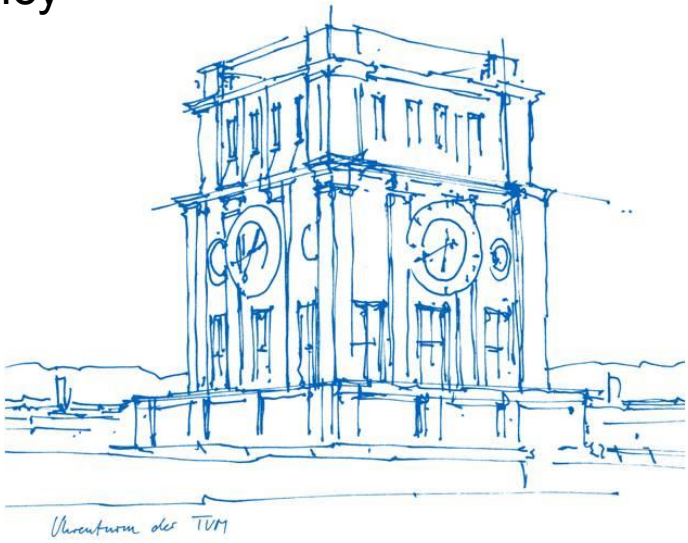
Economics II – Macroeconomics

IV. Aggregate Demand and Fiscal Policy



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Outline

I. Introduction to macroeconomics (chapter 1)
II. Technological change and economic growth (chapter 2)
III. The aggregate economy (chapter 13)
IV. Aggregate demand and fiscal policy (chapter 14)
V. The labour market (chapters 6 and 9)
VI. Aggregate demand and unemployment (chapter 14)
VII. Credit, banks and money (chapter 10)
VIII. Inflation and monetary policy (chapter 15)
IX. Technological progress, unemployment and living standards in the long run (chapter 16)
X. Economic and financial crises (chapter 17)

IV. Aggregate Demand and Fiscal Policy

The Economy Ch.14

I. The Aggregate Demand function and its components
II. Household wealth
III. Investment
IV. Fiscal Policy
V. Government debt

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The context

Aggregate demand (GDP) can fluctuate due to consumption and investment decisions.

Sometimes the aggregate decisions of households and firms can destabilize the economy.

- How can the government stabilize the economy?
- Why might government policies be ineffective?
- How can we model the link between output and unemployment?

A: End of WWI: 1918

B: Start of Great Depression: 1929

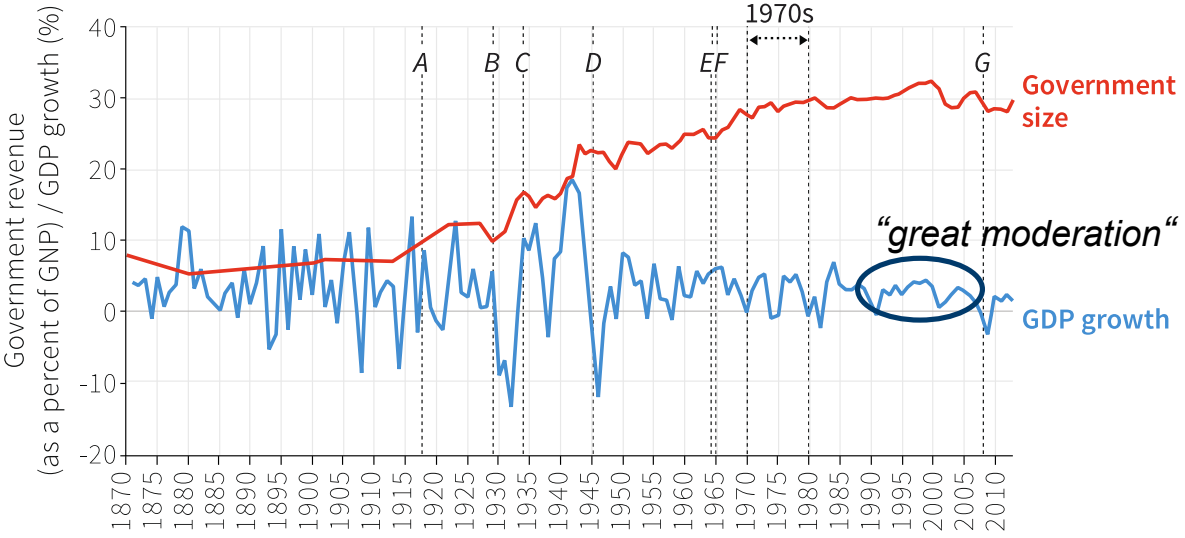
C: President Roosevelt's New Deal: 1933-36

D: End of WWII: 1945

E: US War on Poverty begins: 1964

F: US deploys ground troops in Vietnam: 1965

G: Start of global financial crisis: 2008



The red line shows the share of federal (national), local and state government tax revenue as a share of GDP.

This is a (good) measure of the size of the government sector in the economy.

Use a model of aggregate demand to explain how government spending can stabilize the economy

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Consumption function

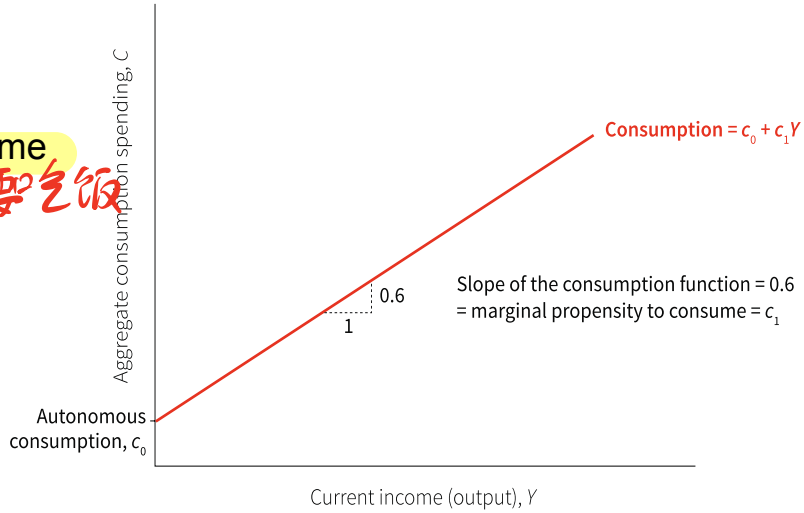
2 parts:

- **Autonomous consumption:** the fixed amount one will spend even with no income
- Consumption dependent on income

Slope of consumption function

=

Marginal propensity to consume



A steeper consumption line means a larger consumption response to a change in income.

$c_1 < 1$ means only part of an increase in income is consumed; the rest is saved.

Chosen output level

Aggregate Demand (AD)

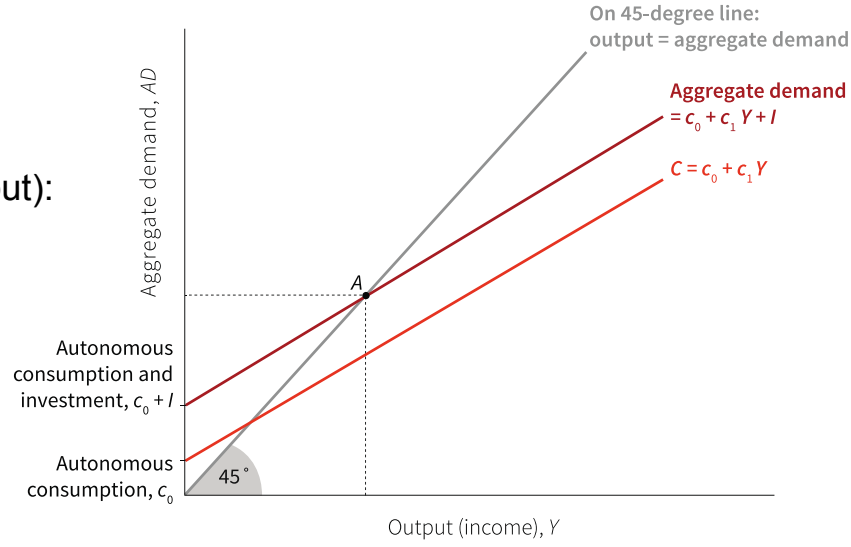
=

consumption function + investment

(Investment assumed not to depend on output):

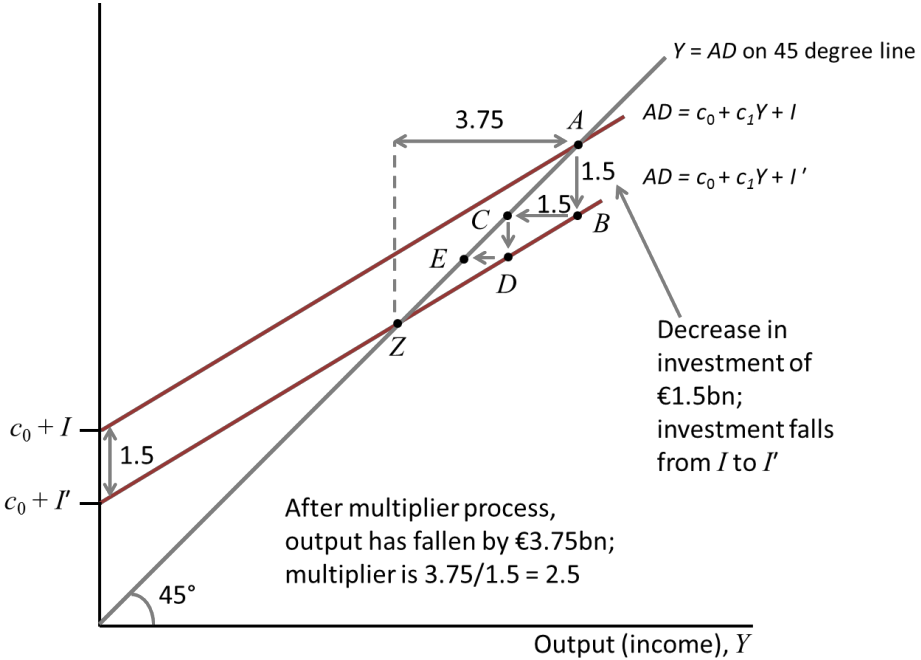
AD = C + I

the slope of AD line is below 45° (MPC<1)



Goods market equilibrium where **output (Y) = AD**

The multiplier process: Negative investment shock



The total change in output can be greater than the initial change in aggregate demand.

The **multiplier** represents the relative magnitude of this change.

Taxes, imports, and wage variation reduce the multiplier effect.

The multiplier process

Investment shock:

- A fall in investment leads to a fall in aggregate demand
- This leads to lower output and income
- Production adjusts to demand: Firms supply the amount of goods demanded at the prevailing price. When demand falls --> firms adjust production down.
- This leads to a further (smaller) fall in demand and income, which leads to a further fall in production, and so on
- **The sum of all these successive decreases in production will impact the magnitude of the multiplier**
- New equilibrium in Z!

The multiplier process

Demand shock:

- A fall in demand leads to a fall in production and an equivalent fall in income: This leads to a further (smaller) fall in demand, which leads to a further fall in production, and so on.
- **The multiplier is the sum of all these successive decreases in production**

Positive shock:

- If the increase in GDP is equal to the initial increase in spending: We say that the multiplier is equal to one.
- If the total increase in GDP is greater than the initial increase in spending: We say that the multiplier is greater than one.

The multiplier effect

The total change in output can be greater than the initial change in aggregate demand. This is because of the circular flow of expenditure, income, and output.

The **multiplier** represents the relative magnitude of this change:

- multiplier = 1: the increase in GDP = the initial increase in spending
- multiplier > (<) 1: the total increase in GDP > (<) the initial increase in spending

Changes in the consumption function

Credit constraints and consumption smoothing is reflected in the **slope of the AD curve** and the size of the multiplier.

Consumption decisions can also **shift the AD curve**.

- e.g. a fall in house prices will be bad news for a household with a mortgage. They may choose to save more (**precautionary saving**) and hence their autonomous consumption would fall.

The multiplier process

Important assumptions in this model:

1. There are underutilized resources in the form of spare capacity in production facilities and underemployed labor.
2. Wages are not affected by changes in the level of output.
3. Prices will not be adjusted.
4. For the multiplier process to work in the same way in reverse in response to a rise in investment, the assumption of spare capacity and fixed wages means that costs will not rise when output goes up, so firms will be happy to supply the extra output demanded without adjusting their price.

If the economy is **not** characterized by spare capacity and constant wages, the multiplier will be smaller.

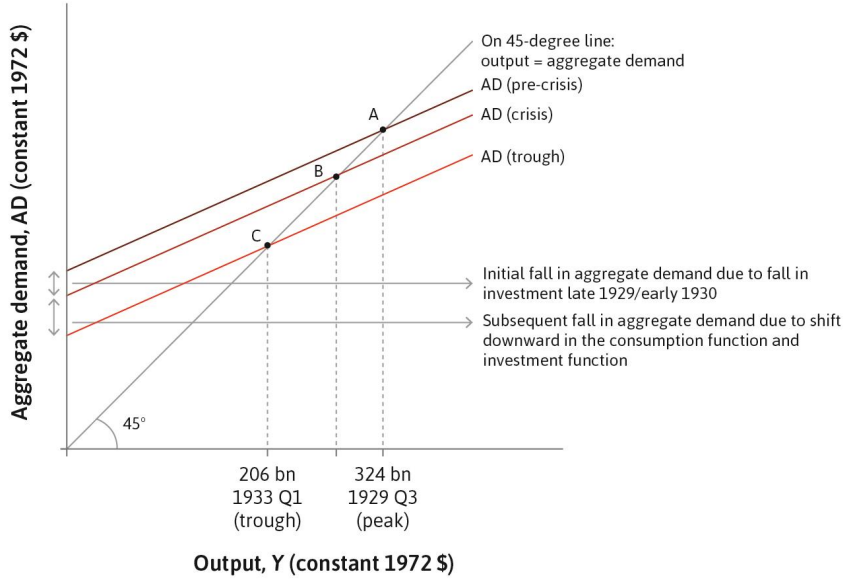
Example: The Great Depression

A: goods market equilibrium (1929)

B: fall in investment
➔ downward shift of AD

C: fall in autonomous consumption
➔ further downward shift of AD

uncertainty due to stock market crash, pessimism, banking crisis and collapse of credit



IV. Aggregate Demand and Fiscal Policy

The Economy Ch.14

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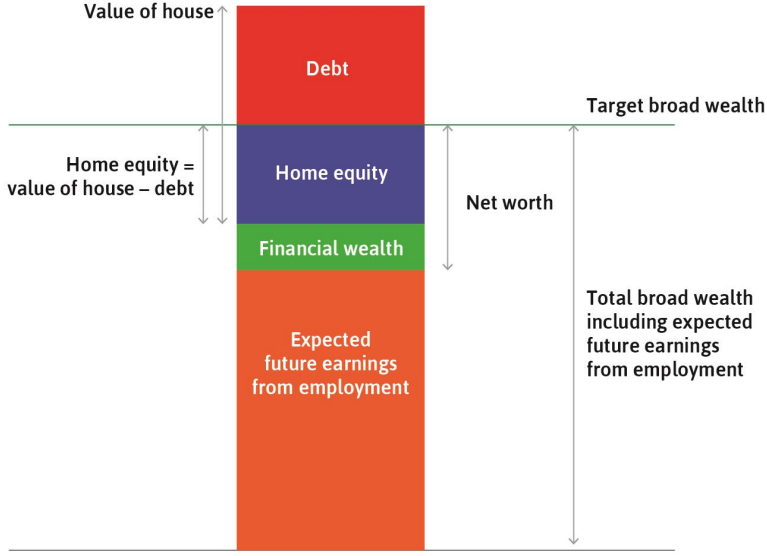
The household balance sheet

How does household behavior affect aggregate demand?

→ Household wealth impacts autonomous consumption!

Target wealth: level of wealth that households try to maintain

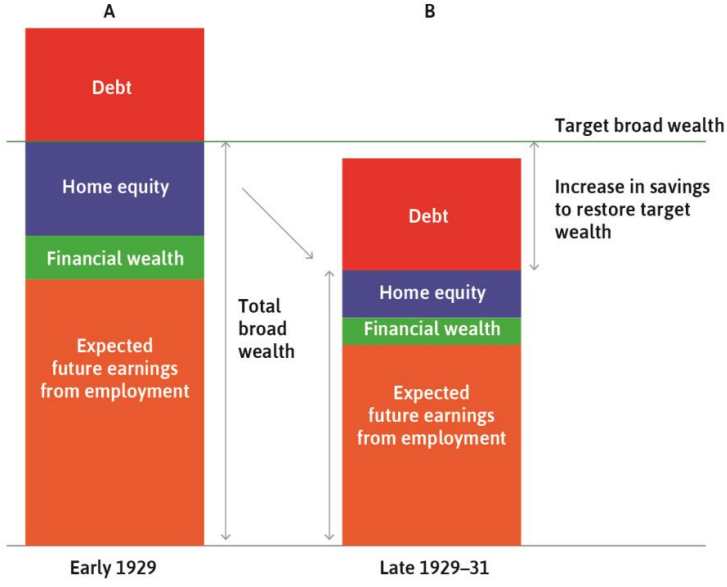
Total broad wealth includes household's expected future earnings from employment, **financial wealth** and **home equity** (value of house minus mortgage debt)



Precautionary saving

Precautionary saving: An increase in saving to restore wealth to its target level
➔ fall in consumption

Home prices affect consumption
- Directly via net worth
- Indirectly via credit constraints (ability to borrow depends on value of their **collateral**)



A fall in expected earnings will lead to cut in consumption (precautionary savings) to restore target wealth

Consumption and the housing market

Changes in house prices affect consumption through two channels:

1. Via change in **household wealth** (home equity)

2. Via change in **credit constraints**: lower house value makes it more difficult to borrow (greater credit constraint)

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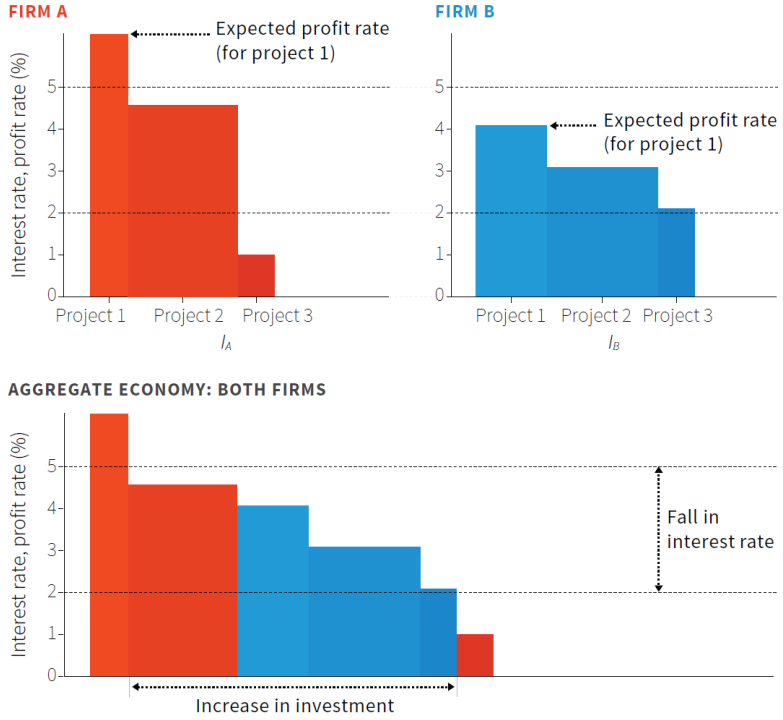
Investment spending

How do firm decisions affect aggregate demand?

Firms' decisions depend on

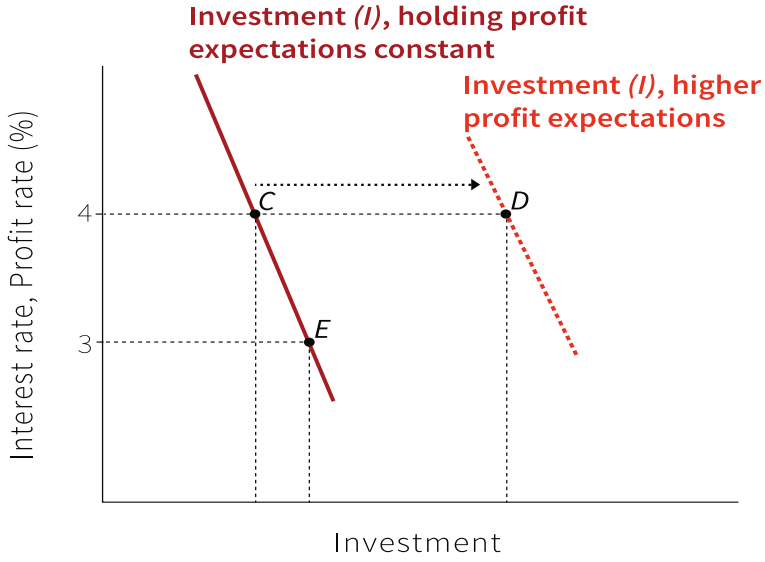
- Owner's discount rate (ρ), interest rate on assets *(r)*, net profit rate on investment *(p)*
- Firms invest when p is greater than both ρ and r



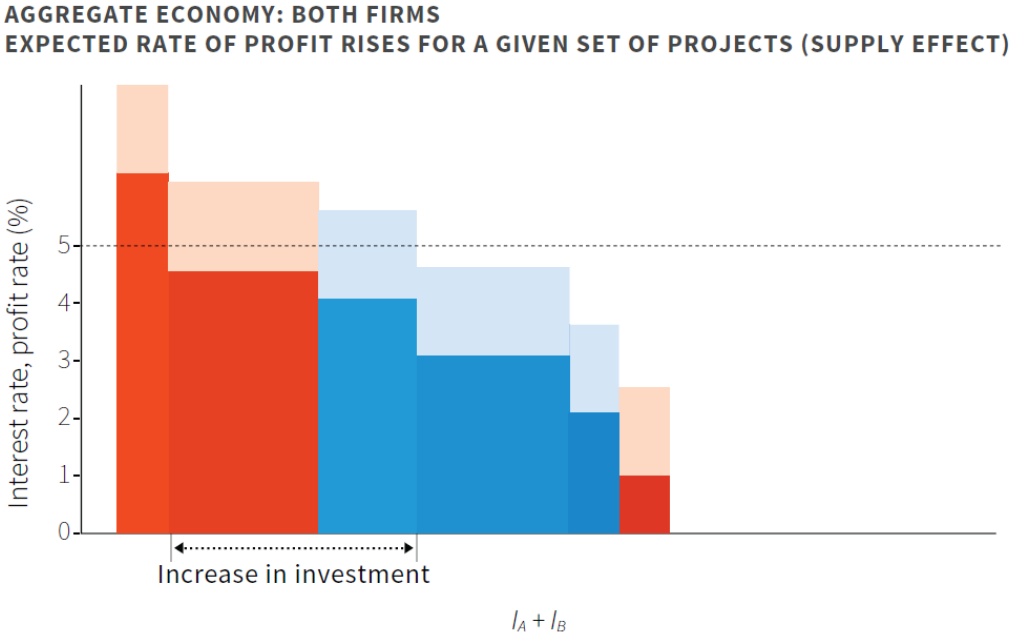
Investment spending

Aggregate investment function shows how overall investment spending depends on *r* and *p*

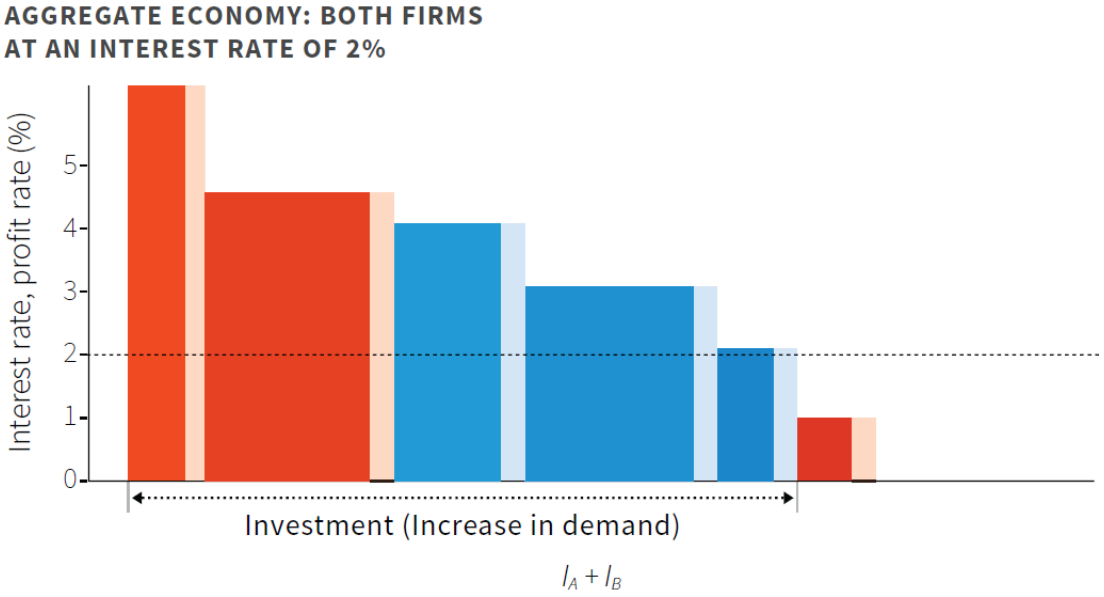
But: empirical evidence suggests that business spending on machinery and equipment is not very sensitive to the interest rate.



Supply and demand factors



Supply and demand factors



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Net exports and government spending

Aggregate demand: **AD = C + I + G + X - M**

Government spending shifts AD curve upwards:

- **Fiscal multiplier:** The total (direct + indirect) change in output caused by an initial change in government spending
- **Marginal propensity to import (m):** The fraction of each additional unit of household income that is spent on imports
- Production costs and the exchange rate affect export demand

The government's role

3 main ways that government spending and taxation can dampen fluctuations in the economy:

- ***The size of government:*** Unlike private investment, government spending is usually stable (e.g. health & education does not fluctuate with capacity utilization or move with business confidence)
- ***Transfer payments:*** government provides unemployment benefits and / or redistributes income
- ***Direct intervention:*** Government intervenes deliberately to stabilize aggregate demand using fiscal policy (upward adjustment of spending or cuts in taxation to support aggregate demand in a downturn; or trimming spending and raising taxes in a boom)

The government's role

- Household behavior may either smooth or disrupt the economy.

- **Negative/positive feedback** processes dampen/amplify initial changes, which can destabilize the economy.
  - e.g. **Paradox of thrift** occurs when the aggregate attempts of households to increase savings during a recession does not actually increase savings.

- The government can use
  - **automatic stabilizers** or provide a
  - **fiscal stimulus** to avoid a deep recession.

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Fiscal policy and the business cycle

Taxes and transfers are **automatic stabilizers** that offset economic expansions/contractions.

Governments can also amplify fluctuations by adjusting their **budget balance**

Budget: tax revenue minus transfers (T) minus spending (G):

$$BB = T - G$$

- Budget in balance: G = T
- Budget deficit: G > T
- Budget surplus: G < T

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The paradox of thrift

In a recession, faced with a household budget deficit, a family worries about their falling wealth, cuts spending, and saves more.

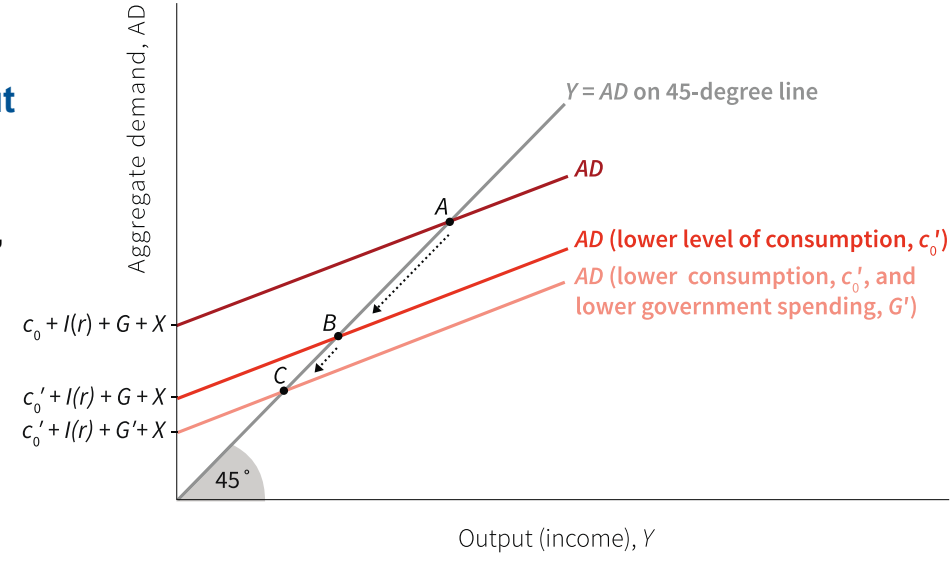
- But in the economy as a whole, spending and earning go together.

- **The paradox of thrift:** the aggregate attempt to increase savings leads to a fall in *aggregate* income.

→ **Fallacy of composition:** what is true for one part of the economy (a single household) is not true of the whole economy.

The **fallacy of composition** and the **paradox of thrift**

- Government can dampen recession with increased transfer, tax cuts, spending: **budget deficits rises, but this avoids a deep recession (Keynesian policy)**
- Government can amplify recessions, e.g. **austerity** (increasing savings during a recession):
- While **saving** helps the individual household, it makes matters worse when everyone does it
- The reason: in the economy as a whole “my spending is your income; your spending is my income”.



Note: $AD = c_0 + c_1(1 - t)Y + I(r) + G + X - mY$

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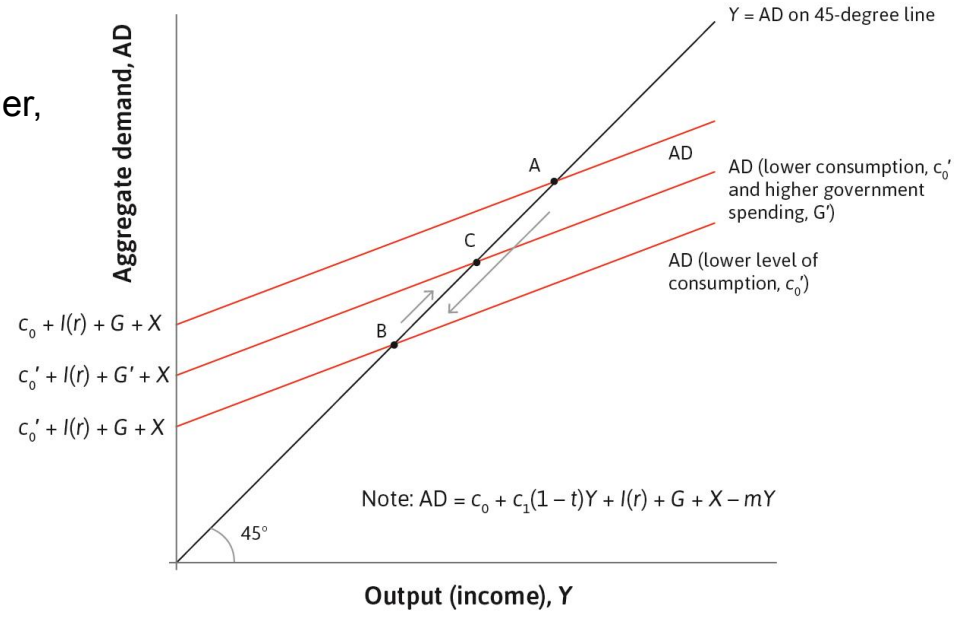
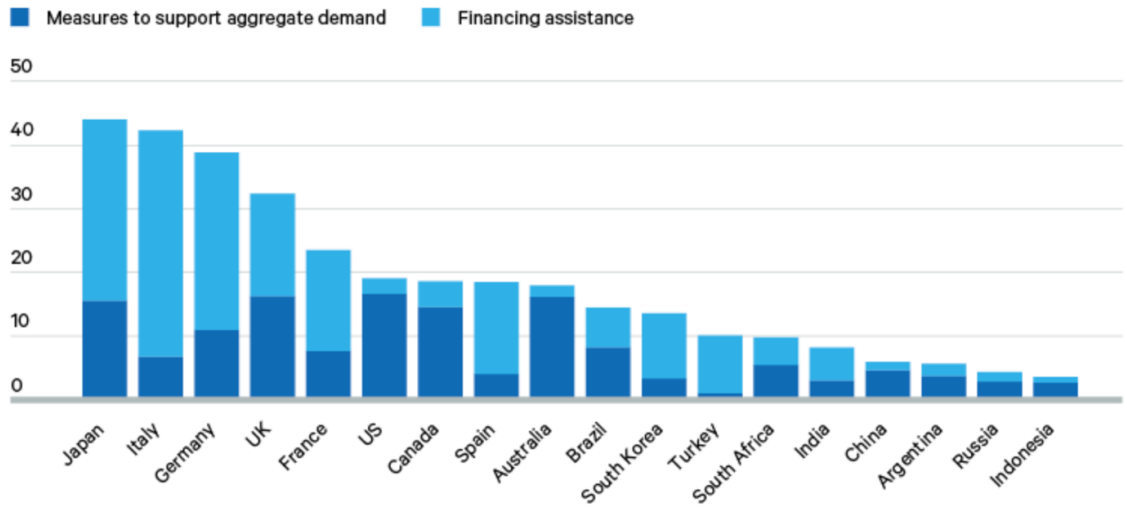
Fiscal stimulus

The rise in **G** operates via the multiplier, so the increase in **Y** will typically be greater than the initial increase in **G**!



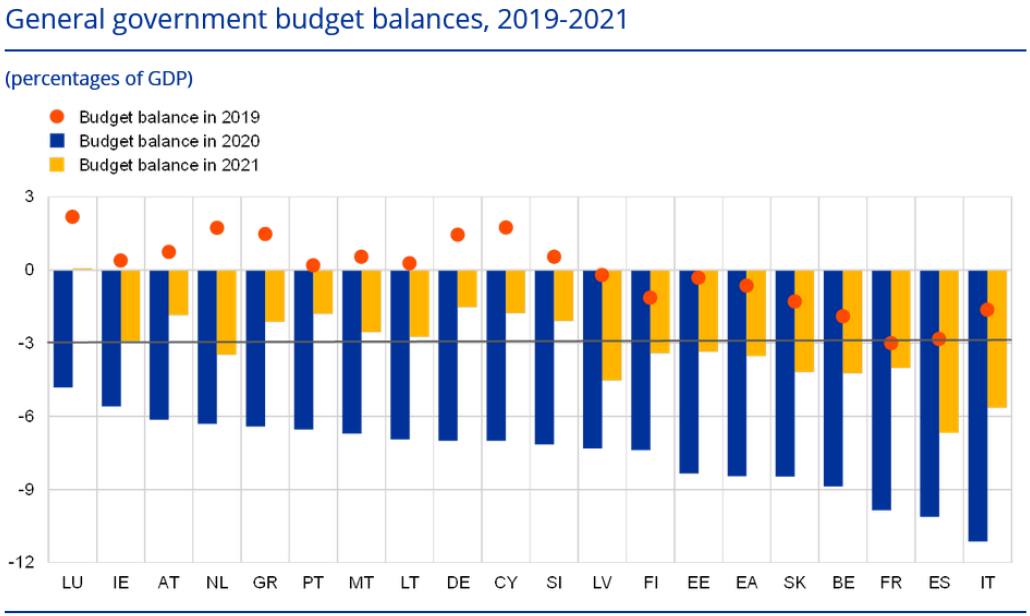
Fiscal stimulus during COVID19 crisis

Figure 1. Discretionary fiscal response to the COVID-19 crisis (% of GDP), selected countries

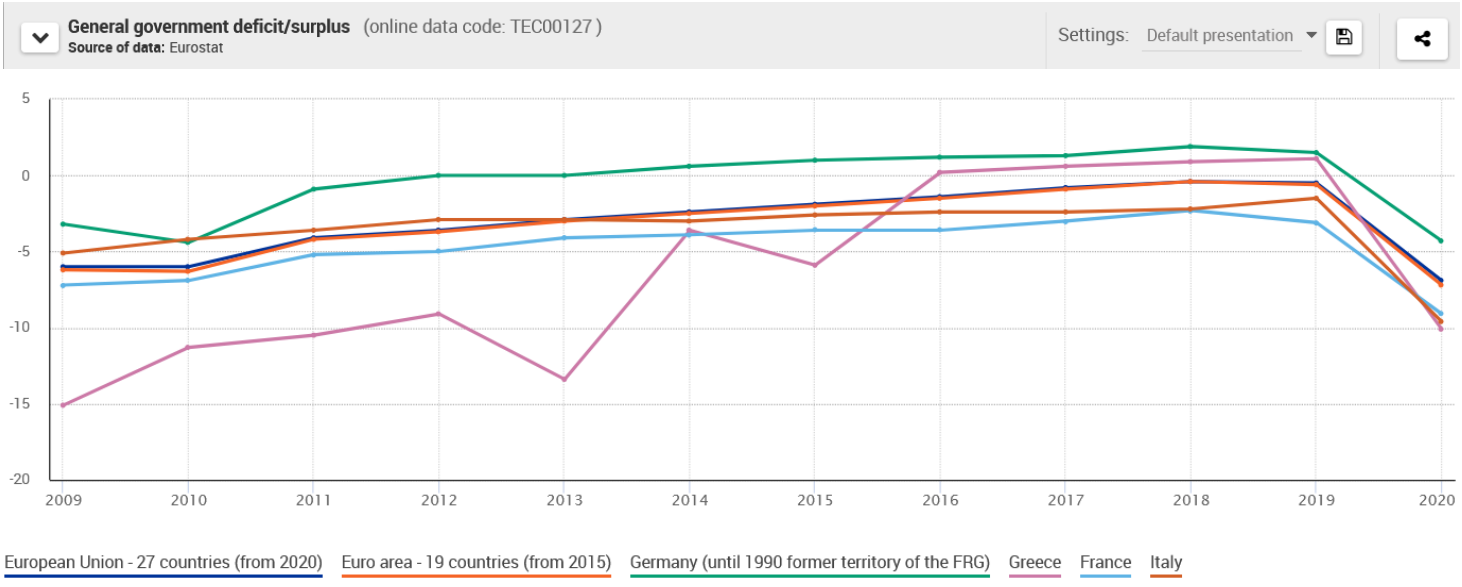


– Source: IMF (2021), 'Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic', IMF Fiscal Affairs Department, January 2021, https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19 (accessed 4 Feb. 2021).

Budget balances



Budget balances



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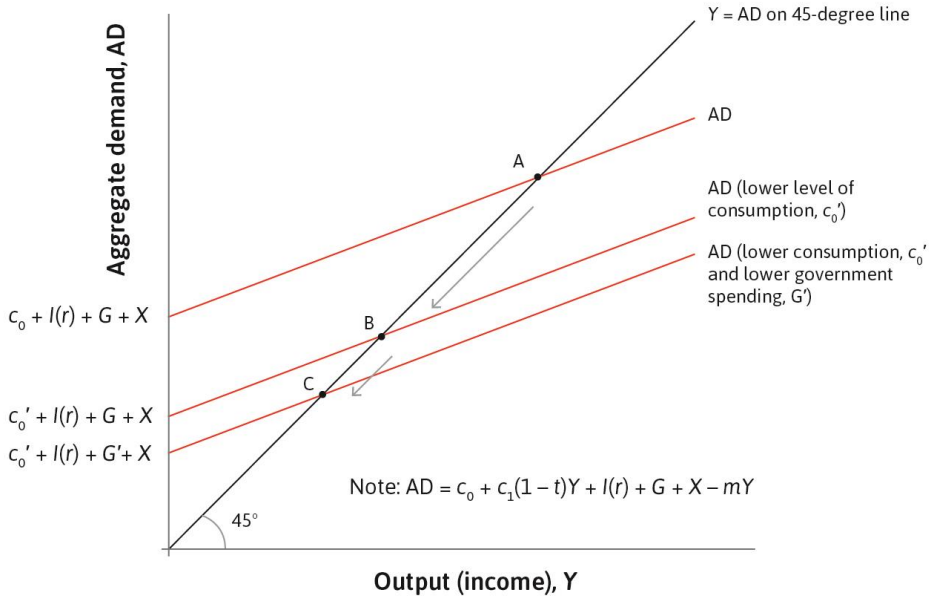
Austerity policy

Austerity policy can reinforce a recession by further reducing aggregate demand



Fiscal multiplier

Size of the multiplier depends on

- the marginal propensity to consume, the marginal propensity to import, and tax rates
- *crowding out:* with fully employed resources, a 1% increase in government spending would displace or *crowd out* some private spending in the economy (e.g. increase in government employment results from taking workers out of the private sector)
- the expectations of households and firms.

To be effective, government spending needs to put resources that would otherwise be idle into productive use.

- Households and firms react to policy changes, but they also anticipate them!

Positive/negative feedback mechanisms

	DAMPENING MECHANISMS OFFSET SHOCKS (STABILISING)	AMPLIFYING MECHANISMS REINFORCE SHOCKS (MAY BE DESTABILISING)
PRIVATE SECTOR DECISIONS	Consumption smoothing	Credit constraints limit consumption smoothing Rising value of collateral (house prices) can increase wealth above the target level and raise consumption Rising capacity utilisation in a boom encourages investment spending, adding to the boom
GOVERNMENT AND CENTRAL BANK DECISIONS	Automatic stabilisers (e.g. unemployment benefit) Stabilisation policy (fiscal or monetary)	Policy mistakes, such as limiting the scope of automatic stabilisers in a recession or running deficits during low demand periods, while not running surpluses during booms

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Government debt

Why might/should austerity policies come after stimulus policies?

- **Primary budget deficit** = Government revenue minus expenditures, excluding interest payments on government debt (G –T)
- Governments fund deficits by selling bonds to the public
- **Government debt** = sum of all bonds sold minus bonds that have matured
- Governments can maintain a sustainable debt ratio by reversing fiscal stimuli and by running primary surpluses

Sovereign debt crisis: a situation in which government bonds come to be considered risky.

→ In 2010, increase in interest rates on bonds by the Irish, Greek, Spanish and Portuguese governments: signal of a sharp increase in default risk.

Government debt

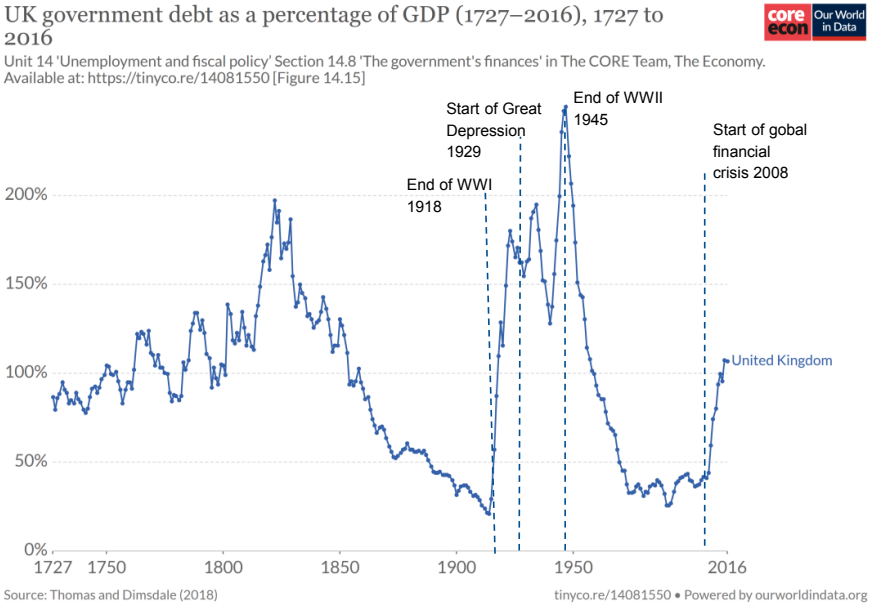
- A large stock of debt relative to GDP can be a problem because the government has to pay interest on its debt.
- However, there is no point at which the government has to pay off all its stock of debt — it can roll it over instead by issuing new bonds.
- An ever-increasing debt ratio is unsustainable, but there is no rule that says exactly *how much* debt is problematic.

Debt-to-GDP ratio

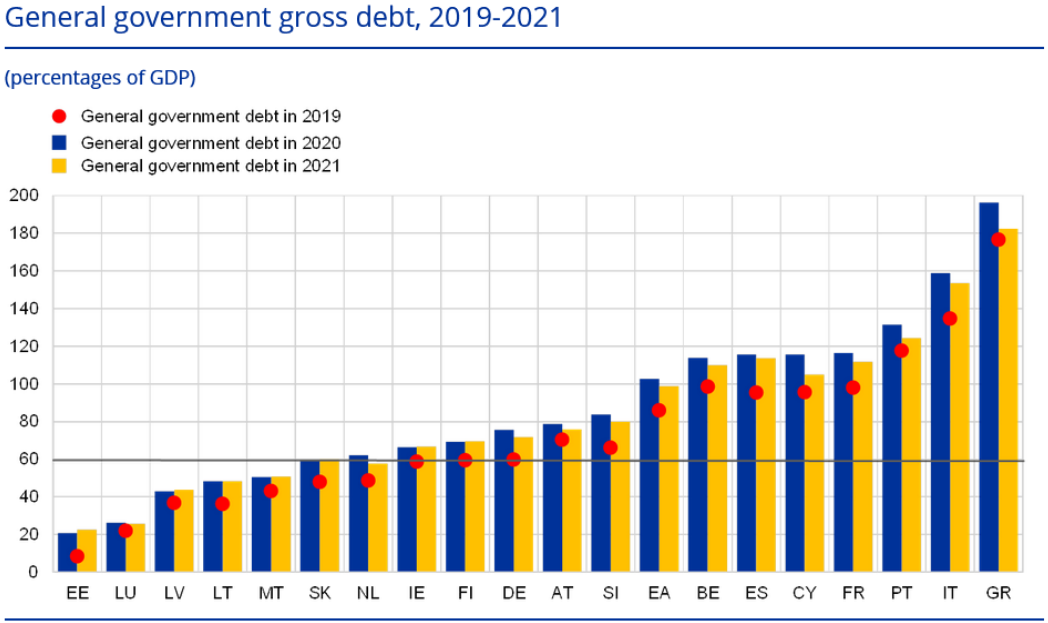
The level of indebtedness of a government is measured relative to the size of the economy (**debt-to-GDP** ratio)

Indebtedness can fall

- if the primary budget balance is positive
- if GDP is growing faster than government debt
- if inflation is high (real value of debt falls)



Government debt

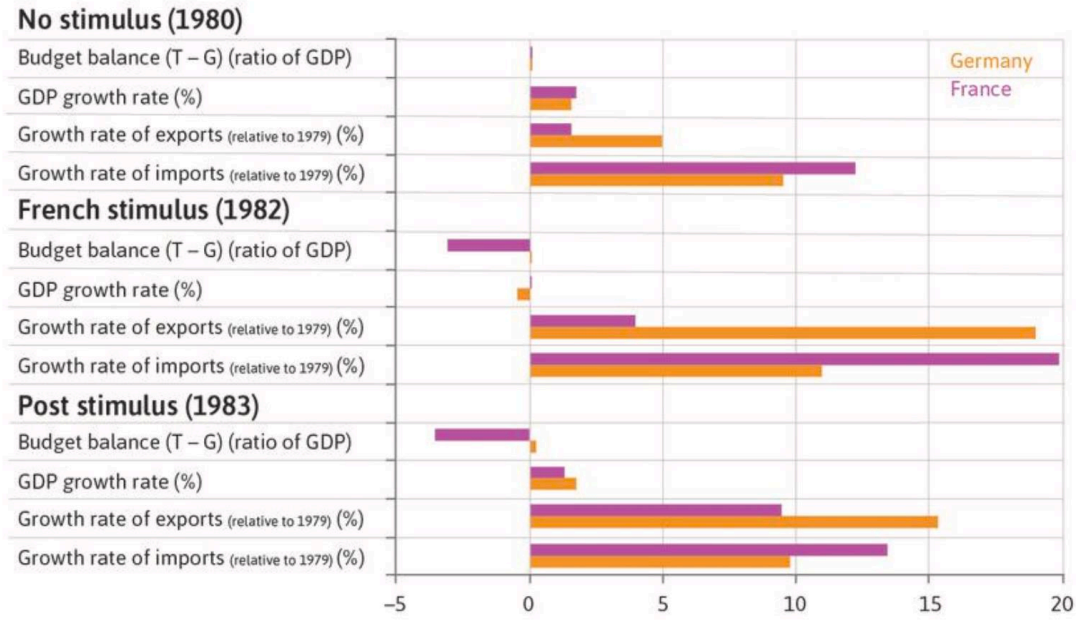


The role of trade

- Foreign markets matter: The economic growth of important markets abroad affects net exports and hence aggregate demand
- Imports dampen domestic fluctuations: Households increase spending on imports as well as domestic goods
- Trade constrains the use of fiscal stimulus: spillover effects to other economies could limit the effectiveness of fiscal policy

Foreign markets and aggregate demand

1. Fluctuations in the growth rate of important markets abroad influence the domestic economy via demand for exports.
2. Demand for imports dampens domestic fluctuations.
3. **Foreign trade limits the use of fiscal stimulus if the marginal propensity to import is large.**



Summary

1. The aggregate demand function and its components
   - **Consumption function** depends on target wealth
   - **Investment function** depends returns from investment
   - **Government spending**
   - **Net exports** depend on exchange rates and foreign demand

2. Fiscal policy can act as an **automatic stabilizer**
   - Effectiveness depends on **fiscal multiplier**
   - Governments use fiscal policy to maintain a sustainable debt ratio (avoid a debt crisis)

Summary

3. Economic fluctuations and the business cycle
- **Key indicators:** GDP, unemployment rate
- Households smooth consumption and respond to shocks
- Firms maximize profits and respond to demand expectations

4. Measuring the size of an economy
- **GDP** (**aggregate demand**) and its components
- Fluctuations in GDP due to consumption and investment
- Adjusting for **inflation** allows GDP to be compared over time

To keep in mind for next unit…

- Consumption and investment are important components of GDP

- The labour market is the key market in which
    1. workers earn income for consumption
    2. firms buy an important input factor for their production

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