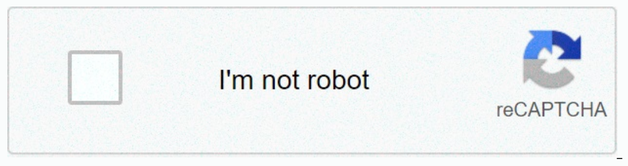

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Aggregate expenditures model open economy

Real GDP is a measure of the total production of enterprises. The total expenditure shall be the same as the total expenditure planned for that issue. The model balance exists when aggregated expenditure is equal to real GDP for a given period of time. The balance can be thought of as recognising that companies, with the exception of a few stocks that they intend to store, produce goods and services with the intention of selling them. Aggregate spending consists of what people, companies and government agencies reare. If the economy is balanced in real GDP, firms will sell what they want to sell (i.e. there are no unplanned inventory changes). in 28.8, the following shall be replaced by the following: The 45-degree line connects all points where the values on the two axes, which represent aggregated expenditures and real GDP, are equal. The balance should happen sometime along this 45-degree line. The point at which the aggregate spending curve crosses the 45-degree line is equilibrium real GDP, which has been achieved with real GDP of $7,000 billion. Figure 28.8 Determination of balance in the aggregate expenditure model The 45 degree line shows the points where ak's aggregate expenditure is equal to real GDP as needed for balance. The equilibrium solution comes at a time when the AE curve crosses the 45-degree line, with real GDP of $7,000 billion. Equation 28.11 says that real GDP is $7 trillion, the amount of consumption and projected investment of $7,000 billion- exactly the level of output companies have produced. At this level of production, companies sell what they were planning to sell and keep stocks that are planned to hold. Real GDP of $7,000 billion represents a balance in the sense that it results in the same level of aggregate spending. If firms produced real GDP in excess of $7,000 billion a year, aggregate spending would fall short of real GDP. The companies would have had $400 billion worth of goods they were going to sell, but they didn't. The actual investment level would be $400 billion greater than the projected investment level. With these unsold goods (i.e. unplanned increases in inventories), firms are likely to cut production and move the economy towards a balance GDP of $7,000 billion. If the companies produced $5,000 billion, total spending would amount to $5,400 billion. Consumers and businesses would demand more than they produced; companies would react by reducing their stocks below the projected level (i.e. resulting in an unplanned decrease in inventory) and increasing their output in the coming periods, again reducing the economy to $7,000 billion in equilibrium towards the end of the day. in 28.9. in 28.8, the following shall be replaced by the following: It shows the level of aggregate expenditure at different levels of real GDP and the direction in which real GDP changes if the AE does not equat to real GDP. There are unplanned investments at any level of real GDP other than equilibrium. Figure 28.9 Adjustment to real GDP in equilibrium Each level of real GDP results in a certain amount of aggregate expenditure. If aggregate expenditure does not reach real GDP levels, businesses will reduce their emissions and real GDP will fall. If aggregate spending exceeds real GDP, firms will increase their output and real GDP will rise. If aggregated expenditure is the same as real GDP, businesses will leave their output unchanged; balance has been achieved in the aggregate expenditure model. There is no unplanned investment in balance. Here, that's $7,000 billion in real GDP. Now we build on our understanding of consumption and investments to form the so-called aggregate spending model. This model is used to determine the equilibrium output or GDP of the economy. When we developed the consumption function in an earlier lesson, we said that consumption is a function of disposable income. In this model, we return to the assumption of the circular flow model that the production of final goods and services (GDP) in the economy results in a flow of income exactly equal to the value of output. Because GDP is equal income, we can model our spending (now only consumption and investment) in the economy in terms of GDP, but also in terms of income. In the graph above, we have referred to point E as the point of equilibrium and GDP* as the equilibrium level of GDP. Let's see why this balance. Keep in mind that one of the characteristics of balance is that if you move away from it, natural market forces are automatically returned to balance. Notice this process in the graph below: If the economy were to generate GDP1 instead of GDP for some reason*, what would be the result and what market forces would encourage the economy to return to GDP*? Note: for GDP1, total expenditure is less than output. We know that spending is less than output, because at this LEVEL of GDP, the aggregate spending row is below the 45 degree line, which is the line where spending is equal to emissions. Thus, the expenditure would be equal to the output measured in point A, but the actual expenditure measured by the series of aggregated expenditures would be lower (label B). Imagine you run the economy. Every month, it sets 10,000 units of output from production, and people buy 9,000 units of output. Each month, it adds 1,000 units of output to its inventories, and during the year, inventories accumulate. Imagine that producers have a certain level of that they want to get their hands on it, but do not want stocks to increase significantly or be depleted. At GDP1, inventories would accumulate 1,000 extra inventory units per month! What would you do if you were running the economy and building unwanted stocks? Wouldn't that be a sign to cut production? By reducing production, output or GDP, gdp decreases from 1 to GDP*. What if the economy were to be pro-GDP2? Now the Total release line is above the 45-degree line, indicating that spending exceeds output. Spending would be equal to the output point D, but the actual spending point F. Imagine that the economy is producing 5,000 units of output each month, but consumers and businesses together buy 6,000 units of output. How can more be purchased than produced during a given period? It would be possible if businesses had unsold stocks on hand. But if a business has an ideal level of stocks that they want to maintain, and purchases exceed production, stocks must be deducted or exhausted. What would happen, of course, in an economy if spending were greater than production and stocks were reduced? Businesses would produce more and more and the output or GDP of the economy would rise from GDP to GDP*. In conclusion, notice that in this model: If spending is greater than production, stocks will be depleted and production will rise, and if spending is less than production, inventories will accumulate and production will decrease, SO ... The duration of the balance can be achieved if production is exactly equal to expenditure: Output = expenditure, in other words GDP = consumption + investment GDP* is the equilibrium performance of the economy, since output (GDP) is equal to expenditure (consumption + investment). Saving and investing The second way to test balance is savings and investments. Keep in mind that when people save, they undo spending flows of revenue and spending. Savings are therefore called leaks. When businesses invest, they are added to the flow of income and expenses to the expenditure, to call the investment an injection. Equilibrium performance can be achieved if: Leaks = injections or savings = investment If the savings are greater than the investment, then GDP is too high and emissions will decrease. If savings are less than investments, GDP is too low and output will rise. Let's look at this graphically. Think about it: Total spending The table below shows data from a hypothetical private closed economy. Private means no government, and closed means no foreign trade. We take into account mixed (both private and government sectors) and open (one that accounts for economy later. Use the information in the table graph of the aggregated expenditure line on one graph and savings and investment schedules on another graph. Show how these graphs illustrate that your company's total spending is balanced. This means that spending with equal spending is the same as saving equal investment. Table 1: Equilibrium Example Real GDP Consumption Savings Investment AE = C + I 11,800 12,000 (200) 600 12,600 12,600 12,600 0 600 13,200 13,400 13,200 200 600 13,800 14,200 13,800 400 600 14,400 15,000 14,400 600 600 15,000 15,800 15,000 800 600 15,600 16,600 15,600 1,000 600 16,200 The model of Aggregate Expenditures that we are currently considering is often called a Keynesian Model because it was first formulated by British economist John Maynard Keynes in his General Theory of Employment, Interest, and Money, published in 1936—at the height of the great depression. One of the central rooms of Keynes economics is the idea of a multiplier. Keynes hypothesized that a given increase in spending would increase production by several times the increase in spending. How is that possible? Let's start with investment expenditure. When a business spends $1 on new plant or equipment, it injects $1 into the farm. This $1 will be income for someone (who built the machine or built the new plant) who spends some of it and saves the rest. The part they spend and the savings they spend are isolated depending on the MPC and MPS. The spent part becomes the income of someone else who similarly spends one part, which is another, spending one part and so on. The release stream is characterized as follows: $1 + $1(MPC) + $1(MPC) (MPC) + $1(MPC)(MPC) (MPC) + ... Or $1 + $1 (MPC) + $1(MPC)2 + $1(MPC)3 + ... Which is 1/(1-MPC) in its limit. This is known as the investment multiplier. As long as the MPC is less than 1, the multiplier will be greater than one. In fact, we can show that if the MPC is 0.9, the multiplier is 10 When the MPC is 0.8, the multiplier is 5 If the MPC is 0.75, the multiplier is 4 If the MPC is 0.6, the multiplier is 2.5 If the MPC is .5, the multiplier is 2 It should also be determined that the investment multiplier can be seen in terms of MPS. This reciprok is MPS, 1/MPS, since the MPS is equal to 1-MPC. Example: Consider a scenario in which companies in the economy choose to increase investment spending by $5 million. If the MPC is equal to 0.75, the investment multiplier is equal to four and the issue in the economy goes up to $20 million (the five million dollar increase in investment multiplier to four). Graphically, this can be seen below: Think about it: Based on investment multiplier calculations graphs given, answer the following questions. 1. In the first graph, if the MPC is 0.75, then what is the in a pro-GDP ratio, when overall spending increased by two million? A2. IN THIS GRAPH, WHAT IS MULTIPLIER AND WHAT IS MPS? ANSWER MPS = multiplier 0.10 = 10 Close (X) 3. In this graph, if the MPS is 0.2, how much was the aggregate spending going up to the indicated GDP growth? ANSWER Section 02: Government spending Now let's look at the mixed (both government and private spending) closed (no net exports) economy. The fundamental change is that we now add government spending to the model. Since government expenditure is determined by a political process and not based on GDP, it is portrayed as a horizontal line when GDP is on the horizontal axis. If you add this horizontal line to the upward-slope aggregated expenditure row, you simply push Total spending up by the amount of public spending. The following two graphs show an illustration. Equilibrium GDP is determined by where the C+I+G line intersects the 45-degree line in our standard model. Changes in government spending have a similar effect on equilibrium GDP as changes in investment. With government spending multiplied quantitatively, the government spending multiplier is the same as the investment multiplier. The $1 increase in government spending results in an increase in GDP equal to $1 times 1/(1-MPC). Because the multipliers for investment and government expenditure are the same, sometimes they are only collectively referred to as the multipliers of expenditure. Think about it: The effects of government spending This example shows how Keynes has impacted government spending changes on the output of the economy. Let's say the MPC is equal to 0.6. What does the multiplier for government spending mean? What impact would a $5 billion increase in government spending have on equilibrium GDP? What about the $5 billion G drop? Are both cases illustrated in a graph? ANSWER If the MPC is 0.6, the multiplier is 2.5. The $5 billion change in G will change GDP by $12.5 billion if the MPC = 0.6. Close (X) As mentioned above, the multipliers for expenditure are all the same, 1/(1-MPC). There is also a multiplier that goes hand in hand with changes in taxes. This is called a tax multiplier, and it is not the same as spending multipliers. In fact, it's smaller than the multipliers of spending. Why would the tax rate be less than the multiplier for government spending? The answer lies in the fact that when a business or government undertakes new spending, it injects the initial amount that the spending is a source of income and then multiples through the economy. When the government decides to cut taxes, it is not injecting new money into the economy; they simply decided not to take the money out of the economy, which is already a source of income. Individuals then some of the money they can keep. So if the government increases spending by $1 billion, the total $1 billion will be injected into the revenue source. If taxes are reduced by $1 billion, only MPC x $1 billion will be injected into the revenue source. Therefore, the tax multiplier has an effect: $1(MPC) + $1(MPC) (MPC) + $1(MPC)(MPC) (MPC) + ... This progression can be shown to be equal to the spending multiplier of the MPC, or MPC x 1/(1-MPC) Which is simplified MPC/ (1-MPC) Since reducing taxes increases income, and vice versa, the tax multiplier is negative, i.e. -MPC/(1-MPC) Let's look at some common values for the MPC and determine the tax multiplier for each. If the MPC is 0.9, the tax multiplier is -9 If the MPC is 0.8, the tax multiplier is -4 If the MPC is 0.75, the tax multiplier is -3 If the MPC is 0.6, the tax multiplier is -1.5 If the MPC is 0.5, the tax multiplier is -1 Do you see the relationship between the spending multipliers and the tax multiplier at all levels of the MPC? How would you describe it? Note that the change in taxes will change C in our aggregate spending model. Tax growth will be pushed downwards by C and the fall in taxes will push C upwards, along with expected effects on equilibrium GDP. Think about it: Production opportunities Show that the tax change has a defined impact on GDP, depending on the MPC. Show that you can get the same answer about your impact on GDP by using the tax multiplier or the multiplier for spending. For example, let's say the government raises taxes by $16 billion by an MPC = 0.75. What impact would this have on equilibrium GDP? A Direct response includes the use of the multiplier. 16 billion x -$3 = a $48 billion GDP decline. You can look at the spending multiplier t. The $16 billion tax level reduces C by $12 billion, which, multiplied by the 4-way issue multiplier, reduces GDP by $48 billion. Close (X) In the lesson on fiscal policy, we show how both government spending and taxes (the two main components of fiscal policy) can be used to expand or contract the economy. The balanced budget factor The final multiplier to be taken into account in the Keynesian model is called a balanced budget multiplier. Essentially, this multiplier will tell you how gdp will be affected if you increase government spending and taxes alike. For example, if the government wanted to increase government spending by, say, $2 billion, but it didn't want to cause a deficit, and so it increased taxes by $2 billion. We examine these actions independently and then put them together to find a general answer. Let's say the MPC is equal to .8. The MPC is 0.8, the government's spending multiplier is 5-if the government increases spending by $2 billion, with output going up to $10 billion. If MPC 0.8, the tax multiplier -4-if the government increases taxes by $2 billion, output goes down by $8 billion. If these two things happen at the same time, the net impact is to increase output by $2 billion ($10 billion-$8 billion = $2 billion). So increasing government spending by $2 billion and simultaneously increasing taxes by $2 billion will increase output by $2 billion. The multiplier for a balanced budget is 1 and can be summed up as follows: when the government increases spending and taxes by the same amount, output increases by the same amount. In general, we can show that a balanced budget multiplier is equal to a factor and that it does not depend on the size of the MPC: when you add up the spending multiplier and the tax multiplier, you always get one, regardless of the MPC. 1/(1-MPC) - MPC/(1-MPC) = (1-MPC) /(1-MPC) = 1 Think About It: Calculate the impact of a balanced budget multiplier to prove both graphically and algebrailag impact on GDP with rising government spending and taxes of $5 billion dollars if the MPC is 0.9. ALGEBRAIC RESPONSE G growth will cause output to increase by $5 billion x $10 = $150 billion. Tax increases will cause output to fall by $5 billion, x 9 = $45 billion. The net result is that output increases by $5 billion. Close (X) GRAPHIC ANSWER [insert Image 11.5 here] The move from C+I+G to C+I+G is a $5 billion G increase, the change from C+I+G' to C+I+G is caused by tax changes of $5. The total change is a $5 billion increase in GDP. Close (X) Section 03: Recessionary and inflation deficits Let's say GDP = 1400 is the total employment performance or the level of equilibrium we want to achieve. We also assume that the MPC is equal to 0.6. If the economy were actually producing 1,300 and the government wanted to implement policies to increase emissions by 1,400 it would have to increase government spending to 40. That's the additional 40 government spending on the so-called recessionary gap. In this case, the inflation gap of 40 government spending. When G is used to increase emissions, it is called anti-unemployment policy, and when G is used to reduce emissions, it is called anti-inflation policy. Net exports and equilibrium output If we add international trade to our analysis and assume that net exports are independent of GDP levels, equilibrium GDP is determined by where the C+I+G+NX line intersects the 45-degree line of the standard model (see graphs below). Changes in the NX have a similar effect on equilibrium GDP as changes in investment or public expenditure. For example, if the MPC was equal to 0.5 and there was a NX equals $15 million, with an output increase of $30 million. This is true the multiplier corresponds to 2. 2.

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