

ECONOMICS

for South African students

Macroeconomics

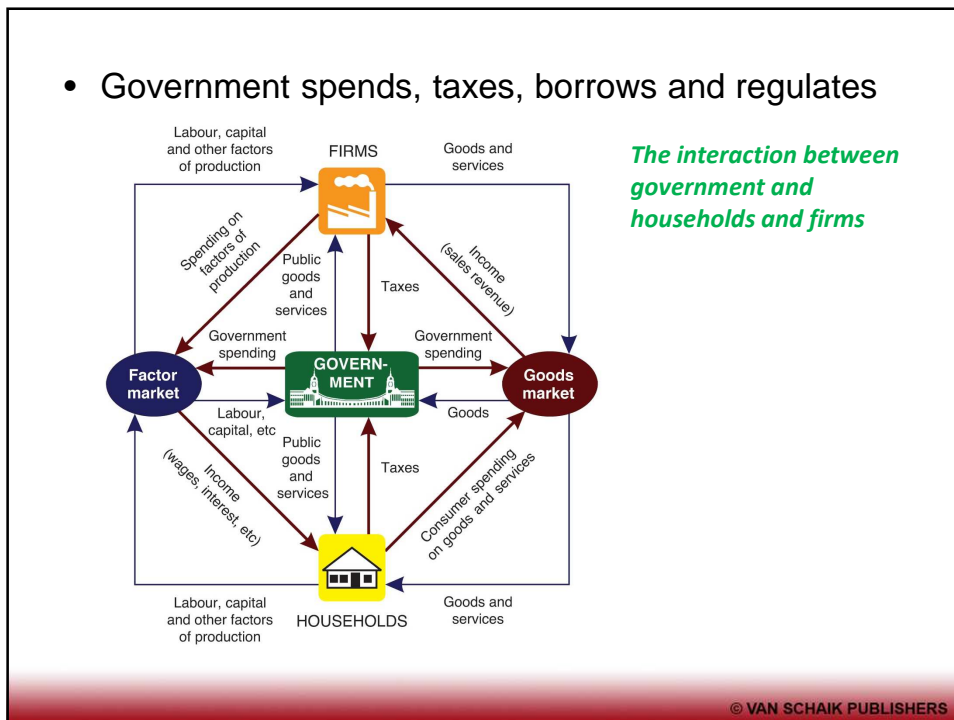
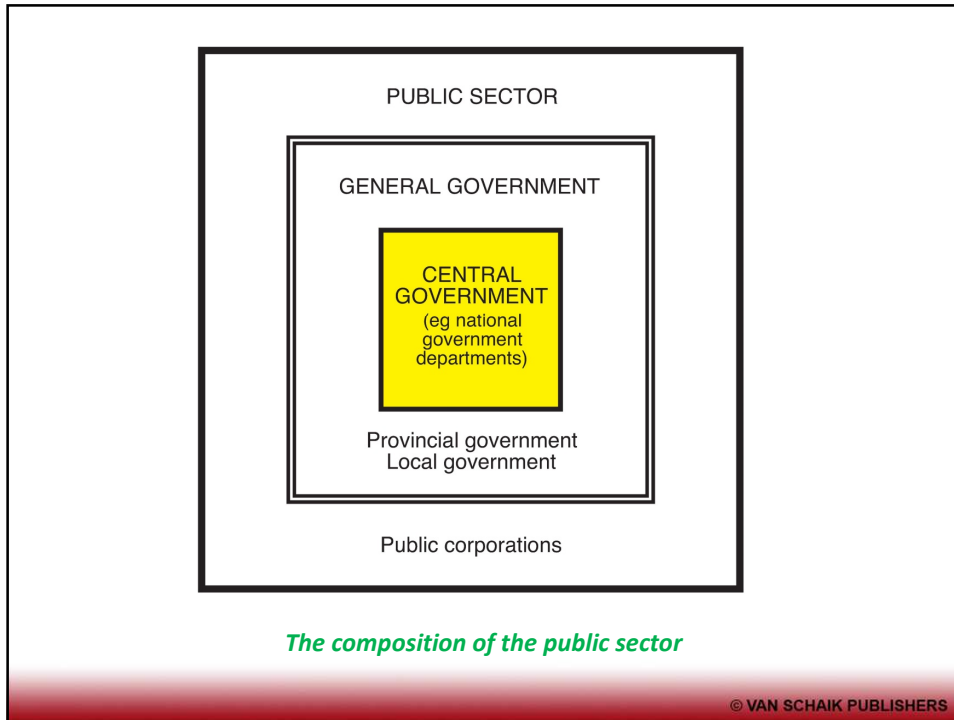
The government and fiscal policy

The government in the economy

- A. Central government
- B. Regional/provincial government
- C. Local government
- D. Public corporations

A + B + C = General government

A + B + C + D = Public sector



Appropriate mix between government and the market?

- Private initiative and market forces are generally more efficient than government
- Government has to provide an appropriate environment (eg legal framework) in which market forces can operate
- Markets sometimes fail (market failure)

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- Markets produce **efficient** outcomes but not necessarily **equitable** outcomes
- Markets tend to generate macroeconomic **instability**

**Both government and the market
therefore have a place**

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Fiscal policy and the budget

- **Definition of fiscal policy:**
 - level and composition of
 - government spending
 - Taxation
 - government borrowing

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- **Budget as main instrument:**
 - reflection of political decisions
 - budget deficit/surplus
- **Demand management**
 - fiscal policy
 - monetary policy
 - expansionary (stimulatory) policy
 - contractionary (restrictive) policy

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- **Government spending financed by:**
 - income from property
 - taxes
 - borrowing

- **Borrowing (to finance budget deficit):**
 - domestic capital markets (government bonds)
 - international capital market (government bonds)
 - central bank (SARB) (inflationary financing)

- **Borrowing increases public debt and interest on public debt**

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Taxation

- **What is a good tax?**
 - neutral
 - equitable
 - administratively simple

- **Equity**
 - ability to pay principle
 - horizontal equity
 - vertical equity
 - benefit principle

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Taxation: some important distinctions

- Tax avoidance vs. tax evasion
- Direct taxes vs. indirect taxes
- Taxes on income and wealth vs. taxes on products and production
- General taxes vs. selective taxes
- Progressive, proportional and regressive taxes

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The three main taxes

- ***Personal income tax***
 - taxable income (tax base)
 - marginal tax rate and average (or effective) tax rate
 - progressive tax
 - includes capital gains tax

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- **Company tax**
 - company profits (tax base)
 - proportional tax
- **Value-added tax**
 - indirect tax
 - regressive tax

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Government in the Keynesian model

- **Impact of G and T on:**
 - aggregate spending A
 - multiplier α
 - equilibrium income Y
- **Impact of fiscal policy**
 - changes in G and T

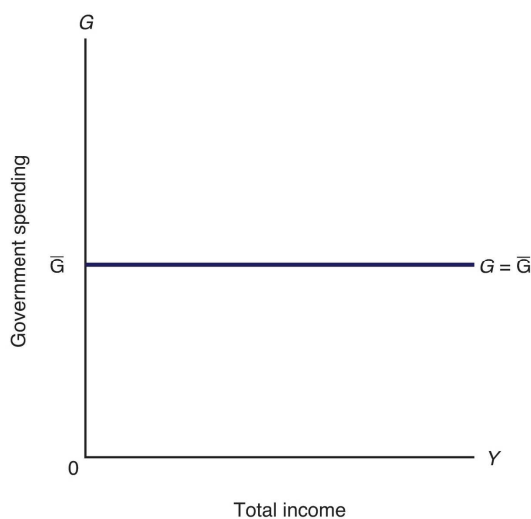
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Government spending (G)

- Essentially a political issue
- Not systematically related to Y
- Regarded as exogenous/autonomous wrt Y
- Introduction of G thus:
 - Raises aggregate spending A
 - Leaves multiplier α unchanged
 - Raises equilibrium level of income Y_0

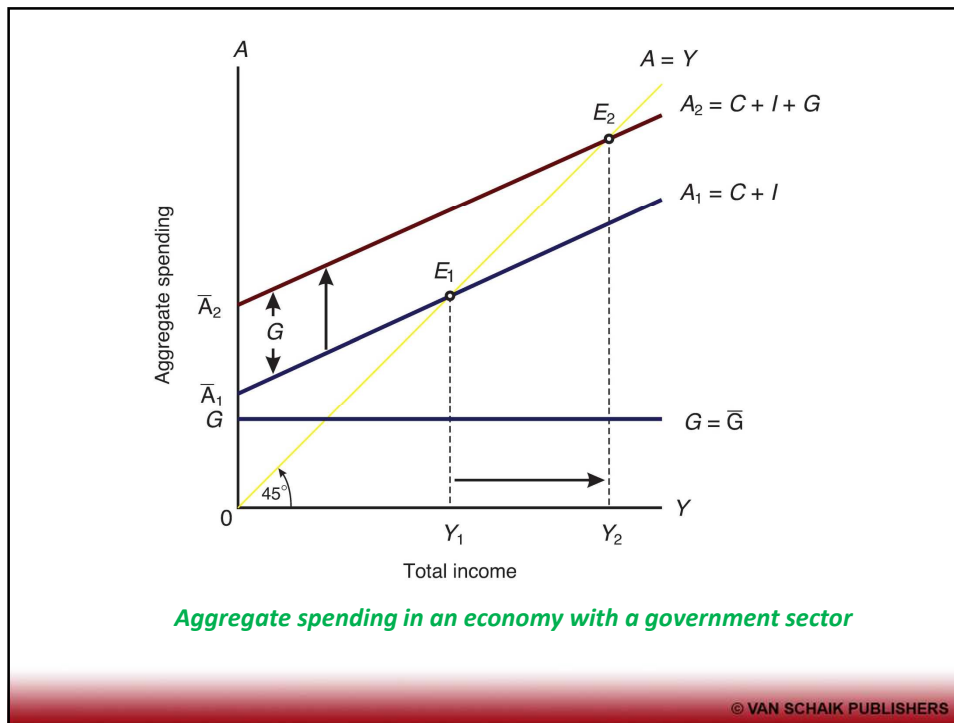
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- $G = \bar{G}$



Government spending

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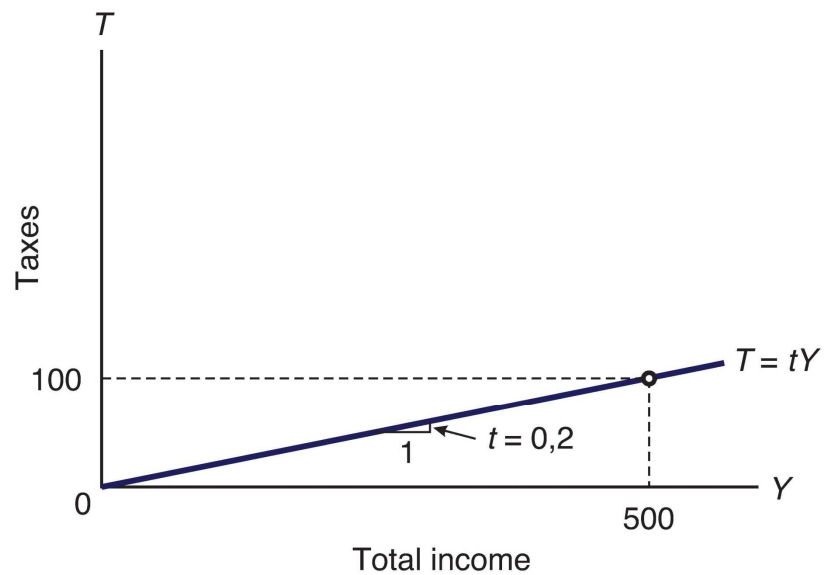


Taxes (T)

- Taxes T constitute leakage or withdrawal from circular flow
- Reduce disposable income Y_d , where $Y_d = Y - T$
- Taxes are related to income: $T = tY$
- Taxes reduce consumption C indirectly (because they reduce Y_d)

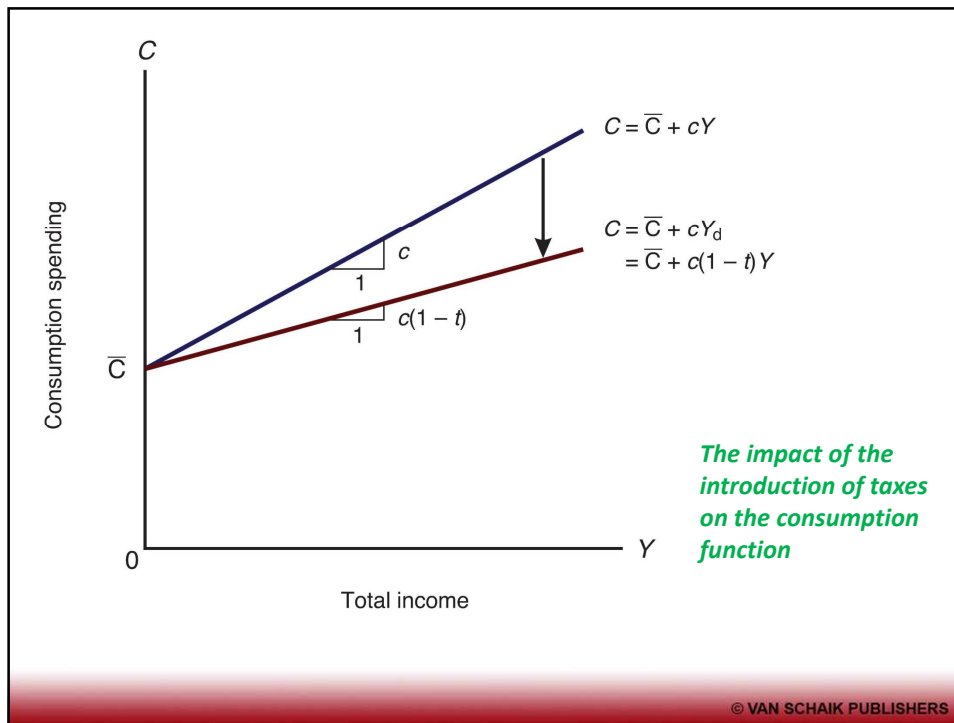
- Introduction of T thus:
 - Does not impact directly on aggregate spending A
 - Reduces multiplier α
 - Reduces the equilibrium level of income Y_0

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Taxation as a function of income

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Multiplier with taxes

- Taxes are leakage or withdrawal
- Multiplier now smaller
- $1/1-c(1-t)$ instead of $1/(1-c)$
- Taxes have to be paid before spending can occur
- **Example:** if $c = 0,75$ and $t = 0,2$, then $\alpha = 2,5$:

$$\alpha = 1/1-c(1-t) = 1/1-0,75(1-0,2)$$

$$= 1/1-0,75(0,8) = 1/1-0,6 = 1/0,4 = 2,5$$

Equilibrium level of income with government

The model

$$Y = A \text{ (equilibrium)}$$

$$A = C + I + G \text{ (aggregate spending)}$$

$$C = \bar{C} + cY_d, \text{ where } Y_d = Y - T \text{ (consumption spending)}$$

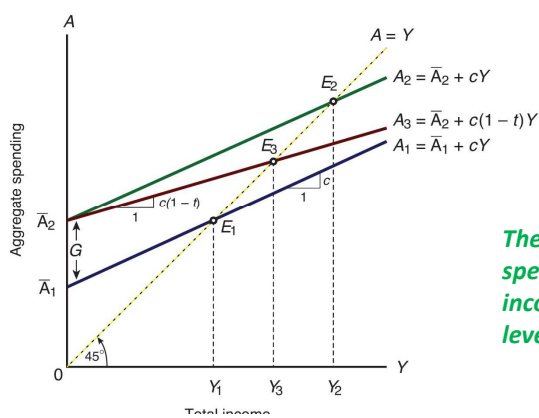
$$T = tY \text{ (taxes)}$$

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Equilibrium

$$Y_0 = 1 / 1 - c(1 - t) (\bar{C} + \bar{I} + \bar{G})$$

(= multiplier α x autonomous spending \bar{A})



The impact of government spending and a proportional income tax on the equilibrium level of income

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Fiscal policy

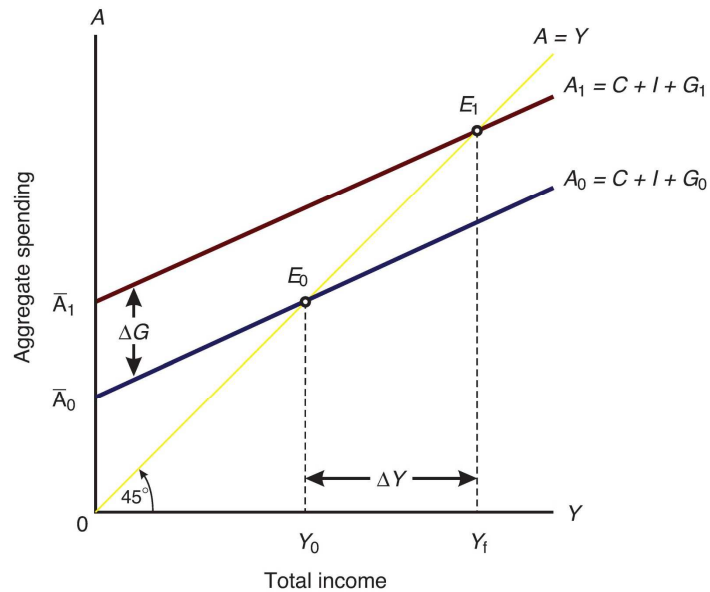
- Use government spending and/or taxes to affect Y
- Expansionary/stimulatory policy: increase G , decrease t
- Contractionary/restrictive policy: decrease G , increase t
- We examine change in G only

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- If income Y has to increase by ΔY (the income gap)
 - by how much must G increase?
 - answer is by less than ΔY
 - Why? Because of the multiplier α
 - increase in G will be multiplied
- **Numerical example**
 - if $\Delta Y = 300$ and $\alpha = 3$, then ΔG required
= $300/3 = 100$

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- Graphical exposition



Fiscal policy in the simple Keynesian model

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Numerical example

Suppose $\bar{C} = 300$, $\bar{I} = 6,00$, $\bar{G} = 800$, $c = 0,9$, $t = 0,33$
 $Y_f = 4500$

$$Y_0 = \alpha \bar{A}$$

$$\begin{aligned} \alpha &= 1/1-c(1-t) \\ &= 1/1-0,9(1-0,33) \\ &= 1/1-0,9(0,67) \\ &= 1/1-0,60 \\ &= 1/0,4 \\ &= 2,5 \end{aligned}$$

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$$\bar{A} = 300 + 600 + 800 = 1700$$

$$Y_0 = \alpha \bar{A} = 2,5 \times 1700 = 4250$$

$$\Delta Y (\text{income gap}) = Y_f - Y_0 = 4500 - 4250 + 250$$

$$\Delta G \text{ to fill income gap} = 250/2,5 = 100$$