
CHAPTER 11

FISCAL POLICY AND THE REAL INTEREST RATES

Savings and Investment, Revisited

The Rise of Savings During the 2020 Pandemic

The End of the U.S. Great Depression

**a crash course
on crises:**

macroeconomic

concepts for

run-ups,

collapses, and

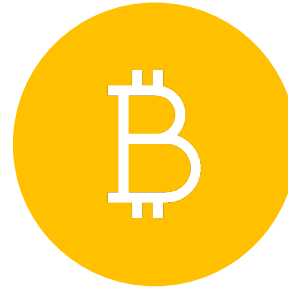
recoveries

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and ricardo reis**

THE GREAT DEPRESSION & FISCAL POLICY



The Great Depression is the queen of financial crises. It led to the largest macroeconomic recession felt in many countries in the past century.



Fiscal policy played an important role in ending the Depression.



The effectiveness of fiscal policy in ending the Depression led to an understanding that public deficits should rise during recessions.



There are two different bodies of arguments for why it should be so: neoclassical and Keynesian.

ARGUMENTS FOR DEFICITS TO FIGHT RECESSIONS

Neoclassical

- Most taxes and transfer programmes distort behaviour.
- When economic activity falls in a recession, keeping tax rates and the generosity of social programmes unchanged implies that fiscal revenues fall and spending rises, resulting in public deficit.
- Raising taxes or cutting subsidies in a recession would discourage work, production and investment at a time when they are already depressed.
- Public deficit should be countercyclical, moving in the opposite direction of output.

Keynesian

- Recessions are times when private savings are too high, above what would be socially desirable.
 - Private spending, and so production, are too low.
 - If the government increases spending, or cut tax revenues, it decreases public savings and brings the economy closer to the desired point.
 - Extra government spending raises public demand for goods, and lower tax revenues raise private spending, both leading to more output being produced.
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A MODEL OF SAVINGS AND INVESTMENT

- A model of the global economy
 - It is a closed economy: we do not trade with other planets (yet)
 - All investments must come from someone's savings, either private or public.
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INTEREST RATES AND RETURNS

- In making savings choices, private agents care about real returns.
- The real interest rate (r) is the key relative price considered when choosing to save.
- The expected real return of investing in government nominal bond, that delivers a promised payment denominated in units currency, is equal to:
 - the nominal interest rate i
 - minus expected inflation π^e ,
 - Real investments and nominal bonds give the same expected return

$$r = i - \pi^e$$

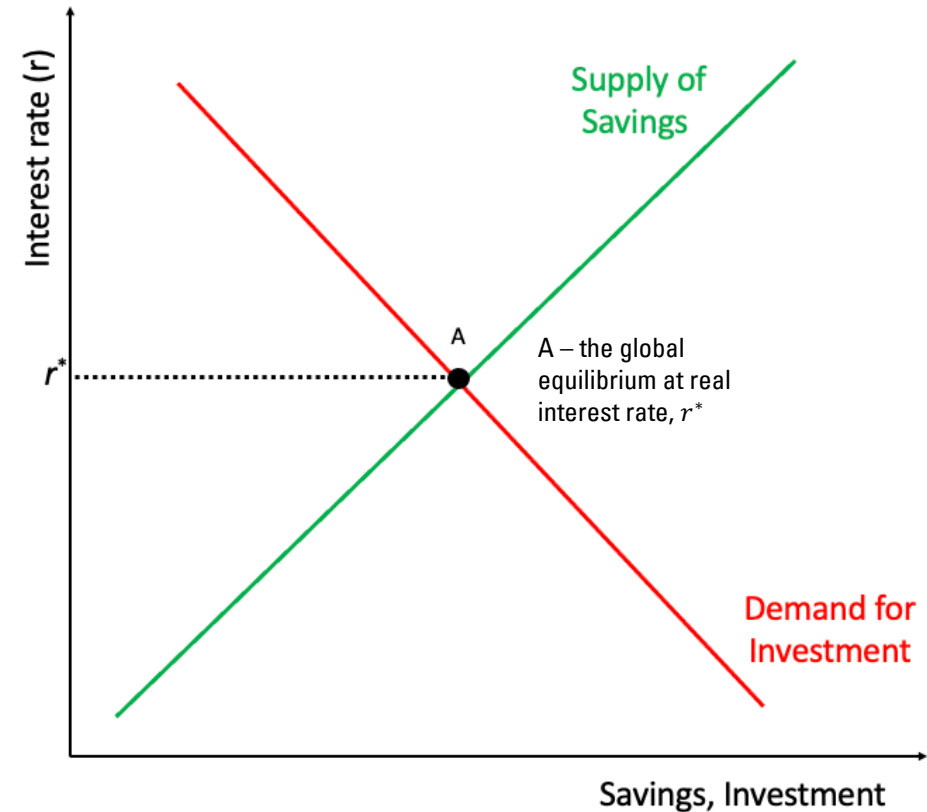
SETTING UP THE MODEL

Savings

- When the real interest rate is higher, households will want to delay consumption and save more to take advantage of the higher returns.
- The supply of savings will slope upwards.

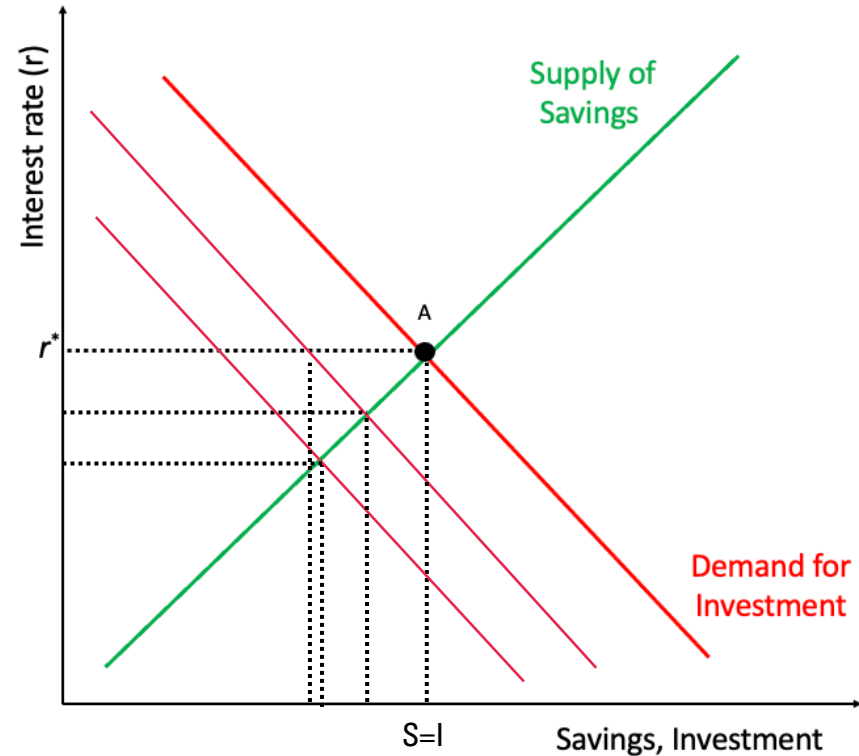
Investment

- As the real interest rate rises, there are fewer investment projects that have a marginal return making them worthwhile.
- The demand for investment slopes downwards.



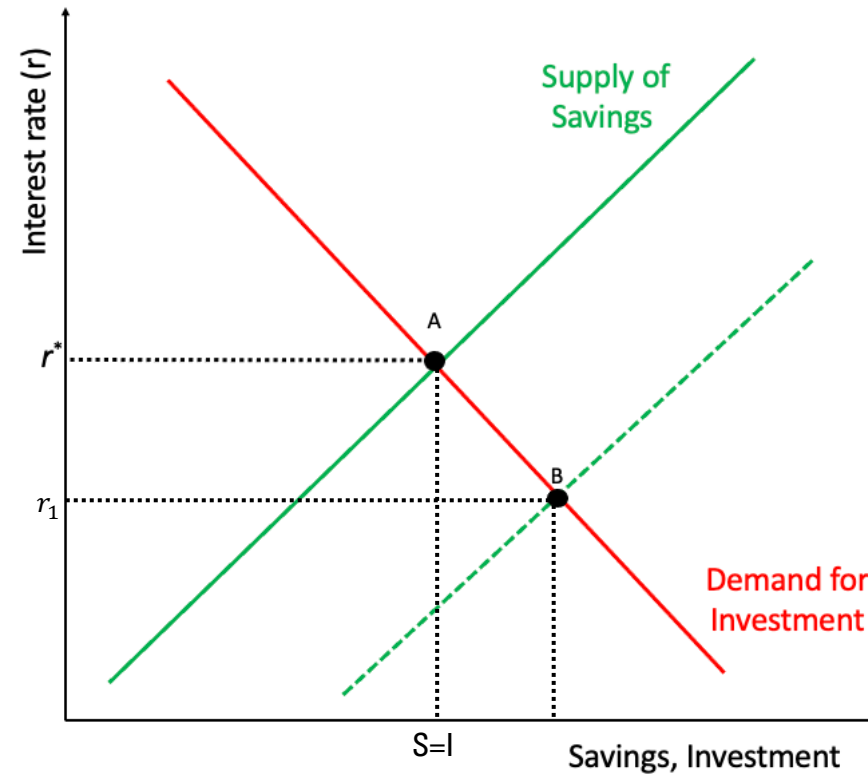
NEOCLASSICAL ARGUMENT

- Sees recessions as times when productivity falls
- The demand curve shifts left
- Less is invested, for a fixed tax rate on investment, tax revenue falls
- Raising the tax revenue would further shift the demand curve to the left, lowering the return on investment
- Deepening the recession



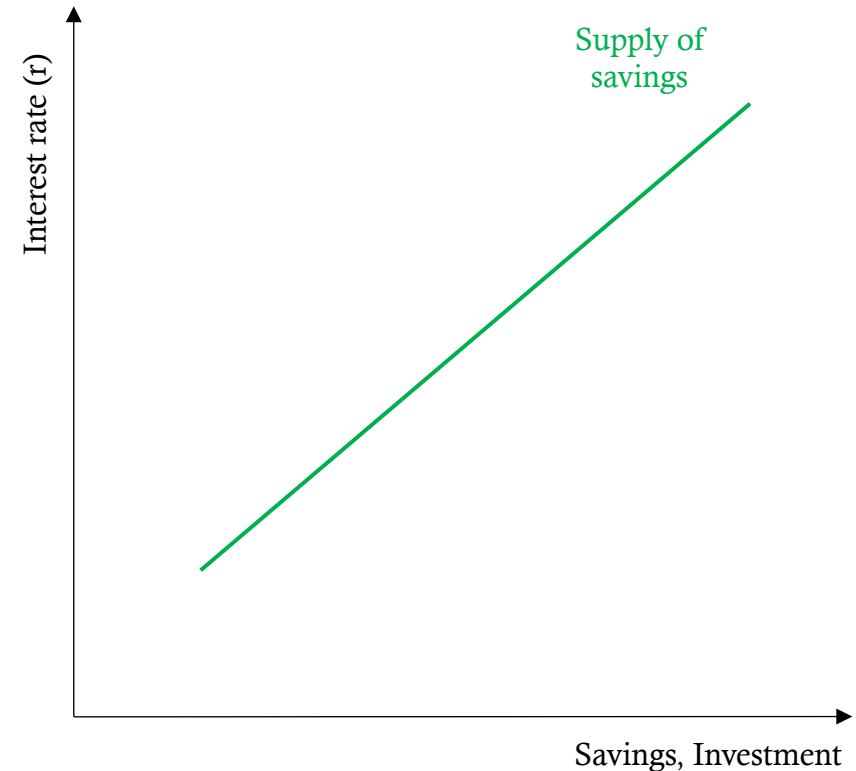
KEYNESIAN VIEW

- People become pessimistic and fearful of the future
- They start saving more, shifting the supply curve to the right
- This moves the economy away from A to B, and the real interest rate from r^* to r_1
- By having public dissavings (deficits), fiscal policy can shift this total savings curve back to the left to its initial position



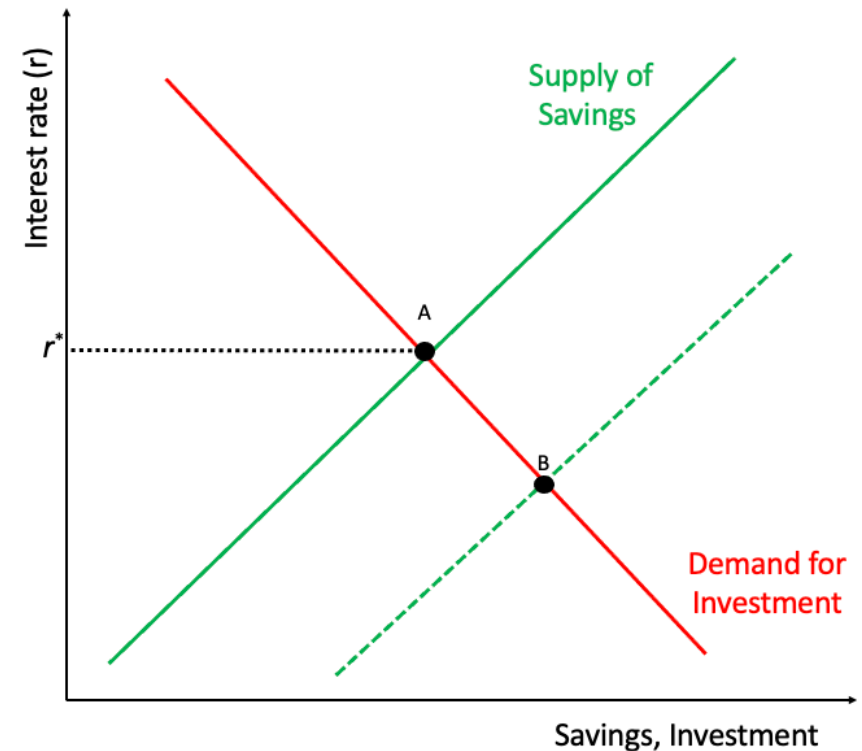
FINANCIAL CRISIS CAN SHIFT DOWN R^* (SAFE ASSETS)

- A main driver of savings: households' desire to put resources aside during their working years to sustain a standard of living during retirement.
- Those savings are partly channelled to safe assets, which are produced by the dissavings of other agents (e.g. retired households).
- Savings and dissavings net out to give the total savings line in the figure,
- This total savings goes to finance investment.



FINANCIAL CRISIS CAN SHIFT DOWN R^* (SAFE ASSETS)

- After a financial crisis, financial markets become less able to produce safety. **Fewer safe assets.**
- Households looking to dissave and households looking to save do not have the vehicles to do so.
- They turn to investing in real projects
- The savings curve shifts to the right,
- r^* falls as the economy moves to point B , with many low-productivity investments being made.

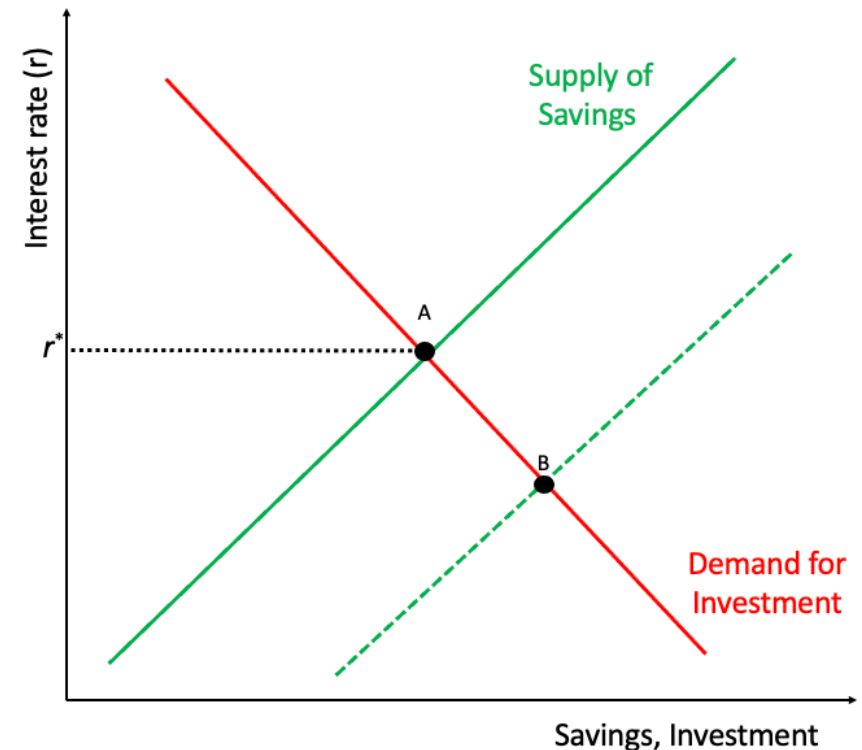


FINANCIAL CRISIS CAN SHIFT DOWN r^* (SAFE ASSETS)

- r^* may be so low that the economy is dynamically inefficient: every household could be made better off by consuming more instead of saving at such low returns, as long as all other households would do the same, increasing real interest rates.

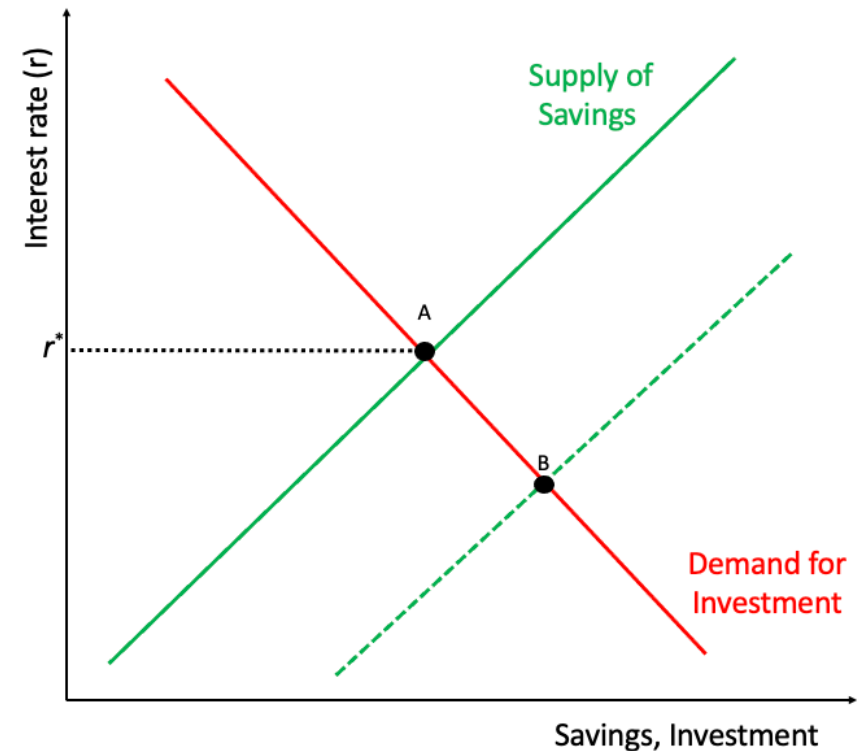
Public deficits after financial crises:

- Create a safe asset, the government bonds.
- Shift the total supply of savings back to the left, move the economy back near point A, raise r^*



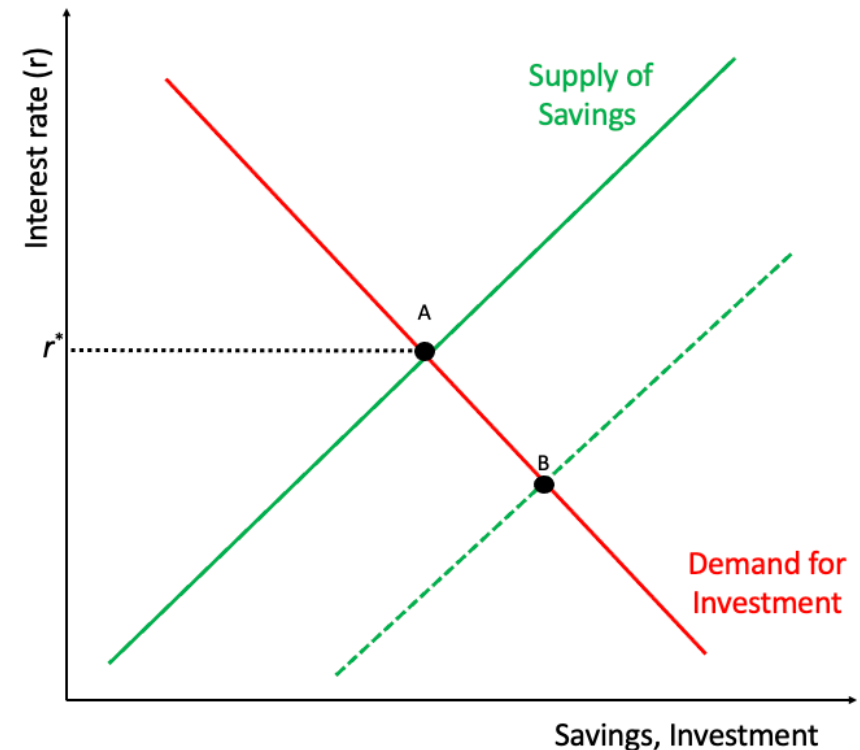
FINANCIAL CRISIS CAN SHIFT DOWN R^* (BUFFERS AND RISK)

- People save to be able to pay for unexpected expenses. **Precautionary savings**.
- A deep financial crisis comes with an increase in the risk of job loss. Even conditional on keeping one's job, income risk rises, as some have their hours or overtime cut and others do not.
- Realising uncertainty is higher, these precautionary savings rise.
- The savings curve shifts to the right again, and the economy ends up at B , with a lower r^* .



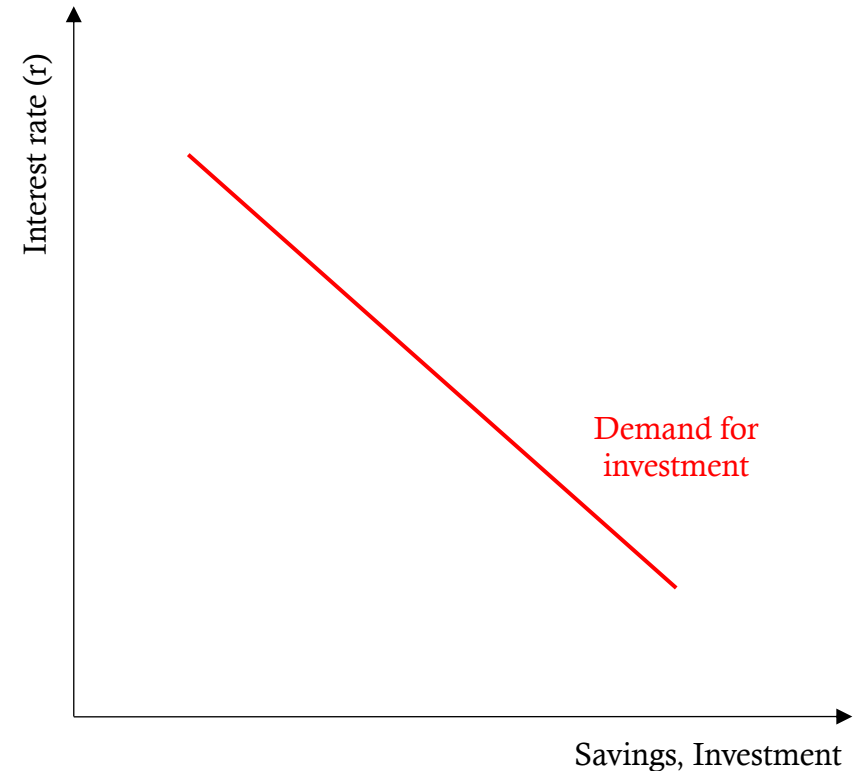
FINANCIAL CRISIS CAN SHIFT DOWN R^* (BUFFERS AND RISK)

- Policy in response: **automatic stabilisers**
- Safety net provides social insurance: those who lose their jobs can collect unemployment benefits, and those whose income falls pay lower income taxes. If large shock, poverty relief, catastrophic health insurance.
- Lower post-tax, post-transfers income risk
- In a recession, they reduce the increase in precautionary savings, and so prevent the supply of savings from shifting to the right as much in the first place
- Automatic: without any policy change



FINANCIAL CRISIS CAN SHIFT DOWN R^* (INVESTMENT)

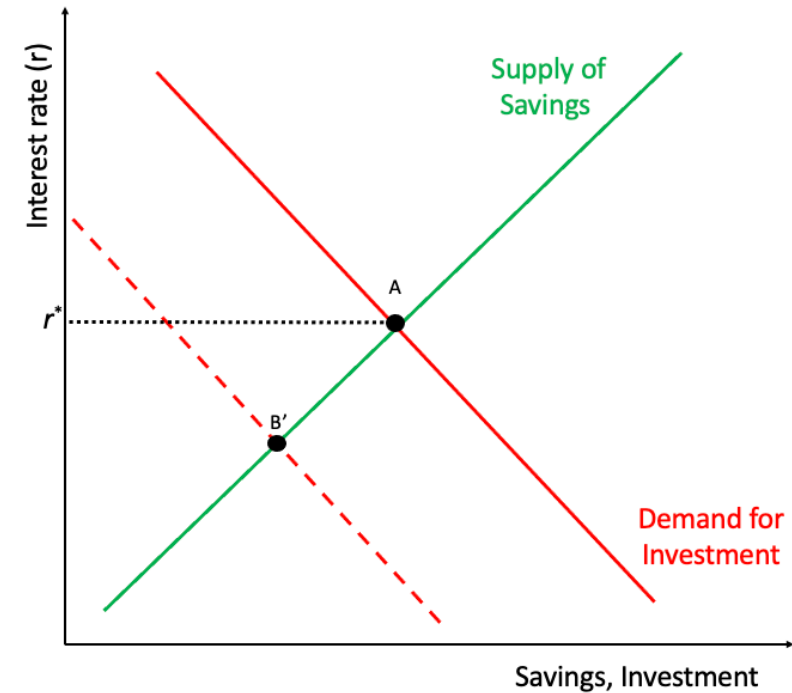
- Investment projects have **idiosyncratic risk**.
Because:
- Only the entrepreneur understands project
- Only entrepreneur can affect the returns through her efforts in a way that no one can accurately measure,
- Human capital of entrepreneur is essential for assets to be as productive.
- Consequence: entrepreneur's own financial resources must be used in the business so that she has **skin in the game**



FINANCIAL CRISIS CAN SHIFT DOWN R^* (INVESTMENT)

After a **financial crisis**: increase in idiosyncratic risk shifts the demand for investment to the left, moves to the point B' , r^* is lower. Because:

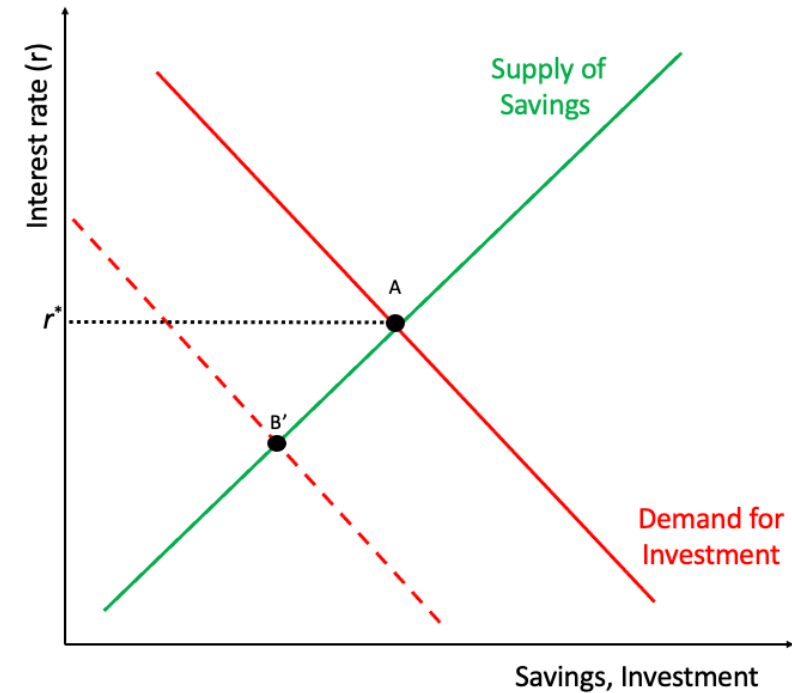
1. Private insurance markets retreat, less of the individual risk can be sold away or diversified
2. Banks cut lending, entrepreneurs must use more of their resources, they bear more risks.
3. Financial firms fail, their expertise at sorting through projects and excluding the riskier ones is lost.
4. Policymakers tighten financial regulations, more risk is left in the hands of the entrepreneurs.



FINANCIAL CRISIS CAN SHIFT DOWN R^* (INVESTMENT)

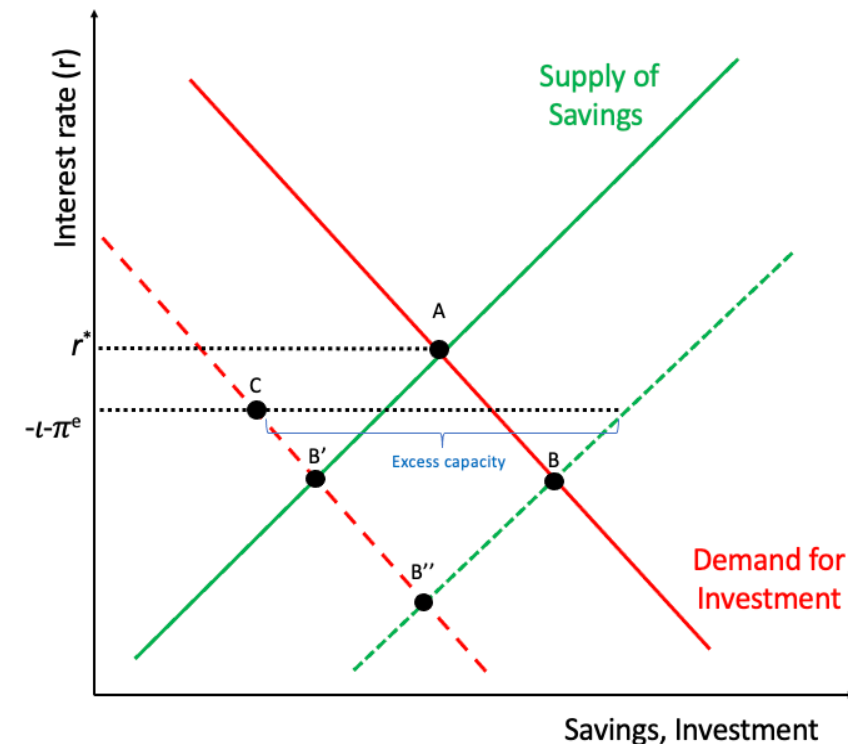
The role of **public deficits**:

- Shift the supply of savings to the left, raise r^* back up.
- Generate government bonds, which provide a safe haven for entrepreneurs to hold in their portfolios together with their risky projects.
- This increases their willingness to undertake those projects, offsetting the initial decline in investment



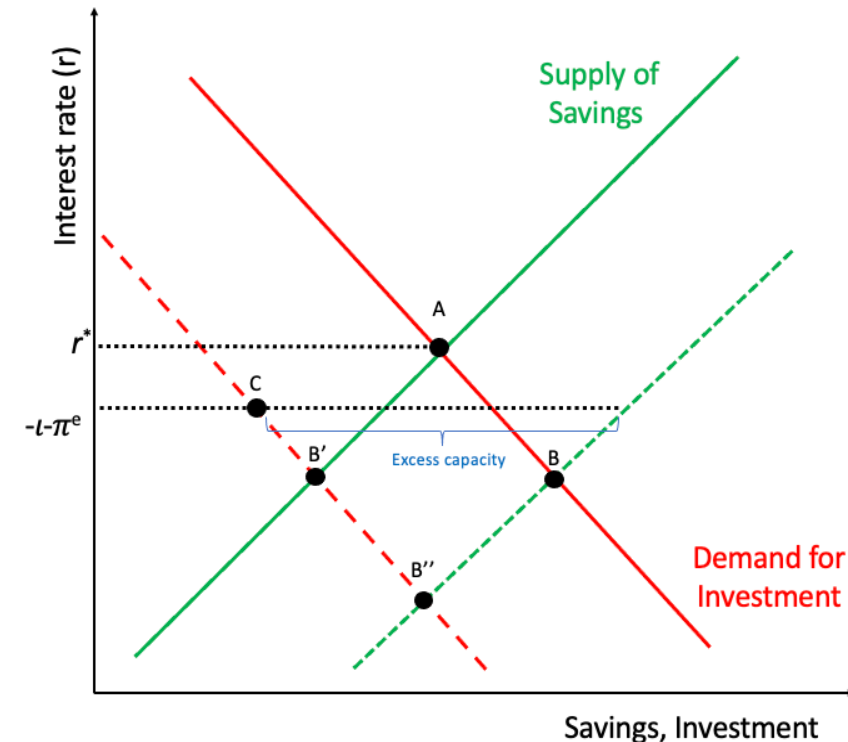
A DEEP CRISIS: EXCESS CAPACITY

- Deep crises, supply curve sufficiently to the right, demand curve sufficiently to the left, new intersection at B'' is at a significantly negative real interest rate.
- For fixed expected inflation, at B'' real interest rate (r) is so low, that nominal interest rate (i) must be well negative. This cannot be so, as people would just save in banknotes and coins that have expected return of minus the costs of safekeeping it, its expected return is only slightly below zero $-\iota$
- Real rates cannot fall below an **effective lower bound** of $-\iota - \pi^e$.



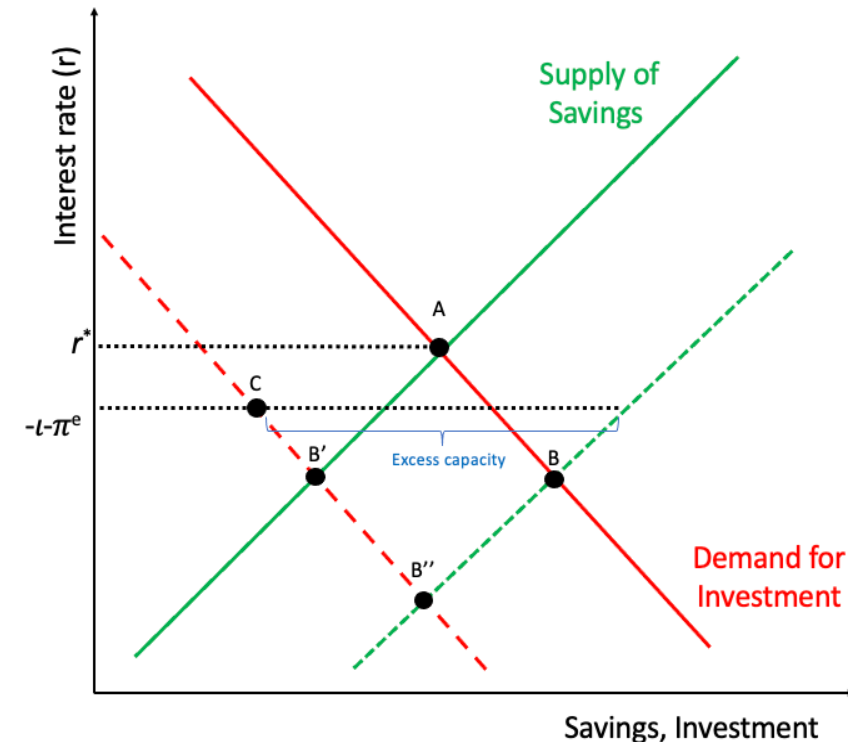
A DEEP CRISIS: EXCESS CAPACITY

- Economy is not at B'' but at C
- Where real interest rate is at the effective lower bound
- But here supply is to the right of demand
- Desired savings exceed investment.
- The excess savings is deficiency in production and consumption. **Excess capacity** in economy not being used to produce and to consume
- The recession is deeper at C than it would have been at B'' .



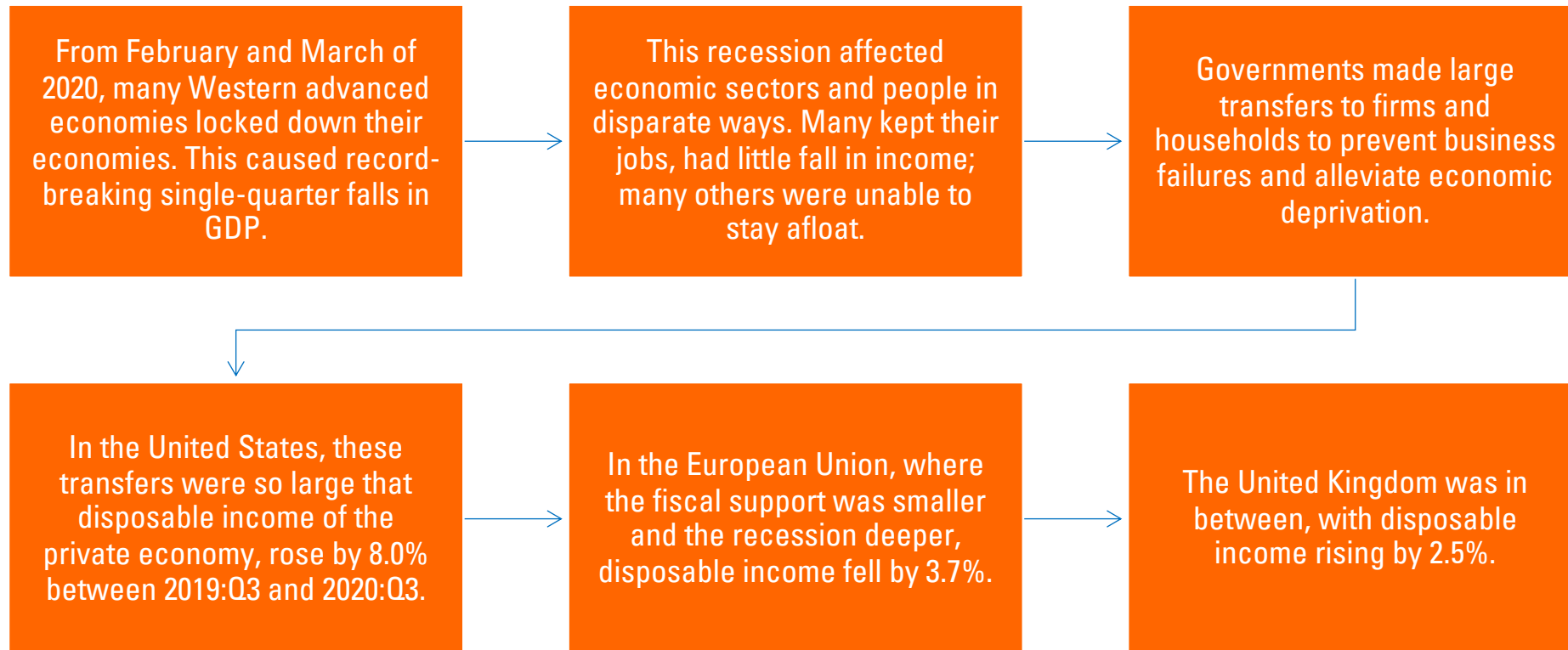
A DEEP CRISIS: POLICY RESPONSE

- **Public deficits:** shifts the savings curve leftwards
- If excess capacity, this has no effect on real interest rates. Just increase in investment and output.
- Therefore larger impact on output: larger multipliers
- Moreover: since the increase in government spending will tend to raise inflation expectations, it will lower the effective lower bound, which by itself stimulates the economy by allowing real interest rate to fall further.
- *All combined: stronger case for public deficits after a financial crisis*



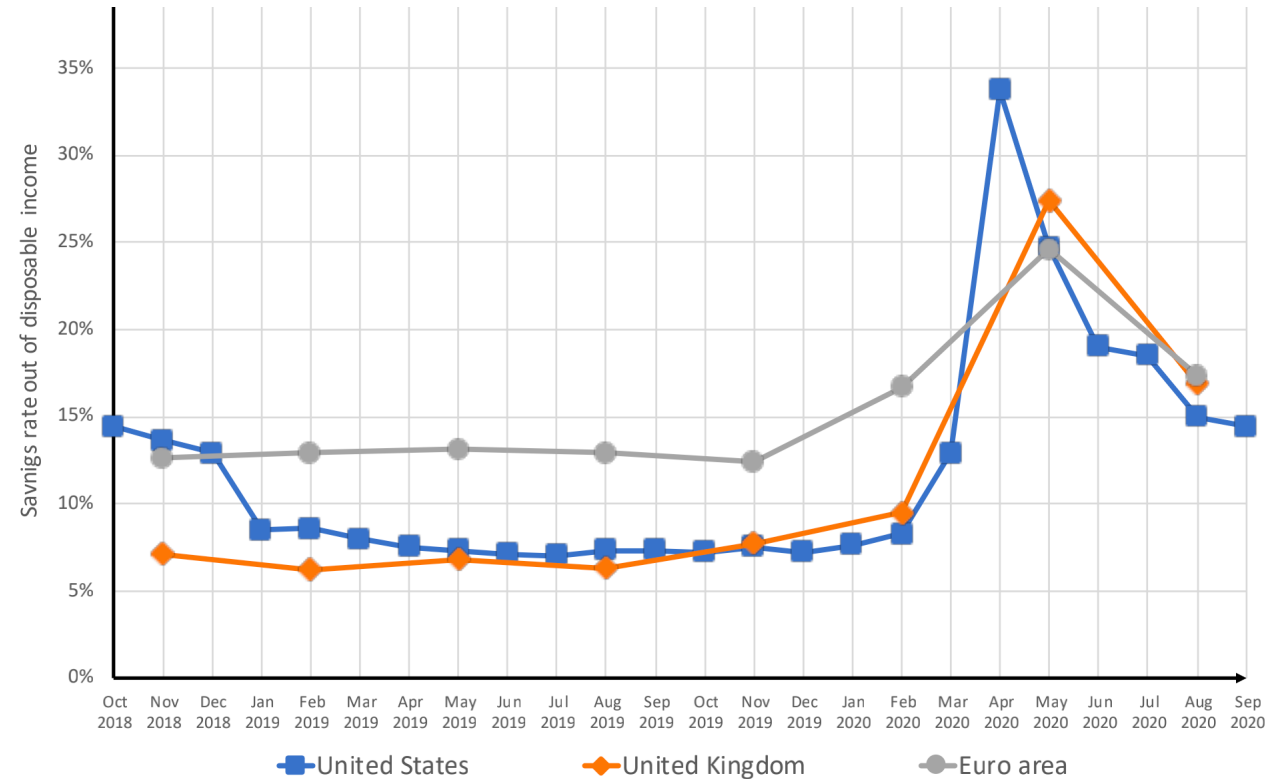
THE RISE OF SAVINGS DURING THE 2020 PANDEMIC

LOCKDOWNS AND TRANSFERS



SAVINGS RATE OUT OF DISPOSABLE INCOME

- This figure shows savings rates in the U.S., E.U. and U.K.
- In all of them, savings spiked in 2020, increasing by factors between 2 and 5, something that had not been seen for decades.
- There are at least two ways to make sense of this increase and to explain what will follow: compulsory savings or precautionary savings



CAUSES OF THE SAVING SPIKE IN 2020 AND SAVINGS IN 2022

Compulsory savings

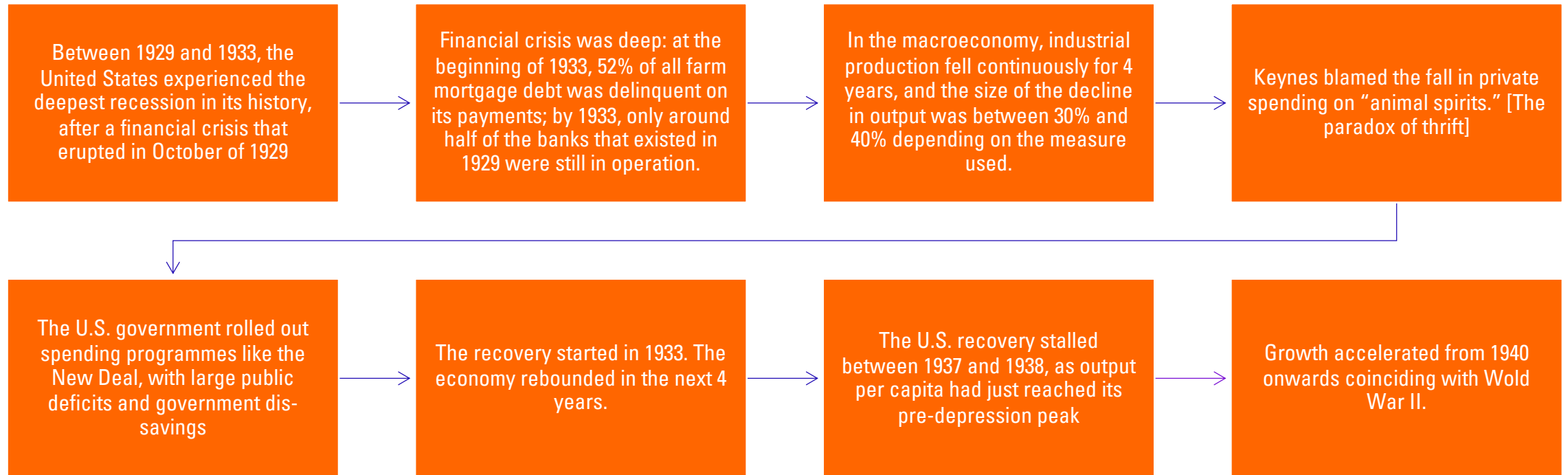
- Consumption fell during 2020 as people could not have access to many of their usual consumption goods and services.
- If so, savings would fall and overshoot relative to their usual values as the pandemic is over and economic activity re-opens
- Having over-saved during 2020, households eager to adjust their stock of savings back to a desired level
- This pushes economic activity to recover swiftly from the recession.
- Further government deficits would be unnecessary, and fiscal policy might want to turn to paying off the public debt accumulated during 2020 instead.

Precautionary savings

- The increase in savings because households that are worried about their health and economic well-being, were saving more because their perceived individual risk is higher.
 - If so the high stock of savings may persist into the future. One would still see a spending boom in 2021 and 2022, as the flow of savings adjust, but it would not be as extreme.
 - This might keep the economy for many years in the situation where r^* has fallen so much that the economy operates with spare capacity. Public deficits potentially still justified.
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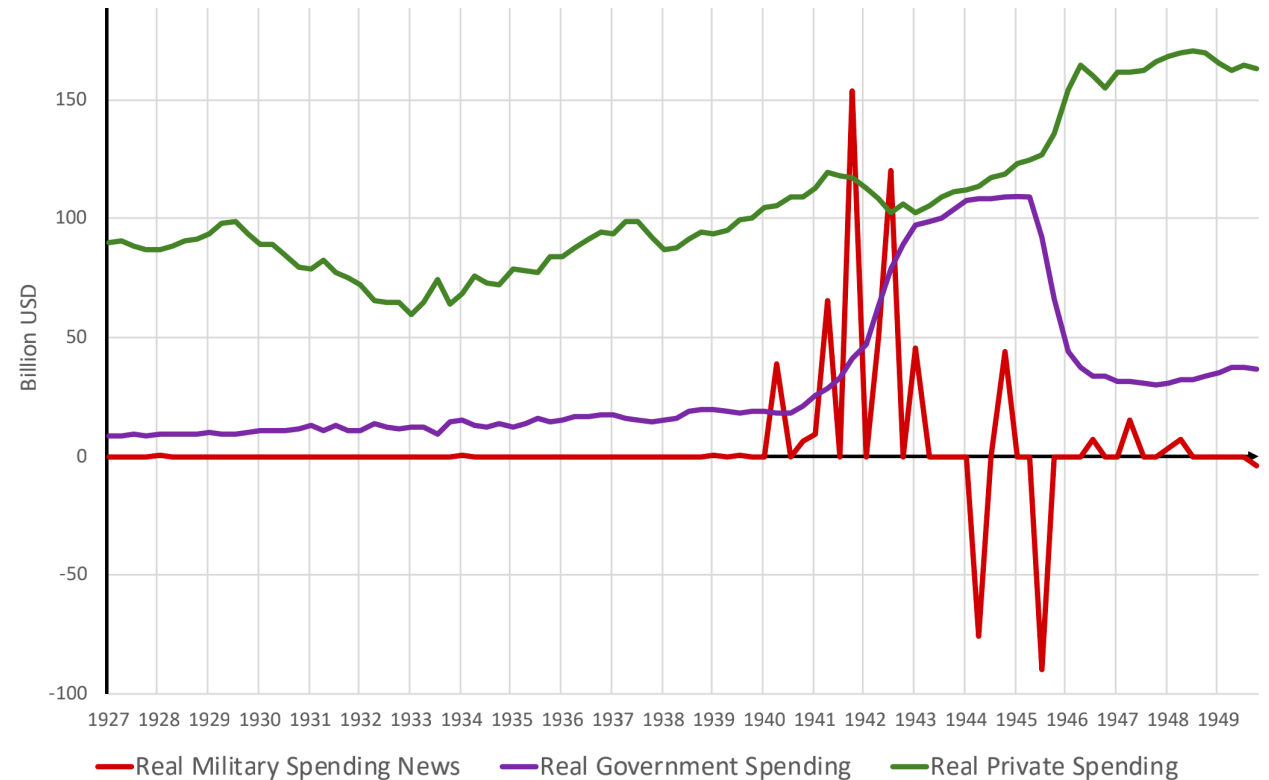
THE END OF THE US GREAT DEPRESSION

THE END OF THE U.S. GREAT DEPRESSION



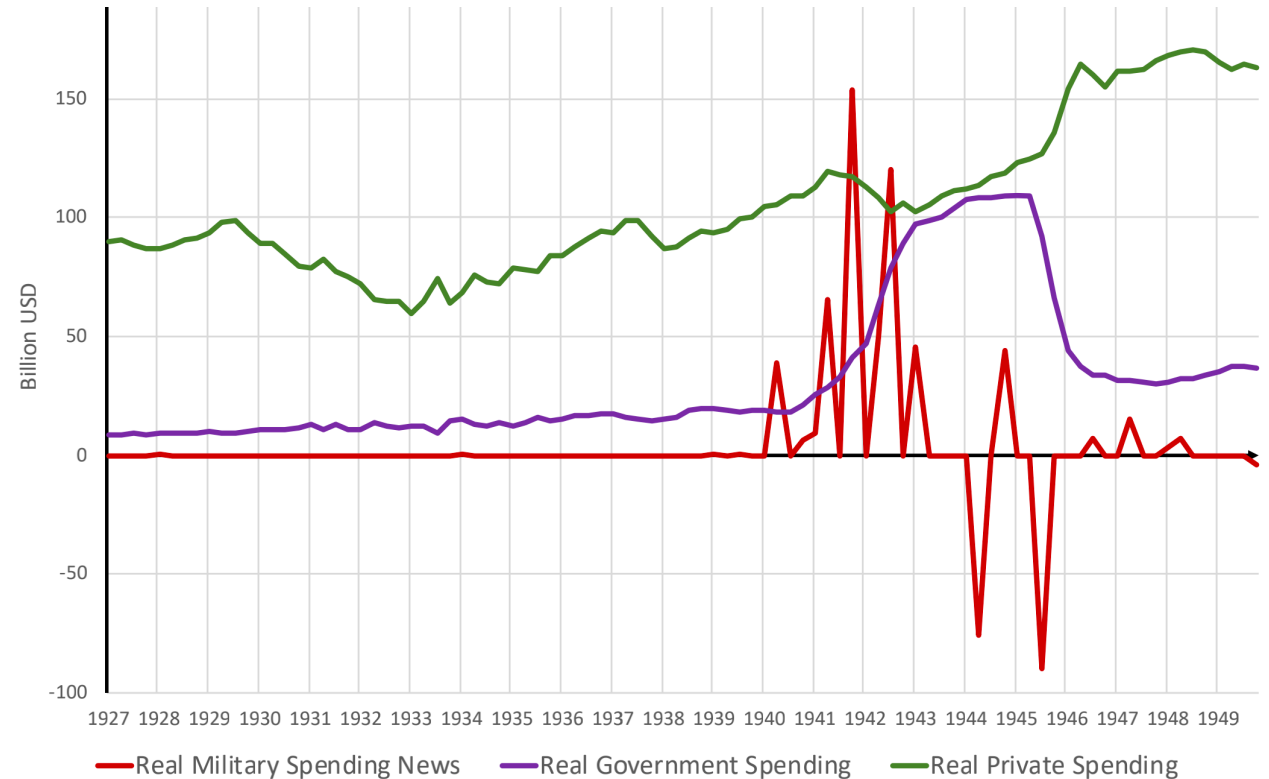
OUTPUT AND GOVERNMENT SPENDING DURING WW2

- From the start of the Depression until the mid 1940s, 3-month nominal interest rates were almost 0.
- Between 1929 and 1933, the U.S. economy experienced deflation
- Inflation expectations were falling, the effective lower bound may be close to 0.
- So, arguably economy was at the effective lower bound during the 30s and all the way into the end of World War II



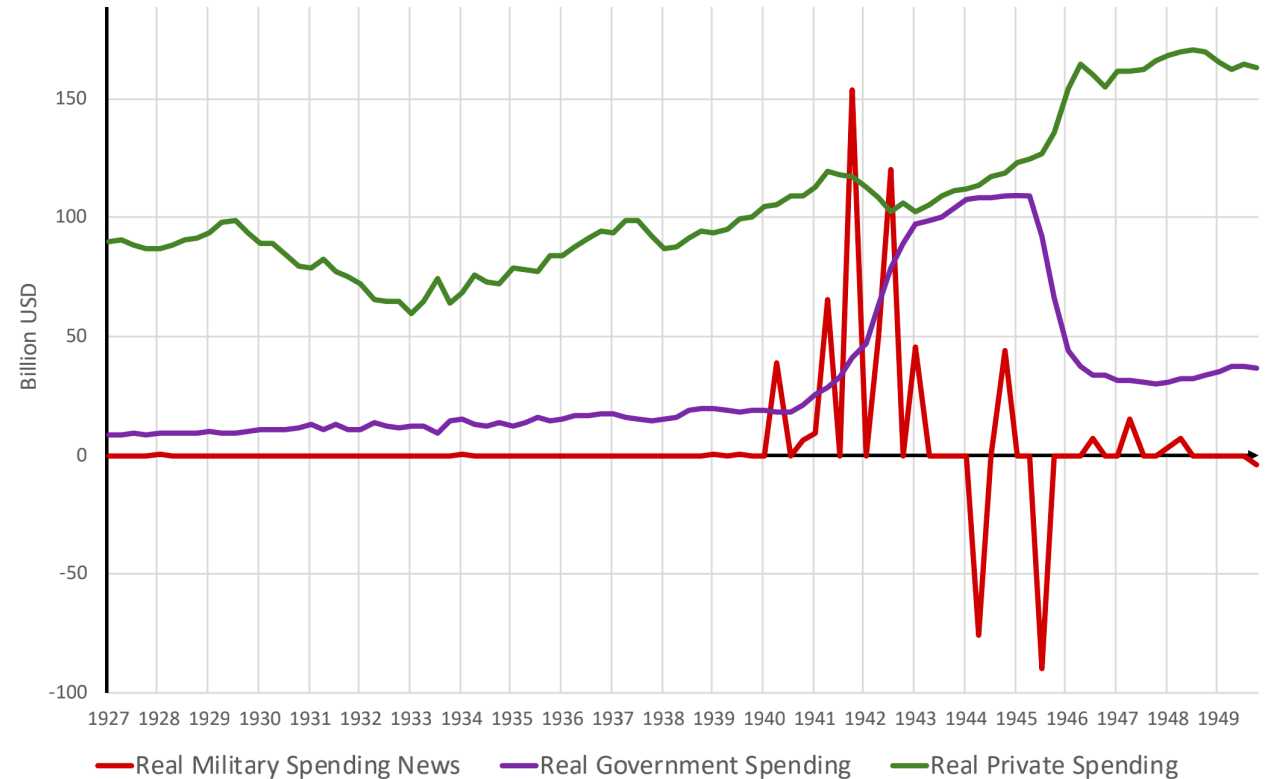
OUTPUT AND GOVERNMENT SPENDING DURING WW2

- Two large public spending shocks
 - New Deal, 1933-36
 - World War II, 1940-45
- This figure shows both actual total government spending, which increased from 15% at the end of 1939 to almost 50% by 1944,
- Also, a series that captures news about planned future military spending.
- Unsurprisingly, the plans predate the actual spending.



OUTPUT AND GOVERNMENT SPENDING DURING WW2

- In the figure is also the path of output
- Output accelerated once spending was planned and announced.
- Formal econometric estimates using these data find that while the multiplier on output of defence spending is usually less than 1, when the economy is at the effective lower bound, it jumps to 1.5.



SUMMARY

- **Fiscal policy**, especially **increasing public deficits** play a role in ending recessions. Both by a **Keynesian** argument that public deficits can counter animal spirits raising savings, or by a **Neoclassical** argument that should not raise taxes when productivity falls.
- Arguments for why financial crisis enhance case for public spending:
 1. Production of safe assets falls, more savings goes to investment
 2. Uncertainty rises raising precautionary savings
 3. Ability to diversify idiosyncratic risks diminishes, invest less
 4. If deep crisis, excess capacity because of effective lower bound
- **Savings** spiked in 2020 during the pandemic. Whether public deficits needed in 2022 depends on whether this compulsory or precautionary
- Public deficits contributes to end the **Great Depression**

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