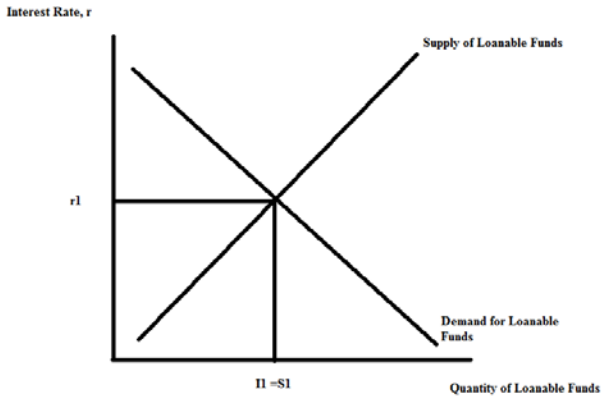
Economics 102 Name _____
Summer 2015
Answers to Quiz #3
Thursday, July 9, 2015

Please write your answers neatly and legibly.

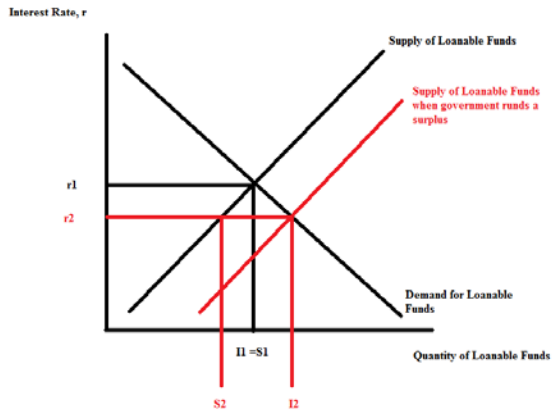
1. Consider the loanable funds market depicted below. In this graph assume that the demand for loanable funds curve depicts the private demand for loanable funds and that the supply of loanable funds curve represents the saving of households. Assume that initially the government is running a balanced budget and that there is balanced trade (neither a trade surplus or a trade deficit).



(2 points) Alter the above graph to represent the following scenario. Suppose that this government runs a surplus. Illustrate this surplus in the above graph. Label the new level of private investment as I2, the new level of household saving as S2, and the new equilibrium interest rate as r2. Make sure you label clearly any curves that shift.

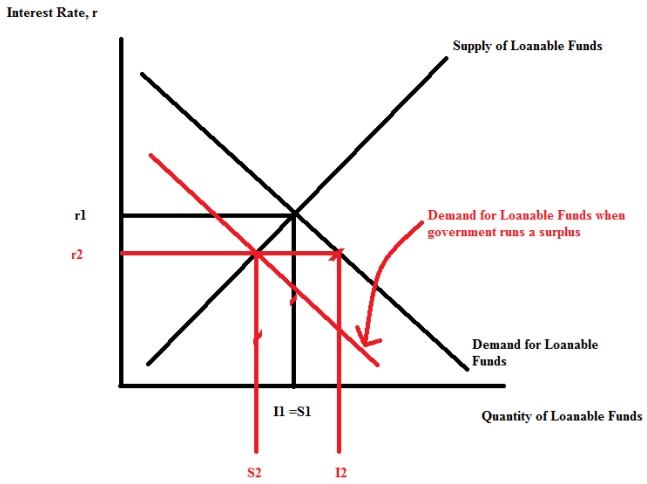
Answer:
There are two ways to model this surplus: I will provide both methods.

Method One:
The surplus results in a greater supply of savings at every interest rate since the government is now running a surplus and effectively has savings to contribute to the supply of savings curve. Here's the graph:



Note: that when the government runs a surplus this results in a lower interest rate: this lower interest rate stimulates investment (I1 increases to I2) and reduces private household saving (S1 to S2).

Method Two:
The surplus results in a smaller demand for loanable funds at every interest rate (this is harder to see "intuitively"….but, if the government had started with a deficit and then reduced the deficit we could see this as a reduction in loanable funds demand at every interest rate and this is essentially the same type of argument that this method is using). So, the demand for loanable funds curve shifts to the left….and here's the graph:



Note: that when the government runs a surplus this results in a lower interest rate: this lower interest rate stimulates investment (I1 increases to I2) and reduces private household saving (S1 to S2).

Also, I am going to say that I find Method One a lot more intuitively pleasing than Method Two: but both methods should provide the same overall result: lower interest rates, higher investment and lower private household saving.

2. Suppose that in an economy there are 10,000 people who are at least sixteen years old. Of these 10,000 people 5,500 are employed; while 2,000 are currently not working, are available for work, and are actively seeking employment by applying for jobs. Of the remaining 2,500 people in this population there are 1,000 people who are not working, are available to work, but who are not actively seeking work because they believe that the economy is performing so poorly that there are not jobs available for them; there are also 500 people who are currently working in part-time jobs but who would prefer to work in full-time jobs but they are not able to find these full-time jobs; and the remaining 1,000 people in this population are either full-time students or retirees.
a. (1 point) Using the standard definition of unemployment (U-3), calculate the unemployment rate for this population. Show any formulas you use to calculate this measure.

Answer:
Unemployment rate = [(Number of Unemployed)/(Number of Unemployed plus Number of Employed)]*(100%)
Unemployment rate = [(2000)/(2000 + 5500 + 500)](100%) = [(2000)/(8000)]*(100%) = 25%

b. (1 point) Suppose that the government reclassifies people who are discouraged workers as unemployed workers at the same time that they also decide to count as unemployed any workers who are working part-time while preferring to work full-time. Calculate the unemployment rate for this population based on

these new definitions of the unemployed. Show your work. Round your answer to the nearest whole percentage.

Answer:
New Unemployment rate = [(Number of Unemployed using this new definition)/(Number of Unemployed Using this New Definition + Number of Employed using this New Definition)](100%)
Number of Unemployed Using this New Definition = 2000 + 1000 + 500 = 3500
Number of Employed Using this New Definition = 5500
New Unemployment Rate = [(3500)/(3500 + 5500)](100%) = [(3500)/(9000)](100%) = 38.8% ≈ 39%

3. (2 points) Suzanne is considering three job offers for next year. These three offers are in three different cities and Suzanne wants to take the job that offers the greatest purchasing power. Suzanne rates the three jobs as equivalent, so she will accept the offer that provides her with the highest real income. Here are the offers as well as data that Suzanne has gathered about the CPI in each of the three cities. Using this data **explain** which job offer Suzanne should take.

City	**Job Offer**	**CPI (using Salt Lake City as the base city)**
Salt Lake City, Utah	$45,000	100
Lexington, Kentucky	$50,000	110
Orlando, Florida	$62,000	120

Answer:
One way to answer this question is to compute the real salary for each city:

City	**Job Offer**	**CPI (using Salt Lake City as the base city)**	Real Salary
Salt Lake City, Utah	$45,000	100	(45,000/100)(100) = $45,000
Lexington, Kentucky	$50,000	110	(50,000/110)(100) ≈$45,454
Orlando, Florida	$62,000	120	(62,000/120)(100) ≈$51,000 (I rounded big here!)

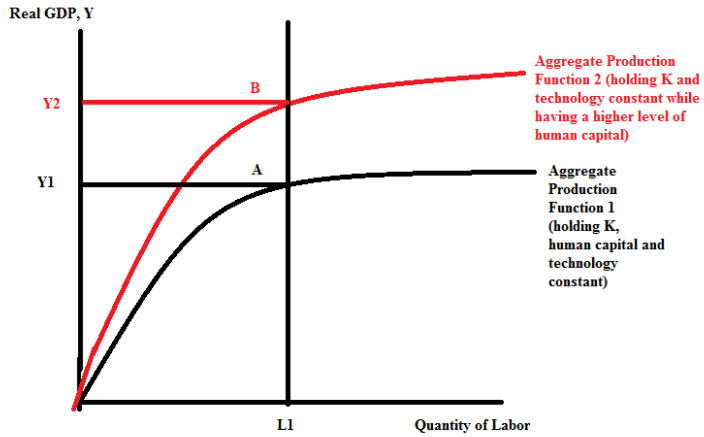
Alternatively, you could reason that the general price level in Orlando was 20% higher than in Salt Lake City: so, to "stay even" you need to have 20% more nominal income than in Salt Lake City. 20% of $45,000 is $9000 and clearly $62,000 is more than $9000 greater than $45,000.

For Lexington, Kentucky you would need 10% more nominal income than in Salt Lake City. 10% of $45,000 is $4500 and $50,000 is slightly more than 10% greater than $45,000.

So, just "eyeballing" this Suzanne should be able to quickly conclude that her destiny for next year lies in Orlando!

4. Consider an economy's aggregate production function. In the space below illustrate what happens to this aggregate production function if there is an increase in human capital.
a. (2 points) In your graph represent the quantity of labor on the horizontal axis and real GDP on the vertical axis. Then assume that this economy hires L1 units of labor and that this level of labor usage does not change once the increase in human capital occurs. Illustrate the initial level of real GDP as Y1 and the new level of GDP once the increase in human capital occurs as Y2.

Answer:



b. (2 points) In the space below verbally describe what happens to labor productivity with this increase in human capital. Provide the intuition behind what happens and not just a statement of the direction of change in labor productivity.

Answer:
Labor productivity increases and we can see that by drawing a ray from the origin through point A and a ray from the origin through point B. The slope of the ray that goes through point A provides the initial measure of labor productivity while the slope of the ray that goes through point B provides the new measure of labor productivity. For the same amount of labor, an increase in human capital results in a set of workers whose skill set allows them to produce more from a given amount of capital and labor: we see this through the increase in real GDP from Y1 to Y2.