

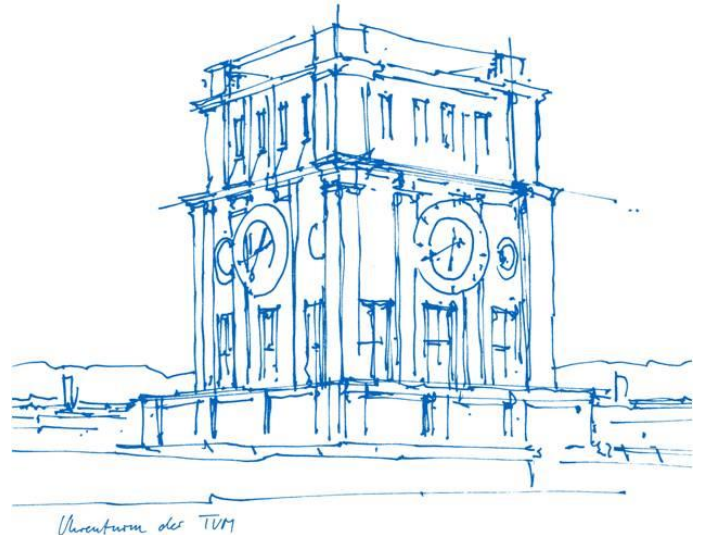
# Economics II – Macroeconomics

## III. The Aggregate Economy

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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)

## III. The Aggregate Economy

The Economy Ch.13

- I. **Measuring the Aggregate Economy**
- II. Economic Fluctuations and Consumption
- III. Economic Fluctuations and Investment

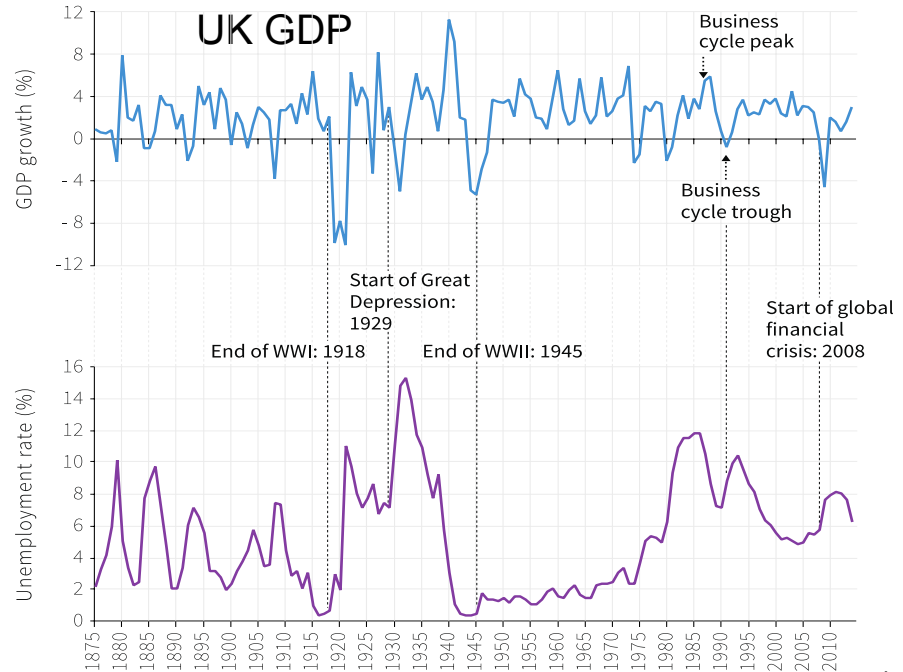
# The business cycle

Economic growth is not a smooth process!

**Business cycle** = Alternating periods of positive and negative growth rates.

**Recession** = period when output is declining or below its potential level

The business cycle affects labor market outcomes.

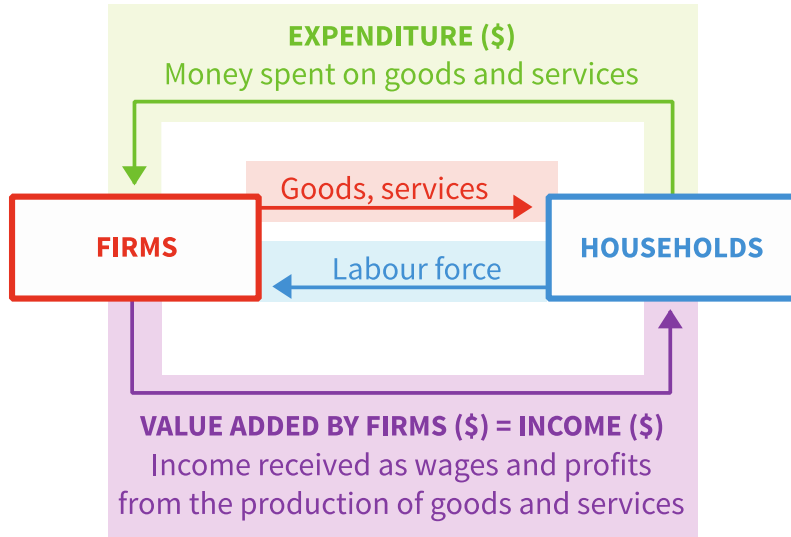


# Measuring the aggregate economy

**National accounts** = system used to measure overall output and expenditure in a country.

3 equivalent ways to measure **GDP**:

- 1. Total spending on domestic products
- 2. Total domestic production (measured as **value added**)
- 3. Total domestic income



**Circular flow model**  
shows this equivalence

# Exports, imports, and government

How do we account for international transactions?

e.g. foreign production is domestic consumption (**imports**);  
or domestic production is foreign consumption (**exports**)

- We include exports and exclude imports, so that GDP includes value added, income from, or consumption of, domestic production.

How do we incorporate **government**?

- We treat it as another producer – public services are “bought” via taxes

Δ

public  
service

# Components of GDP

- Consumption (**C**) = Expenditure on all consumer goods
- Investment (**I**) = Expenditure on newly produced capital goods
- Government spending (**G**) = Government expenditure on goods and services (excluding transfers)
- Net exports (**trade balance**) = Exports (**X**) minus imports (**M**)

$$\text{GDP} = \text{C} + \text{I} + \text{G} + \text{X} - \text{M}$$

(Also known as **Y**, or aggregate demand)

# Components of GDP (2013)

	US	EUROZONE (19 COUNTRIES)	CHINA
CONSUMPTION (C)	68.4%	55.9%	37.3%
GOVERNMENT SPENDING (G)	15.1%	21.1%	14.1%
INVESTMENT (I)	19.1%	19.5%	47.3%
CHANGE IN INVENTORIES	0.4%	0.0%	2.0%
EXPORTS (X)	13.6%	43.9%	26.2%
IMPORTS (M)	16.6%	40.5%	23.8%

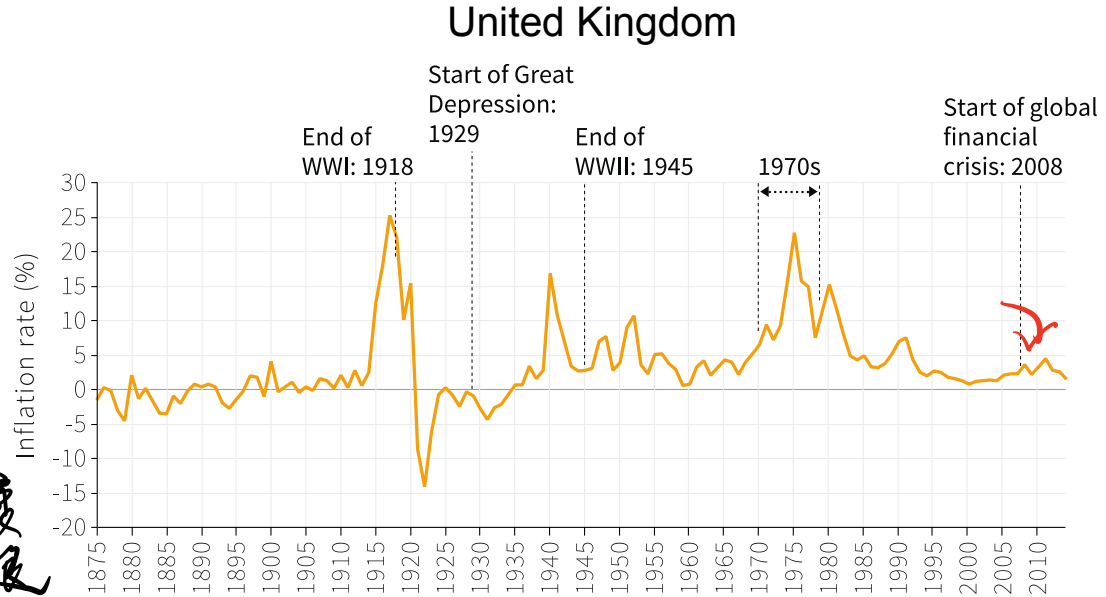
OECD Statistics; The World Bank. 2015. World Development Indicators. OECD reports a statistical discrepancy for China equal to -3.1% of GDP.)



# Inflation

**Inflation** = an increase in the general price level in the economy

Price levels tend to be lower during recessions (high unemployment)



# Measuring inflation

The **Consumer Price Index (CPI)** measures the general level of prices that consumers have to pay for goods and services, including consumption taxes

- Based on a representative bundle of consumer goods – “cost of living”
- Common measure of inflation = change in CPI
- [https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/\\_node.html](https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/_node.html)

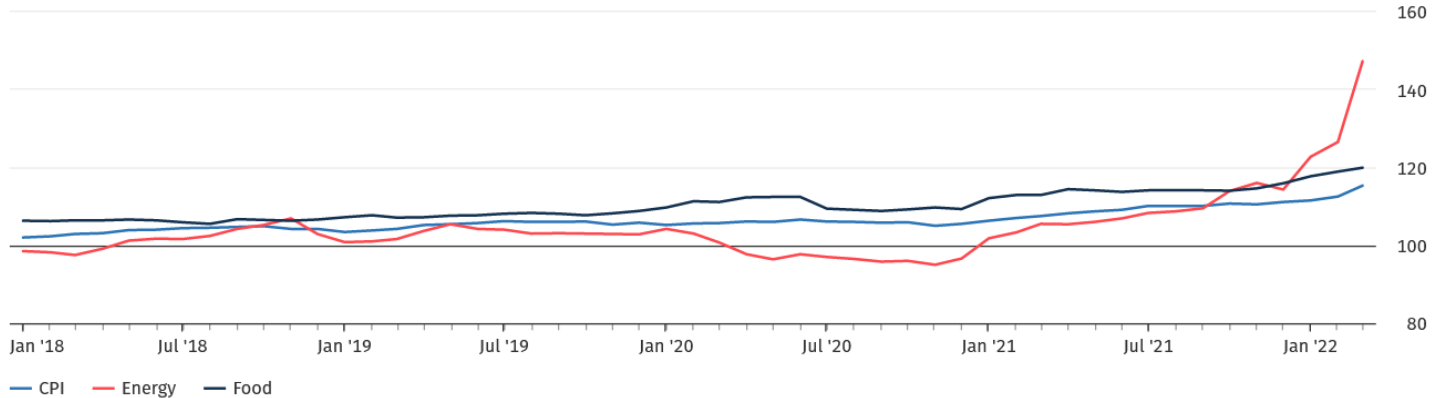
**GDP deflator** = A measure of the level of prices for domestically produced output  
(ratio of **nominal** to **real GDP**)

- Tracks prices of components of GDP (C, I, G, NX)
- Allows GDP to be compared across countries and over time

# Trends in inflation

## Consumer prices indices for Germany

2015 = 100

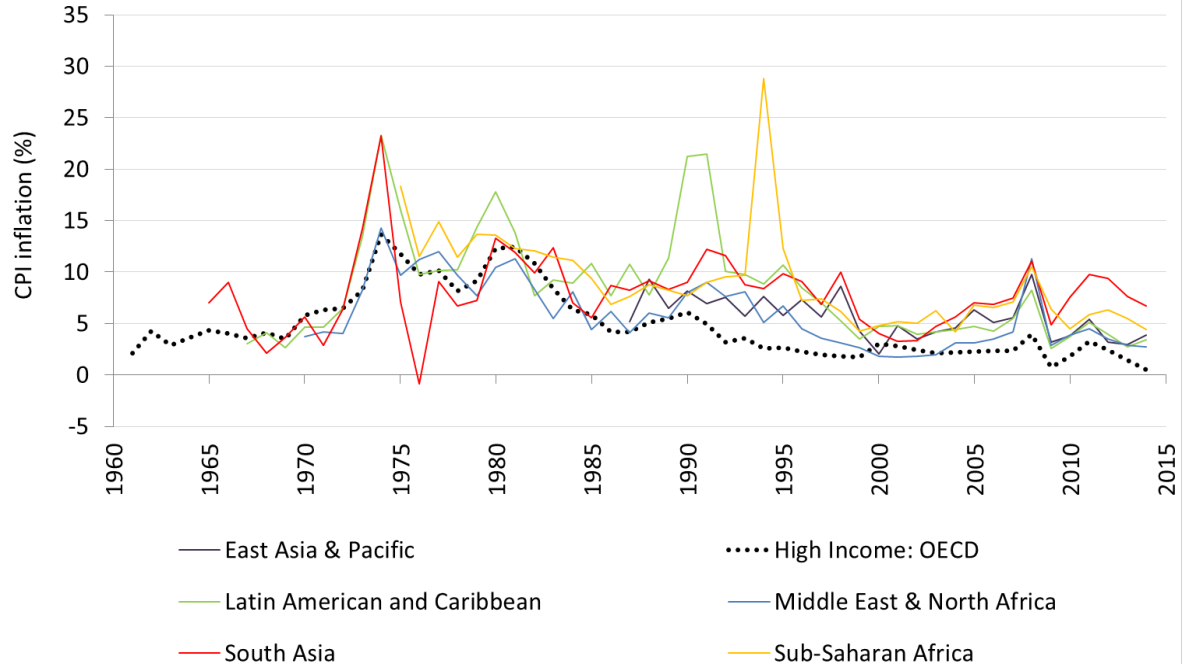


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# Trends in inflation

**Upward spikes in inflation during economic crises, general downward trend since 1970s**

Inflation tends to be higher in poor than in rich countries.



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The Economy Ch.13

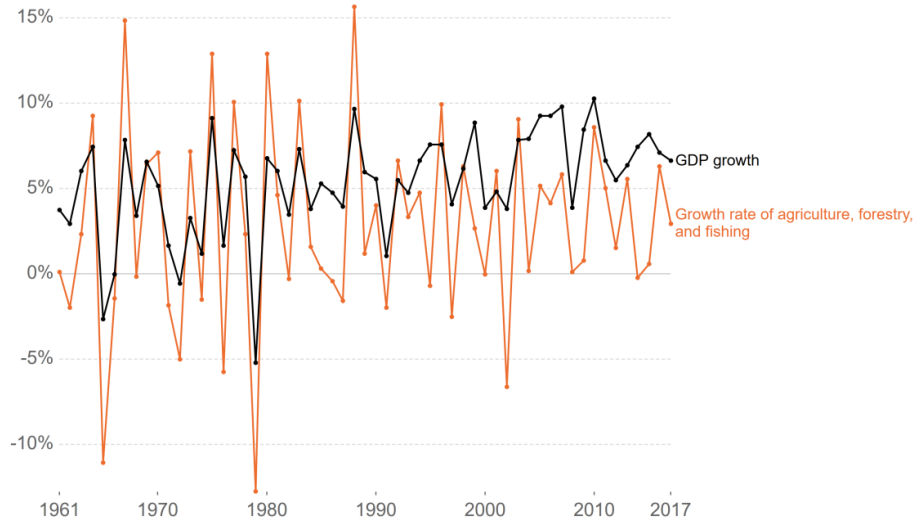
- I. Measuring the Aggregate Economy
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# Economic fluctuations

## The role of agriculture in the fluctuations of the aggregate economy in India (1961–2017)



Unit 13 'Economic fluctuations and unemployment' Section 13.5 'How households cope with fluctuations' in The CORE Team, The Economy. Available at: <https://tinyco.re/13050991> [Figure 13.9b]



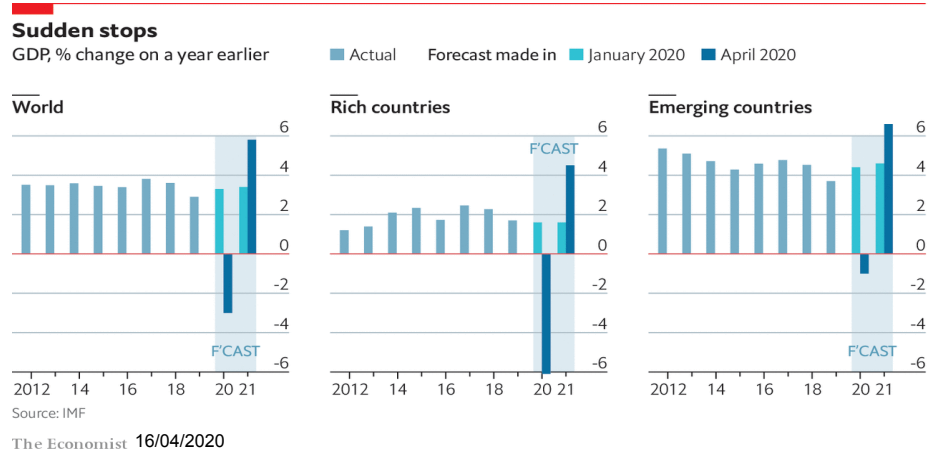
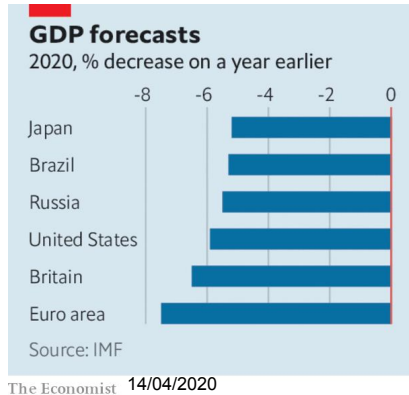
Source: The World Bank (2018)

[tinyco.re/13050991](https://tinyco.re/13050991) • Powered by [ourworldindata.org](https://ourworldindata.org)

- Economies fluctuate between good and bad times.
- This is true for industrialised as well as agrarian societies.

# Shocks

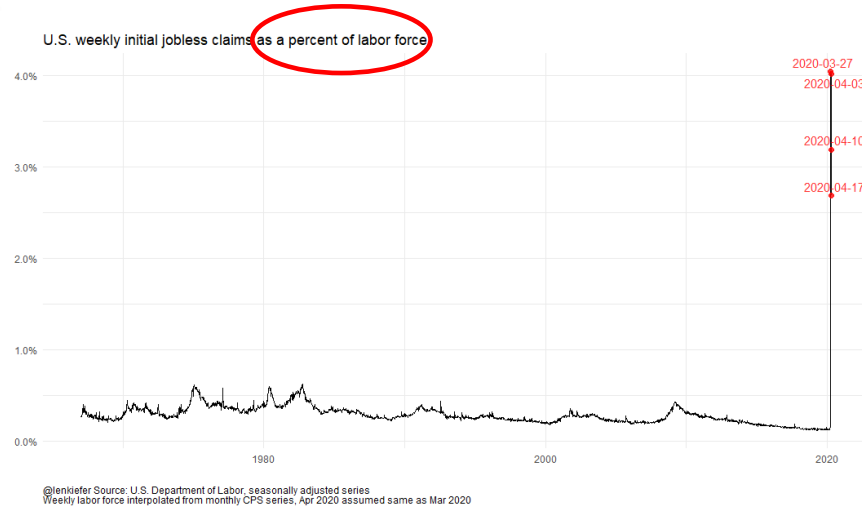
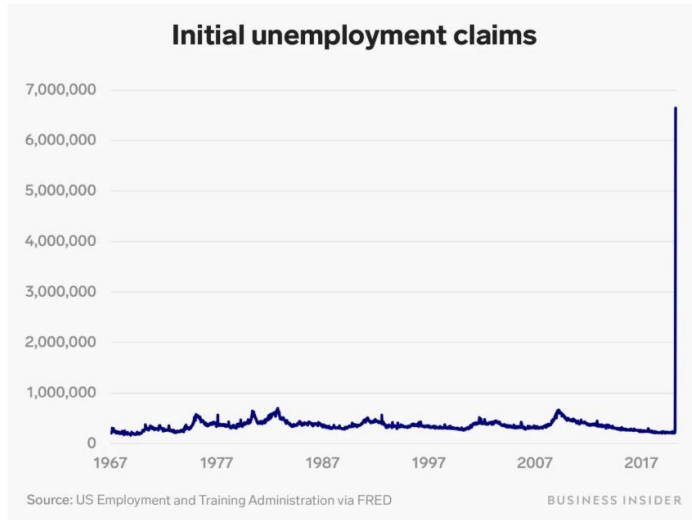
**Shock** = an unexpected event (COVID, extreme weather, war...) which causes GDP to fluctuate.



There are two broad types of shocks:

1. Good or bad fortune strikes the **household**
2. Good or bad fortune strikes the entire **economy**

# Effects on Unemployment





# Household shocks versus economy-wide shocks

## Household shocks:

People use 2 strategies to deal with shocks that are specific to their household:

1. **Self-insurance** – saving and borrowing. Other households are not involved.
2. **Co-insurance** – support from social network or government.

This reflects that households prefer to smooth their consumption, and that they are (to a degree) altruistic. 利他主义

## Economy-wide shocks:

Co-insurance is less effective if the bad shock hits everyone at the same time.

But when these shocks hit, co-insurance is even more necessary.

# Shocks and consumption

- **Credit constraints, weakness of will** and **limited co-insurance** mean that, for many households, a *change in income results in an equal change in consumption*.
- In the case of a negative income shock (such as the loss of a job), this means that the income shock will now be passed on to other families who would have produced and sold the consumption goods that are now *not* demanded.
- The shock **multiplies** through the economy. (恶性循环)

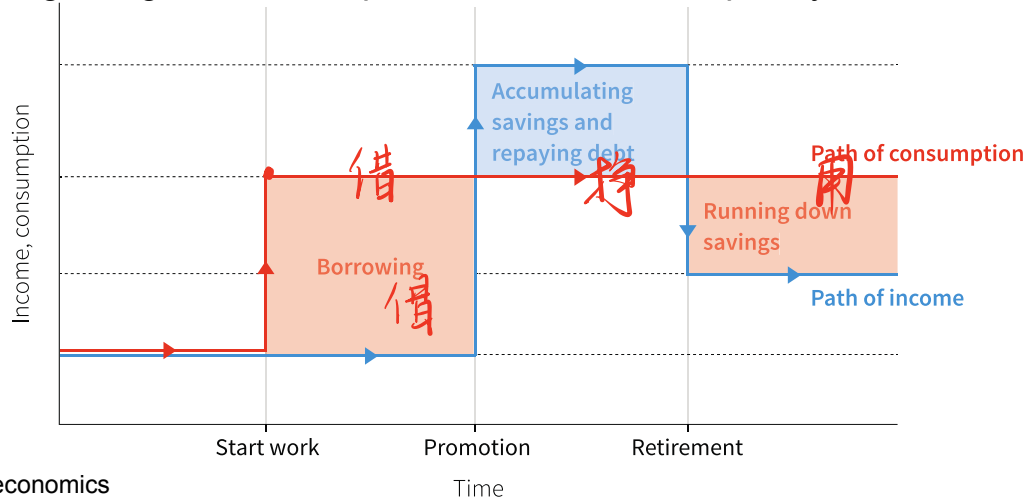
Example for measures to reduce this effect:

- I. Germany's *Kurzarbeit* during 2009  
→ although income had fallen, consumption did not—and unemployment did not increase much.
- II. Extended *Kurzarbeit* now during COVID19 crisis

# Smoothing Consumption

Households make lifetime consumption plans based on expectations about the future, and react to shocks:

- Readjust long-run consumption if shocks are permanent
- Do not change long-run consumption if shocks are temporary

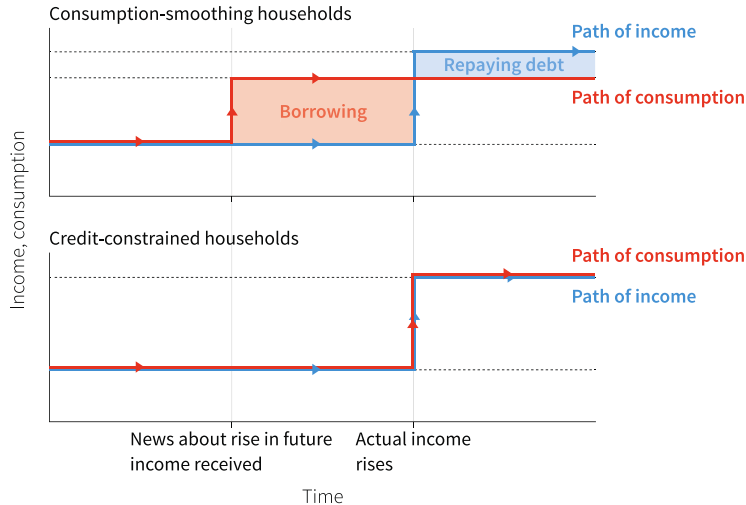


# Limitations to smoothing

Consumption-smoothing cannot always stabilize the economy

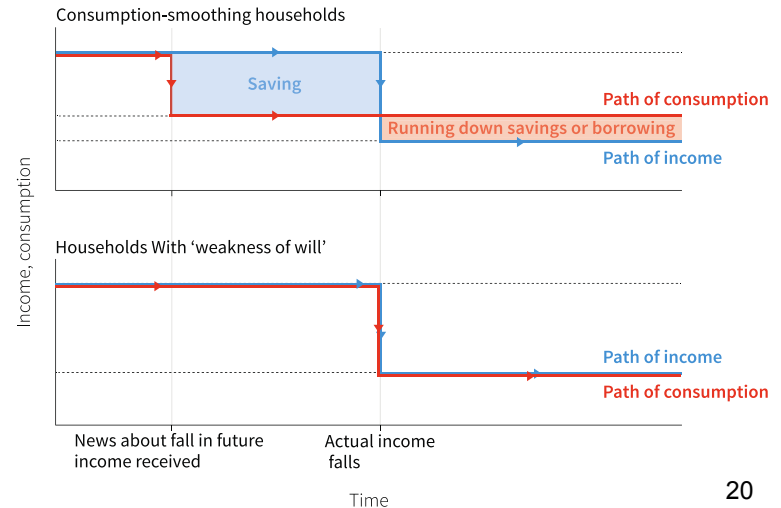
## Credit constraints:

limits on amount borrowed/ability to borrow




## Weakness of will:

inability to commit to beneficial future plans



# Shocks and consumption

- A change in income results in an equal change in consumption if
  - **the individual or household is credit constrained, i.e. cannot borrow to smooth consumption,**
  - **did not save in the past for bad times (weakness of will),**
  - **there is no or limited co-insurance.**
- Trough reduced demand from this (and maybe many other) households, the income shock will now be passed on to other individuals and households who would have produced and sold the consumption goods. 
- Consequence: the shock **multiplies** through the economy affecting income and consumption of individuals initially not affected by a shock.

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# Volatile Investment

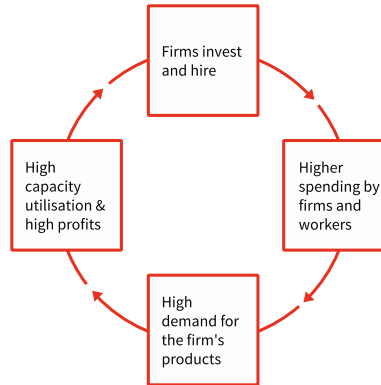
Firms have profit-making motives and adjust investment plans to both temporary and permanent shocks. Investment decisions depend on firms' expectations about future demand

High demand means high capacity utilization

→ encourages investment

→ further raises demand

*boom*  
“virtuous circle”



# Volatile Investment

On the other hand:

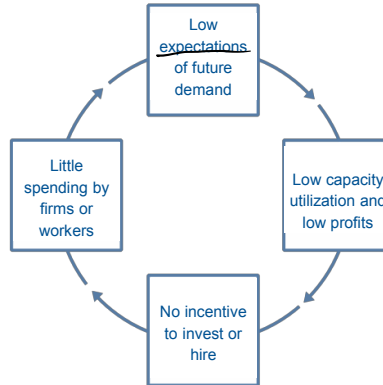
Low (**expectations of future**) demand

→ **low capacity utilization**

→ discourages investment and hiring,

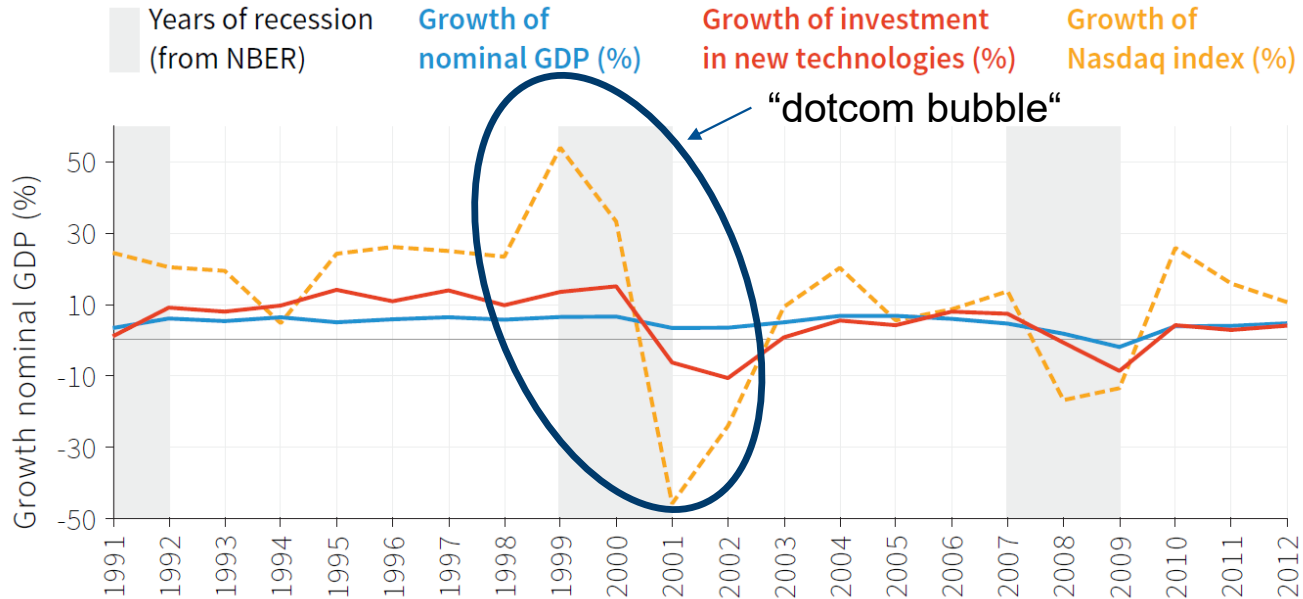
→ further reduces demand

“vicious circle”

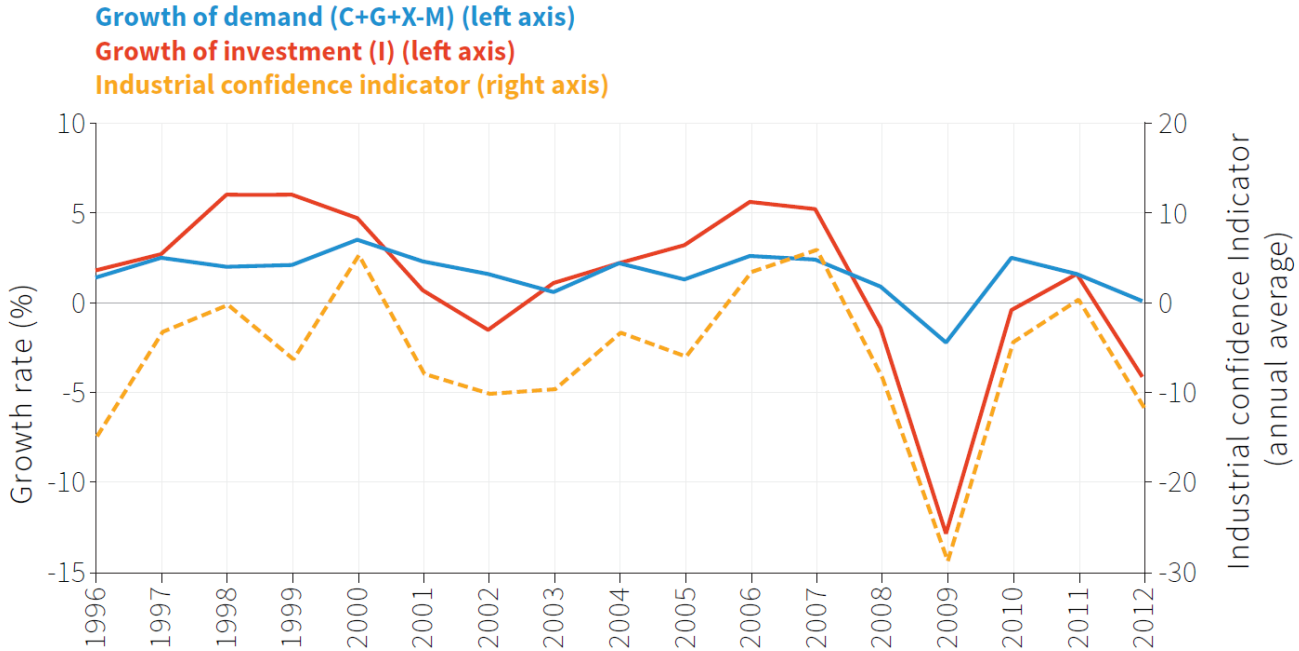




# Investment in new technologies (in the US)



# Confidence and investment

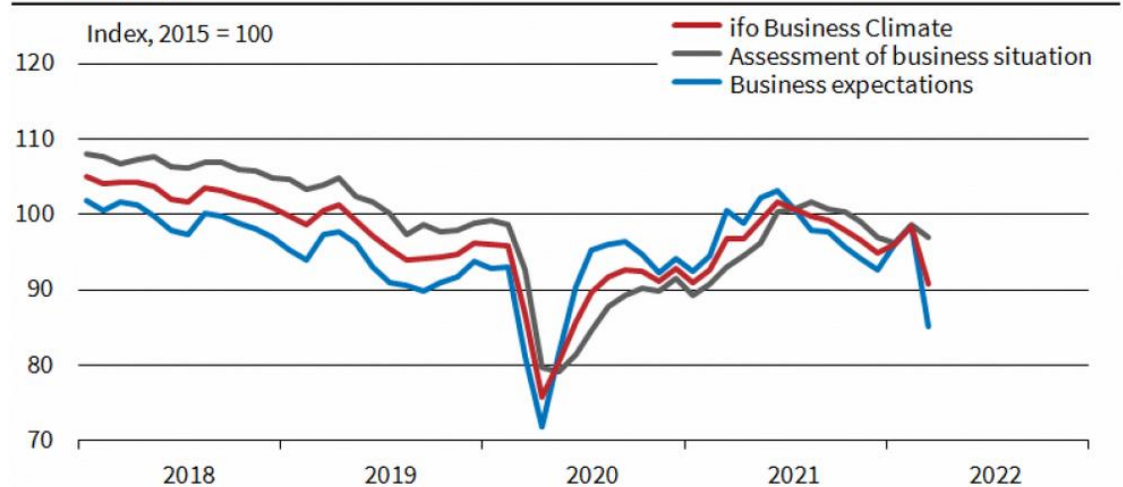


Investment and business confidence in the Eurozone (1996–2012), Source: Eurostat 2015

# Business confidence: COVID19 and War in Ukraine

## ifo Business Climate Germany<sup>a</sup>

Seasonally adjusted



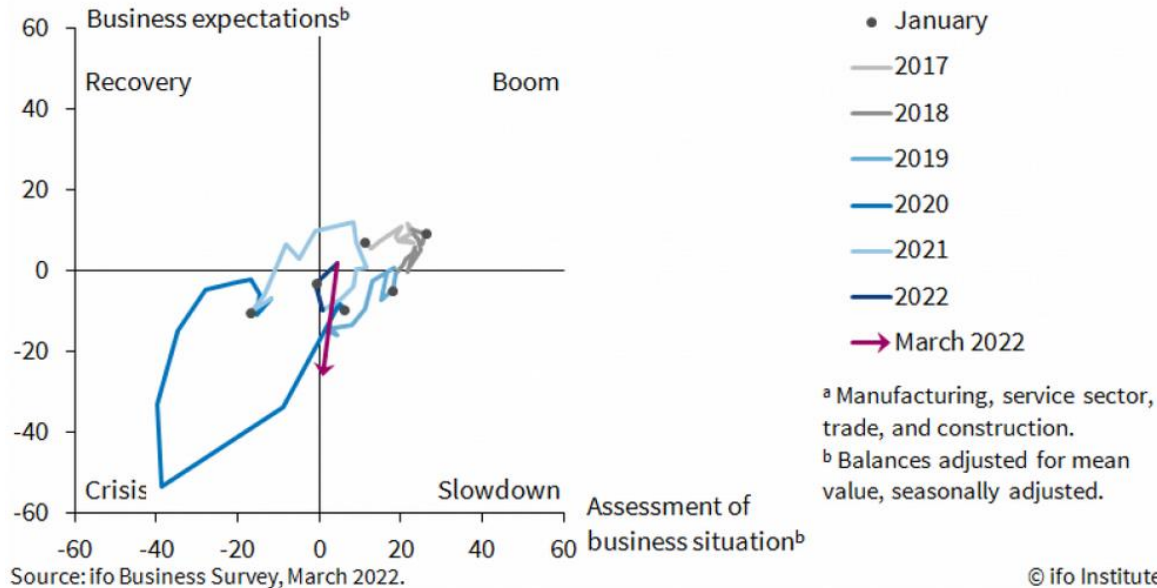
<sup>a</sup> Manufacturing, service sector, trade, and construction.

Source: ifo Business Survey, March 2022.

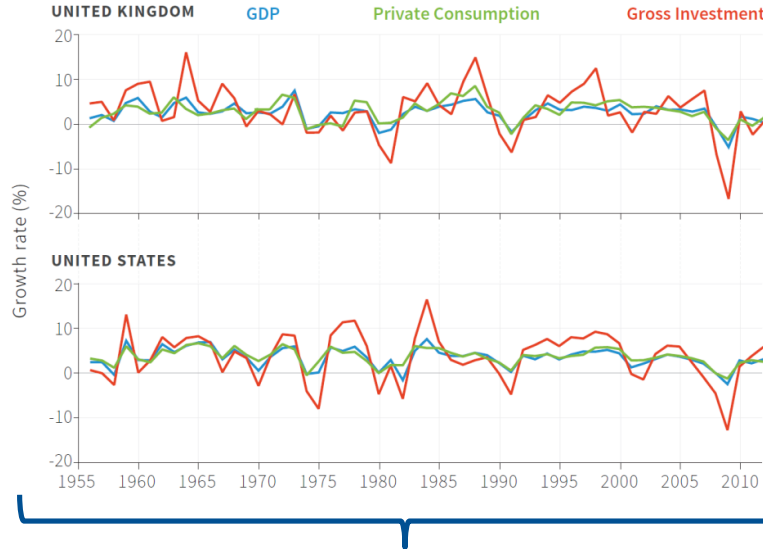
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# Business confidence: COVID19 and War in Ukraine

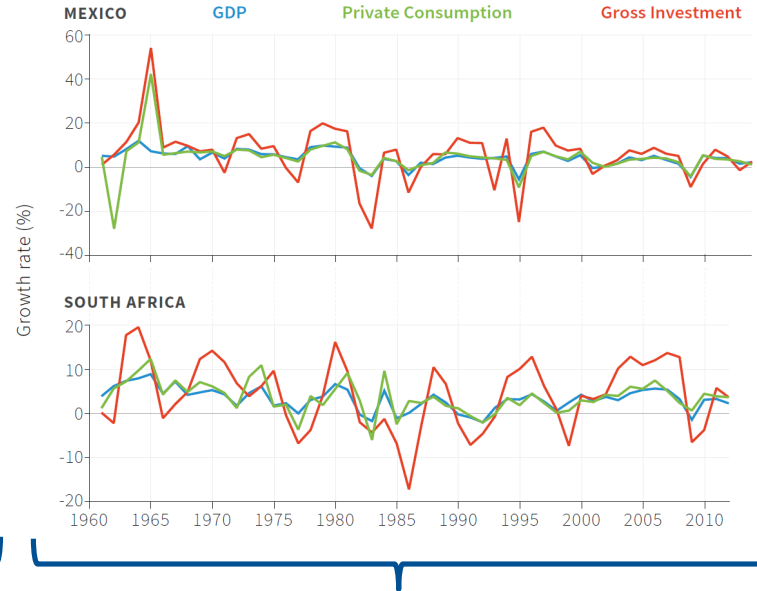
ifo Business Cycle Clock Germany<sup>a</sup>



# Volatility and investment



high income, well developed financial markets



lower income, less developed financial markets

## Other components of GDP

- **Government spending** is also less volatile than investment (does not depend on business confidence)
- **Exports** depend on demand from other countries, so will fluctuate according to the business cycles of major export markets

# Summary

1. System of **national accounts** to measure the economy
  - **$GDP = C + I + G + X - M$**
  - Measuring GDP as income, spending, production
2. Economic growth is not a smooth process – the economy goes through a **business cycle**
  - Households try to smooth their consumption over the business cycle (problem: credit constraints)
  - Investment is more volatile than GDP; expectations and confidence are important
3. **Shocks** disrupt households and/or entire economies
  - Importance of self- and co-insurance
  - Shocks can multiply through economies and across economies

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