

Big Question:
How can government spending be justified?

Multiplier summary

Webnote 228
Syllabus weight 3
Syllabus: item 91

SYLLABUS REFERENCE 2.2: Multiplier – see also webnote 224+225

Keynesian Multiplier

(Y) is accounted for in terms of:

- consumption (mpc) +
- saving (mps) +
- imports (mpm) +
- taxes (mpt)

$$\text{or } mpc + mps + mpm + mpt = 1$$

Keynesian Multiplier:

Final Change in Income/GDP (\$200) (total Y as a result of the injection)

Original Injections (\$100) (total amount injected/spent)

OR

1

OR

1

$$1 - MPC_{(0.5)}$$

$$mps_{(0.1)} + mpm_{(0.2)} + mpt_{(0.2)}$$

Note: all income is accounted for in terms of consumption (mpc = 0.5)+ saving(mps = 0.1)+imports(mpm = 0.2)+taxes (mpt = 0.2)

Note: $mpc + mps + mpm + mpt = 1$, therefore we get the formula whereby:





$$1/1-mpc = 1/mps+mpm+mpt \text{ so we have 2 formulas for the multiplier.}$$

Note: if you know that the final GDP as a result of an injection is \$200 and you know that the initial injection was \$100 then the multiplier has to be 2 to bring about a final GDP of \$200.

3 Determinants of size of the multiplier: amount of the leakages

1. if economy is open rather than closed consumers will buy imports. M is a leakage and therefore reduces the multiplier
2. interest rates- higher rates of interest might encourage more saving and less spending and therefore the multiplier is reduced
3. tax rates – higher tax rates will also result in a reduction in spending and therefore a smaller multiplier

- 1) influences national income :
 $AD = C + I + G + X - M$
- 2) influences how injections impact an economy.
- 3) injections can be **I, G or X**

<p>MPC = 0.5</p> <p>Example</p>	<p>G</p> <p>Government injects \$100</p> 	<p>Expenditure</p> <p>The government pays Mr. Build's construction company \$100 for building a bridge.</p>
A	<p>Mr Build earns \$100</p> 	<p>Mr Build purchases from the chemist items worth \$50</p>
B	<p>The chemist earns \$50</p> 	<p>The chemist purchases items worth \$25 from the baker</p>
C	<p>The baker earns \$25</p> 	<p>The baker purchases items worth \$12.5 from the butcher</p>

J = Injection

Trickle Down Spending
 Impact on economy: government injection spending increases by \$100 but it causes further spending so more factors of production are used to produce goods for the additional spending that takes place. Each income results in further additional income/output/GDP spending.

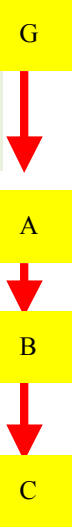
Build Impact on economy: spending increases by \$50 (\$50 x 0.5 = \$25)

Chemist Impact on economy: spending increases by \$25 (\$25 x 0.5 = \$12.5)

Baker Impact on economy: spending increases by \$12.5 (\$12.5 x 0.5 = \$6.25)

Spending continues in this trickle down fashion and eventual national income/gdp increases to \$200.

Mathematicians would describe this as a geometric progression.



Geometric Progression:

Y = (change in J) + (change in J multiplied by MPC) + (change in J multiplied by MPC squared + (change in J multiplied by MPC to the power of 3 etc

or...

Y, Income = 100 + (100 x .5) + (100 x .25) + (100 x 0.125) + (100 x 0.0625) + (100 x 0.5 to the power of N)

In this case with an injection of 100 and an MPC of .5 Y increases to \$200.

in this example...Multiplier effect is 2.