LECTURE 4

THE ECONOMY IN THE SHORT RUN

JOHN MAYNARD KEYNES

- He distinguished between the decision to save and the decision to invest. In practice he through that everyone saved the same regardless of the interest rate
- He found that a ***lack of effective demand*** caused economic problems. He believed that if savings increased and investment was discouraged, buying power and in turn production would decrease, causing a vicious circle to develop.
- Discovered the **golden rule** of saving: the richer the country the higher the saving, which in turn can lead to less consumption and therefore a lack of demand and growth in GDP.
- He felt that businesses have two choices when demand falls; Respond through cutting wages or letting off workers
- He defended the Gov. ability to pump up demand through injection of money into the economy. He encouraged action rather than watching the country fall into depression.

AGGREGATE EXPENDITURE

Planned Aggregate Expenditure:

If you sell everything this means that planned expenditure will be equal to actual expenditure.
If firms spend less than they expect ($I < I^P$) than inventories will increase. And if you sell more than you expect ($I > I^P$) inventories will decrease.

Keynesian theory states that output at each point in time is determined by the amount that people want to spend, there planned aggregate expenditure PAE. In Equilibrium PAE = Y, which means that there are 4 components of spending on final goods and services.

1. Consumption expenditure ***(C=C+c(Y-T))***
2. Investment (I) is spending by firms on new capital goods, such as office buildings, capital and equipment.
3. Government Purchases is spending by the government (federal, state and local) on goods and services. This includes new schools and hospitals, military hardware and services of government employees. Transfer payments such as social security benefits.
4. Net exports equals exports minus imports

All four components make up aggregate expenditure, **AE = C + I +G + NX**

ACTUAL AND PLANNED INVESTMENT

I^P = purchases of new production equipment + planned additions to inventory (the difference between how much you produce and how you plan to sell) therefore planned investment does not rely on how much you actually sell.
I (actual investment) = how much you produce + inventory left over after actual sale.

KEYNESIAN'S CONSUMPTION THEORY

THE CONSUMPTION FUNCTION

This relates consumption to disposable income and shows the amount of planned aggregate consumption at each level of disposable income.

GET NOTES FROM LECTURE

$$C = \bar{C} + c(Y - T)$$

Exogenous consumption: this is the consumption expenditure, which varies for reasons other changes to disposable income. This is the C bar component.
Induced consumption: this component is related to disposable income. It increases as disposable income increases.

KEYNES'S VIEW OF EXPENDITURE

PLANNED AGGREGATE EXPENDITURE AND OUTPUT

Planned aggregate expenditure is total planned spending on final goods and services in the economy.
The Keynesian model explains that changes in production and income affect planned aggregate spending.
Aggregate spending as a whole depends on output.

PAE = C + I + G + NX
PAE = [620 + 0.8(Y – 250) +220 + 300 + 20
PAE = (620 – 200 + 220 +300 + 200 +0.8Y = 960 + 0.8Y

Thus this shows that PAE can be broken down into two parts, one that is dependent of Y and one that isn't. exogenous and induced.

SHORT RUN MACROECONOMIC EQUILIBRIUM

Remember that in the short run, according to Keynesian, produces leave prices at present levels and simply meet the demand that is forthcoming at those prices, which means that firms produce an amount that is equal to planned aggregate expenditure. Therefore the short run equilibrium output occurs where output Y equals PAE.

$$PAE = Y$$

Injections and withdrawals also have a large affect. These are related to the flows into and out of ***the circular flow of income*** *(the economies national income which can be equivalently measured using either the production, expenditure or income approaches).*
Injections: all sources of exogenous expenditure in the economy. *INJ = I^p +G + X*
Withdrawals: That part of income not used for consumption purposes. *WD = S + T + M*

Short Run Macroeconomic equilibrium is achieved when INJ^p = WD.
As we are working with the two sector model PAE = C = I and therefore in equilibrium Y = C + I^p
Subtract C from both sides Y – C = I^p
Than if we subtract C from Y we get S (savings). Therefore ***S = I^p***

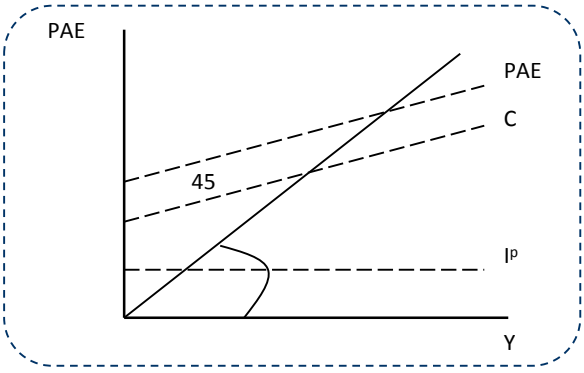
Y > PAE
Y > C + I^p
C + I > C + I^p
I > I^p = inventories ↑ → ↓Y
→ Y = PAE

Y < PAE
Y < C + I^p
C + I < C + I^p
I < I^p = inventories ↓ leading to ↑ in Y
This will → Y = PAE

KEYNESIANS' CROSS 45-DEGREE DIAGRAM

The use of this diagram shows a simple way of visualizing the workings of the economy over the time period in which firms do not adjust prices in response to changes in demand.

- **The 45-degree line plays as a guideline. It traces out the possible points where equilibrium is satisfied. PAE = Y [Y=F (K, C, A)]**
- The **KEY ASSUMPTION IN THIS MODEL** is that in the SR, firms meet the demand of their products at preset prices; therefore firms produce at the amount that is equal to PAE. (PAE = Y)



FOUR SECTOR MODEL

INJ = WD
I + G + X = S + T +M
This means that in a 4 sector model we introduce a tax function into the Consumption function.
New Consumption Function:

$$C = C - cT + c(1 - t)Y$$

IMPORT function:

$$M = m(1 - t)Y$$

This demonstrates that import spending increases with disposable income with m representing the marginal propensity to import.

Exogenous Values in the Four Sector Model:

$$I^p, G, X$$

Therefore considering all this equilibrium is:

$$PAE = (C + cT + I^p + G + X) + (c - m)(1 - t)Y$$

To get Equibrium income make INJ = WD (S + T + M = I^p + G + X)

THE ROLE OF THE MULTIPLIER

If the tax is on income:
PAE = C + c(Y – tY) + I + G + NX
PAE = Y

$$Y = \frac{C + I + G + NX}{1 - c(1 - t)}$$

2-sector model:
Multiplier = 1/1 – MPC
4-sector Model:

$$\textit{Multiplier} = \frac{1}{1-(c-m)(1-t)}$$

or (if m not given) $= \frac{1}{1-c(1-t)}$

LECTURE 5

GOVERNMENT BUDGET

The fiscal year in Australia lasts from july1 to June 30. Revenue for the budget includes *taxes from income (personal and corporate), GST, Medicare, etc*
Expenditure includes government purchases, transfer payments, interest payments on debt, health and defense, education, etc

At the end of the budget is the ***Primary Balance*** *which is the difference between expenditure and revenue.*

- *Revenue minus expenditures gives you either a surplus or a deficit.*
- ***Structural Balance:*** *this is the balance at full employment. ∴ estimating Y* to be reached [tY* - G]*
- ***Cyclical Balance:*** *balance due to economic fluctuations*

GRAPH

FISCAL POLICY TOOL OF STABILISATION

Fiscal policy is a **discretionary** policy as it is used to smooth out recessions and booms, i.e. **stabilize** the economy.

- This is done through deliberate changes in G (government spending) and tax revenues designed to either remove inflationary or deflationary pressures from the economy.

METHODS

- Increasing or decreasing G
- Tax cuts
- Investment subsidy

EFFECTS OF TAXES AND SPENDING

- As can be seen with an ↑ in G the multiplier comes into play and thus a small change in G will have a large impact on Y and thus the business cycle
- As can be seen a tax cut will have a faster effect on output and the business cycle

THE BALANCED BUDGET MULTIPLIER

What happens to the economy when G and T rise by the same amount?
It will result in an expansionary effect on the economy

- The government multiplier is positive = 1/1 – c
- The tax multiplier is negative = c/1 – c

∴ Increasing both G and T by an equal amount has a positive impact equal to unity or change in G on output. Thus it is called the balanced budget multiplier as it does not put the budget out of balance.

$$\textit{Balance Budget } k = \left(\frac{1}{1-c} - \frac{c}{1-c} \right)$$

AUTOMATIC STABILISERS

Refers to the use of welfare payments and the tax brackets.

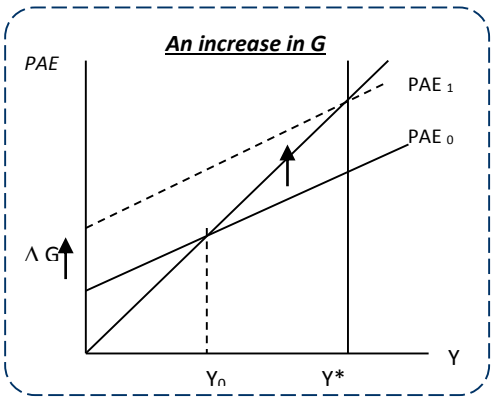
- As GDP increases ➔ wages increasing and people moving into higher tax brackets ➔ ↑ tax revenue and low transfer payments during high economic activity. ∴ Decreasing disposable income and moderating economic expansion.
- GDP ↓ ➔ low tax revenues as people move down tax brackets ➔ high transfer payments during a recession. Thus increasing disposable income and reducing the severity of a recession.
- Deficit ➔ ↑ welfare payments

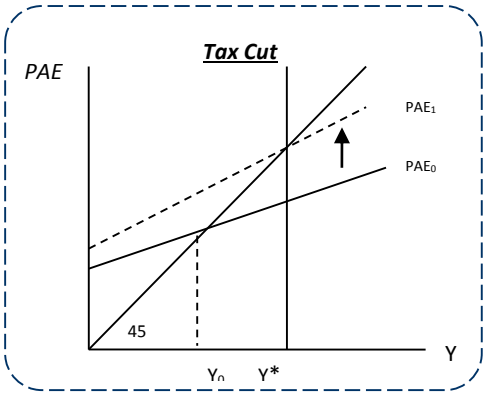
PROBLEM WITH AUTOMATIC STABILISERS

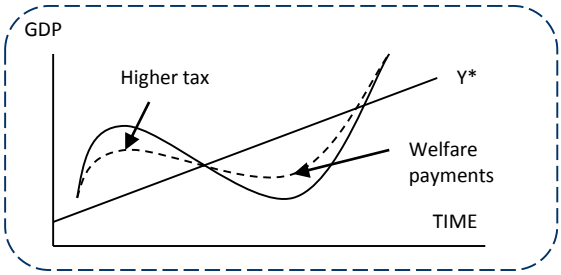
- It prolongs recessions and retards long run expansions
  This is because taxes are proportional to income and thus rise as the economy expands
- It cause disposable income to fall during expansions, so it takes longer time to reach full employment

BUDGET PHILOSOPHIES

ANNUALLY BALANCED BUDGET
This means that revenue must equal expenditure, yearly.
The **implication** of this is that there are amplified business cycle (government spends more during booms and less during recessions).
CYCLICALLY BALANCED BUDGET
Increased deficit (G > T) during recessions and increase surplus (G < T) during booms. That is, the government uses surpluses in a boom to finance deficits during recession to dampen the economy.







- When the economy is above full employment higher taxes restrict rapid expansion to NEW potential level, *assuming there is a positive shock or increase in resources that increases potential output.*

FACTORS THAT INFLUENCES THE BUDGET DEFICIT

(T – G) = T + tY – G

BUDGET DEFICITS AND PUBLIC DEBT

GOVERNMENT BUDGET CONSTRAINT

Define the budget deficit in year t (BD_t)

$$BD_t = rB_{t-1} + G_t - T_t$$

B_{t-1} = government debt at the end of year t-1 (or at the beginning of year t),
r = the (constant) real interest rate,
G = government spending + transfer payments during year t,
T = tax revenue.

Budget deficit can also be defined as:

$$BD_t = B_t - B_{t-1}$$

The change in government debt from year t-1 to t.

Hence, $BD_t = Bt_t - B_{t-1} = rB_{t-1} + G_t - T_t$ ∴ $B_t = (1+r)B_{t-1} + G_t - T_t$

This is the government budget constraint in terms of government debt. It shows the ***intertemporal nature of government budget constraint***

MEASUREMENT OF THE BUDGET DEFICIT

The official measure, although it is a good measure of the stance of fiscal policy, is incorrect. The "***structural***" deficit is often a better measure.

Requires 2 basic adjustments:

1. Inflation
   - ***Fiscal drag:*** Nominal GDP rises and hence tax collection, exerting a potentially depressing effect on the economy
   - ***Bracket creep:*** As nominal income is higher due to inflation, they are automatically moved into higher tax brackets (see Lecture 2 on the effects of inflation)
2. Business cycle (cyclical adjustment)

HOW THE TREASURY ANNOUNCES THE BUDGET

They announce it differently from above by using the ***nominal interest*** and hence can be seriously misleading.
It overstates the correct measure by an amount equal to πD.

EFFECTS OF BUDGET DEFICITS

(1) The Traditional View
Assume Y = Y*.
In the SR: Y increases. Expansionary gap.
In the LR: Y = Y*, inflation and interest rate both rise (to be confirmed by the AS-AD model later)

(2) The Ricardian (neoclassical) View
Proposition: A debt-financed tax cut should have no effect on the economy.

Originally due to David Ricardo

RICARDIAN VIEW OF BUDGET DEFICITS

Rationale:

If a tax cut is financed by issuing bonds today, the government is committing itself to higher taxes in the future (to pay interest and retire the bonds).

- Rational (or forward-looking) individuals will save the (believed to be temporary) tax cut today in anticipation of their future tax liability.
- Consumption does not change and the increase in private saving will exactly offset any change in public saving.

LIMITATIONS TO FISCAL POLICY

- Fiscal policy can affect the supply side of the economy too. An increase in G for education → ↑ skills and ∴ ↑ Y

PROBLEM OF DEFICITS

Large persistent surpluses need to be avoided. Sustained deficits can be harmful as they reduce national savings through the crowding out effect; this in return reduces investment in new capital goods.

INFLEXABILITY

It is not always flexible enough to be used for stabilization. Changes in G and T must go through a lengthy legislative process, which reduces its efficiency. Fiscal policy makers also have other objectives. Automatic stabilizers are the only flexible component of fiscal policy