Start Chapter 10

EXPENDITURE MULTIPLIERS

- Click Important Dates link
- MC quiz
- Chapter (PPT) summary
- Key figures (all the details)
- Lecture slides
- Format: PDF files
what is an expenditure multiplier?

**Generic definition:**

$\Delta$ in *equil. value of a dependent variable*

$\Delta$ in *value of an independent variable*
Specific example:

The investment multiplier

\[
\frac{\Delta \text{GDP}}{\Delta I} = \frac{1}{1-b}; \quad 0 < b < 1
\]

\( b \) is the slope of the consumption function.
Key concept in economics: "equilibrium"

D = S

In macroeconomics, in the commodity market:

\[ AD = AS \]

Specifically:

RGDP + Y = C + S + I + G + X

"Supplied" = "Demanded"

"Exceede
National Income Accounting

Supply and Demand for correctly produced final goods and services

<table>
<thead>
<tr>
<th>Supply (Sources)</th>
<th>Demand (Sources)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic + Foreign</td>
<td>Domestic + Foreign</td>
</tr>
<tr>
<td></td>
<td>Private + Public</td>
</tr>
<tr>
<td></td>
<td>non-durable + durable</td>
</tr>
</tbody>
</table>

\[ \text{RGDP} + \pi = C + I + G + X + M \]

Note: \( \text{RGDP} = C + I + G + X - M \)
Derive the relationship

income from output sold = expenditure on output bought

\[ \text{GDP} = C + I \]

\[ \text{Perishable} \quad \text{Durable} \]

\[ \text{Final goods} \quad \text{Final funds} \]
Name the relationship:

**the consumption function**

Write it:

\[ C = \bar{C} + b \times RGD P \]

\[ \uparrow \quad \uparrow \]

intercept \hspace{1cm} slope: \hspace{0.5cm} 0 < b < 1
• Consumption is related to income from output sold

\[ C = C_0 + b \times \text{RGDP} \]

- expenditure on durable goods is not related to RGDP

\[ I = I_0 + o \times \text{RGDP} \]
Basic AD model

- $\text{RGDP} = \text{C} + \text{I}$ (eg. in comm. market)
- $\text{C} = \bar{\text{C}} + b \times \text{RGDP}$ (consumption function)
- $\text{I} = \bar{\text{I}}$ (investment function)

Three eqs.; 3 unknowns ($\text{RGDP}, \text{C}, \text{I}$)

SOLVE
Step 1/ Market clearance in the output market

\[ \text{RGDP} = C + I \]

Step 2/ Substitute for \( C \)

\[ \text{RGDP} = \bar{C} + b \times \text{RGDP} + I \]

Step 3/ Substitute for \( I \)

\[ \text{RGDP} = \bar{C} + b \times \text{RGDP} + \bar{I} \]

One eq. in one unknown: \( \text{RGDP} \)
Step 4/ Collect terms

\[(1 - b) \times \text{RCDP} = \bar{c} + \bar{f}\]

Step 5/ Solve

\[\text{RCDP} = \frac{\bar{c} + \bar{f}}{(1 - b)}\]
\[ \text{RGDP} = \frac{C + I}{a-b} \]

Step 6:

- **verbalize**; i.e. interpret

- the market clearing level of RGDP is determined by
  - the level of autonomous spending \( C \)
  - the level of autonomous investment spending \( I \)
  - the Marginal Propensity to consume \( b \)

- we have developed a full

  [flawed] theory of national income determination.
Step 7:

\[ \Delta \text{GDP}^{22} = \frac{\Delta C + \Delta I}{(1 - b)} \]

Note: b is assumed constant.

Step 8:
Make a table.

<table>
<thead>
<tr>
<th>( \Delta \text{GDP}^{22} )</th>
<th>( \Delta C^{22} )</th>
<th>( \Delta I^{22} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{b}{(1 - b)} )</td>
<td>( \frac{b}{(1 - b)} )</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

- Name the multipliers
- Sign of the multipliers
- Numerical value of the multipliers
Step 9

- What causes the business cycle?

Ch. 10

- Changes in autonomous expenditures, $\Delta C$; $\Delta F$

- How can we mitigate the business cycle?

Ch. 11

- Appropriate changes in fiscal policy, $\Delta G$; $\Delta F$