Economics 104B, Section 1 **Prof. Steve Fazzari**
Solutions: Part 7 **Spring, 2013**

1. The U.S. economy has experienced substantial growth over the last century. Discuss the factors that led to this growth by summarizing the key determinants of potential output. You do not need to list every possible factor that affects Y*, just summarize the major categories.

Since the early 20th century, three major factors have altered productive capacity (potential output) in the U.S. economy. First, the capital stock has increased, as a result of investment. With more capital resources, aggregate production capacity rises. Second, the population of the U.S. has grown dramatically, and the proportion of the population participating in the labor force has gone up due to demographic and preference shifts, such as more women entering the labor force. These changes have created more labor resources. You might also mention that improved education has greatly increased the skill of the work force (higher "human capital") which probably created substantial growth. Third, and likely most important, there have been important improvements in technology so that the economy can produce more output, even if input resources had stayed the same. The productivity of workers is also improved by the higher capital stock, improved technology, and greater skill of the labor force. Each worker can produce more when he or she is better educated and has access to more capital equipment and better technology.

You could also identify many other detailed factors that affect potential output, including tax rates that alter incentives to work, save, and invest, government regulations, the preferences for saving and consumption of the population, etc.

2. Summarize the logic of the supply-side economic policies pursued early in the Reagan administration. Do you think these policies were successful in improving the performance of the U.S. macro economy? Cite specific evidence from recent economic performance in the U.S.

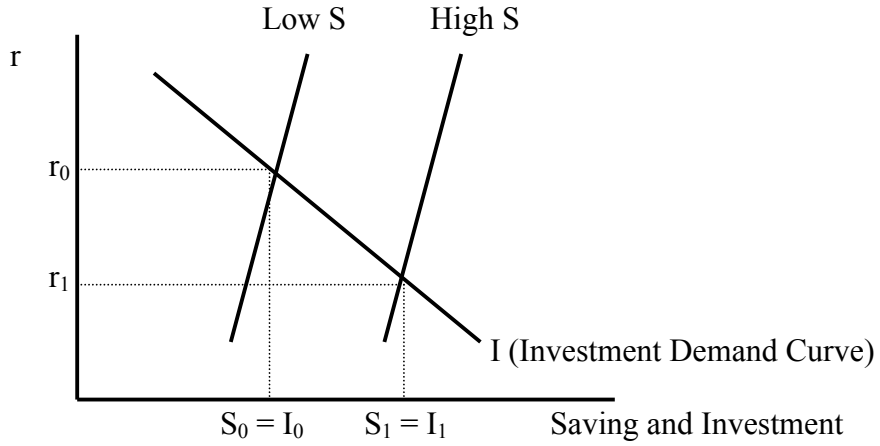
The primary emphasis of Reagan's supply-side economics was to change tax policy to improve *incentives* to work, save, invest, and develop new technology. Cutting income tax rates will increase an individual's disposable income. If workers are able to take home a larger portion of each dollar they earn, they have an increased incentive to supply labor. Lowering taxes on the return that people get from saving creates a greater incentive to save, which releases resources for greater investment in capital and new technology. Cuts in tax rates on interest income, dividends, and capital gains all may accomplish this goal. If individuals keep a greater portion of each dollar of interest or capital gains income earned, they may save more at any given interest rate. Many people argue that tax cuts, particularly cuts in capital gains rates, will give firms stronger incentives to develop new technology. The result of these changes, in theory, is higher potential output.

In practice, the evidence that the early 1980s supply-side polices worked as predicted by their promoters is mixed. The economy experienced a long expansion from about the time that the policies were put into effect until the slowdown in growth during the second half of 1989 and the recession beginning in 1990. A detailed look at the expansion, however, suggests some inconsistencies with supply-side predictions. There were a lot of jobs created (the growth rate of civilian employment was 2.4 percent from 1982 to 1989, while it was 1.9 percent from 1972 to 1982). This growth could be the result of supply-side incentives, although many studies question this conclusion. The employment growth also may have occurred in the absence of tax cuts, because of the demographic effects associated with the baby boom generation entering the work force in large numbers, as well as greater labor force participation among women, trends that were well underway before the change in economic policy. Supply-side economics predicted higher saving, but in fact saving rates fell dramatically during the 1980s (probably in part because individuals consumed their tax cuts rather than saving them). Therefore, critics have argued that the growth in the 1980s was more demand-led (Keynesian) than supply led.

Finally, the tax rate cuts of the early 1980s were partially reversed in the George Bush (senior) administration and the early part of the Clinton administration. Nevertheless, the U.S. economy experienced very good macro performance from the middle of 1992 through the rest of that decade. Therefore, the modest tax increases, at least on the surface, did not appear to be particularly harmful for the economy in contrast with what some supply-side economists predicted when the tax rates were increases.

3. It is conventional wisdom that higher saving makes individuals better off in the future. Describe in macroeconomic terms how higher saving can raise the welfare of the entire society. Use a "loanable funds market" graph that includes investment and saving curves in your answer.

As the diagram below shows, higher desired saving shifts the saving supply curve out to the right. At the initial interest rate (r_0), there is an excess supply of funds available to lend. Banks and other financial institutions will lower the interest rate in these circumstances to induce borrowers to take more loans. The lower interest rate (r_1) reduces the cost of capital, encouraging firms to borrow more for investment. The new equilibrium point results in higher investment as well as higher saving. (Investment moves from I_0 to I_1.)



Higher investment raises the capital stock and increases potential output, at least in the long run. The future economy is better off because it can produce more goods and services. In addition, higher potential output and higher capital raises labor productivity which raises standards of living.

It is important to recognize that this discussion assumes that the economy always remains at potential output (perhaps because good monetary policy has restored AD to the level necessary to purchase all of potential output). Therefore, this discussion is not concerned with "Keynesian" aggregate demand effects. The results of higher saving are favorable in theory, as long as output remains at the potential level. But if AD is not pushed back to potential output, higher saving, which implies lower consumption, may well lead to lower output and employment, possibly even lower investment, at least in the short run.

4. Give a supply-side macroeconomic explanation for why higher saving by the baby boom generation today will make it easier for society to deal with the big increase in the retired population over the next several decades.

Higher saving today lowers interest rates in the loanable funds market and raises investment in capital plant and equipment. Increased investment will raise the supply of

capital resources and increase future potential output. If the future economy can produce more output, it will be easier to provide for the baby boom retirement.

In addition, if the baby-boom generation saves more now, they will own a greater share of the future capital stock. To the extent that claims on this future capital have value to future generations of workers, baby boomers can sell their claim (for example, by selling shares of stock) to future income earners as a way of financing their consumption in retirement.

5. When the government budget deficit rises, many economists predict that private investment will be "crowded out." Use a loanable funds market diagram to demonstrate the crowding out phenomenon after an increase in the government budget deficit. Make sure that you clearly label the magnitude of investment crowding out.

An increase in the budget deficit shifts the demand for funds in the loanable funds market out to the right by the amount of the budget deficit. This shift occurs because the budget deficit is a net increase in the demand for borrowing in the economy. As the diagram below shows, this shift results in a higher equilibrium interest rate (the interest rate moves from r_0 to r_1). The increase of the interest rate raises firms' cost of capital and discourages their investment. The reduction of investment from I_0 to I_1 is called investment "crowding out."