DISCUSSION QUESTION

Name:
Instructor:
Course:

In September 2014, Tesla announced plans to build a $5 billion factory to produce lithium ion batteries for their electric cars in McCarran, Nevada. When fully operational, the plant plans to employ up to 6,500 full-time workers. A report titled "Tesla Economic Impact Report and Tax and Incentive Analysis" projects that more than 21,500 full-time jobs will be created in Nevada as a result of the Tesla factory.
Source: http://www.diversifynevada.com/documents/Full_Tesla_Summary_Report_Analysis_Letters.pdf

a) How is it possible that a single firm with only 6,500 workers can generate 21,500 full-time jobs in a region's economy?

b) What are the major factors that will influence the total number of jobs created in Nevada as a result of the Tesla plant?

c) Nevada's government gave Tesla $1.3 billion in tax incentives to locate in Nevada. Is this a wise use of public dollars? Why or why not?

PEER GROUP PROBLEM SOLVING

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Suppose Aggregate Expenditure (AE) in an economy is given by the following equation: 400 + 0.6Y, where 400 is the value of spending when there is zero income, 0.6 is the marginal propensity to consume, and Y is income.

a) Calculate the equilibrium income level for this economy.

b) If AE is reduced to 300 + 0.6Y, what is the new equilibrium income level for this economy?

c) What is the value of the multiplier for this economy?

d) Depict this situation graphically using a Keynesian-cross diagram. Spending should be placed on the vertical axis and income should be plotted on the horizontal axis. Graph both AE lines and show the equilibrium output levels associated with each AE.

IN-CLASS EXPERIMENT / ACTIVE EXERCISE

The aggregate expenditures model presumes that there is one single marginal propensity to consume (MPC) for the entire economy, and many students presume that all individuals have this same MPC. In reality, individuals have different MPCs and so different regions will have different multipliers. This exercise is intended to show how the multipliers will vary depending on the individual values of the MPCs.

Write random values ranging from 0.1 to 0.9 on index cards. The number of index cards should equal the number of students in the class. Have students form groups of 4 or 5 and pass out the index cards to each student. Give each group a hypothetical amount of money, like $100 or $1,000. Each student will spend the proportion of this amount based on the value on their index card, which represents their MPC.

After all students in the group have determined the amount they will spend, have each group sum the amount spent by each individual student. Have students use this number to determine the group's multiplier. To illustrate the relationship between the multiplier and the MPC, have students calculate their group's (average) MPC by summing the values of each individual MPC divided by the number of students.

The multiplier that was calculated earlier should equal: 1/(1 – *group MPC*).

SOLUTIONS AND INSTRUCTOR NOTES

Discussion Question

In September 2014, Tesla announced plans to build a $5 billion factory to produce lithium ion batteries for their electric cars in McCarran, Nevada. When fully operational, the plant plans to employ up to 6,500 full-time workers. A report titled "Tesla Economic Impact Report and Tax and Incentive Analysis" projects that more than 21,500 full-time jobs will be created in Nevada as a result of the Tesla factory.
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a) How is it possible that a single firm with only 6,500 workers could generate 21,500 full-time jobs in a region's economy?

This is possible because of the multiplier effect. Since each employee will spend a portion of their income in the local economy (the MPC), that consumption will create demand for new jobs. Those new jobs will then support and create other additional jobs in the same economy, again through the multiplier effect, and the cycle continues.

b) What are the major factors that will influence the total number of jobs created in Nevada from the Tesla plant?

It depends on many factors, but two of the major factors include the marginal propensity to consume goods in the local economy (the higher the MPC, the greater the multiplier), and how many of Tesla's suppliers will locate in Nevada (sales of intermediate goods).

c) Nevada's government gave Tesla $1.3 billion in tax incentives to locate in Nevada. Is this a wise use of public dollars? Why or why not?

Possibly. If the amount of additional tax revenue that Nevada generates as a result of the new Tesla plant exceeds $1.3 billion, then the public funds could be viewed as a wise investment. However, it is also possible that Tesla might have relocated without the incentives due to some other factor like desirable geography. Further still, one must compare the return on investment (ROI) of the Tesla plant incentives with the ROI of alternative projects Nevada could have pursued.

Peer Group Problem Solving

Suppose Aggregate Expenditure (AE) in an economy is given by the following equation: 400 + 0.6Y, where 400 is the value of spending when there is zero income, 0.6 is the marginal propensity to consume, and Y is income.

a) Calculate the equilibrium income level for this economy.

AE = Y
400 + 0.6Y = Y
400 = 0.4Y
Y=1,000*

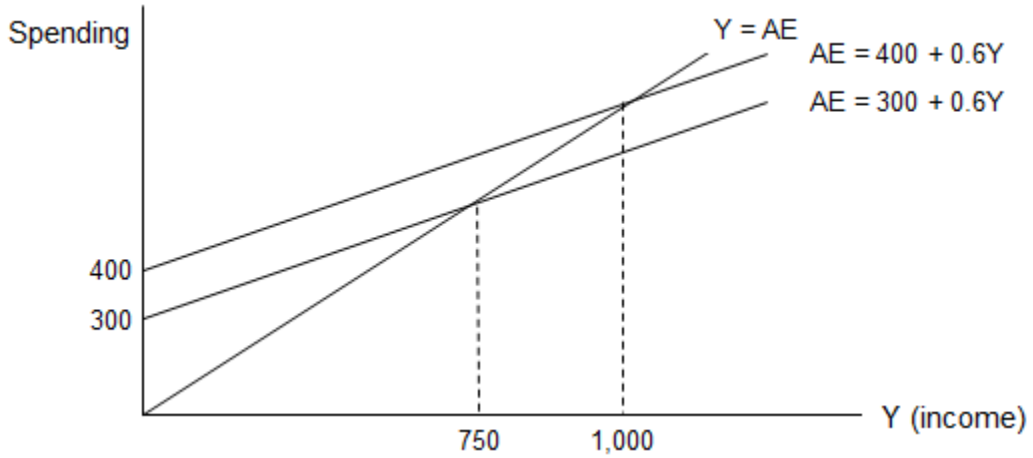
b) If AE is reduced to 300 + 0.6Y, what is the new equilibrium income level for this economy?

300 + 0.6Y = Y
300 = 0.4Y
Y = 750*

c) What is the value of the multiplier for this economy?

The multiplier is equal to 1/(1 – MPC) = 1/(1 – 0.6) = 2.5.

d) Depict this situation graphically using a Keynesian-cross diagram. Spending should be placed on the vertical axis and income should be plotted on the horizontal axis. Graph both AE lines and show the equilibrium output levels associated with each AE.



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