5. Fiscal Policy at Work

EE 212 : SEC 046042

March 2013

Outline

1. Meaning, objectives and tools of fiscal policy
2. Effects of fiscal policy on equilibrium national income
   (a) The government spending multiplier
   (b) The tax multiplier
3. Fiscal policy and its effectiveness in solving macroeconomics problems

1 Meaning, Objective and Tools of Fiscal Policy

- Fiscal policy : the role of government sector
- Why is the government sector needed?
  - provision of public goods, handling of externalities
  - market failures, market fails to deliver the best resource allocation $\rightarrow$ the government can improve the situation (for example, Keynesian school : ADAS model)
- Objective of economic policy is to achieve macroeconomic goals; economic growth, economic stability and economic equity.
- Fiscal Policy : enable the government to acquire resources from private sector in term of tax and the use the tax revenue to fulfill its objectives
- Government Revenue, Spending and Public Debt (domestic private borrowing, borrowing from central bank, oversea borrowing)

1.1 Government Revenue :

1. Revenues from public enterprises
   (a) Tax revenues (i) Direct taxes (ii) Indirect taxes
   (b) Direct taxes : tax collected from income received by the owner of factors of production. Normally, income tax is progressive (as income $\uparrow$, tax rates $\uparrow$).

- Progressive Tax :

  ATR (Average Tax Rate) = $\frac{\text{Tax Paid}}{\text{Tax Base}}$,

  MTR (Marginal Tax Rate) = $\frac{\Delta\text{Tax Paid}}{\Delta\text{Tax Base}}$

Tax Ranges	Tax Rate (%)	Y (Income) (Tax base)	Tax Paid	ATR	MTR
0 - 1,000	10	1,000	100	0.10	-
1,001 - 2,000	12	2,000		0.1...	0.1....
2,001 - 3,000	15	3,000		0.1....	0.1....

As tax base rises, ATR ..... MTR ....., MTR ..... ATR

- Proportional Tax : tax base rises, tax rate remains constant. For example tax rate is equal to 10% for all level of income.

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1,001 - 2,000	10	2,000		0.1...	0.1...
2,001 - 3,000	10	3,000		0.1...	0.1...

As tax base rises, ATR ..... MTR ....., MTR ..... ATR

- Regressive Tax: tax base rises, tax rate decreases.

Tax Ranges	Tax Rate (%)	Y (Income) (Tax base)	Tax Paid	ATR	MTR
0 - 1,000	15	1,000	150	0.15	-
1,001 - 2,000	12	2,000		0.1..	0.1...
2,001 - 3,000	10	3,000		0.1..	0.1...

As tax base rises, ATR ..... MTR ....., MTR ..... ATR

ii) Indirect taxes : tax which is not collected from income received by the owner of factors of production, for example VAT

- Everybody pays the same tax rate for VAT
- It sems to be proportional tax.
- People with high income pays the same rate as people with low income when they buy goods and services.
- It cound be considered as regressive tax.

Effect of Tax

- Tax $\rightarrow Y_E$?

  1. Tax $\uparrow \Rightarrow$ (leakage/injection) ..... $\Rightarrow Y_E$ .....

2. DAE = $C + I + G + X - M$. Tax $\uparrow \Rightarrow$ .....
   $\Rightarrow$ (C / I / G / X / M) ..... $\Rightarrow$ DAE $\downarrow$ and $Y_E \downarrow$

t	ΔY	ΔT	ΔY_d	ΔC	$\frac{\Delta C}{\Delta Y}$	$\frac{\Delta C}{\Delta Y_d}$
0.2	1,000					
0.4	1,000					

- $\frac{\Delta C}{\Delta Y}$ = MPC out of national income
- $\frac{\Delta C}{\Delta Y_d}$ = MPC out of disposable income

1.2 Government Spending

- Government plan its spending one year ahead of time.
- When we discuss about fiscal policy, we talk about planned or intended government spending.
- The government has to forecast its tax revenue.

Government spends as much as tax revenue recieves : Balance Budget Government spends less than tax revenue receives : Budget Surplus Govrnment spends more than tax revenue receives : Budget Deficit

1.3 Government Borrowing

- What are the factor determining how much the government can spend?
  - Government Spending = Government (Tax) Revenue + Government Borrowing
  - G = T (balanced budget) , borrowing will be .....
  - G > T (budget .....), borrowing will be .....
    (creation of public debt)
  - G > T (budget .....), borrowing will be .....
    (government makes saving , called budget reserve)
  - "Government Debt Ceiling"

- Balanced budget : creation of public debt = 0
- Budget surplus : creation of public debt < 0
- Budget deficit : creation of public debt > 0 (by borrowing)

2 Effects of fiscal policy on equilibrium national income

Fiscal Policy Measures (Tools)

2.1 Non-discretionary fiscal policy (Automatic or Built-in Stabilizing)

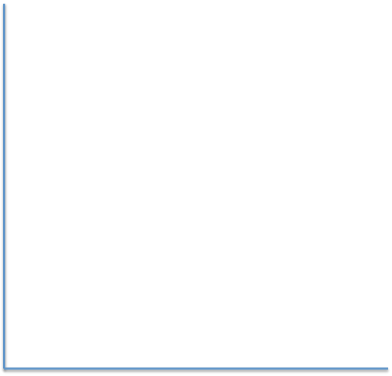
- "Keynesians view budget deficits as the right medicine to cure a recession and surpluses as remedies for inflation. Most politicians enjoy granting the tax cuts and new spending projects as they are generally popular with voters. But raising taxes and slashing budgets to fight inflation are poison for incumbents when re-election time rolls around."
  - Keynesians count on certain built-in mechanisms in the economy.
  - Automatic Stabilizers are tax structures and government spending programs that cause budget deficits to grow automatically during recessions, or surpluses to grow when expansion is rapid.
    - Y $\uparrow \Rightarrow$ Tax ..... , Government spending .....
      Size of budget deficit ..... (automatically to stabilize economy).
    - Y $\downarrow \Rightarrow$ Tax ..... , Government spending ..... .(automatically to stabilize economy)
      Size of budget deficit ..... (automatically to stabilize economy).
  - Automatic stabilizers are sometimes called "nondiscretionary" fiscal policy because no apparent government action is required.
- Income tax (personal tax, corporate tax) is closely tied to income (Y).
- When prosperity boosts national income, government's revenue from income tax increases.
- It is called automatic/ built-in stabilizer because once you have income tax into the system, it will automatically act as a stabilizer.
- Comparison between a closed economy with income tax and without income tax. $T = T_0 + tY$.

	Closed economy **without** income tax	Closed economy **with** income tax
Y_E		
Marginal Propensity to Spend (MPTS)		
	$MPTS_{\text{without } t}$ ..... Slope $\text{DAE}_{\text{without } t}$	$MPTS_{\text{with } t}$ Slope $\text{DAE}_{\text{with } t}$

- Why it is call autonomous stabilizing?
- **Income tax will make the multiplier effect ..... (smaller or bigger?).**
- $\Delta Y_E = \left(\frac{1}{1 - \text{Slope of DAE}}\right) \times \Delta AE$
- $\Delta Y_E = \left(\frac{1}{1 - b + bt}\right) \Delta AE$: bt make the denominator ..... This makes ΔY_E.....
- Numerical example : $b = MPC = 0.8$, $t = 10\%$, AE = Autonomous Expenditure

- Economy without income tax multiplier : $\frac{\Delta Y_E}{\Delta AE} = \frac{1}{1-b} = \frac{1}{1-.....} = 5$
- Economy with income tax multiplier : $\frac{\Delta Y_E}{\Delta AE} = \frac{1}{1-b} = \frac{1}{1-.....} = 3.\dot{6}$

- Without income tax, if AE changes by 1 baht, Y_E will change in the same direction by 5 times. (If AE $\uparrow$ by 1 baht, $Y_E \uparrow$ by ..... baht.)
- With income tax, if AE changes by 1 baht, Y_E will change in the same direction by $3.\dot{6}$ times. (If AE $\uparrow$ by 1 baht, $Y_E \uparrow$ by ..... baht.)
- Therefore, the same magnitude of a positive ΔAE, Y_E for the economy without income tax will increase by a ..... amount than that for the economy with income tax.
- That's why we call it automatic stabilizer.
- Graphically illustrate.



- With income tax, the fluctuation will be less, that's why we called it automatic stabilizer.
- When you have income tax in the system, automatically when there's an economic expansion, it will not expand as much as there is no income tax.
- When the economy declines, it will not decline as much as there is no income tax.

- Is lump-sum tax an automatic stablizer?
- Lump-sum tax is not the automatic stabilzer because it doesn't change the size of the multiplier. It doesn't affect the slope but it affects the intercept. The DAE curve will shift down not rotate.
- Unemployment benefit scheme also act as built-in stabilizer because once the economy starts to grow, Ystats to be higher, part of this increase's channeled into the unemployment benefit scheme, and that' ll also act the automatic stabilizer (only the part of the expenditure that depends on Y).

2.2 Discretionary (intended or planned) fiscal policy

- Discretionary fiscal policy is "a macroeconomic policy based on the ad hoc judgment of policymakers".
- The government needs to make their decision about 'government spending' (ΔG) and 'tax' (ΔT). (here)
- Types of fiscal policy
  1. Expansionary fiscal policy : employed when the government want to stimulate economy, ... G, ...T. It is used when the economy is facing with ..... gap.
  2. Contractionary fiscal polucy : emploed to solve inflation problem or inflationary gap, ... G .....T. It is used when the economy is facing with ..... gap.
- If there is economic recession, the government will employ expansionary fiscal policy to stimulate the spending by

  (1) increasing government spending, other things remain the same

  (2) decrease the tax either autonomous or income tax

  (3) the combination of both.
- If there is economic inflation or inflationary gap, the government will employ contractionary fiscal policy to stimulate the spending by

  (1) decreasing government spending, other things remain the same

  (2) increase the tax either autonomous or income tax

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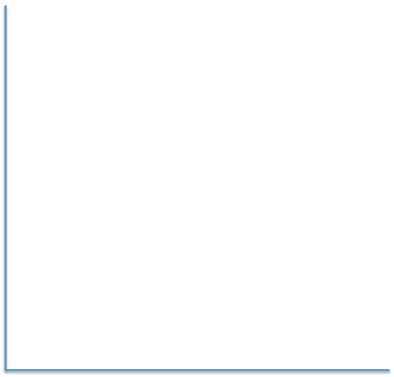
To solve 'Deflationary gap' problem

(1) The government increases G, other things remain the same

- DAE curve will shift up, and the gap will be eliminated.



- AD curve shifts to the right and the price will be higher.

(2) Government decreases the tax : 2.1 T_0 , 2.2 t

(2.1) the lump sum tax (T_0)

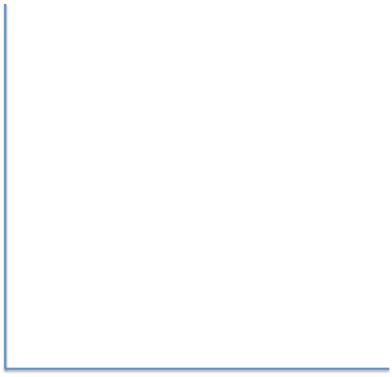
- The government has to decrease lump-sum tax ..... than to increase in government spending to close the deflationary gap.
- This is because
  - the tax multiplier is $k_T = \dfrac{\Delta Y_E}{\Delta T_0} = \dfrac{.....}{(1 - \text{slope of DAE})}$.
  - the government spending multiplier is $k_G = \dfrac{\Delta Y_E}{\Delta T_0} = \dfrac{.....}{(1 - \text{slope of DAE})}$.

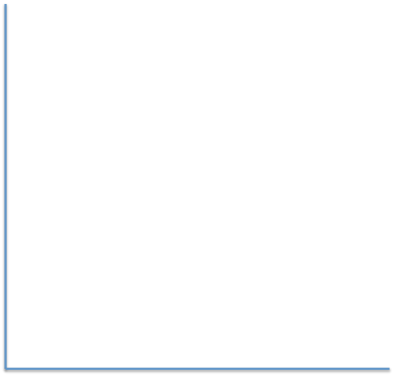
(2.2) Government decreases the income tax (t). The curve will rotate.

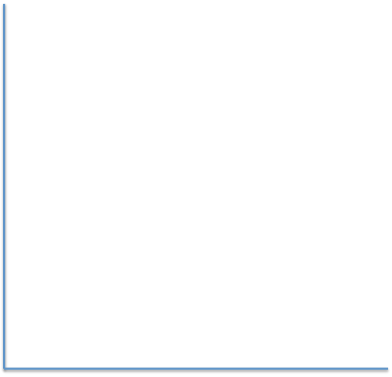
- DAE curve will shift up, and the gap will be eliminated.

(3) Use the combination of both.

- (3.1) G $\uparrow$ and $T \downarrow$ (3.2) $G \uparrow$ and $t \downarrow$ (3.3) $G \uparrow$, $T \downarrow$, $t \downarrow$







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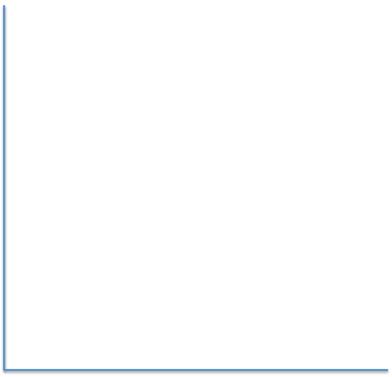

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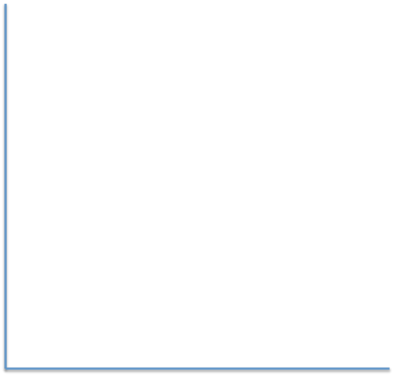

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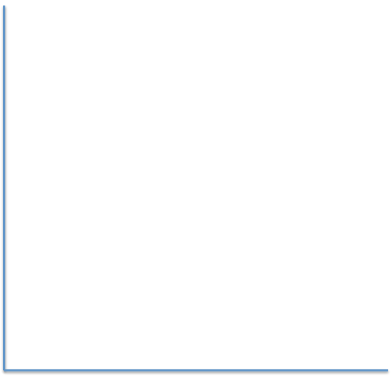

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