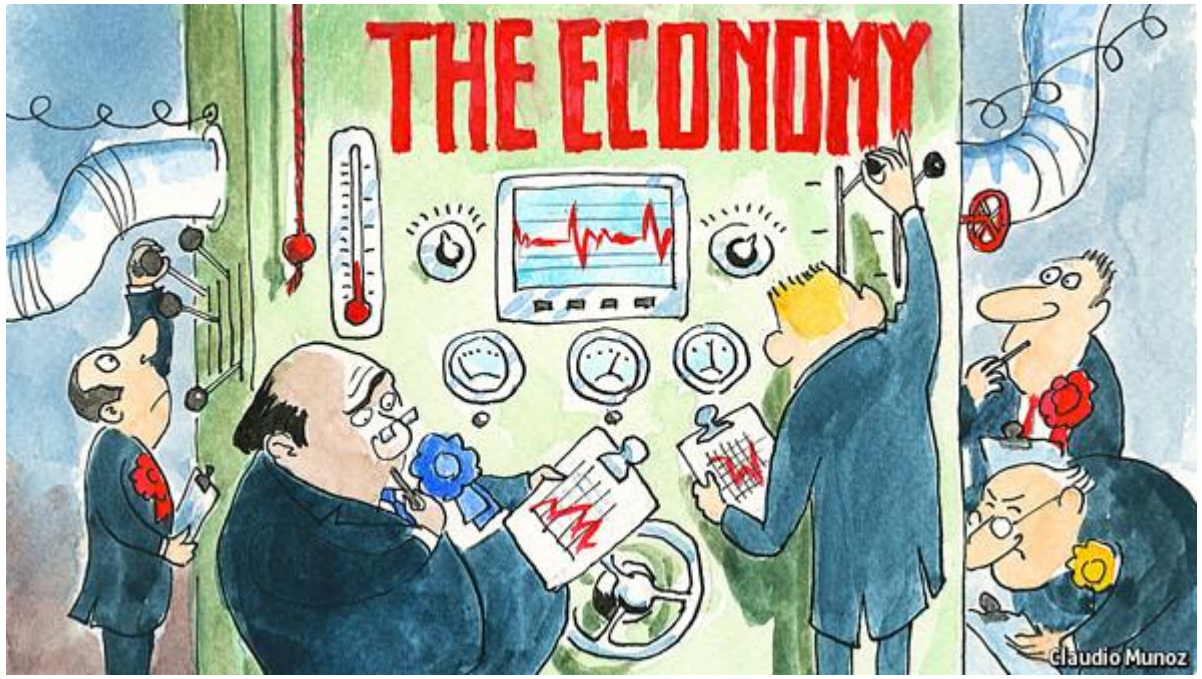

Demand-Side
Policies

Demand-side Policies

Demand-side policies, also known as demand management, focus on **changing aggregate demand**, or shifting the aggregate demand curve in the AD-AS model, to achieve several macroeconomic goals.

- They are based on the idea that short-term fluctuations in real GDP of the business cycle are due to actions of firms and consumers affecting aggregate demand, causing inflationary or deflationary/recessionary gaps.
- **Objectives**: bring aggregate demand to the full employment level of real GDP, or **potential GDP**.



Two types of demand-side policies

1. Monetary policy
2. Fiscal policy

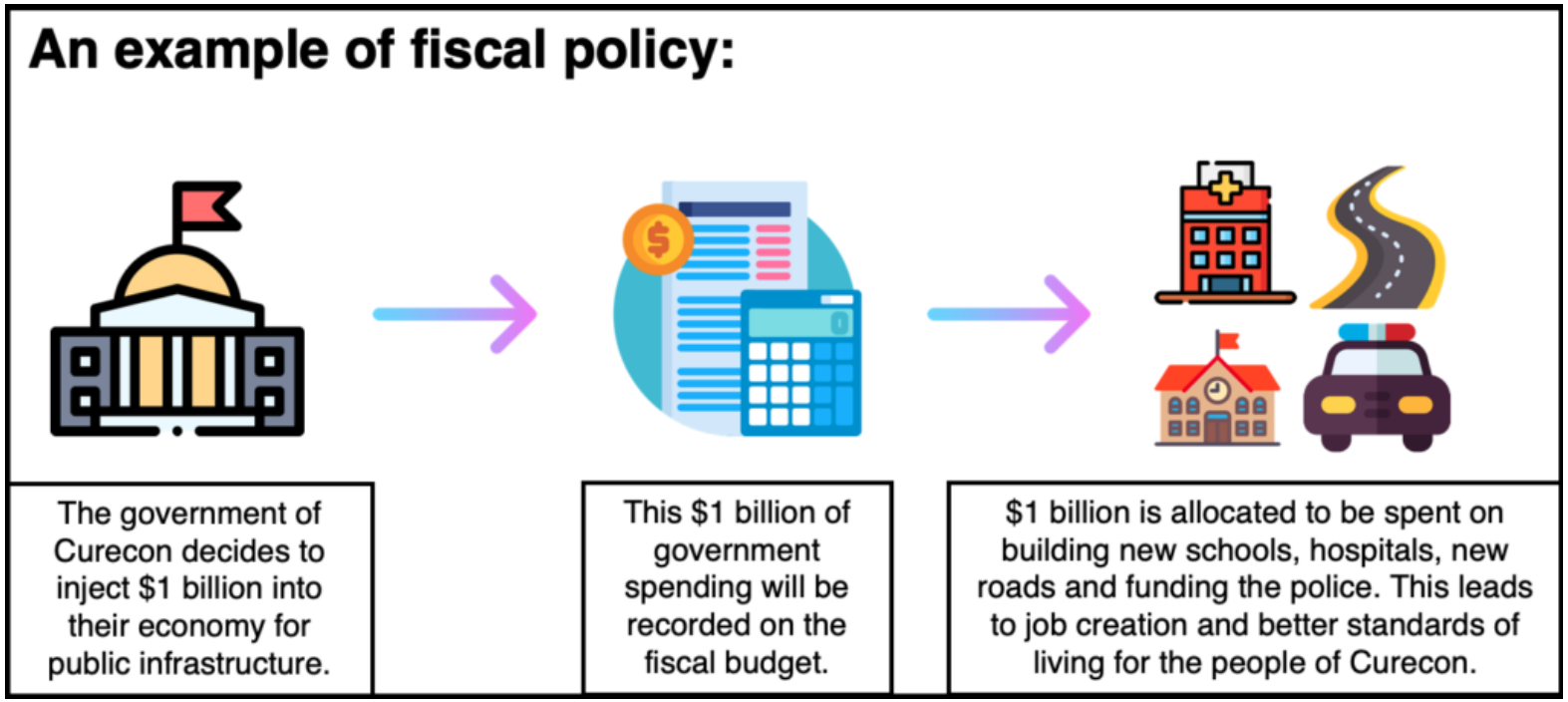
→Both policies attempt to reduce the short-run fluctuations of the business cycle (flattened out the business cycle)

→They are called stabilization policies, because they try to eliminate short-run instabilities caused by increases and decreases of aggregate demand.

Fiscal policy

Fiscal policy

- **Fiscal policy:** Manipulations by the government of its own expenditures and taxes in order to influence the level of aggregate demand; it is a type of demand-side policy or demand management.

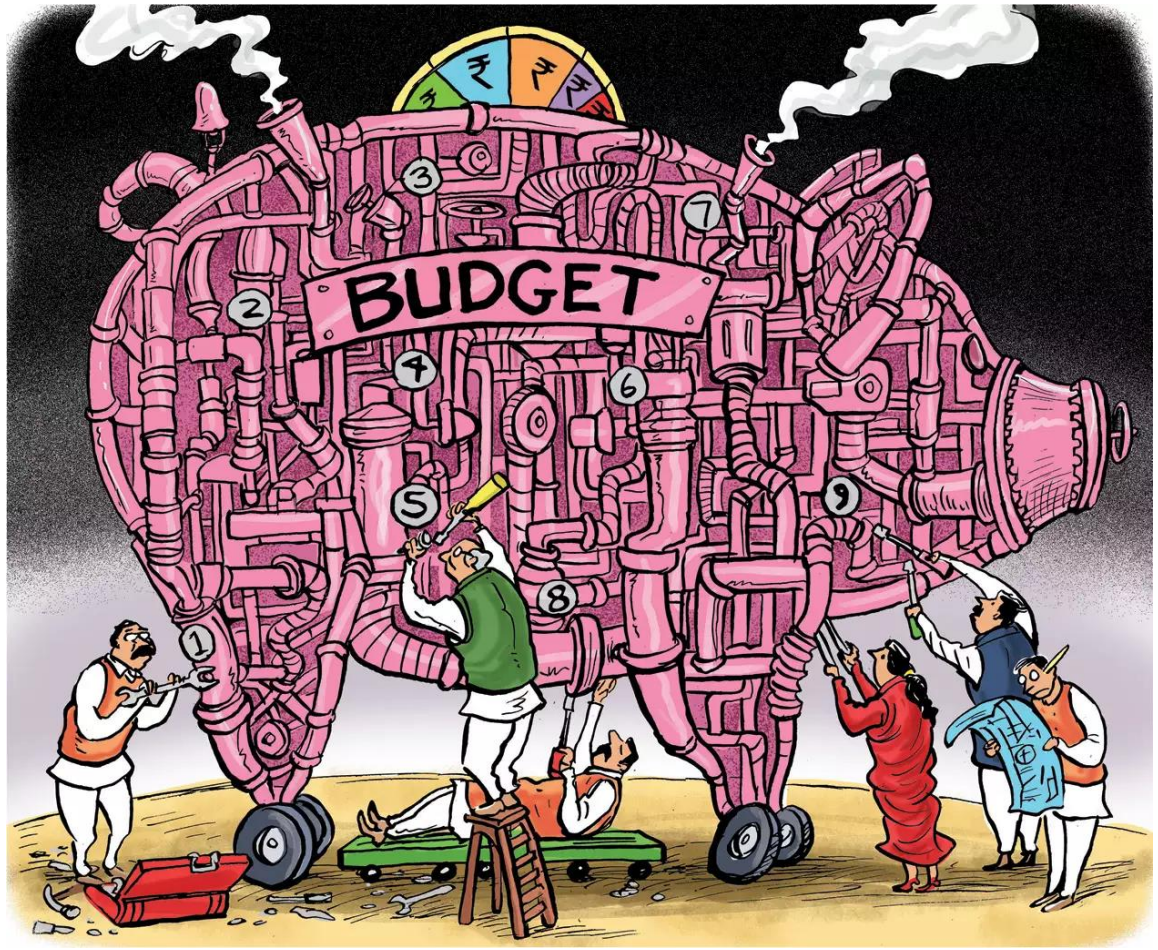


The government budget

The **government budget** is a type of plan of a country's revenues and expenditures over a period of time (usually a year) that the government makes to plan its activities.

It consists of:

- Government revenue
- Government expenditure



Sources of government revenue

- **Taxes of all types**, both direct and indirect. – most important source
  - **Direct taxation** is a type of tax imposed on the income, wealth or profit of individuals and firms. (income tax, corporation tax, capital gains tax, inheritance tax, etc.)
  - **Indirect taxation** refers to expenditure taxes imposed on the spending of goods and services in the economy. (VAT, sales tax, customs duties, etc.)
- From the **sale of goods and services**
  - Government provide many goods/services free of charge. (public goods)
  - For some goods/services, the users must make a payment (nationalized industries)
    - E.g. transportation, electricity, water, etc.
    - The revenues from these sales usually go toward covering the government's cost of providing them.
- From the **sale of government-owned assets, or property**.
  - Privatization: transfer of ownership from the government to private owners.

Types of government expenditure

Government expenditure is a key component of aggregate demand. An increase in government spending (G) helps to boost real national output, employment and economic growth. **Three main categories:**

2. Current expenditures

- Government spending on goods and services consumed within the (current) year. Items of spending on a reoccurring basis, often for day-to-day purposes.
  - Wages and salaries of government employees.
  - Spending for supplies and equipment for the day-to-day operation of government activities, such as school supplies for public schools and medical supplies to public health care services.
  - Provision of subsidies
  - Interest payments on government loans.

Types of government expenditure

2. Capital expenditures

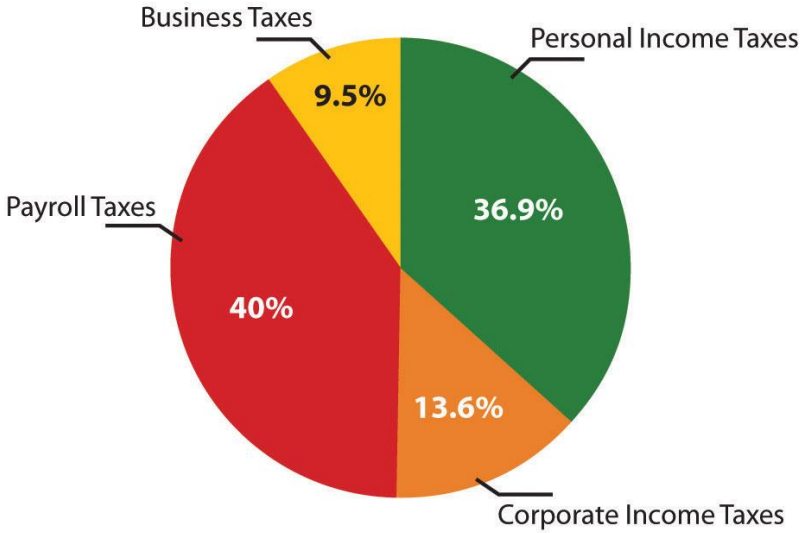
- Long term items of government spending that boost the economy's productive capacity. They are intended to create future benefits for all members of society.
- Public investments, or spending to produce physical capital. E.g. building roads, airports, harbors, school buildings, hospitals, etc.

3. Transfer payments

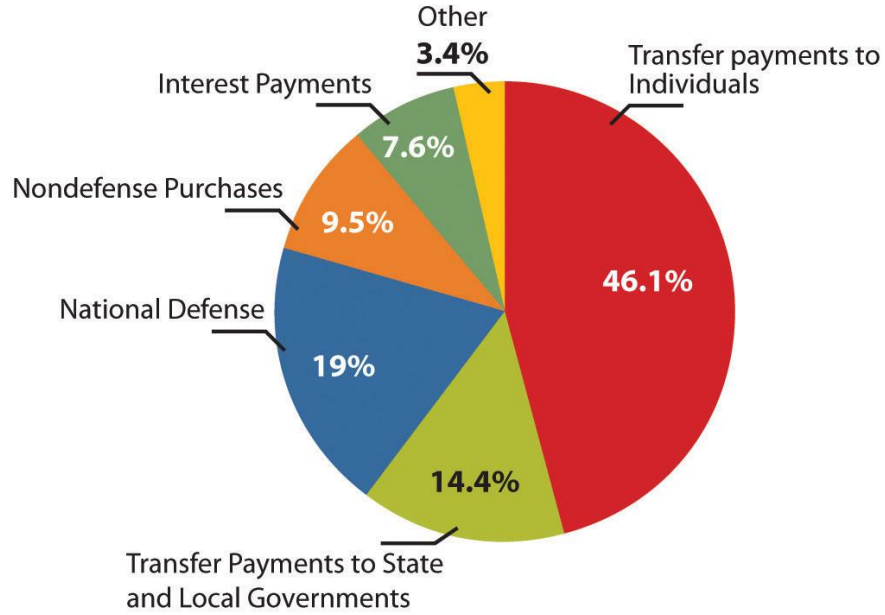
- Payments by the government to vulnerable groups for the purpose of income redistribution, such as unemployment benefits (job seekers' allowance), state pensions (for retirees), child allowances, etc.

*both current and capital expenditures are included in GDP under G, in the expenditure approach to measuring GDP. But transfer payment are not included, because they represent income redistributed away from tax payments and toward the receivers of the transfer payments, they do not represent value of new output produced.

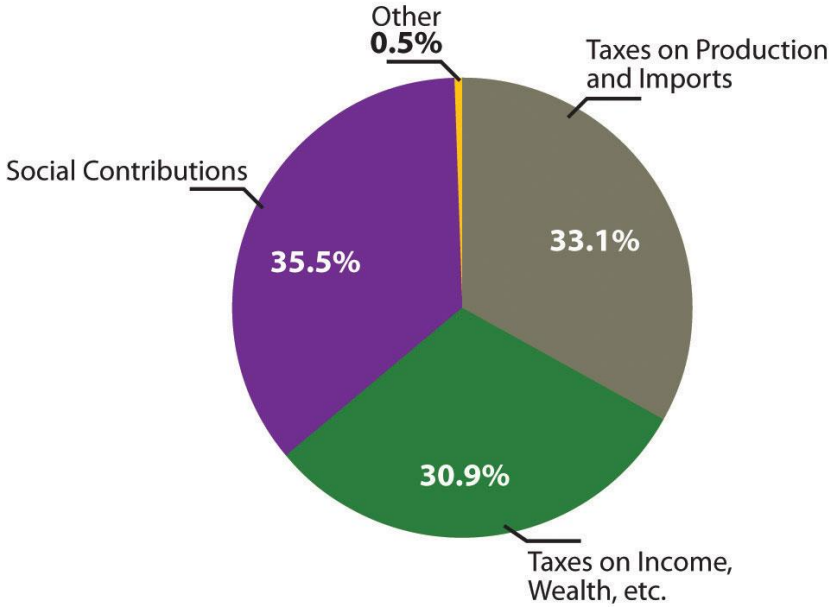
USA: Where It Comes From



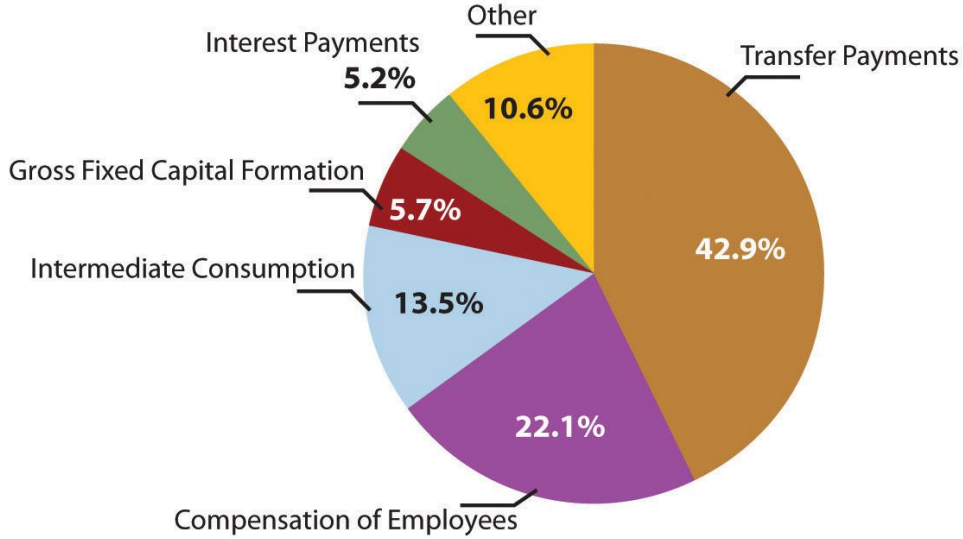
USA: Where It Goes



European Union: Where It Comes From



European Union: Where It Goes



Balanced budget

- If tax revenues = government expenditure for the government

  → balanced budget.

- If tax revenue < government expenditure,

  →Budget deficit

  → The government finances (pays for) the excess of expenditures over revenues by borrowing.

If tax revenue > government expenditure

→Budget surplus

Government debt(national debt or public debt)

= the government's accumulation of deficits - surpluses

Figure 2: Federal debt held by the public

As a share of GDP

The goals of fiscal policy

1. Low and stable rate of inflation

- By manipulating taxes and government spending to influence aggregate demand, control the rate of inflation in the economy, thereby promoting price stability and affecting the country's international competitiveness.
- Fiscal policy does not have any inflation target, but may be used to complement monetary policy if monetary policy is not as effective as expected.

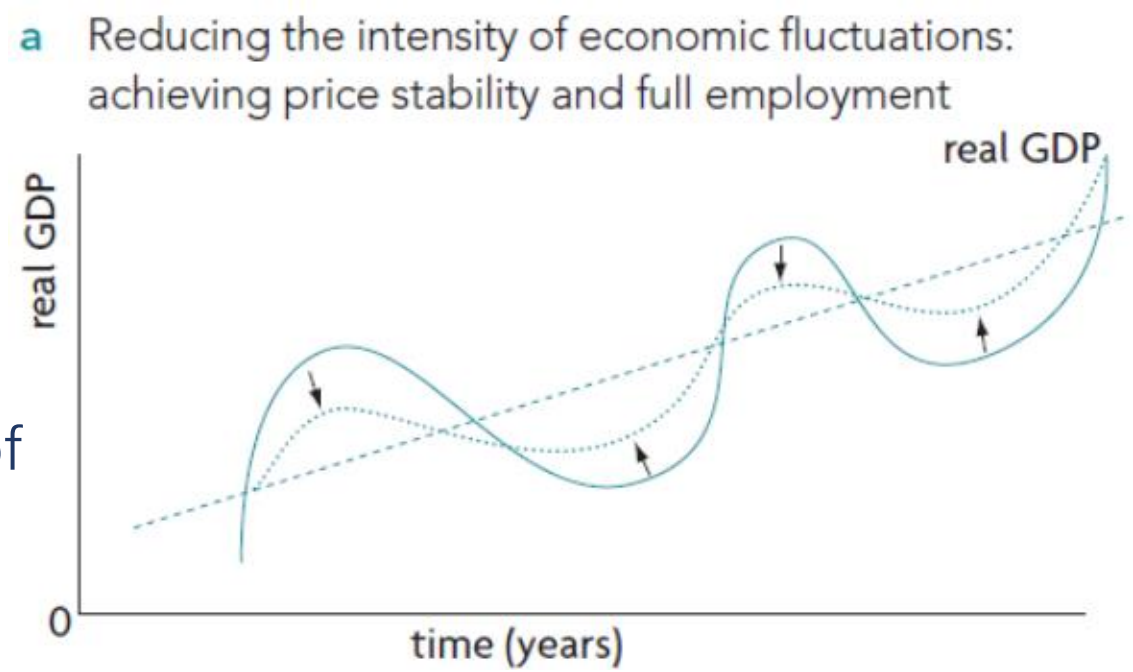
2. Low unemployment

- Fiscal policy try to influence aggregate demand and therefore unemployment. – cyclical unemployment.

The goals of fiscal policy

3. Reduce business cycle fluctuations

- It tries to reduce the size of the fluctuations of the business cycle to make inflationary and deflationary gaps as small as possible.
- **During recession,**
  - the government can spend more than it gets from its various source of government revenue.
  - Social welfare payments tend to rise during an economic downturn, while tax revenues fall due to rising unemployment.
  - The budget deficit is needed to stabilize the economy and is financed by using government borrowing.
- **During economic boom,**
  - Tax revenue will be higher due to increased earnings and consumption
  - Government spending on transfer payments will tend to fall.
  - As government revenues exceed public sector expenditure, the country has a budget surplus.



The goals of fiscal policy

4. **Promote a stable economic environment for long-term growth**
   - Firms need a stable economic environment without sharp inflationary or deflationary gaps in order to promote business confidence so that firms can carry out the activities needed for long-term economic growth.

5. **External balance (country's revenues from exports are roughly equal to its spending on imports, X=M)**
   - Fiscal policy can help achieve external by influencing the level of imports through its effects on aggregate demand
   - If X>M, external disequilibrium and inflationary pressures in the long run as more money flows into the economy. Some protectionist measures are likely to cause retaliation from governments of other countries.
   - If X<M, the economy will face net withdrawals from the circular flow of income → negative external balance.
   - Not sustainable in the long run.

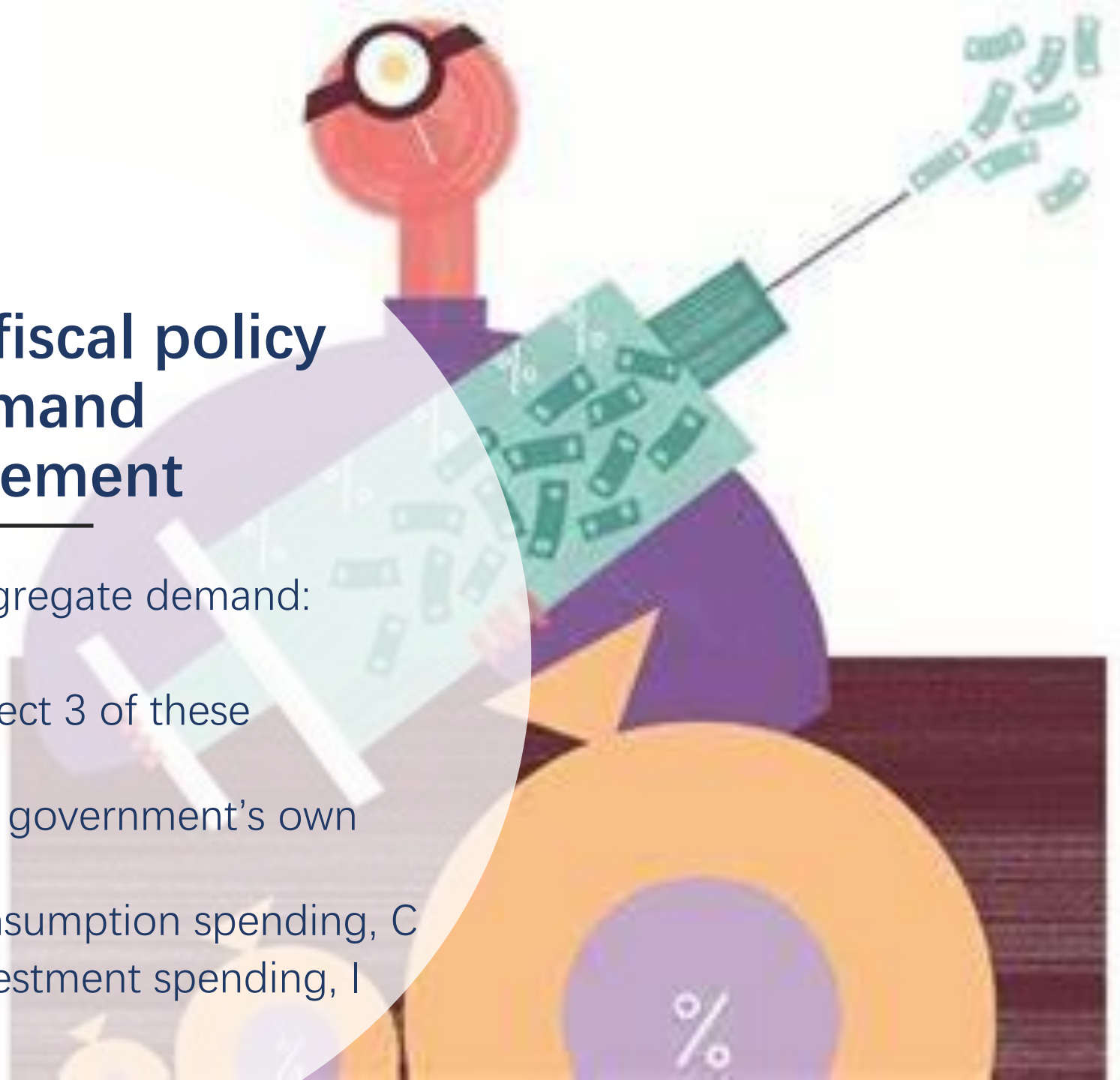
The goals of fiscal policy

6. Equitable distribution of income. (not shared with monetary policy)

- Fiscal policy has major effects on the distribution of income by determining **tax policies** and **government spending** to produce and provide particular goods and services, such as merit goods, unemployment benefit, child benefit, social housing and state pensions.

The role of fiscal policy in demand management

- Components of aggregate demand: C+I+G+(X-M)
- Fiscal policy can affect 3 of these components:
  - The level of the government's own spending, G
  - The level of consumption spending, C
  - The level of investment spending, I



Fiscal Policies

Expansionary fiscal policy

- Expansionary fiscal policy is a demand-side policy used to stimulate the economy during an economic recession, by **increasing government expenditure and/or lowering taxes** to boost consumption (C) and investment (I), therefore helping to **close a deflationary gap**.
- Helps speed up the economy

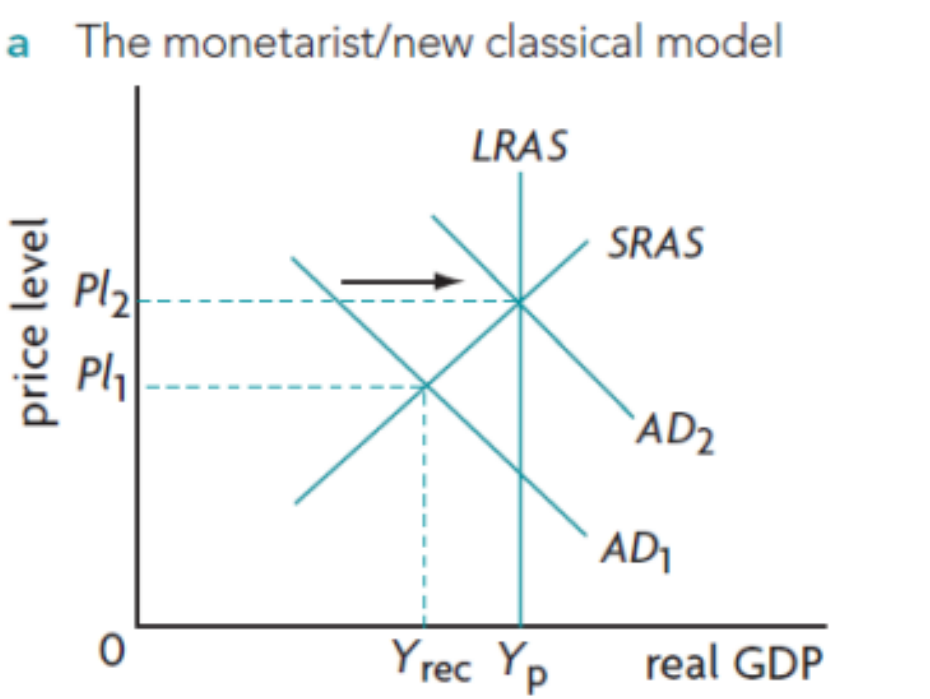
Contractionary fiscal policy

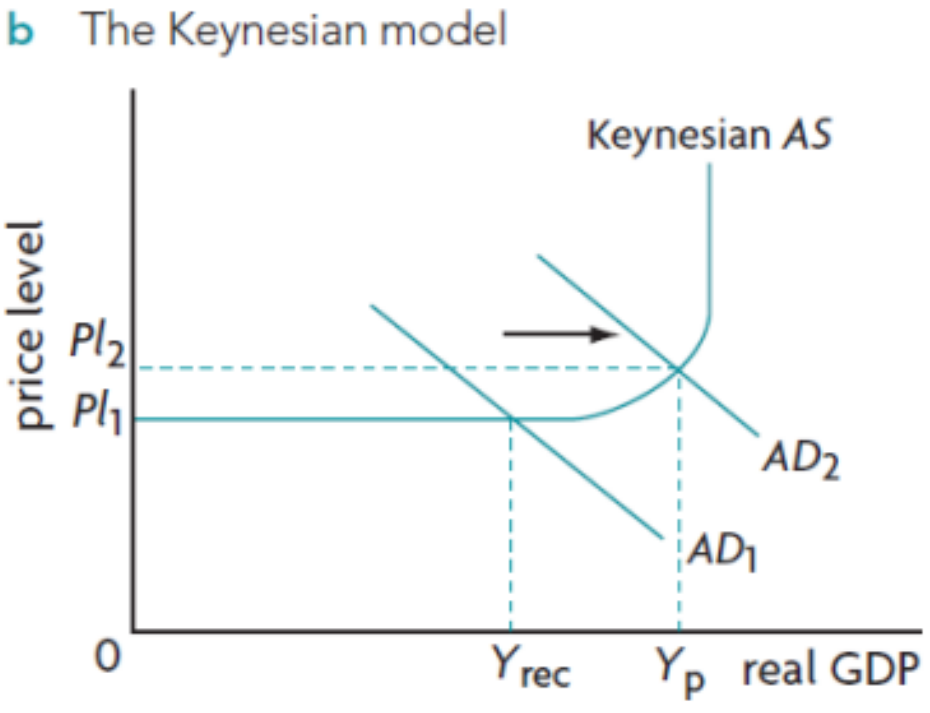
- Contractionary fiscal policy is used to reduce the level of economic activity by **decreasing government spending and/or raising taxes** to limit consumption (C) and investment (I).
- Helps slow down the economy.

Expansionary fiscal policy

- The economy is experiencing a **deflationary gap** due to insufficient aggregate demand.
- Expansionary fiscal policy: to expand aggregate demand and the level of economic activity by shifting AD_1 to AD_2, thus boosting real GDP from Y_{rec} to Y_p. It will also create jobs.

- **Approaches consists of:**
  - Increasing government spending
  - Decreasing personal income taxes
  - Decreasing business taxes (taxes on profits)
  - A combination of the above.





Expansionary fiscal policy
how government increase the aggregate demand

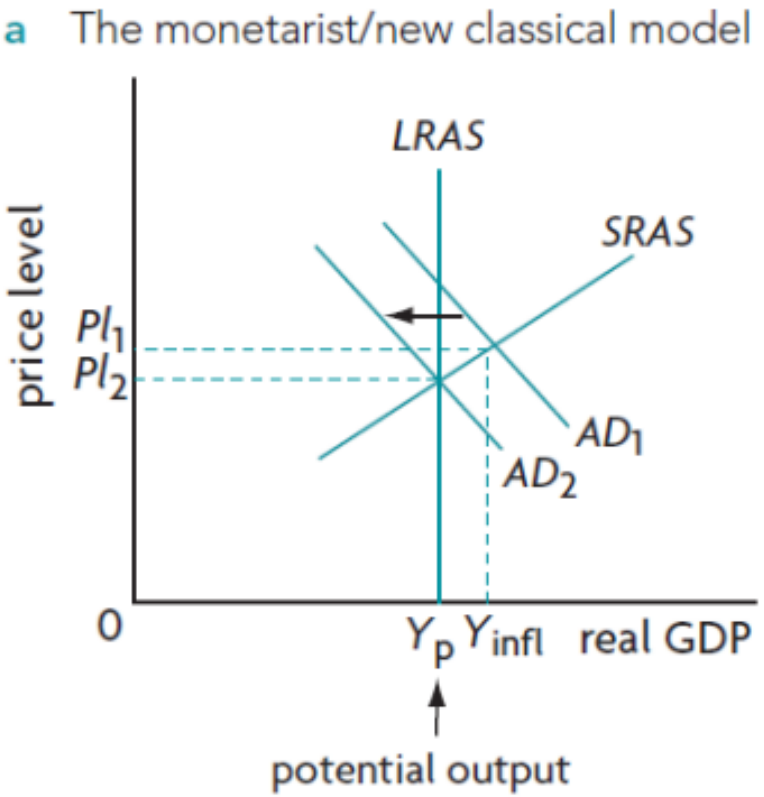
- Fiscal policy can affect 3 of these components:
  - **The level of the government's own spending, G**
    - Increase in government spending lead to more aggregate demand
    - Increase government spending by borrowing (increase own spending while keeping tax constant or decreasing them)
      - Under balanced budget, Increase in borrowing creates a budget deficit or smaller budget surplus or larger budget deficit.
  - **The level of consumption spending, C**
    - Reduce taxes on consumers (personal income taxes), thus increase their level of disposable income.→ more consumption spending

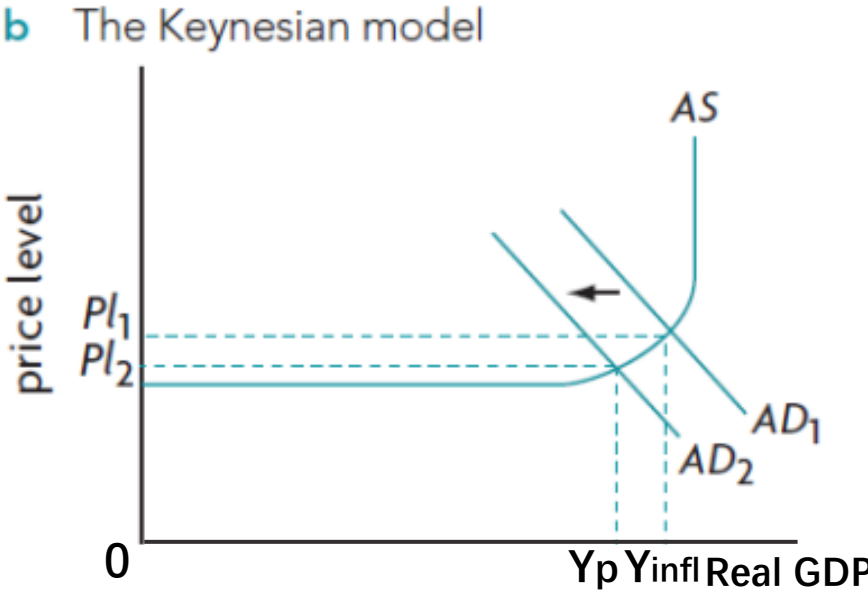
    → Increased aggregate demand, AD shift rightwards.
  - **The level of investment spending, I**
    - Reduce taxes on business profits → more after tax profit → more investment spending.

    → Increased aggregate demand, AD shift rightwards.

Contractionary fiscal policy

- The economy is experiencing a **inflationary gap** caused by excess aggregate demand.
- Contractionary fiscal policy: to contract aggregate demand and the level of economic activity by shifting AD_1 leftwards to AD_2, where the economy will achieve full employment or potential output, Y_p.
- **It consists of:**
  - Decreasing government spending
  - Increasing personal income taxes
  - Increasing business taxes (taxes on profits)
  - A combination of the above.





Contractionary fiscal policy
how government decrease the aggregate demand

- Fiscal policy can affect 3 of these components:
  - **The level of the government's own spending, G**
    - decrease in government spending lead to decrease in aggregate demand
  - **The level of consumption spending, C**
    - raise taxes on consumers (personal income taxes), thus reduce their level of disposable income.→ less consumption spending

    → decrease aggregate demand, AD shift leftwards.
  - **The level of investment spending, I**
    - raise taxes on business profits → less after tax profit → less investment spending.

    →decreased aggregate demand, AD shift leftwards.

  - The government can also pursue a combination of decreases in government spending with increases in personal income and business taxes.

    →budget surplus or the shrinkage of a budget deficit or turning a budget deficit into a surplus.

Evaluating fiscal policy

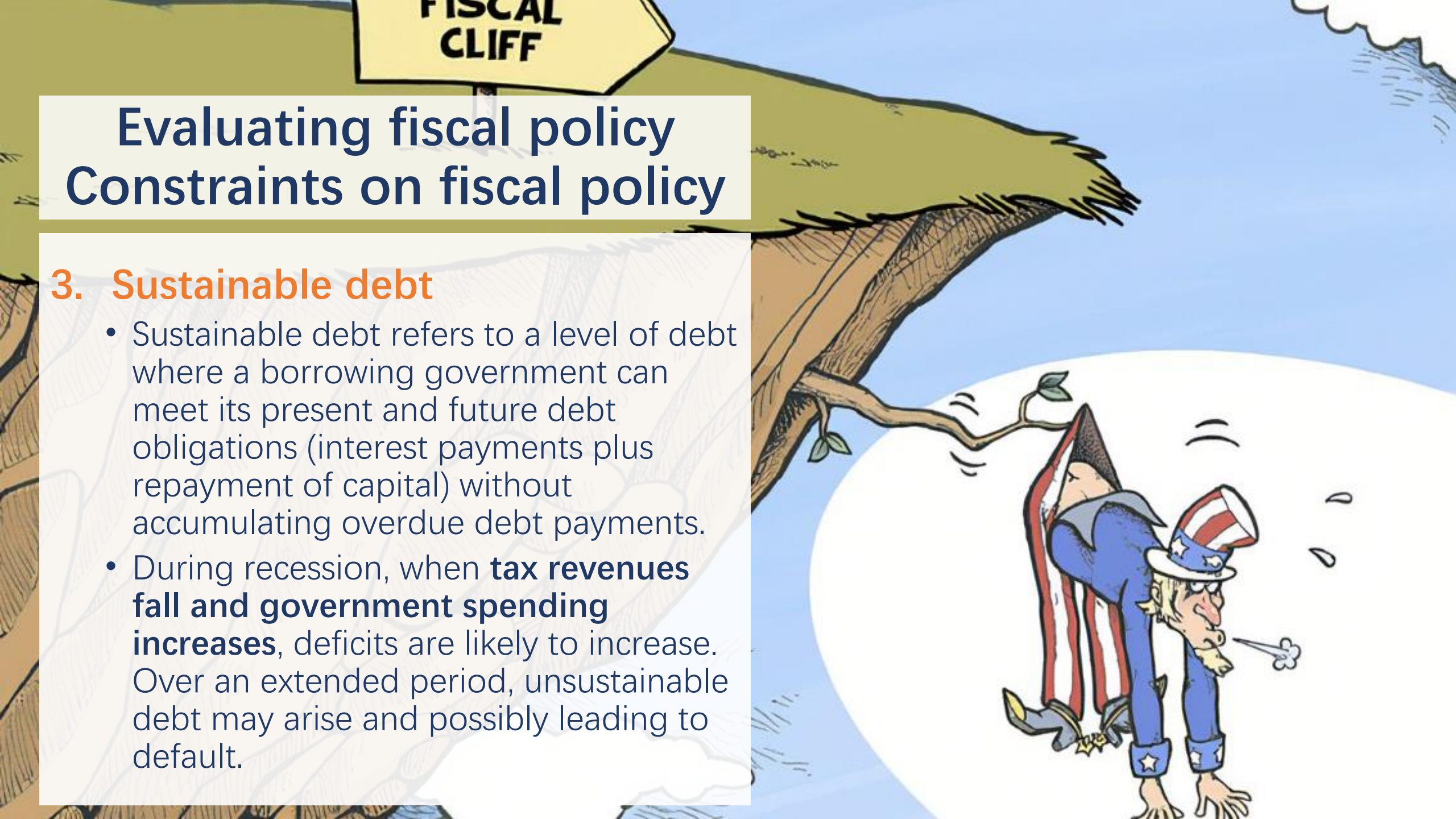
Constraints on fiscal policy

1. **Problems of time lags (time delays) until:**
   - The problem (recessionary or inflationary gap) is recognized by the government authorities and economists
   - The appropriate policy to deal with the problem is decided upon
   - The policy takes effect in the economy.
2. **Political constraints (political pressure)**
   - Spending for social services and public goods cannot easily be cut if a contractionary policy is required.
   - Tax increases are politically unpopular and may be avoided by the government even though they might be necessary.
   - Tax decrease could be inappropriately enacted because they are politically popular.

Evaluating fiscal policy
Constraints on fiscal policy

3. Sustainable debt

- Sustainable debt refers to a level of debt where a borrowing government can meet its present and future debt obligations (interest payments plus repayment of capital) without accumulating overdue debt payments.
- During recession, when **tax revenues fall and government spending increases**, deficits are likely to increase. Over an extended period, unsustainable debt may arise and possibly leading to default.



Evaluating fiscal policy

Constraints on fiscal policy

4. In a recession, tax cuts may not be very effective in increasing aggregate demand

- During recession, the effect of tax cut < increases in government spending, because part of the increase in after-tax income is saved.
- The pessimism about the future will also weaken the effect of tax cut.
- Government spending are more effective in recession, because they work in their entirety to increase aggregate demand.

Evaluating fiscal policy

Constraints on fiscal policy

5. **Inability to 'fine tune' the economy**
   - It cannot be used to reach a precise target with respect to the level of output, employment and the price level.
   - It can only lead the economy in a general direction of larger or smaller aggregate demand.

6. **If it lasts too long it may be inflationary.** The aggregate demand increases beyond what is necessary to eliminate a recessionary gap.

7. It's a demand-side policy, so there is **Inability to deal with cost push inflation**, or stagflation.

Evaluating fiscal policy

Constraints on fiscal policy

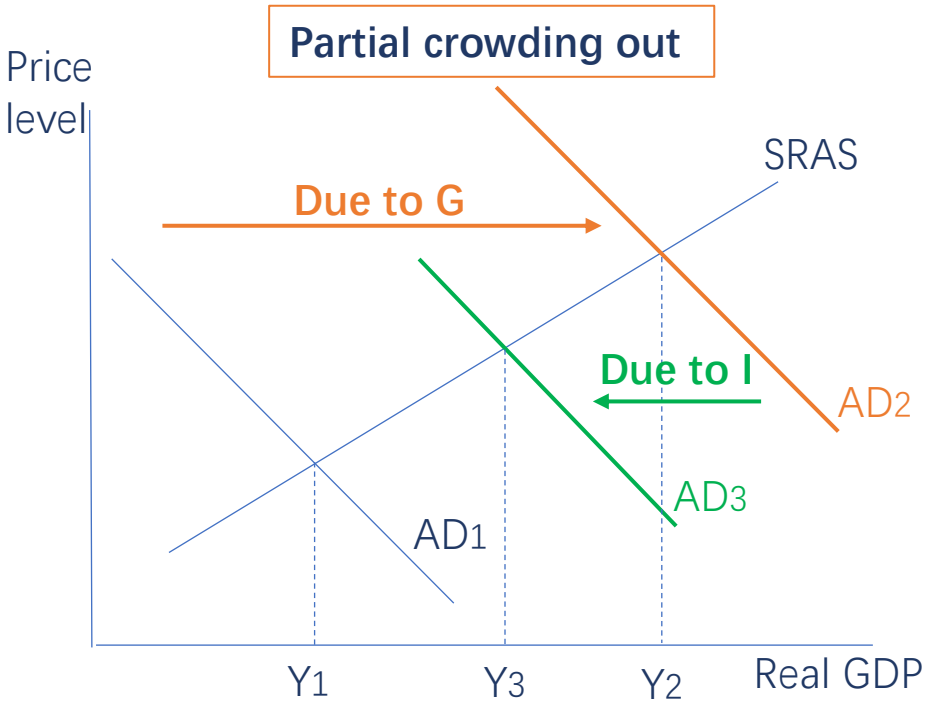
8. Crowding out.

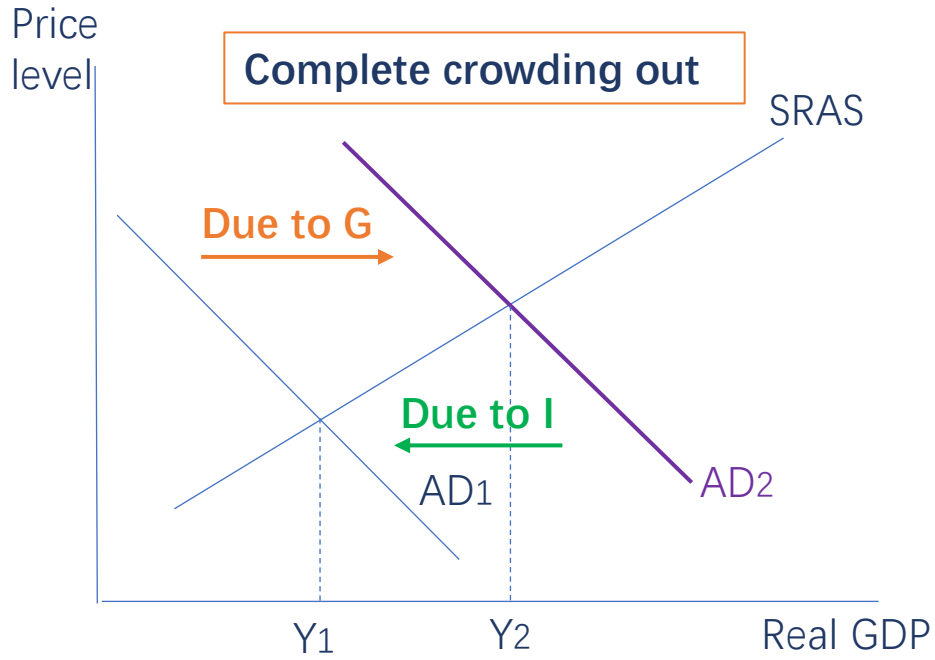
- If the government tries to increase the AD by increasing government spending through borrowing, there will be an increase in the demand for money, which leads to an increase in interest rate. AD_1 shift to AD_2 due to increased government spending.
- Higher interest rate can lead to lower investment spending by private firms. AD2 shift leftwards to AD3 due to decreased investment spending by private firms.

→'Crowding out' of private investment

- Partial crowding out: investment ↘ < gov' spending ↗
- Complete crowding out: investment ↘ = gov' spending ↗

→government fiscal policy is weakened or eliminated.



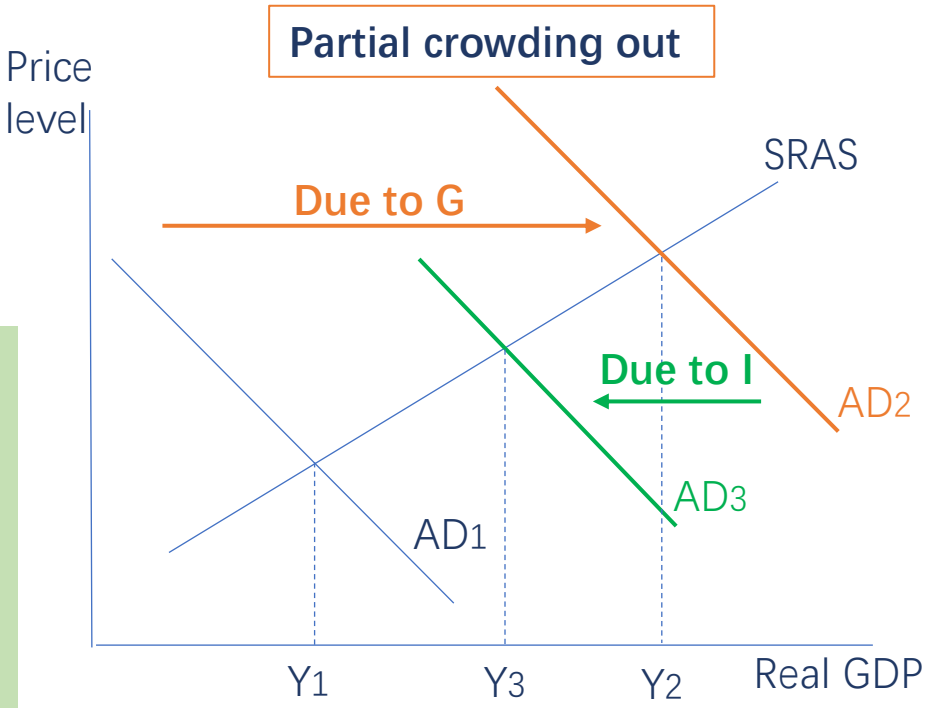


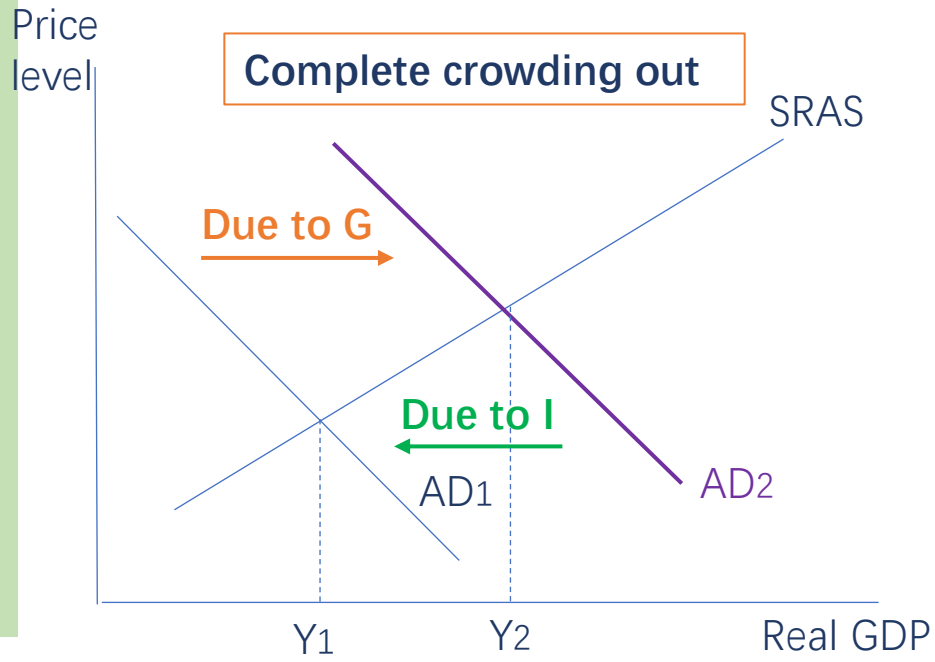
Evaluating fiscal policy

Constraints on fiscal policy

8. Crowding out.

- In Keynesian tradition:
  - In a recession, the stimulus provided to the economy by the government's increased spending may raise output and employment, improve business expectations about their future sales, and increase investment spending in spite of the increase in the interest rate.
  - The government's deficit spending is less likely to crowd out private investment.
- In monetary/new classical tradition:
  - The investment spending will be crowded out in the event of deficit financing even in a recession.





Evaluating fiscal policy

Strengths of fiscal policy

1. **Pulling an economy out of a deep recession.**
   - The strength of fiscal policy is the effectiveness to raise the aggregate demand and pull an economy out of a deep recession.
   - E.g. the Great Depression in 1930s
2. **Ability to target sectors of the economy**
   - Fiscal policy can target spending in specific sectors according to government priorities.
     - E.g. focusing on changing the amount of spending in specific sectors
     - focusing on particular social groups;
     - infrastructure and particular types of infrastructure or the location of infrastructure;
     - focusing on economically depressed regions, variety of public goods, and so on.

Evaluating fiscal policy

Strengths of fiscal policy

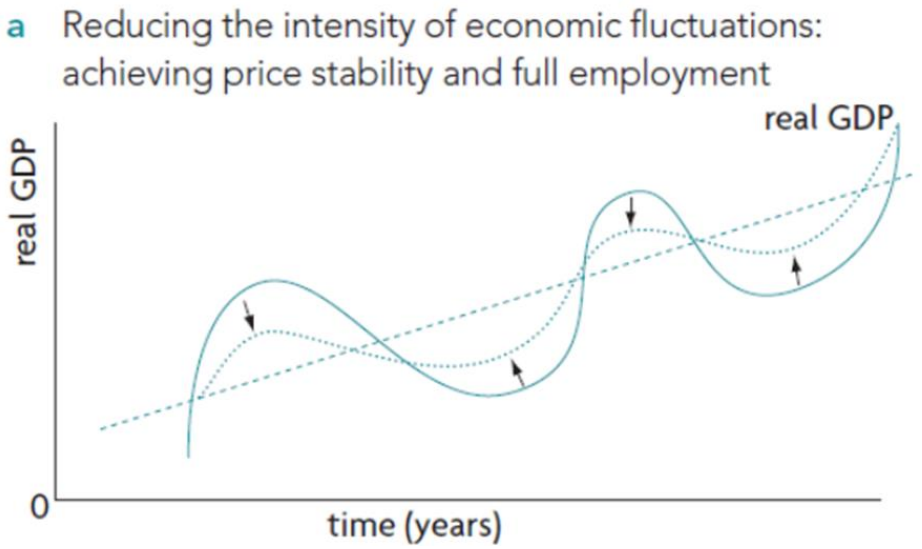
3. **Direct impact of government spending on aggregate demand**
   - Changes in spending are directly impact on aggregate demand in the desired direction.
   - Changes in taxes are less direct, as changes in consumer disposable income and firm after-tax profit poses some uncertainties about their effects on aggregate demand.
4. **Dealing with rapid and escalating inflation**
   - Contractionary fiscal policy may be used effectively to help bring the inflationary pressure resolved.
5. **Ability to affect potential output**
   - Fiscal policy can affect potential output and long-term economic growth indirectly (by creating a stable macroeconomic environment) and directly through investments in human capital and physical capital (infrastructure) and through offering incentives to firms to invest.

Evaluating fiscal policy

Strengths of fiscal policy

6. Automatic stabilizers

- Automatic stabilizers are factors that automatically, without any action by government authorities, work toward stabilizing the economy by reducing short-term fluctuations of the business cycle.
- Two important stabilizers:
  - **Progressive income taxes.**
  - **Unemployment benefits**



* These two stabilizers cannot by themselves stabilize the economy and eliminate inflationary and recessionary gaps on their own, they can **only help make economic fluctuations milder**.

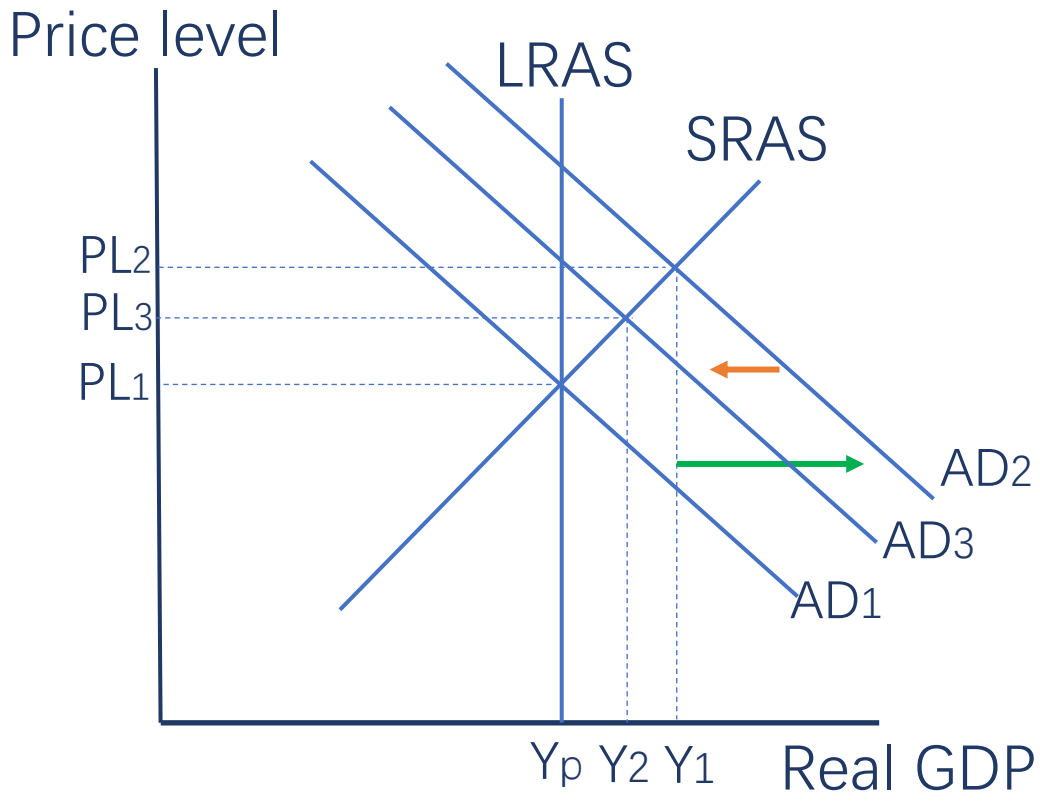
Evaluating fiscal policy

Strengths of fiscal policy

- **Progressive income taxes as automatic stabilizer** - Income taxes are progressive when the fraction of income that is taxed increases as income increases.
  - In the **upswing of the business cycle**, as real GDP and incomes rise, income taxes automatically rise, proportionately more than the rise in income, causing after-tax (disposable) income to be lower than it would otherwise be. → AD increases less and this counteracts the economic expansion, or make it smaller than it would otherwise be. (AD_1 to AD_3 rather than AD_2)
  - In **a recession**, with real GDP and incomes falling, income taxes automatically decline, proportionally more than the decline in income, causing after-tax income to be higher than it would otherwise be.→ AD falls less, making the recession less severe.

➢ The more progressive and income tax system, the greater the stabilizing effect on economic activity.

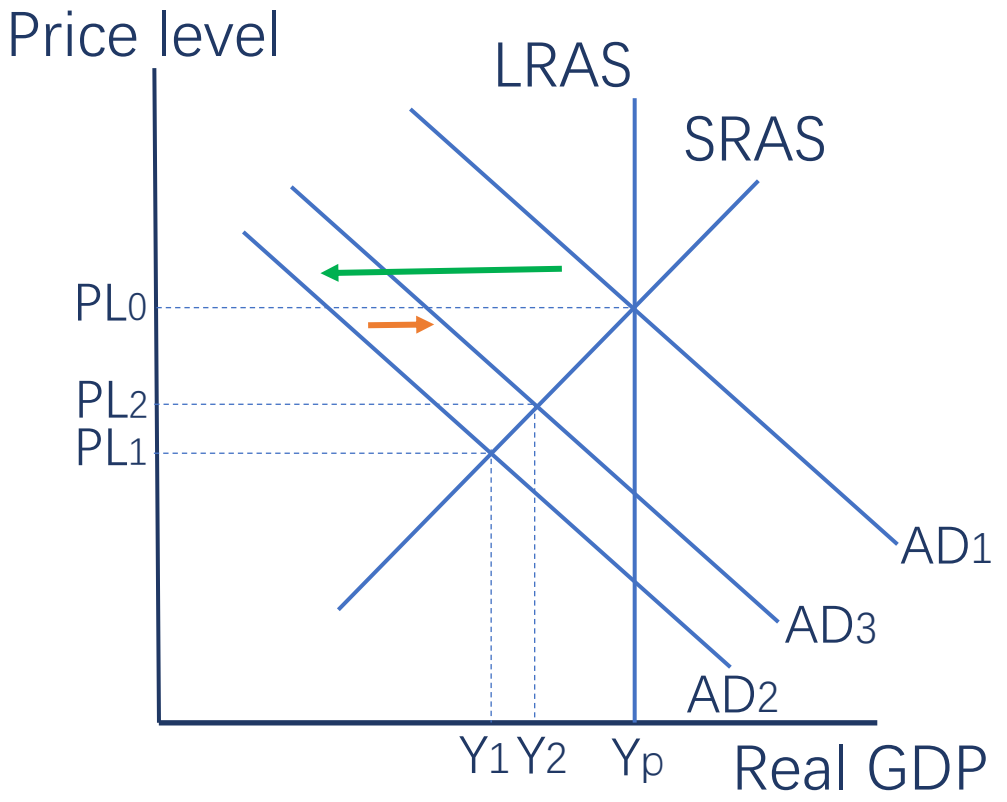
1 Annual income ($)	2 Marginal tax rate (%)
0–10 000	0
10 001–25 000	9
25 001–55 000	22
55 001–115 000	40
115 001 or more	55



Evaluating fiscal policy

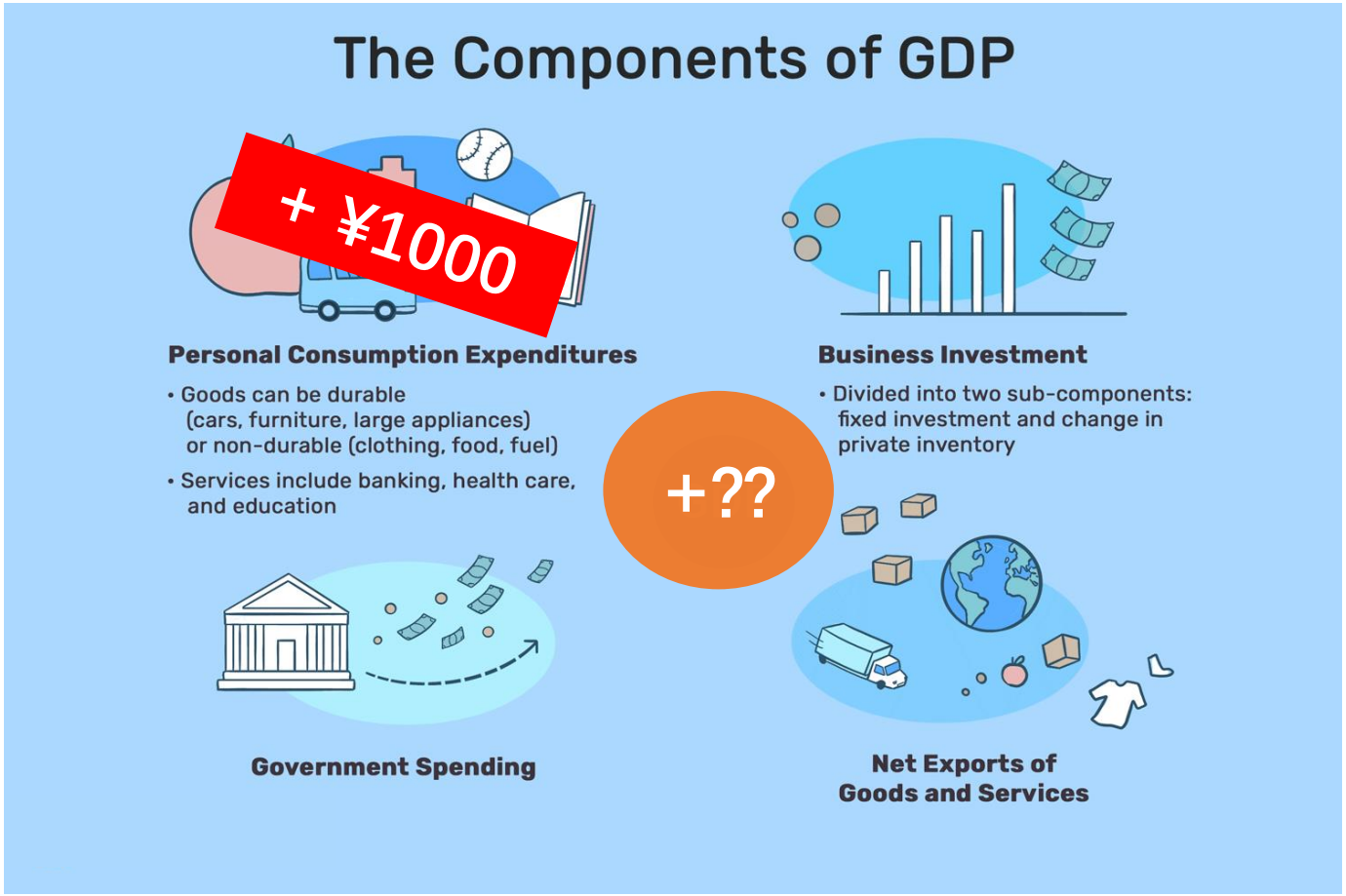
Strengths of fiscal policy

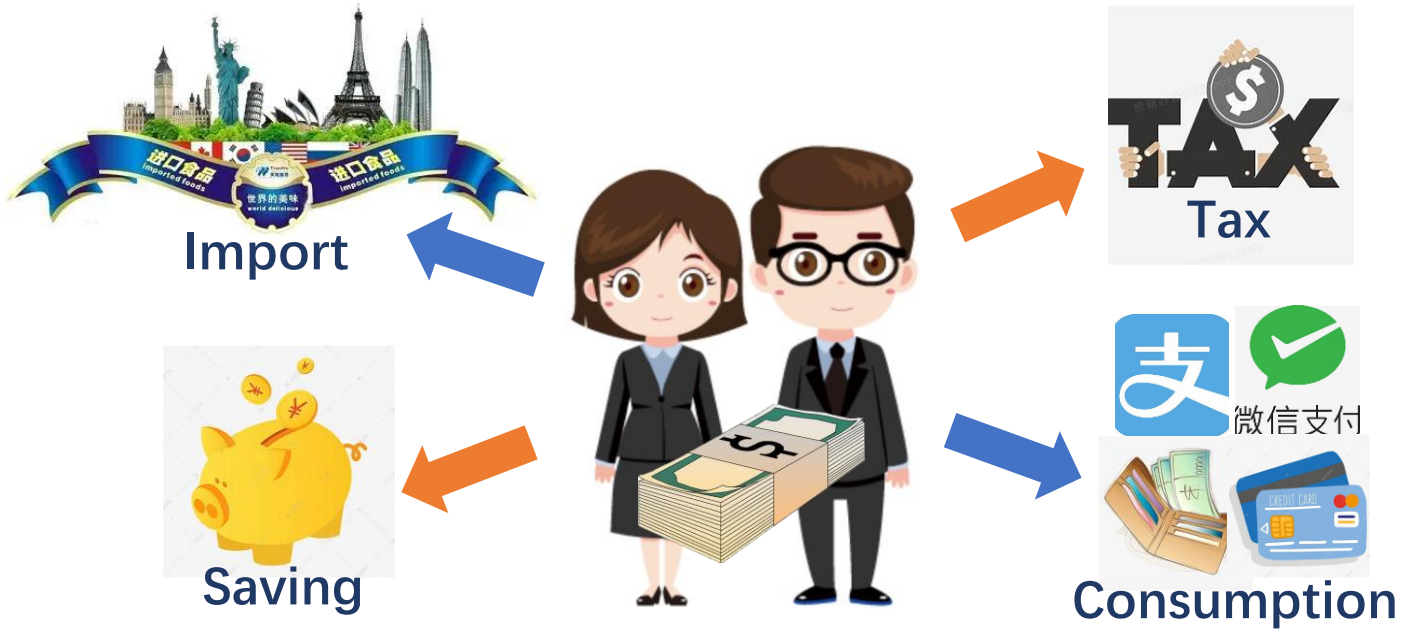
- **Unemployment benefits as automatic stabilizer.**
  - In a **recession**, If there were no unemployment benefits, unemployed workers' spending would fall significantly, putting a strong downward pressure on consumption spending and aggregate demand.
  - With unemployment benefits, as workers become unemployed, unemployment benefit rise as they are offered to more unemployed workers. their consumption will be maintained to some extent as their benefits partially replace their lost income, thus lessening the downward pressure on aggregate demand. (AD1 to AD3 rather than AD2)
  - In an **expansion**, unemployment benefits are reduced as unemployment falls; therefore, consumption increases less than it would in the absence of unemployment benefits.



The Keynesian Multiplier

- When there is an increase in one of the components of aggregate demand, due to a **change in C, or I, or G, or X-M expenditures**, this will produce an increase in aggregate demand and real GDP.
- If there is an **¥1000 increase** in consumption spending, would this increase affect the real GDP?





- **Marginal propensity to consume (MPC):** defined as the fraction of additional income that households spend on consumption of domestically produced goods and services.
- **Marginal propensity to save (MPS):** the fraction of additional income that is saved.
- **Marginal propensity to tax (MPT):** the fraction of additional income that is paid as taxes.
- **Marginal propensity to import(MPM):**the fraction of additional income spent on imports.

MPC =0.6 → spend 60% on domestic goods

MPS = 0.2 → save 20% of the income

MPT = 0.1 → Pay 10% tax

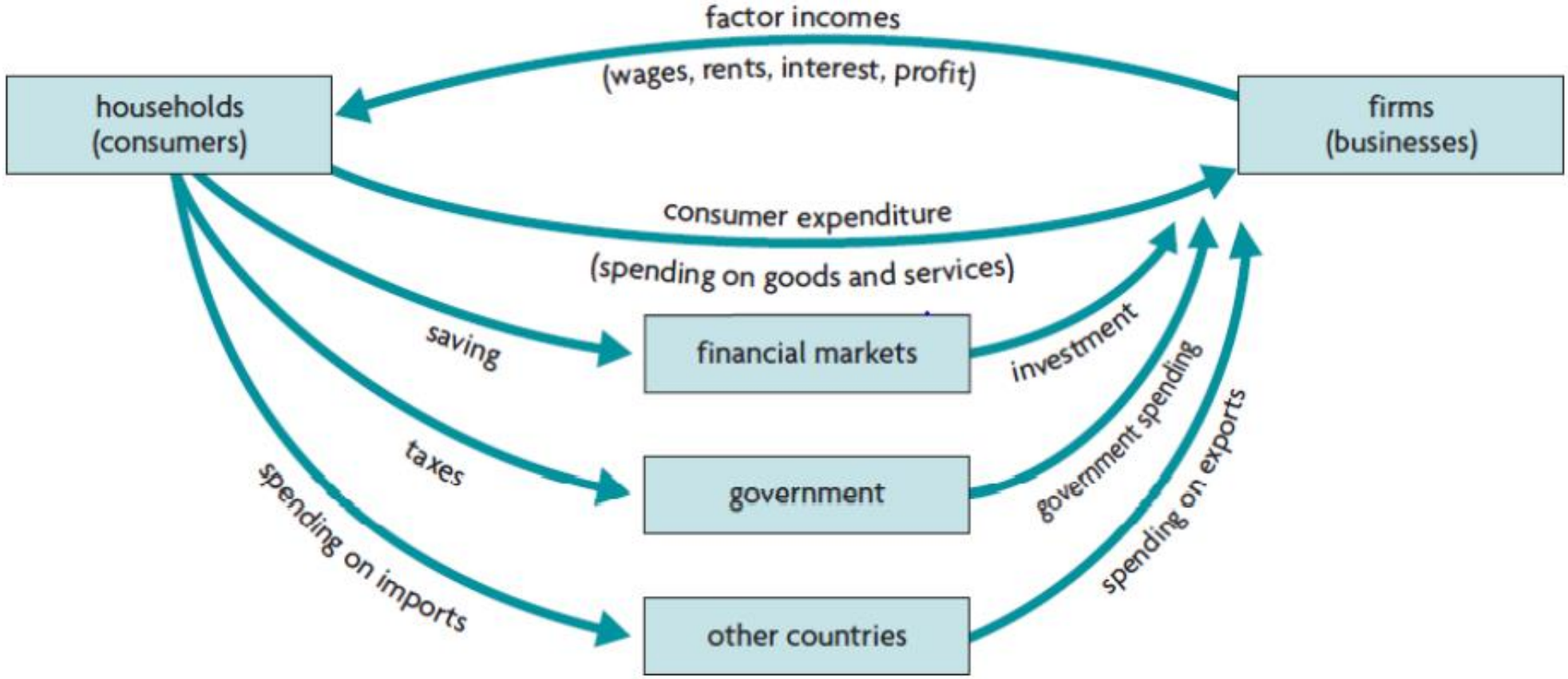
MPM = 0.1 → spend 10% on imported goods

→ MPS+MPC+MPT+MPM = 1

Recall：The circular flow of income

When households receive income, other from consumption, there are a portion of income flows out of the expenditure flow as leakage:

- Saving (S)
- Taxes (T)
- Imports (I)



If MPC = 0.6,

¥1000

¥400

¥600

¥240

¥360

¥144

¥216

¥86.4

¥129.6

.....

Continuously...

*0.6 *0.6 *0.6 *0.6 → MPC (A geometrical progression)

1000+600+360+216+129.6+ … = ¥2500

*10

*25 → 2.5 times of the original spending

The initial change in expenditure produces a chain reaction of further expenditure, with the effect of increasing AD and real GDP to a value greater than the initial expenditure.

The Keynesian multiplier

The Keynesian multiplier: whenever there is a change in a component of AD, there is likely to be a multiplied effect on real GDP.

$$\text{Multiplier} = \frac{\text{Change in real GDP}}{\text{Initial change in expenditure}}$$

→ **Initial change in expenditure * Multiplier = change in real GDP**

→ Multiplier > 1, so the change in real GDP is likely to be greater than the initial change in expenditure.

The relationship between the multiplier and the MPC

$$\text{Multiplier} = \frac{1}{1 - MPC} = \frac{1}{MPS + MPT + MPM}$$

- **The larger the MPC**, the smaller the value of the denominator of the first fraction, and so **the greater is the multiplier**.
- OR we can say, the greater the proportion of income spent on consumption, the greater the multiplier.
- **The smaller the leakages** from the spending stream, **the greater the multiplier**. (smaller the saving, or the level of taxes, or the volume of imports)

→Increase in C,I,G, or X-M, will lead to multiplier effect on greater increase on real GDP

→Decrease in C,I,G, or X-M, will also lead to multiplier effect on greater decrease on real GDP

*0.6 *0.6 *0.6 *0.6 → MPC

1000+600+360+216+129.6+ …=2500

=1/(1-MPC) = 1000/(1-0.6) = 1000/0.4 =2500

*10

*10

* 2.5 times

$$\text{Multiplier} = \frac{\text{Change in real GDP}}{\text{Initial change in expenditure}} = ¥2500/\ ¥1000 = 2.5$$

Change in real GDP = initial expenditure * multiplier = ¥1000*2.5 = ¥2500

- Government spent $8 billion on building a new hospital.

$8 billion

Labour costs (Architects, builders, etc.)

Capital costs (steel, cement, bricks, etc.). Income of the owners of the resources.

Consumption of domestic goods
taxes
savings
imports

Income again...

Leakage

Assume MPC = ¾, when there is an increase in investment expenditure of $8 million…

Initial increase in investment expenditure of $8 million:	Change in income (real GDP) ($ million)	Induced change in consumption expenditure ($ million)
1st round	8	¾ *8 = 6
2nd round	6	¾ *6 = 4.5
3rd round	4.5	¾ *4.5 = 3.38
4th round	3.38	¾ *3.38 = 2.5
…	…	…
Total	32	¾ *32 = 24

The total increase in real GDP. = Initial investment $8 million(autonomous spending) + Induced consumption spending $24 million

→**Multiplier = 32/8 = 4 （4*$8 million = $32 million ）**

Multiplier and the total increase in real GDP

The total increase in real GDP. = autonomous spending (Initial spending) + Induced spending

The total increase in real GDP. = autonomous spending (Initial spending) * multiplier

All the factors listed in the left can cause a change in spending resulting in a multiplier effect.

**the multiplier effect can only be initiated by a change in spending that is not caused by a change in income.*

Shifts in the aggregate demand curve are caused by:
Changes in consumer spending, arising from: • changes in consumer confidence • changes in interest rates (monetary policy) • changes in wealth • changes in personal income taxes (fiscal policy) • changes in the level of household indebtedness • expectations of future price levels
Changes in investment spending, arising from: • changes in business confidence • changes in interest rates (monetary policy) • changes (improvement) in technology • changes in business taxes (fiscal policy) • changes in the level of corporate indebtedness • legal/institutional changes
Changes in government spending, arising from: • changes in political priorities • changes in economic priorities: deliberate efforts to influence aggregate demand (fiscal policy)
Changes in foreigners' spending, arising from: • changes in national income abroad • changes in exchange rates • changes in the level of trade protection

Example

A country with a real GDP of £135 billion and an MPC of 0.8 experiences an increase in exports of £2 billion. What is the change in real GDP, and the final value of real GDP?

Step 1: find the multiplier:

$$\text{Multiplier} = \frac{1}{1 - \text{MPC}} = \frac{1}{1 - 0.8} = 5$$

Step 2: using the multiplier to calculate the change in real GDP

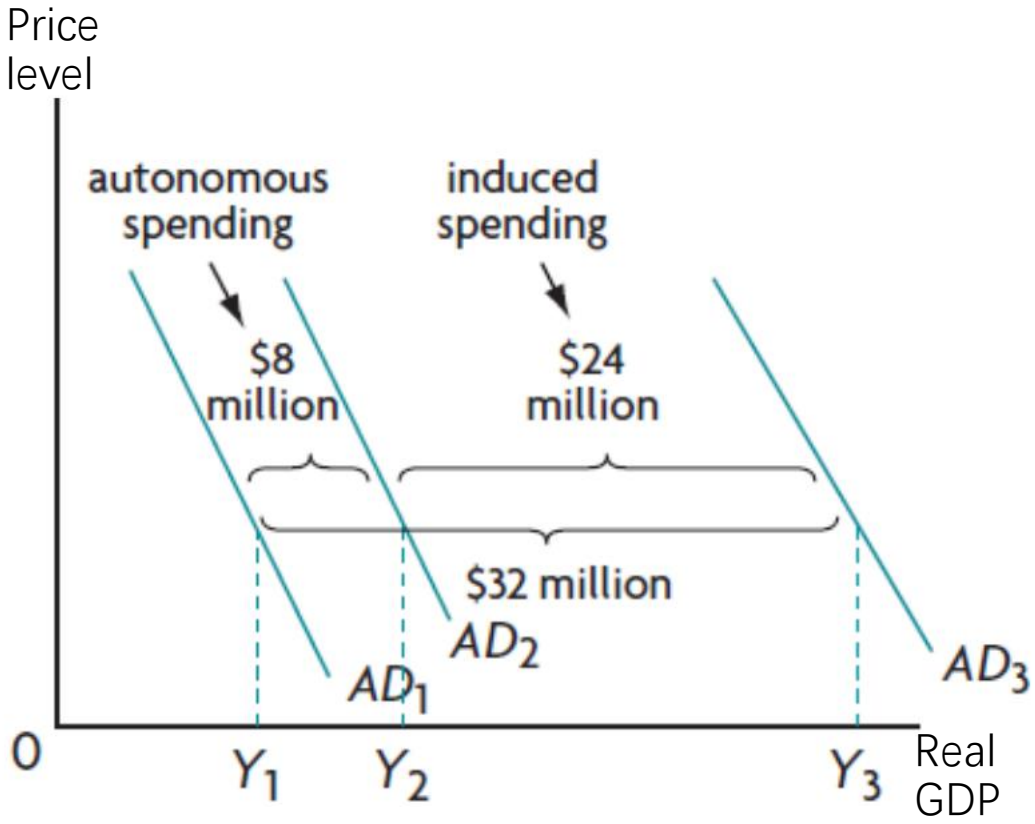
£2 billion * multiplier = £2 billion * 5 = £10 billion

Step 3: calculate the final value of real GDP

£135 billion + £10 billion = £145 billion

Illustration in AD-AS model

- The outside change of autonomous investment spending of $8 million shifts AD_1 to AD_2 by $8 million.
- The autonomous investment caused a change in income, then it leads to changes in consumption and aggregate demand, AD_2 shifts to AD_3 by the induced spending.

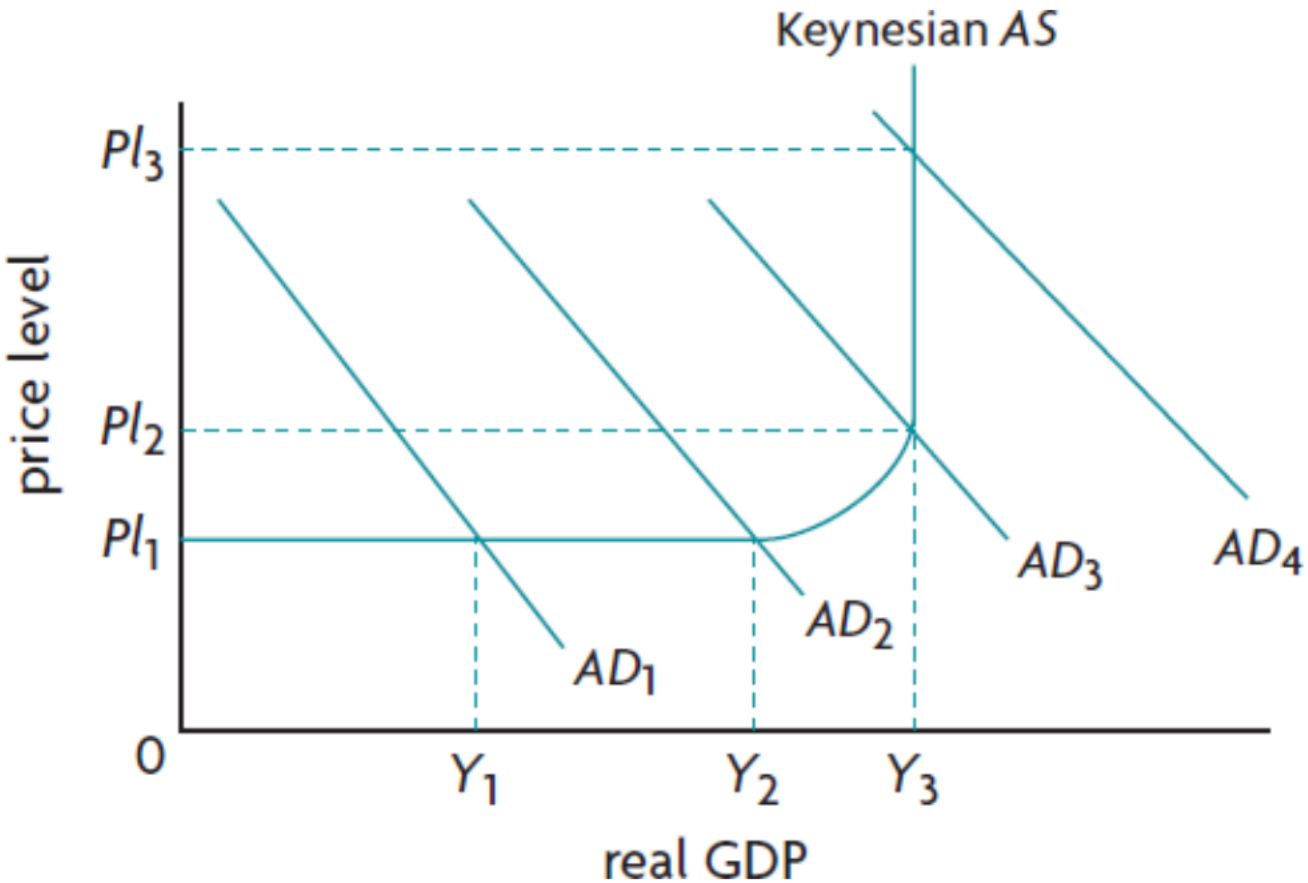


The effect of the multiplier in relation to the price level

Same amount of AD increase might lead to different effect on real GDP.

- In horizontal AS section with constant price level, the increase in real GDP from Y1 to Y2 is exactly equal to the increase in AD→ **full multiplier effect**.
- In upward sloping AS section, the shift from AD2 to AD3, the increase in real GDP from Y2 to Y3, is smaller, because of the increase in the price level.
- In vertical AS section, the shift from AD3 to AD4 results in **no change** at all in real GDP.

→In order for the multiplier to have the greatest effect on real GDP, it is necessary that the price level is constant.



Compare the multiplier effect in AD-AS model and Keynesian model

In AD-AS model:

- Due to the upward sloping SRAS and vertical LRAS curve, the increases in aggregate demand always lead to increases in the price level, therefore it is never possible for real GDP to increase by the full amount of the increase in AD.

In Keynesian model:

- Keynesian economists emphasizes the point that in a recessionary gap (horizontal section), unemployed resources and spare capacity allow aggregate demand to increase without putting an upward pressure on the price level.
- An autonomous increase in spending leads to a substantially larger increase in real GDP.
- When we use the multiplier to calculate the effects on real GDP of a change in autonomous spending, we are **presupposing a constant price level**.

Application for government policies

- Any change in any of the leakage from the circular flow will change the multiplier.

→If tax rate increases (MPT） , multiplier falls.

→If MPM increases, multiplier falls.

→If MPS increases, multiplier falls

- When government plans to intervene to fill a recessionary gap,
  - it must estimate the gap between the equilibrium output and full employment output.
  - It must estimate the value of the multiplier so it can judge the suitable increase in AD that is necessary to inject into the economy in order to fill the gap.