by many of the world's industrialized nations have a side effect of lowering the value of the nations' currencies. That has sparked international tension, particularly between emerging markets and advanced economies. But Mr. Bernanke said currency devaluation isn't the goal. By supporting home economies, advanced nations will help the world economy, he said.

(a) (20pts) In William Dudley's March 25, 2013 speech quoted in the above WSJ article, Mr. Dudley also states "Inflation, as measured by the personal consumption expenditure deflator, is currently below the Federal Reserve's 2 percent objective…. Moreover, inflation expectations remain well anchored at levels consistent with our 2 percent longer-run objective."

Assuming the Quantity Theory of Money holds, describe what people believe the Federal Reserve will be doing on average with the money supply over the next several years. Be explicit in your answer, and explain your reasoning.

(b) (5pts) Mr. Dudley further states in his March speech that the Fed's bond-buying program "reduces the financial stability risks associated with a Japanese-style outcome of chronic deflation."

Assuming the Quantity Theory of Money holds, describe what Federal Reserve action over several years would cause 'chronic deflation.' Be explicit in your answer, and explain your reasoning.

(c) (20pts) In his March speech Mr. Dudley also acknowledges that some people fear "the large amount of excess reserves in the banking system will be 'dry tinder' and fuel a rise in inflation."

Derive the formula for the money multiplier. Using your formula for the money multiplier, and the Quantity Theory of Money, explain how the current extremely high levels of excess reserves in the banking system could "be 'dry tinder' and fuel a rise in inflation."

(d) (5pts) What reassurance does the Fed offer that the high levels of excess reserves in the banking system will not fuel a rise in inflation?

(e) (15pts) Assuming that Purchasing Power Parity holds, explain how "The easy-money policies being pursued by many of the world's industrialized nations have a side effect of lowering the value of the nations' currencies."

5. Consider the excerpts below from the Wall Street Journal one year ago. As you read these excerpts, keep in mind that the unemployment rate in the Untied States was 8.1% in April 2012.

Fed Officials Split on Jobs Progress   By Michael S. Derby **May 3, 2012**

A trio of Federal Reserve officials… spoke [May 3, 2012] at the University of California Santa Barbara… "The nation remains far from the Fed's assigned goal of maximum sustainable employment," [San Francisco Federal Reserve President John] Williams said "…it's essential that we keep strong monetary stimulus in place for quite some time."…

"The Fed's already done a lot to support the recovery," [Atlanta Federal Reserve President Dennis] Lockhart said. "Whether additional monetary-policy actions should be used at this time to try to speed things up has to be balanced against the risks to the Fed's price-stability objective that could accompany an overestimating of the amount of economic slack"…

[Philidelphia Federal Reserve President Charles] Plosser said while he doesn't see a need for further stimulus, he could envision something happening if a deflationary price environment started to emerge…

For questions (a)-(d) below, use the Keynesian fixed nominal wage Aggregate Demand – Aggregate Supply (AD-AS) model to analyze the statements of each of the three federal reserve officials.

(a) (15pts) Consider John Williams's assessment of the economy. Explain why a nation that "remains far from the Fed's assigned goal of maximum sustainable employment" needs "strong monetary stimulus." Refer to an AD-AS graph in your explanation.

(b) (15pts) Consider Charles Plosser's assessment of the economy. Explain how and why the Fed should intervene "if a deflationary price environment started to emerge." Refer to a new AD-AS graph in your explanation.

(c) (25pts) Consider Dennis Lockhart's assessment of the economy. Explain the "risks to the Fed's price-stability objective that could accompany an overestimating of the amount of economic slack." In your explanation, refer to a new AD-AS graph in which you show the short run and long run results of the Fed overestimating the amount of economic slack.

(d) (10pts) Describe what Fed policy has been since May 2012. Do you think the Fed overestimated the amount of economic slack that existed in May 2012? Explain your reasoning and support it with evidence.