

The Digital Economist

Intermediate Macroeconomics

Worksheet #5: **Income Determination**

Name: _____

1. Given the following equations:

| | |
|-----------------------|--|
| $C = 200 + 0.80Y_d$ | Consumption Expenditure |
| $I = 500$ | Investment Expenditure |
| $G = 200$ | Government Expenditure |
| $NX = X - M$ | Net Export Expenditure |
| $X = 100$ | Exports |
| $M = 0.05Y$ | Imports (the marginal propensity to import = 0.05) |
| $Y_d = Y - T$ | Disposable Income |
| $T = 0.10$ | Tax Revenue (tax rate = 10%) |
| $AE = C + I + G + NX$ | Aggregate Expenditure |
| $Y = AE$ | Equilibrium condition |

a. Calculate the level of Autonomous Expenditure 'Ao': _____

b. Derive an expression for the spending multiplier 'α':

c. Calculate the equilibrium level of income and fill in the blanks in the left-hand column below:

| <i>Before</i> | <i>After</i> |
|---------------|--------------|
| I = : _____ | _____ |
| G = : _____ | _____ |
| X = : _____ | _____ |
| S = : _____ | _____ |
| T = : _____ | _____ |
| M = : _____ | _____ |

Financial Sector Balance: _____

Foreign Sector Balance: _____

Government Budget Balance: _____

Recalculate the equilibrium level of income for an increase in autonomous exports of 50 ($X' = 150$) and fill in the blanks on the right. *How does this shock affect the balances in the different sectors of the economy?* Graph these results on a separate sheet of paper.