Week 7. Fiscal Policy

1. **Income Taxes and Consumption SKDL**

a. Fixed (lump-sum) Taxes: *e.g.*) property taxes do not depend on Y

$Yd = Y - T$

$Yd\downarrow = Y - T\uparrow \rightarrow \downarrow C \rightarrow \downarrow[C+I+(G-T\uparrow)+(X-M)]$

$Yd\uparrow = Y - T\downarrow \rightarrow \uparrow C \rightarrow \uparrow[C+I+(G-T\downarrow)+(X-M)]$

$\Delta Y \rightarrow \Delta Yd \rightarrow \Delta C = MPC * \Delta Yd$

Since there's no change in MPC, FT shifts C-skdl down in parallel.

b. Variable (*ad valorem* or proportional) Taxes (usually Progressive):

e.g.) personal/corporate income & sales taxes = $f(Y)$

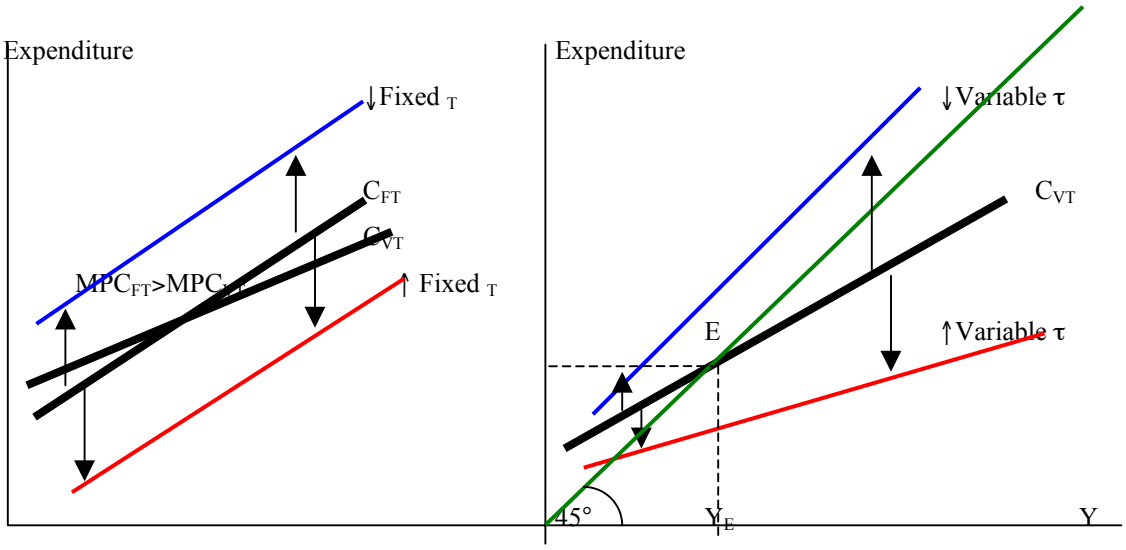
$Yd = Y - \tau Y = (1-\tau)Y$, *where* $T = \tau Y$

$Yd\downarrow = (1-\uparrow\tau)Y \rightarrow$ C skdl shifts down more sharply @Y_H than @Y_L.

$Yd\uparrow = (1-\downarrow\tau)Y \rightarrow$ C skdl shifts up more sharply @Y_H than @Y_L.

$\Delta Y > (1-\tau)\Delta Y = \Delta Yd \rightarrow \Delta C = MPC * (1-\tau)\Delta Y = MPC_{VT} * \Delta Yd$

τ tilts the C-skdl as it changes the MPC by $(1-\tau)$.



If Y_E occurs below/above Y_F, there is recessionary/inflationary gap, where prices will fall slowly/rise pulling the expenditure skdl up/down (w/ high interim unemplyment).

Government purchases add to total expenditure directly through G in C+I+G+(X−M). Taxes reduce C. Depending on how much spending & taxing G may ↑or ↓ Y.

2. **Consumption Multiplier under Taxes**

a. Graphically

i) Figure out how much any change in tax law affects consumer spending.

ii) Enter this vertical shift in C skdl in the 45° diagram and see how it affects the output.

b. Algebraically

$$Y = a + b[Y - T] + I + G + (X - M)$$
$$= a + bY - bT + I + G + (X - M)$$
$$Y - bY = a - bT + I + G + (X - M)$$

i) Fixed Tax Multiplier: $(1-b)Y = a - bT + I + G + (X - M)$

$$Y = \frac{a - bT + I + G + (X - M)}{1 - b}$$

$$Y' = \frac{a - b(T + \$1) + I + G + (X - M)}{1 - b}$$

$$Y' - Y = \Delta Y = \frac{-b}{1-b} = \frac{-MPC}{1 - MPC}$$

Let $T = \tau\ Y$

$$Y = a + b(1 - \tau)\ Y + I + G + (X - M)$$

ii) Variable Tax Multiplier: $Y = \frac{a + I + G + (X - M)}{1 - b(1 - \tau)}$

$$Y' = \frac{a + I + G + (X - M) + \$1}{1 - b(1 - \tau)}$$

$$Y' - Y = \Delta Y = \frac{\$1}{1 - b(1 - \tau)} = \frac{1}{1 - MPC(1 - \tau)}$$

e.g.) In the absence of income tax, if MPC was .75, multiplier was 4. W/ incomes taxed @20%, the multiplier is 2.5

Because they work indirectly via consumption, multipliers for tax changes are more complicated than multipliers for government spending.

c. i) Note that $\text{Multiplier}_G > \text{Multiplier}_\tau \rightarrow \frac{\Delta Y}{\Delta G} \rangle \frac{\Delta Y}{\Delta T}$, because taxes work indirectly by first changing disposable income and then changing C. Since some change in Yd affects saving rather than spending, a \$1 tax cut does not pack as much punch as \$1 of G.

ii) If G and T increase by equal amounts, the effects do not cancel out. Instead, the eqm GDP on the demand side rises. If G and T fall by equal amounts, the eqm GDP level on the demand side falls.

Therefore, fiscal policies that keep the deficit the same ($\Delta G = \Delta T$), which work only with fixed tax case, do not necessarily keep AD the same. Besides, G=T won't crowd out I.

3. **Transfer Payments** also intervene between Y and Yd in precisely the opposite way from income taxes. Hence, the reverse (–ve) taxes. Therefore, tax cuts work exactly the same way as ↑unemployment benefits/social security benefits.

4. **Fiscal Policy**

a. **Expansionary**

Assuming price level is fixed, the gov't has 3 options to raise GDP in the event of a

recessionary gap: i) ↑G, ii) ↓T or iii) ↑Transfer Payments.
e.g.) If Y_F=$7000, the economy is at recessionary gap w/ Y_E=$6000. If the Multiplier is 2.5, you can either i) ↑G, ii) ↓T, iii) ↑Transfer Payments or iv) some combination of i) through iii) by only $400 to eliminate the recessionary gap.

b. **Contractionary**

If there is an inflationary gap, the gov't has 3 options: i) ↓G, ii) ↑T, iii) ↓Transfer Payments or iv) some combination of i) through iii) to eliminate the inflationary gap. But if the economy is approximately at Y_F, this could rather cause unemployment.

c. **Gov't Spending or Tax?**

Any combination of ↑G and ↓T that produces the same AD curve, leads to the same ↑Y and ↑p. Then, to decide whether to ↑G or ↓T depends on how large a public sector the nation or the policymakers want(s).

i) Advocates of big gov't budgets should seek to expand demand through ↑G (to cure recession) and contract demand through ↑T (to cure inflation).

ii) Advocates of small gov't should seek to expand demand by ↓T and reduce demand by ↓G.

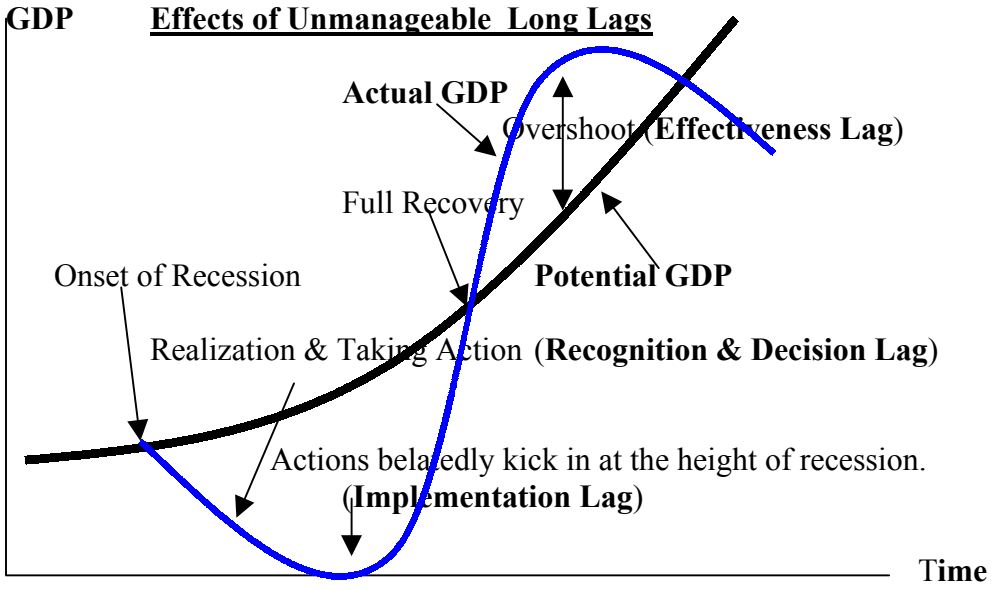
5. **Why Balance the Budget?**

a. **Crowding Out Effect**: G crowds out I *i.e.*) G–T>0 → ↑gov't borrowing → ↑bank's credit to gov't → ↑*i* (cost of borrowing) → ↓I ∴ ↓(G–T)→↑I→LR Growth.

b. Therefore, ↑G by ↑bond sale isn't always preferred to ↑G through ↑T, b/c ↑G by ↑bond sale may lead to crowding-out of I.

6. **Should the Government Intervene?**

a. Liberal: pro-intervention, discretionary stabilization, coarse tuning is good enough. In the presence of long lags, attempts at stabilizing the economy can actually destabilize it. → Democrat platform



b. Conservative: min government intervention, automatic stabilizer ($E_L \le E \le E_H$) through fixed rules, criticize lags and uncertainties of stabilization policy, both fiscal and monetary. → Republican platform
c. **Automatic Stabilizer:** automatically serves to support AD when it would otherwise sag and to hold down AD when it would otherwise surge ahead. → reduces sensitivity to shocks.
e.g.) income tax, unemployment insurance, …etc. → ↓multiplier.

7. Other Dimensions of Rules vs. Discretion

a. Fixed rule advocates favor small gov't, whereas discretionary stabilization proponents favor big gov't. However, most discretionary stabilization is conducted through monetary policy, which has nothing to do w/ the size of gov't.
b. Moral Hazard of Political Biz Cycle
   i) When elections are on the horizon, fiscal policy is subject to political manipulations. Lawmakers may take inappropriate actions to attain SR political goals.
   ii) Automatic stabilizers would eliminate this peril by replacing the rule of men b y the rule of law.

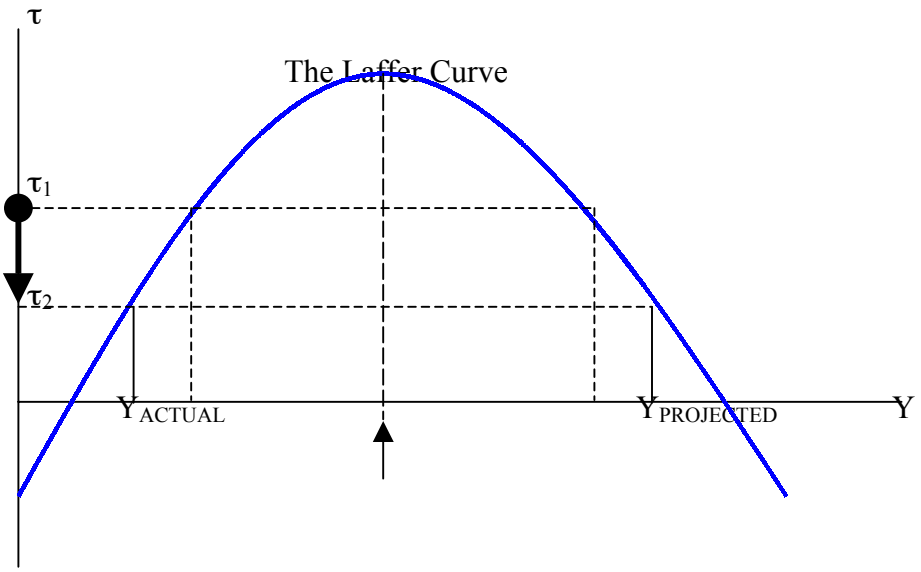
8. **Realities**

A good analogy of fiscal policy is shooting through dense fog at an erratically moving target w/ an inaccurate gun.

i) The target is moving, because C, I, and (X–M) skdls are constantly shifting due to changes in expectations, new technological breakthroughs, events abroad …etc. → Policies made today to take effect at some future date, may no longer be appropriate by the time that date rolls around. Policy must be based on yet-imperfect forecasting, and because policy decisions usually take a long time to be carried out, poor forecasts may result in remedy one step too late that could work rather adversely to the symptoms.
ii) Multipliers are not known w/ as much precision. It is, therefore, impossible to fine-tune every wobble out of the economy's growth path.
iii) The target, Y_F, may only be dimly visible.
iv) In trying to push the unemployment rate lower, we would like to know how large the inflation cost is likely to be. An expansionary fiscal policy also tends to be inflationary. This undesirable side effect make the gov't hesitant to use fiscal policy to combat recession.

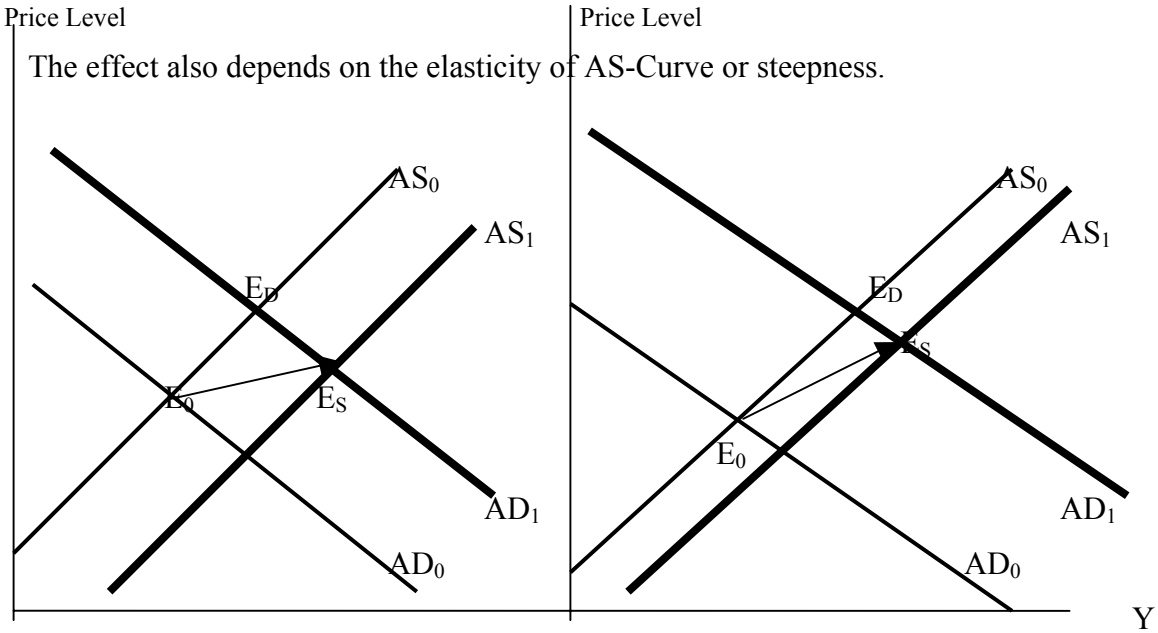
9. **Supply-Side Economics**

Supply-Side Economics (Reaganomics) is the idea that was brought into light in the early '80s to address the issue of *whether we can correct unemployment w/o aggrevating inflation*. The central idea is that certain types of tax cuts can be expected to inrease AS in ways that raise the rewards for working, saving, and investing. If policy measures can shift the AS curve out, prices will be lower and output higher.→ ↓π, ↑Y. → The trade-off between inflation and unemployment will have been defeated.



a. **Supply-siders advocated**:

i) ↓Personal income tax
ii) ↓Savings income tax → ↓Tax on consumption
iii) ↓ K-Gains tax → ↑I
iv) ↓Corporate income tax



Successful Supply-Side Tax Reduction **Pessimistic View of Supply-Side Tax Cuts**

b. **Critiques argue** that supply-siders exaggerate the beneficial effects of tax cuts and ignore some undesirable side effects. Problems were:

i) *Small magnitude of supply-side effects*: While it is easy to design tax incentives that make saving more attractive, people may not actually respond to these incentives.

ii) *Demand-side effects*: Supply-siders underestimate the effects of tax cuts on AD. If ↓personal tax, individuals may possibly work more, but they will certainly spend more. If ↓business tax → ↑industrial capacity → ↑demand for I goods. The joint implication is a small outward shift of AS curve and a large outward shift of AD curve. This results in ↑p as Y↑. The outcome differs only a little from the straight demand-side fiscal stimulus.

iii) *Problems in timing*: Expenditures on I goods (AD) come before expansion of capacity (AS). Supply-side tax-cuts will have their primary SR effects on AD. Effects on AS come later.

iv) *Effects on distribution of income*: Most supply-side initiatives increase income inequality. Most supply-side cuts cannot help but concentrate their benefits on the rich simply because it is the rich who own most of the K.

v) *Losses of tax revenue*: Supply-side tax cuts are bound to raise budget deficit.

c. **Final Analysis**

i) The likely effectiveness of supply-side tax cuts depend on the nature of the tax-cut. Tax-cuts aimed at stimulating biz investment pack more punch than tax-cuts aimed at getting people to work or save more.

ii) Such tax cuts increase AS much more slowly than AD. Thus, supply-side policies are not a substitute for SR stabilization policy, but rather a way to promote slightly faster economic growth in the LR.

iii) Demand-side effects are likely to overwhelm supply-side effects in the SR.

iv) Such tax cuts widen income inequalities.

v) Such tax cuts lead to bigger budget deficits, which is obvious from the Laffer curve.

Therefore, the claims made by the supply-siders were clearly excessive.