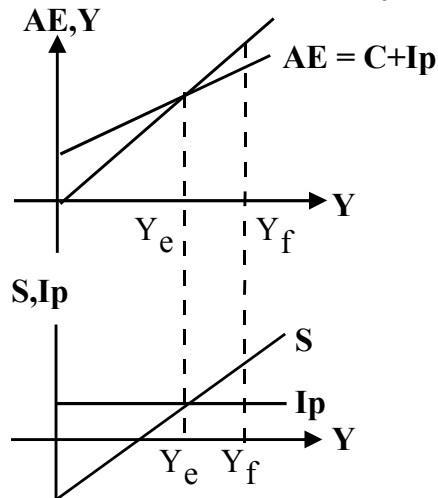


FISCAL POLICY

Previously, our model excluded foreign trade and the government sector, so $AE = C + I_p$
 \Rightarrow private sector spending only

Equilibrium Condition: $Y = AE$ or $S = I_p$
 \Rightarrow Total Leakages (S) = Total Injections (I_p)
 \Rightarrow There is *no guarantee that equilibrium Y coincides with full employment Y (Y_f)*

Keynes considered case where $Y_e < Y_f$



At Y_f , too little spending to sustain it: $S > I_p$

Keynesian Solution: if private sector is stuck below full employment (effective demand failure), in the *short-run*, let government sector stimulate demand through fiscal policy

Fiscal Policy - undertaken by the government Manipulation of supply and/or demand by the federal government in an attempt to move the economy in the direction deemed to be most appropriate at that time

Fiscal Policy Instruments:

- Government Purchases (G)
- Transfer Payments (Tr)
- Taxes (T)

$AE = C + I_p + \underline{G}$ with fiscal policy, so:

Fiscal Policy affects AE - directly or indirectly

- G *directly* affects AE (\$ for \$) (component of AE)
- T and Tr affect AE *indirectly* - altering C and I_p

$C = f(Y_d)$ where Y_d is disposable income

$$Y_d = Y - T + Tr$$

- think of this as "after-tax income"

If Taxes or Transfer Payments change:

ΔT or $\Delta Tr \rightarrow \Delta Y_d \rightarrow \Delta C$ and:

$$\Delta C = MPC \cdot \Delta Y_d$$

Equilibrium Condition Earlier: $S = I_p$

- if $Y_e < Y_f \Rightarrow$ a **GDP Gap** exists

\Rightarrow at Y_f , $S > I_p$

With fiscal policy, no longer need $S = I_p$

- it adds a leakage (T) and an injection (G)

Total Leakages = Total Injections

$$S + \underline{T} = I_p + \underline{G}$$

- *New Equilibrium Condition*

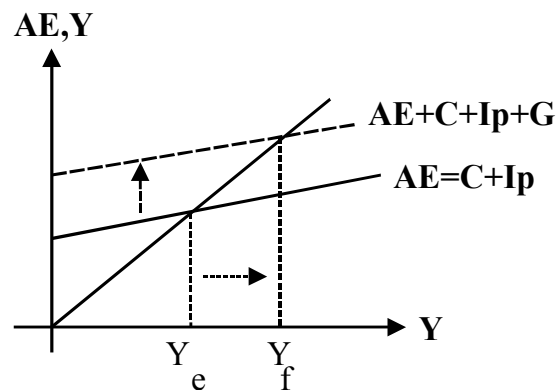
With GDP Gap: at Y_f , $S > I_p$

- to satisfy *new* equilibrium condition, if $S > I_p$

$\Rightarrow G > T$ **Budget Deficit**

Deficit stimulates (raises) AE

\Rightarrow now Y_f can also be an equilibrium with proper fiscal policy



To eliminate a GDP Gap:

$\uparrow G$ $\uparrow Tr$ $\downarrow T \Rightarrow \uparrow AE$ (Macro)

Expansionary (Discretionary) Fiscal Policy

$\uparrow D$ in product markets (Micro)

Philosophical Considerations:

$\uparrow G$ - stimulates and enlarges PUBLIC sector

$\downarrow T$ stimulates PRIVATE sector spending by

altering incentives to households and businesses

- Ongoing debate "solved" by elections

Practical Considerations:

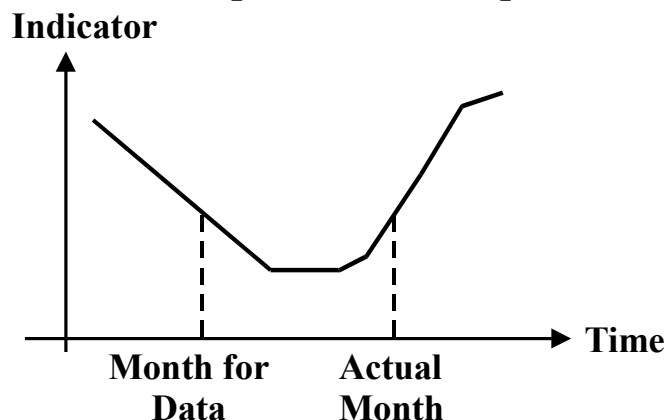
Lags exist with regards to fiscal policy

- if alter G and/or T, it takes time before the primary effects are felt by the economy

(1) Recognition Lag: it takes time before we

correctly understand that a problem exists

- data are based on past months experience



Even after economy turns up, *released* data still show it to be declining. To get around this problem, we use *Leading Economic Indicators*

(2) Administrative (Legislative) Lag: once a problem recognized, must *agree on and pass* legislation to deal with this

- philosophical differences => can take months

(3) Impact Lag: once measures undertaken, takes *at least* 6-9 months before they have major impact on Y_e

Total of all lags can easily exceed one year, so when impact occurs:

- Policy might not be needed anymore; and
- Actual effect can hurt current activity

Ex: Action to eliminate recession by $\uparrow AE$
=> When this takes effect, we might then be in recovery - so the added demand might cause the economy to overheat and shorten the recovery!! (this happened in 1975)

Technical Considerations:

- the way deficits are financed tends to *raise* interest rates - thru sale of government bonds

The higher interest rates caused by deficits:

(1) Lowers investment spending (I_p)

- so public spending rises as private spending falls

$$AE = C + I_p \downarrow + G \uparrow$$

- called **CROWDING OUT**

=> smaller *future* capital stock (see Ch.2)

=> fewer goods and services in future

Both of these => *burden on future generations*

(2) Affects \$ exchange rate and Net Exports (X_n)

\$ *Appreciates*, so Exports \downarrow and Imports \uparrow => $X_n \downarrow$

- this lowers AE - *can slow the economy down when we don't want to slow down*

(3) Requires that foreign investors be willing to

continue buying US government bonds

- if they less willing => US interest rates *rise more*

(note: current surpluses let interest rates *decrease*)

Political Considerations:

Keynes: gave rationale to deficits (stimulate AE)

Politically - much easier to raise the deficit than to reduce it

US: persistent deficits since 1969 - almost balanced budget in FY 97 - took almost 20 years!!

- *not* what Keynes intended

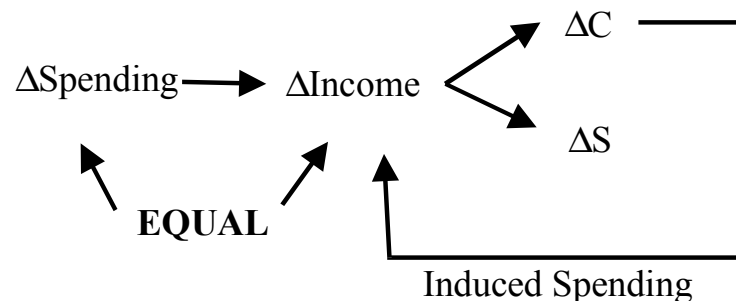
- not surprising based on *political* incentives, since it costly to either $\uparrow T$ or $\downarrow G$

FISCAL POLICY MULTIPLIERS

- since fiscal policy involves spending changes, multipliers exist for *each* policy instrument

Recall: Multiplier tells how much Y_e changes when *autonomous* spending changes

- spending creates income causes new spending



$$\Delta Y_e = k \cdot \Delta AE$$

$$k = \text{multiplier} = 1/\text{MPS} = 1/(1-\text{MPC})$$

For fiscal policy:

ΔG - direct effect on AE (if $\Delta G = \$1$, $\Delta AE = \$1$)

Not true for ΔT : $\Delta T \rightarrow \Delta Y_d \rightarrow \Delta C$ and

ΔC - gets full multiplier

Consider effect of *equal* changes in G and T (=\$100)

Balanced Change in Budget - if budget balanced

before, will still be balanced if $\Delta G = \Delta T$

- has own multiplier: Balanced Budget Multiplier

Let $MPC = 0.75$ ($\Rightarrow k = 1/(1-0.75) = 4$)

(1) Effect of $\downarrow G = \$100$

ΔAE here is $\downarrow G = \$100 \Rightarrow$ gets multiplier

$$\Delta Y_e = k \cdot \Delta AE$$

$$= 4 \cdot (-100) = \underline{-400}$$

\Rightarrow use regular multiplier for ΔG

(2) Effect of $\downarrow T = \$100$

Find ΔC for this:

$\Delta C = MPC \cdot \Delta Y_d$ with $MPC = 0.75$ and

For any Y: $\Delta Y_d = -\Delta T = -(-100) = +100$

(take home pay now higher by \$100)

$$\Delta C = 0.75 \cdot \Delta Y_d$$

$$= 0.75 \cdot (+100)$$

$$= \underline{+75} = \Delta AE \text{ that gets multiplier}$$

$$\Delta Y_e = k \cdot \Delta C \text{ resulting from } \Delta T$$

$$= 4 \cdot (+75) = \underline{+300}$$

A quicker way to do this, use the tax multiplier:

$$k_T = -MPC/MPS \text{ and}$$

$$\Delta Y_e = k_T \cdot \Delta T$$

$$\text{Here: } k_T = -0.75/0.25 = \underline{-3}$$

$$\Delta Y_e = -3 \cdot (-100) = +300$$

TOTAL EFFECT OF $\Delta G = \Delta T = -100$

Intuition: this tax cut will exactly offset the effect of the decline in G \Rightarrow no change in Y_e

WRONG!! Government Purchases multiplier is larger than the tax multiplier (forgetting signs)

$$\downarrow G = 100 \rightarrow \Delta Y_e = -400$$

$$\downarrow T = 100 \rightarrow \Delta Y_e = +300$$

$$\underline{\underline{\text{TOTAL } \Delta Y_e = -100}}$$

Balanced Budget Multiplier

- for a balanced change in the budget ($\Delta G = \Delta T$), the level of economic activity changes by the *same* amount:

$$\Delta Y_e = \Delta G = \Delta T \quad (\text{all } -100 \text{ in example})$$

If G and T change by the same amount, AE and Y_e *both* change - so the effect of this on the level of economic activity is NOT neutral

Application

How to Shrink the Size of Government

Both Presidents Nixon and Bush attempted to make government smaller by cutting G and offsetting the negative effects by lowering T by same amount
Neither realized that this lowers economic activity
=> they inadvertently slowed the pace of economic activity and blamed other factors

Application

How to Balance the Budget

Presidents, Congress, the Senate and state governments *consistently* overlook the technical implications of the different multipliers for G and T in their fiscal policy decisions

A few years ago, the demand was for cuts in government spending to greatly exceed whatever tax hikes would arise

- Political expediency was behind this
- Were this done without "smoke and mirrors" they would have observed a higher recession risk than what actually occurred
- In the short-term, the beneficial effects of lower interest rates would be more than offset by the slower economy (and income growth)

Non-Discretionary Fiscal Policy

A second layer of fiscal policy exists

Discretionary fiscal policy: manipulation of taxes and government spending to attain stated goals
- "legislated fiscal policy"

Non-Discretionary Fiscal Policy: features built into the economy that stabilize it

(1) Progressive Income Taxation
tax brackets (marginal tax rates) rise as taxable income increases and vice versa
 $\% \Delta \text{tax liability} > \% \Delta \text{taxable income}$

In a recession, tax liability falls *faster* than the overall economy
 \Rightarrow *real* tax revenue falls in recessions (less income available to tax)

(2) Entitlement Spending (transfer payments)
Government only sets the criteria for entitlement not the \$ amount spent
- the state of the economy determines the amount of entitlement spending
- in recessions, entitlement spending automatically rises (more unemployed or in poverty)

Putting this together:

IN A RECESSION:
(1) tax revenue falls
(2) entitlement spending rises
 \Rightarrow deficit rises automatically, which \uparrow AE and reduces the severity of the recession
- **Non-Discretionary Fiscal Policy**
 \Rightarrow Keynesian Prescription

- this buys time for discretionary fiscal policy to be undertaken
- prevents recessions from becoming depressions (we think - there's only one way to find out!)

IMPLICATIONS:

(1) The state of the federal budget (i.e., deficit or surplus) depends on the state of the economy
=> actual deficit/surplus is not an accurate gauge of the extent of fiscal policy stimulus
=> true for federal *and* state budgets

(2) If wish to balance the budget during recessions
- in recessions: *automatic* $\uparrow Tr$ and $\downarrow T \rightarrow \uparrow$ deficit
To balance the budget, need to:
 $\downarrow G$ and/or $\downarrow Tr$ and/or $\uparrow T \Rightarrow \downarrow AE$
- This is Hoover's solution to the 1929 recession!!
Recession => too little demand
- if balance the budget => $\downarrow AE$ further
- this is like leaning into a punch

(3) The actual deficit/surplus does *not* measure the amount of fiscal stimulus, as people believe
 \Rightarrow a deficit does *not* necessarily mean expansionary fiscal policy - it could be caused by slow economic growth or a recession (called **cyclical deficit**)

Correct measure of fiscal stimulus

- based on a hypothetical
- since T depends on the level of Y , we compare *current* G with what tax revenue would be *if we were at* full employment

FULL EMPLOYMENT (STRUCTURAL) BUDGET

Use this to evaluate fiscal policy:

- If is a **full employment (structural) deficit** - fiscal policy is expansionary (\Rightarrow current $G > T$ even if the economy were at full employment)
- If is a **full employment (structural) surplus** - even if actual deficit \Rightarrow fiscal policy is contractionary ($G < T$ at full employment)

During depression - had (cyclical) deficits BUT a full employment surplus
 \Rightarrow fiscal policy made things worse

Today, have a budget surplus that is the result of strong economic growth, not discretionary fiscal policy (as politicians want you to think)