

# The insights of demand-supply curve of macroeconomics and its application to GDP components

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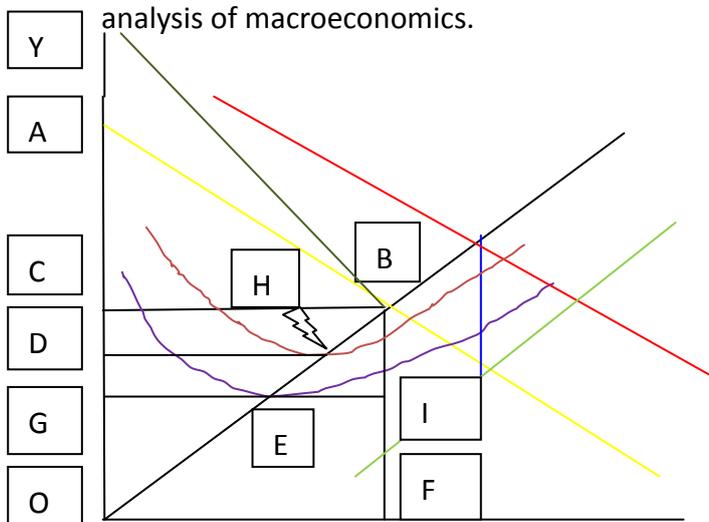
## Abstract

Macroeconomics is the key economics branch to describe gross economy behavior of one country or the world. However, the detailed demand-supply graph representing the macroeconomics is not clearly explicit. Here, I will use the demand-supply curve to explain the detailed macroeconomics contents ( $GDP=C+I+G+NX$ ) in the graph. I propose the demand-supply curve is likely the typical demand-supply curve with upward and downward slopes. The detailed components will be shown in the following graph in the content.

## Text

The classical economics or Keynesian economics didn't clear describe the whole pictures of the key components of macroeconomic in the typical demand and supply curve. I propose the long term demand supply curve is the same as microeconomics demand-and-supply curve with down and up slopes. This is the real world situation that demand and supply laws are still true in the macroeconomics world. In addition, I will put all the GDP components( $GDP=C+I+G+NX$ ) in the graph to allow further

analysis of macroeconomics.



In the above graph, the yellow line is aggregated demand curve and the black line is aggregated supply curve. The brown line is national average total cost and the purple line is national average variable cost. We can see the triangle ABC represents consumer surplus which is the same as the consumption of GDP in macroeconomics. It is the triangle area below the gross demand curve and the horizontal equilibrium line. Thus, consumer surplus is actually the consumption. The Ladder BCGE is the producer surplus which stands for two producer's components: profits and total fixed cost compared to microeconomics. The profit part is BCDH is the area between marginal cost curve, average total cost, and the equilibrium horizontal line. The profit BCDH is the same as NX in the GDP of macroeconomics. The point H equals to import point price (including import cement etc for building factory) and the equilibrium point B is the same as export price for this nation. Thus, the profit is equal to NX. The ladder DGEH represents the total fixed cost (like assets in accounting). This area also means investment in the GDP of macroeconomics. The investment is usually provided to companies for their lands, machines, factories. This will become the total fixed cost for the producers. Thus, DGEH area is I from GDP of macroeconomics. The area GOIF is the total national material cost. The triangle BEI is the total national labor cost. In addition, the government expenditure is the blue line in the above graph. It is like the subsidy concept from microeconomics. It will both enhance gross demand and supply to move the curves to red and green lines. In addition, the black line (supply MC curve) is the same as wage rate. Wage rate is the marginal cost for the company owner to pay for the workers for producing one unit of good. The yellow line (demand MB curve) is the same as minus marginal propensity to consume (MPC). It is the proportion trend for purchasing certain unit of good from one unit of income. We can also find out saving by marginal propensity to save (MPS). Since  $MPC=1-MPS$ , the triangle YAB is the area for saving from consumers (line YB is 45 degree line). And, the income of consumers is the area YBC. The GDP components are ABEG plus government expenditure. Thus, we can explain the GDP macroeconomics in one typical demand-supply curve and give the welfare economics new meanings and usage.