

Key Formulas in Macroeconomics

1. $GDP = C + I + G + X_n$: The expenditure approach to measuring GDP
2. $GDP = W + I + R + P$: The income approach to measuring GDP
3. Calculating nominal GDP: The quantity of various goods produced in a nation times their current prices, added together.
4. GDP deflator: A price index used to adjust nominal GDP to arrive at real GDP. Called the 'deflator' because nominal GDP will usually overstate the value of a nation's output if there has been inflation.
5. Real GDP: $(\text{Nominal GDP} \div \text{GDP Deflator}) \times 100$
6. GDP Growth rate: $((\text{Current Year's GDP} - \text{Last Year's GDP}) \div \text{Last Year's GDP}) \times 100$
7. The inflation rate via the CPI: $((\text{This Year's CPI} - \text{Last Year's CPI}) \div \text{Last Year's CPI}) \times 100$
8. Real interest rate = nominal interest rate – inflation rate.
9. Unemployment Rate = $(\text{Number of Unemployed} \div \text{Number in the Labor Force}) \times 100$
10. Money Multiplier = $1 \div \text{Required Reserve Ratio}$
11. Quantity theory of money: $MV = PY$ – a monetarist's view which explains how changes in the money supply will affect the price level assuming the velocity of money and the level of output are fixed.
12. $MPC + MPS = 1$ – Households may consume or save with any change in their income.
13. Spending Multiplier = $1 \div (1 - MPC)$ OR $1 \div MPS$
14. Tax multiplier = $-MPC \div MPS$. It tells you how much total spending will result from an initial change in the level of taxation. It is negative because when taxes decrease, spending increases, and vice versa. The tax multiplier will always be smaller than the spending multiplier.