

# Classical vs Keynesian Views

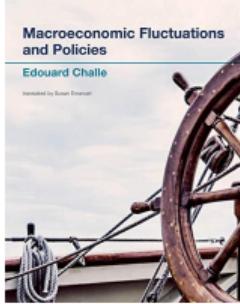
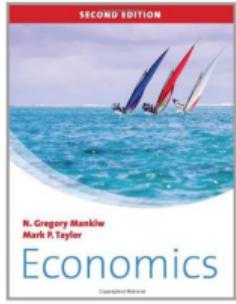
Macroeconomics - EF01

Year 2022-2023

## **Goal of the course**

Help all of you to establish solid intuitions about short term macroeconomics.

# Resources



Use Mankiw's book to clarify concepts, Challe's if curious about more theory

We will also use a bit<sup>1</sup> bit of formalism. You can work on it by doing the exercises, but bear in mind that formalism is actually there to help you establish intuitions.

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<sup>1</sup>a wee little bitty bit if we're honest...

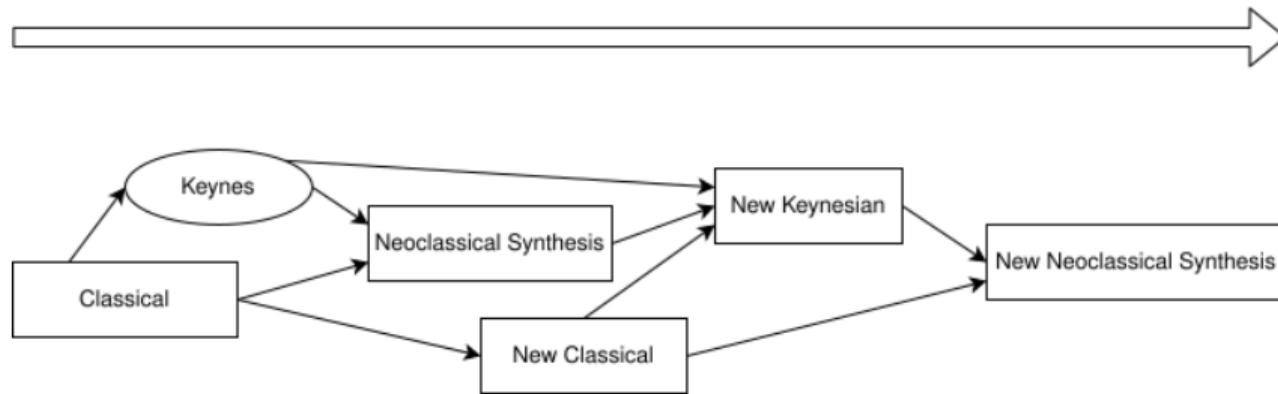
## Plan for the Course

- ▶ Session 1: introduction / reminders on macro
- ▶ Session 2: aggregate demand
- ▶ Session 3: aggregate supply
- ▶ Session 4: macroeconomic fluctuations
- ▶ Session 5: monetary policy
- ▶ Session 6: unconventional monetary policies

## Main Goal Today

Understand why it is said that Keynes *invented* macroeconomics as a discipline.

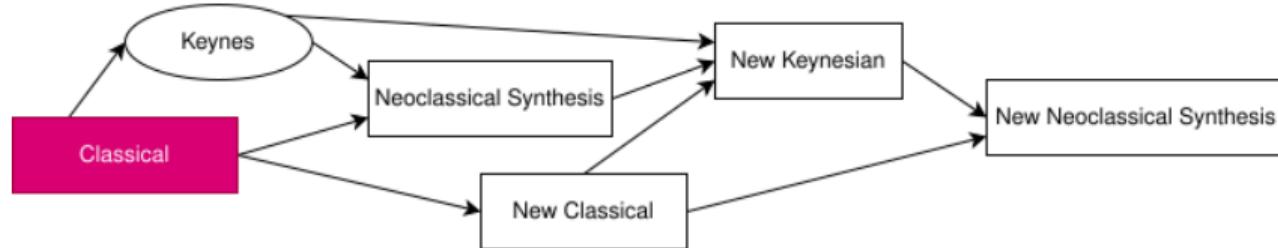
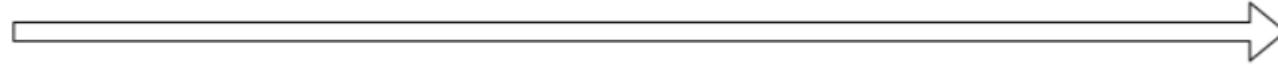
# A tiny little bit of economic history



Our goal today:

- ▶ quickly contextualize the content of the course
- ▶ contrast classical and keynesian thinking
- ▶ remind you of some important concepts in macro
- ▶ not a real history of economic thought course

# The Classical



Adam Smith  
(1723-1790)



David Ricardo  
(1772-1823)



Thomas Malthus  
(1766-1834)



Jean-Baptiste Say  
(1767-1832)

## The Classical Economists

- ▶ Classical economists were contemporaneous of the development of **industrial capitalism**
- ▶ Their goal: understand how market forces could solve society's problems
- ▶ Educated belief:
  - ▶ Market is the best way to allocate resources that is to take production decisions and allocate goods
  - ▶ Government should generally not interfere with market activities

# The Classical Economists

One big question

What determines *intrinsic* value of goods?

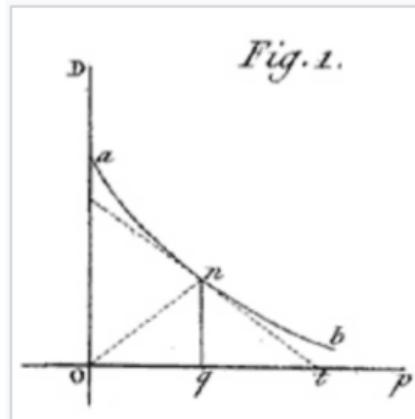
- ▶ (marginal) cost?
- ▶ rarity?
- ▶ utility?



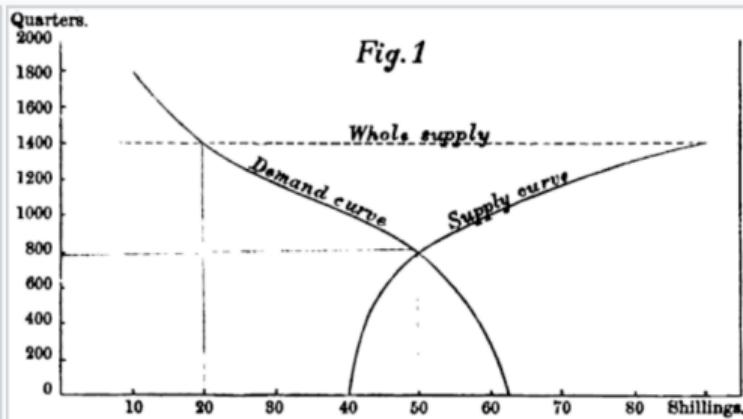
# The Classical Economists

Conclusion: there is no intrinsic value for individual goods

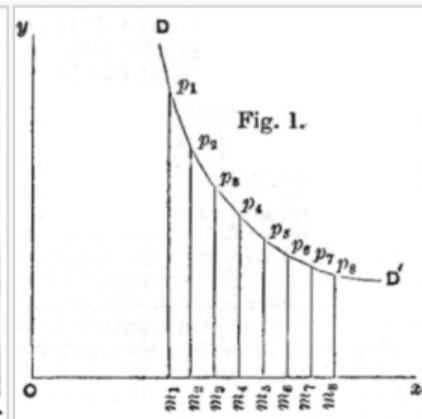
- ▶ The market determines *value*, by definition



Cournot's *Recherches* (1838)



Jenkin's *Graphical Representation* (1870)



Marshall's *Principles* (1890)

Model of Market: - Supply: cost, rarity - Demand: utility

## Role-Play: The Classical View

*Subjects complain price of bread is too high. People are starving. Bakers complain about rising costs of wheat. Wheat producers are on strike.*

What should the government do? Suppose you are Adam Smith answering that question.

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- tax and redistribute? break the strike?
- nothing?

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- ▶ government intervention distorts market allocations and just makes things worse

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Classical economists promote “laisser-faire”:

- ▶ government intervention distorts market allocations and just makes things worse

But if one market is distorted, it should be fixed:

- ▶ terminate the strike.



Figure 1: King George III

## The Classical Economists on the Aggregate Economy

For classical economists, it made no difference, whether one was dealing with a particular market or the whole economy.

The response was the same: see which market is temporary out of equilibrium, and if necessary, try to fix it.

## The law of Markets : Say's law

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Meaning:

*There cannot be a shortage of demand.*

Then what creates aggregate fluctuations and cycles?

- ▶ classical economists think it's temporary misfunctions in one or several markets

## A supply shock

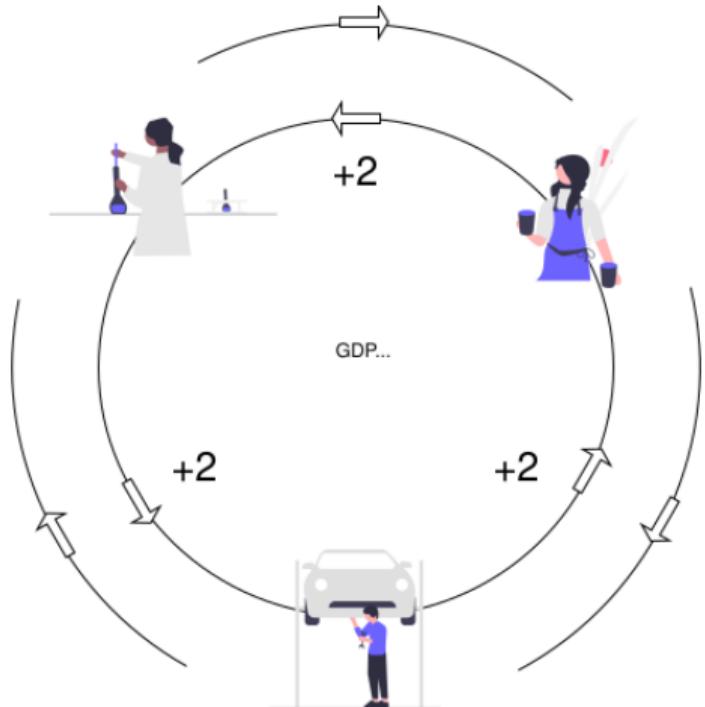


Figure 2: Baby Economy

Here is a baby economy with three producers/consumers (a scientist, a barista, a mechanic)

- ▶ inside the circle: production
- ▶ outside: monetary transaction

## A supply shock

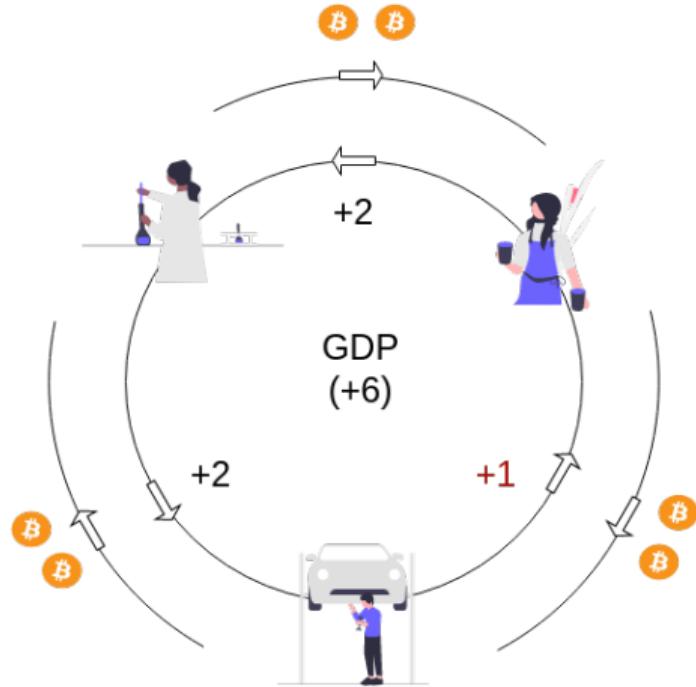


Figure 3: Baby Economy

Suppose there is initially a production shortage (e.g. the mechanic is missing a tyre and can't produce a second car)

## A supply shock

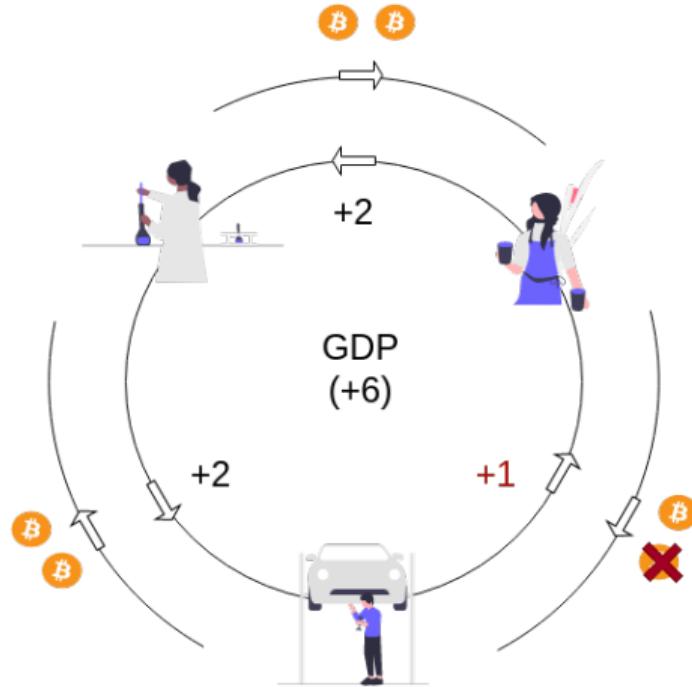


Figure 4: Baby Economy

It leads to a loss in revenue for said producer...

## A supply shock

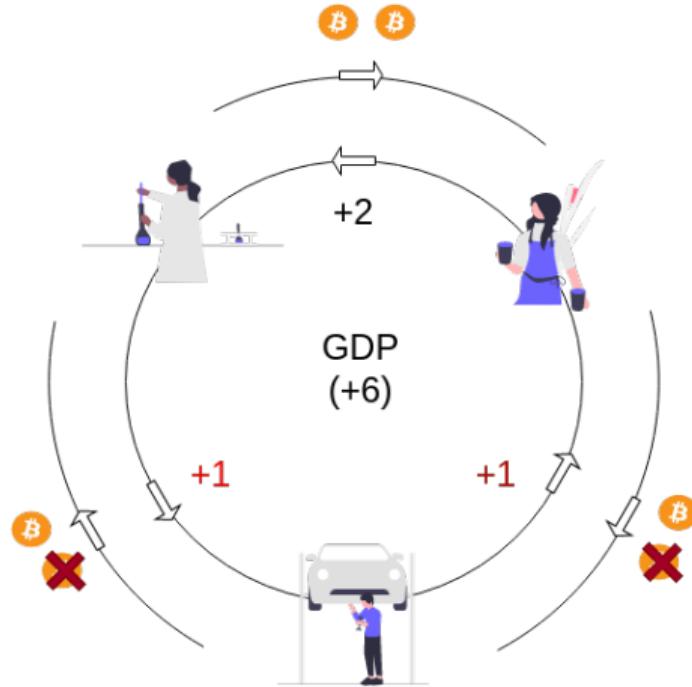


Figure 5: Baby Economy

... and decreased demand for another producer (temporary disequilibrium)

## A supply shock

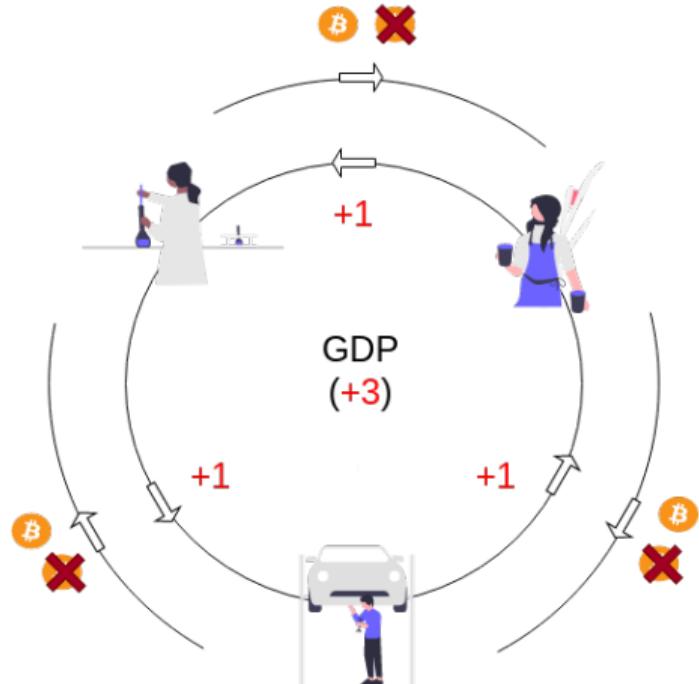


Figure 6: Baby Economy

Once all markets have adjusted, there is a new (lower) equilibrium.

## A supply shock

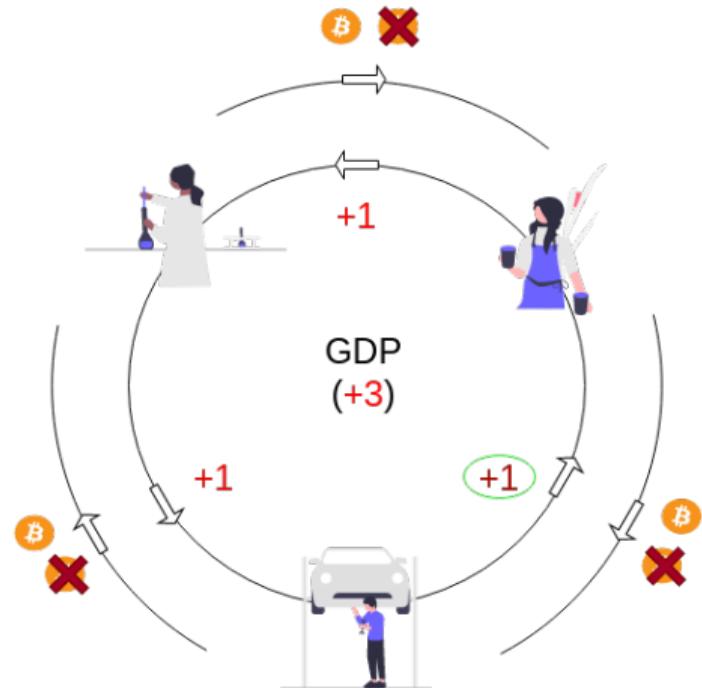


Figure 7: Baby Economy

The remedy: fix the production shortage.

# Neutrality of Money

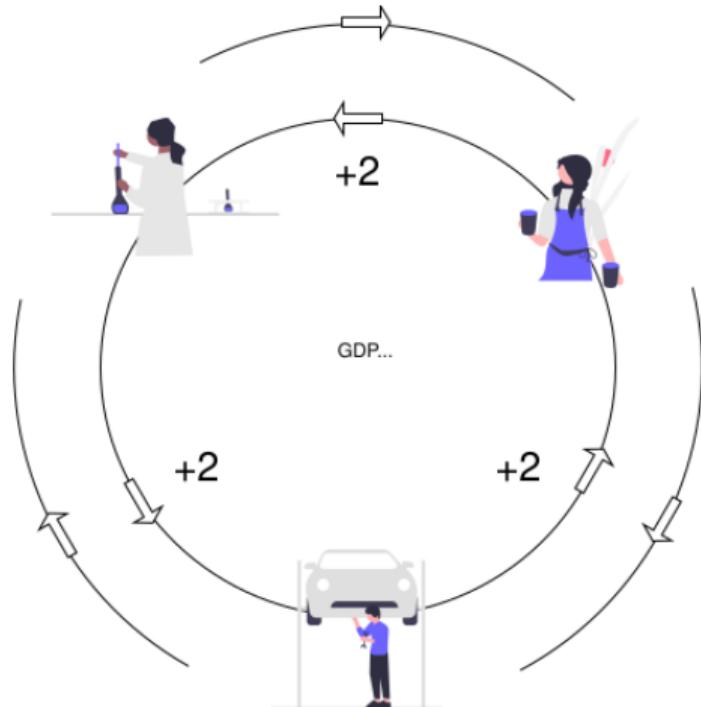


Figure 8: Baby Economy

- ▶ In the classical view the monetary equivalent of each transaction is immaterial.
- ▶ Mill: *The veil of money*
  - ▶ money is a commodity like another..
  - ▶ ... used as a **numeraire**
    - ▶ i.e. a good used as unit of accounting
- ▶ Market allocations depend on *relative prices* only

# Neutrality of Money

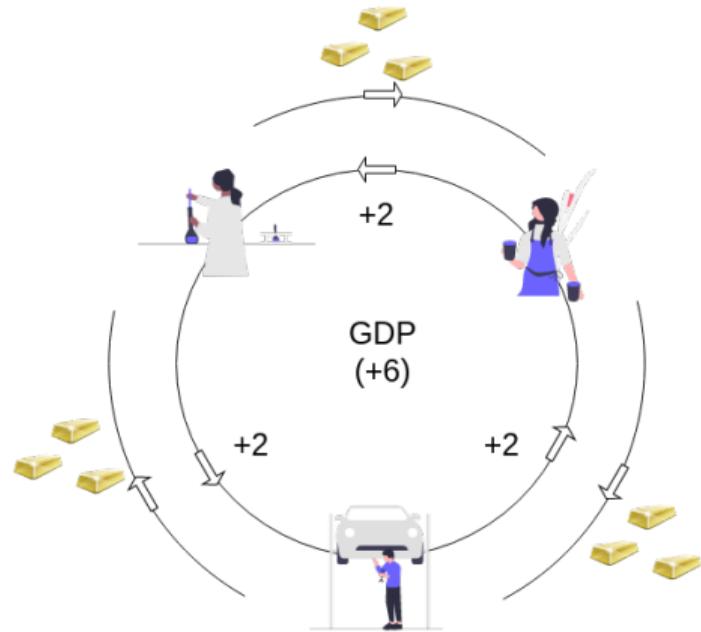
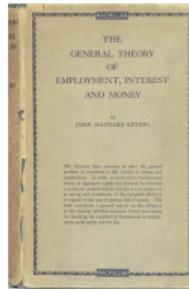


Figure 9: Baby Economy

- ▶ In the classical view the monetary equivalent of each transaction is immaterial.
- ▶ Mill: *The veil of money*
  - ▶ money is a commodity like another..
- ▶ ... used as a **numeraire**
  - ▶ i.e. a good used as unit of accounting
- ▶ Market allocations depend on *relative prices* only
- ▶ Changing the numeraire changes prices but not real allocations

# Keynes



Keynes (1883-1946)

The General Theory of Employment, Interest and Money (1936)

## A demand shock

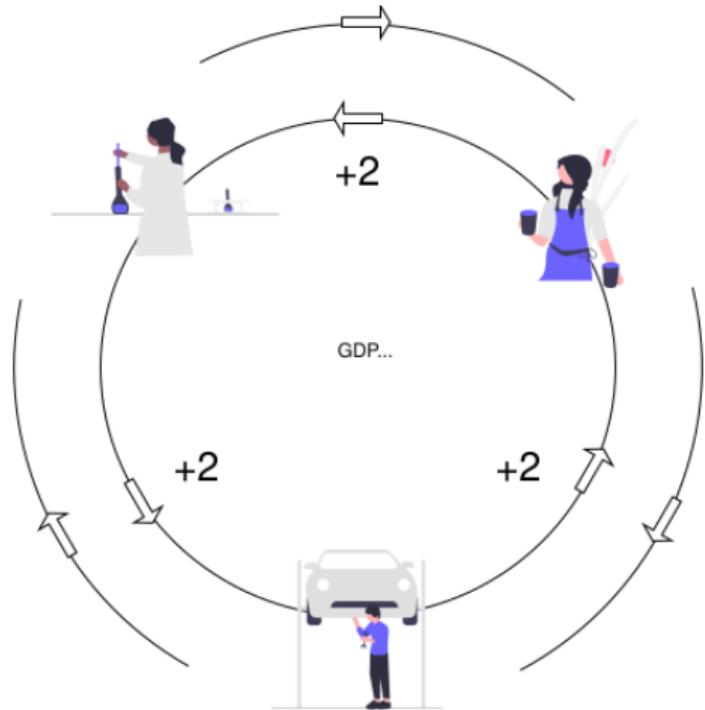
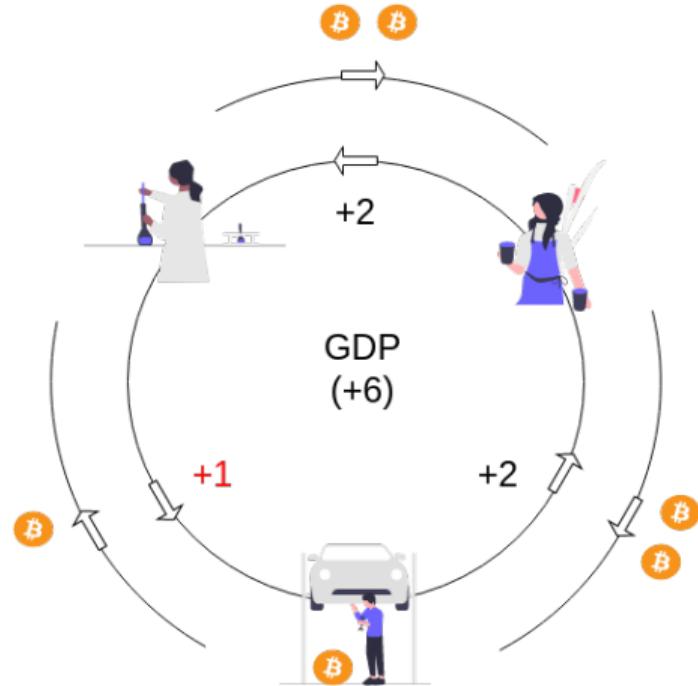


Figure 10: Baby Economy

Keynes, in TGTEIM, p18: - *From the time of Say and Ricardo the classical economists have taught that supply creates its own demand...*

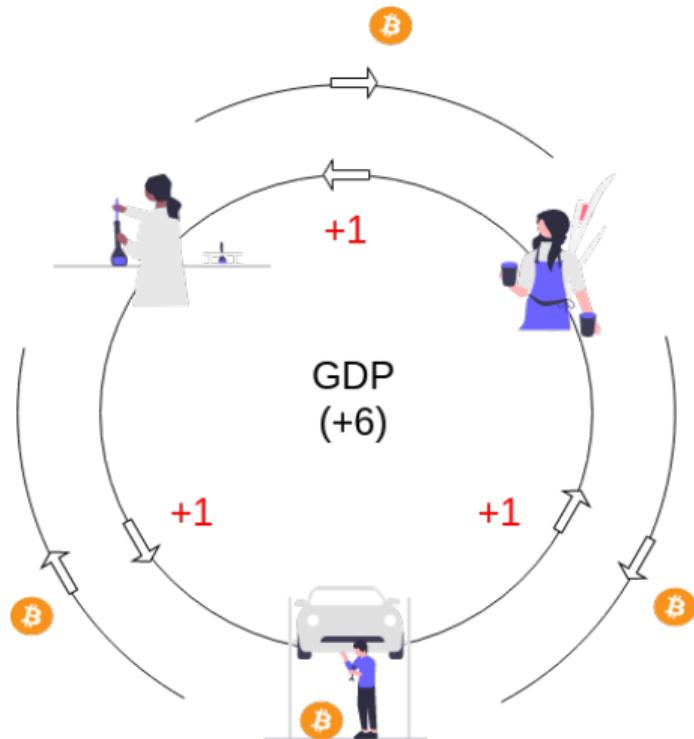
## A demand shock



If one of the agents, *decides* not to spend all its income.

Figure 11: Baby Economy

## A demand shock



We end up with lower production too.

Figure 12: Baby Economy

## A demand shock

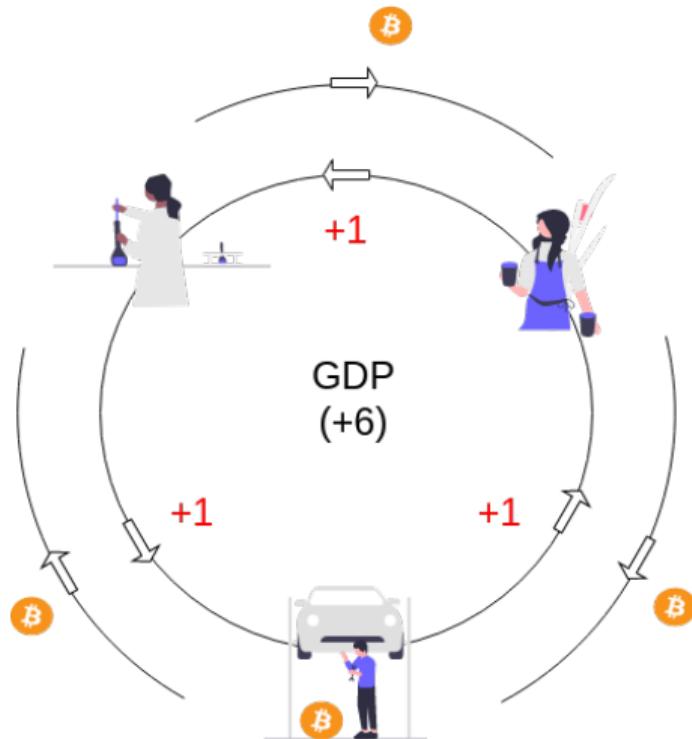


Figure 12: Baby Economy

Why would an agent decide not to spend its income ?

- ▶ bad dream, animal spirits...
- ▶ fear of the future -> precautionary spending
- ▶ small propensity to consume

## A demand shock

What should the authorities do?

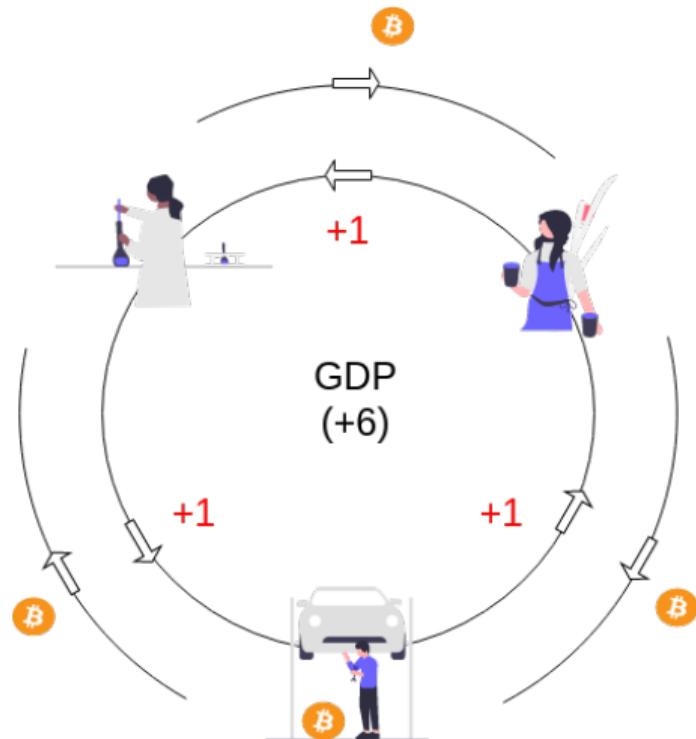
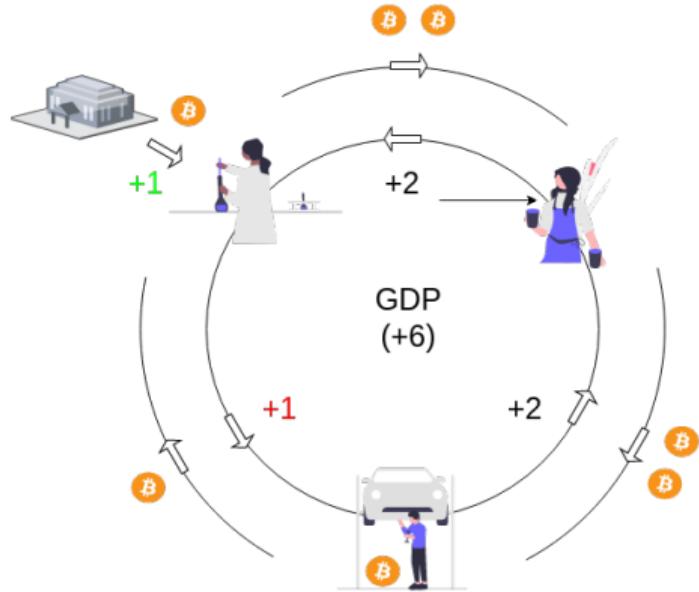


Figure 13: Baby Economy

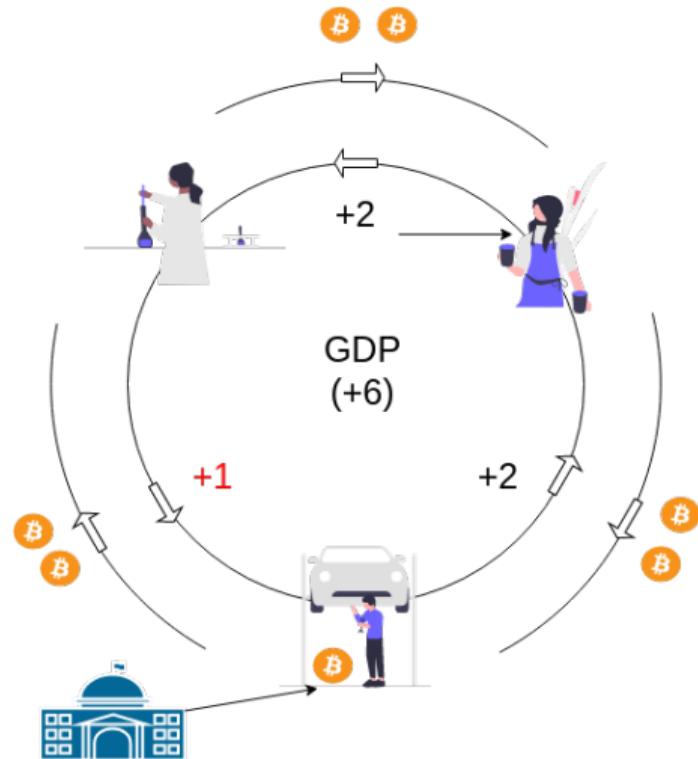
# A demand shock



The government can stimulate production by purchasing goods and services

Figure 14: Baby Economy

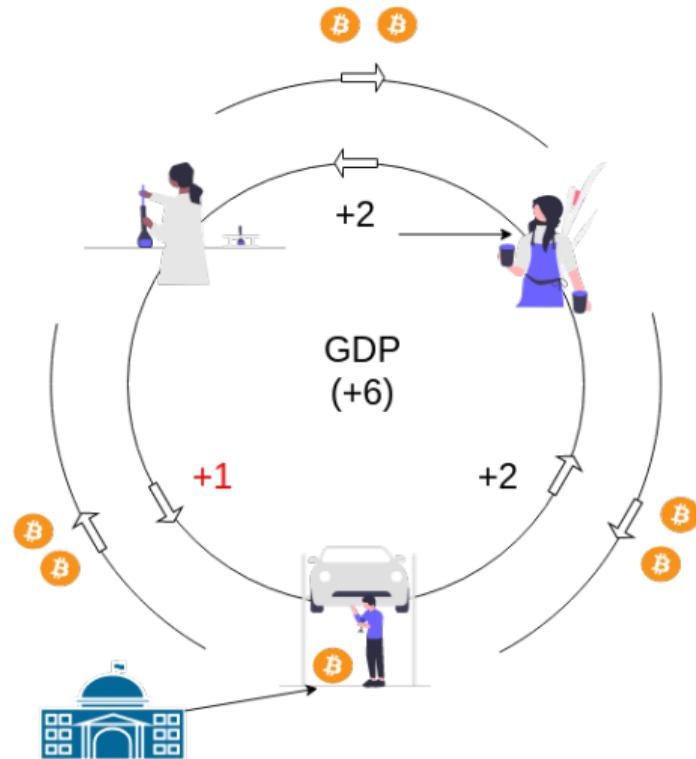
## A demand shock



The central bank can create money and provide liquidity

Figure 15: Baby Economy

## A demand shock



All these policies were experimented in the aftermath of the Great Depression

Figure 15: Baby Economy

## Classical or Keynesian? Which view is correct?

In the preceding slides, implicitly:

- ▶ demand is defined as “spending”
- ▶ supply is defined as “revenue”

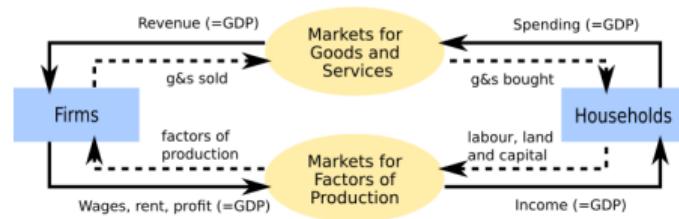
But **in equilibrium**, *by definition*

- ▶ Revenue = Income (cf circular graph)

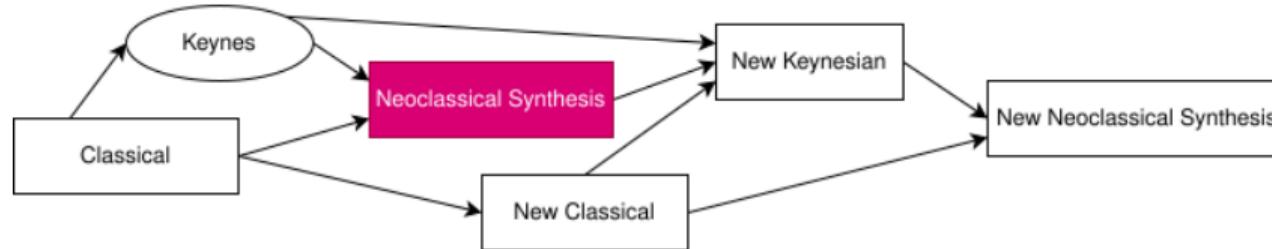
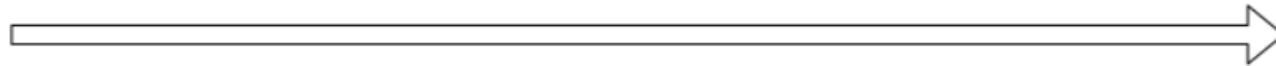
Then at the macro level **in equilibrium** “demand=supply” would be tautological.

We’re not equipped to conclude.

# Circular Flow Diagram (reminder)



# Neoclassical Synthesis



Alvin Hansen  
(1887-1975)



John Hicks (1904-1989)



Paul Samuelson (1915-2009)

# The program of the neoclassical synthesis

Describe a rigorous, quantitative framework, to expose keynesian ideas in a way that is understandable to classical thinkers

Two important questions:

- ▶ what is “demand”
- ▶ which market is / is not in equilibrium

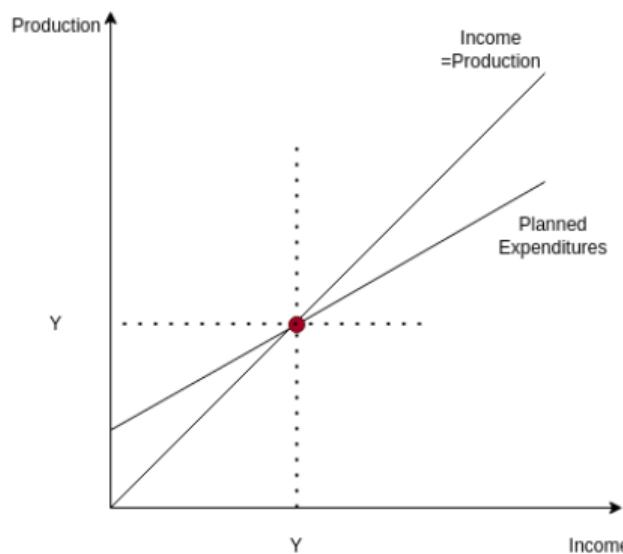
Resulting consensus (Long story short)

- ▶ *long term* is classical
  - ▶ static equilibrium
- ▶ *short term* is keynesian
  - ▶ dynamic fluctuations

## What is demand?

- ▶ Depart from the “demand=Income” view.
- ▶ **Planned expenditures:**
  - ▶ How much economic agents (consumers, firms, ...) would like to spend for a given Income
- ▶ of which:
  - ▶ **autonomous spending:** what agents spend independently of their income
  - ▶ **induced spending:** what they spend when they become richer
- ▶ OK, but if spending depends on income, and income still depends on spending, how do we do?

# The Keynesian Cross



Suppose *planned expenditures* in the economy are given by:

$$P(Y) = c_0 + c_1 Y + g$$

The equilibrium on the markets for goods and services implies

$$Y = P(Y) = c_0 + c_1 Y + g$$

Figure 17: Keynesian Cross a.k.a. 45 degrees Diagram

It is what would be produced *if production was fully determined by demand*<sup>2</sup>.

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<sup>2</sup>See exercise 1 for more details.

## Demand Stimulus

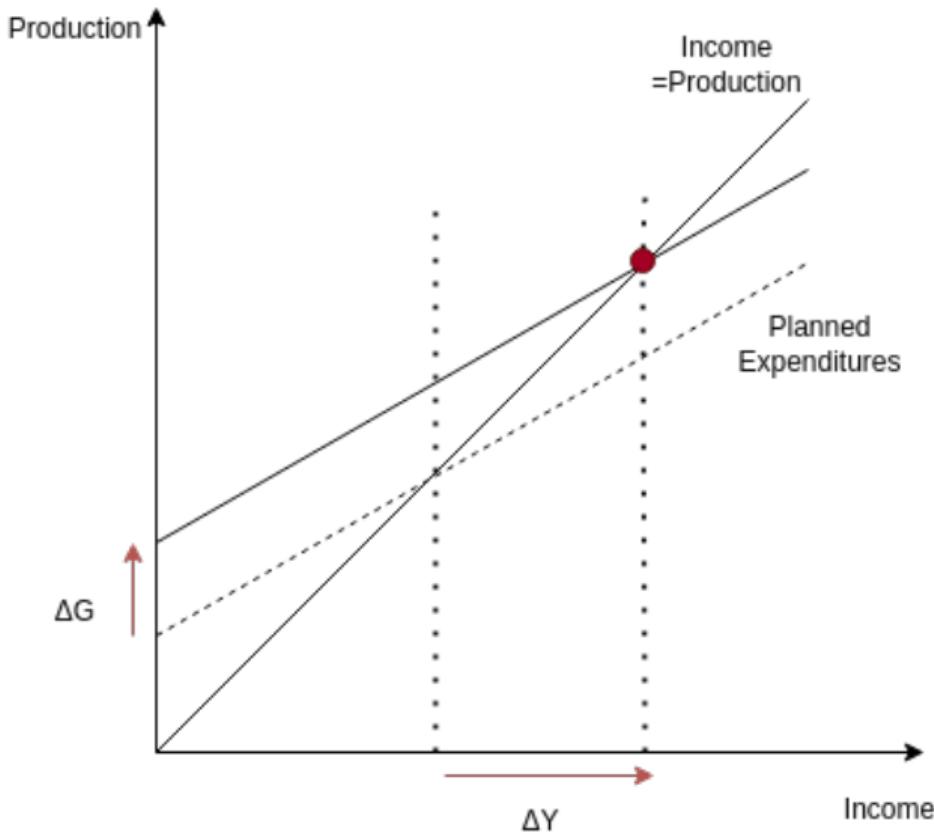


Figure 18: Effect of government spending

Assume now, the government spends  $g + \Delta G$  instead of  $g$ . Planned expenditures become

$$P(Y) = c_0 + c_1 Y + g + \Delta G$$

The equilibrium condition becomes

$$\begin{aligned} Y + \Delta Y &= P(Y + \Delta Y) \\ &= c_0 + c_1(Y + \Delta Y) + g + \Delta G \end{aligned}$$

From which we deduce:

$$\Delta Y = \frac{1}{1 - c_1} \Delta G$$

## About market equilibrium

The idea that *whatever people want will be produced* is preposterous!



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If all markets were in equilibrium, production should already be optimal

- ▶ you can't increase it by “wanting” more of it
- ▶ excessive demand should be washed off with price increases

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<sup>3</sup>Some economists (Patinkin, Benassy, Malinvaud...) went on from there to develop of general theory of disequilibrium. This agenda didn't really succeed at that time.

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On the other hand, imagine demand is increased and prices are prevented from increasing. Can the firms produce more?

- ▶ no if they are already at maximum capacity
  - ▶ then the goods market must be out of equilibrium <sup>3</sup>
- ▶ yes, if they have access to unemployed resources

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# The Great Depression

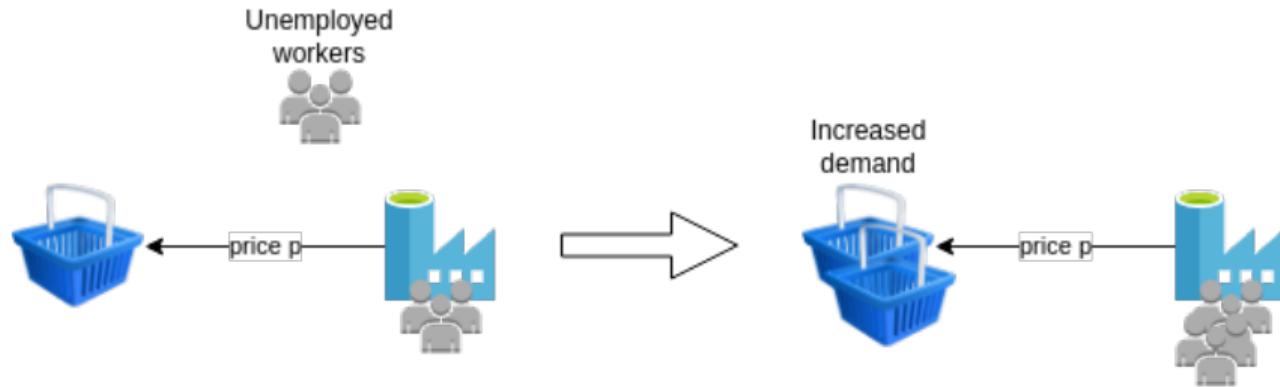


Figure 19: Unemployment rate in the US in 1932: 23.6%

In the aftermath of the 1929 crisis, there seemed to be a lot of workers ready to work...

# The labour market

Then, at constant prices, stimulating demand could work:



Actually, it depends on the reasons for unemployment:

- ▶ frictional
- ▶ structural (unemployed people don't add value)
- ▶ cyclical (less demand for what they do)

In Keynes' terms, for demand policies to work it is important than unemployment be *unvoluntary*.

# The Neoclassical Synthesis

Until the early 70s: a majority among economists and most policy makers, were convinced by the following distinction:

- ▶ short term: stimulate demand during a downturn
- ▶ long term: implement structural reforms

## Question

Can you name some short-term and long term macro policies that were taken after WWII?

# The Neoclassical Synthesis



Figure 20: The Moniac

For policy makers, easy tools were available to analyse short term fluctuations:

- ▶ theory of demand
  - ▶ keynesian cross
  - ▶ ISLM
- ▶ quantitative models:  
macroeconometric tools
- ▶ even analog computers!
  - ▶ cf the Maniac running at LSE using water flows

# The Neoclassical Synthesis

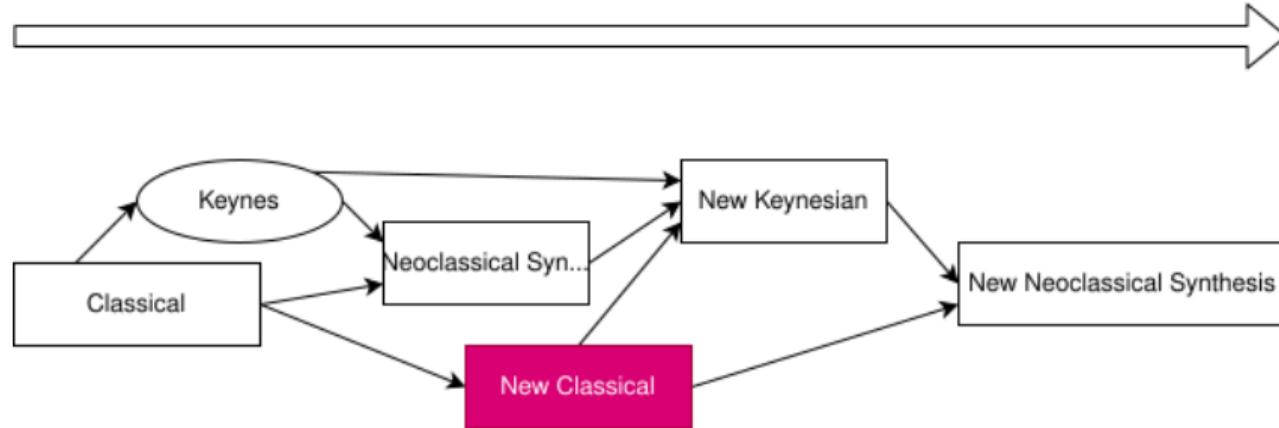


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# New Classical



Robert Lucas  
(1937-)



Thomas Sargent  
(1943-)



Edward Prescott  
(1940-2022)



Finn Kydland  
(1943-)

## New Classical

New classical economists wanted even more rigorous mathematical foundations.

No distinction between short term and long term.

Agent's behaviours are specified by their ultimate goal (consumption, profit)

Agents are rational...

- ▶ utility/demand:  $\max_{\text{s.t. } p_1C_1 + p_2C_2 = B} U(C_1, C_2)$
- ▶ cost/supply:  $\max_q \pi(q) = pq - wp$

...like in microeconomics.

New classical economists established **microfoundations** for modern macroeconomics.

## New Classical vs Keynesian ideas

The new classical program directly conflicted with some keynesian ideas.

For instance, the premise that agents are *rational* implies they should form *rational expectations*.

- ▶ use all available information to make informed forecasts
- ▶ as a result, they should not make systematic mistakes in predicting economic variables

In their traditional formulation, keynesian policies relied on agents paying less attention to their real income, agents started to realize it and changed their behaviour by asking for inflation-indexed wages.

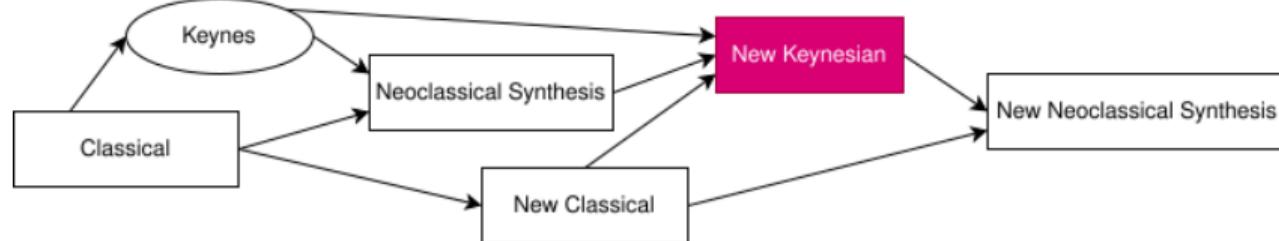
## The Lucas critique

- ▶ This weakness of short term model formulated by Bob Lucas, as what becomes the famous **Lucas critique**:
  - ▶ In 60s, econometric models used by the central banks, were postulating some form of behaviour by agents, in particular a constant marginal propensity to consume, and a certain blindness of agents regarding inflation.
  - ▶ But when these models led to actual policies, private agents learnt how to adapt and changed their behaviour.
- ▶ A good model should be *internally consistent*.
  - ▶ If agents of the model know what the model is (or which policy are taken), they should not change their behaviour.

## New classical: The nail in the keynesian coffin

- ▶ More generally, rational expectations were thought to invalidate the notion of involuntary unemployment and planned expenditures...
- ▶ ... but policy makers still needed some guidance for the short term and were reluctant to leave the short term keynesian model
- ▶ 1982: Kydland and Prescott: *real business cycles*
  - ▶ it is possible to explain short term fluctuations with only real variables
  - ▶ assuming some random changes in productivity
  - ▶ while maintaining the assumption of full rationality
- ▶ so, you see, no need for keynesian ideas ;)
- ▶ It became the dominant framework until the late 90s

# New Keynesian



Gregory  
Mankiw (1958)



Jordi Gali (1961-)



David Romer  
(1958)



Olivier Blanchard  
(1948-)

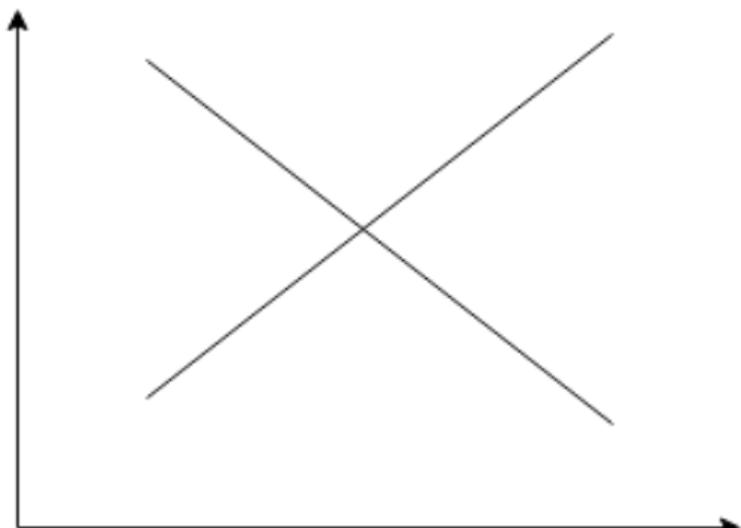
## New Keynesian

- ▶ Reuse tools from the new classical framework...
  - ▶ agents optimisation
  - ▶ rational expectations
  - ▶ -> microfounded planned expenditures (and IS curve)
- ▶ ...Add market imperfections (on the supply side)..
  - ▶ monopolistic competition
  - ▶ nominal rigidities
  - ▶ -> no need to assume prices are fully rigid
- ▶ ... To show that demand policies can have an effect in the short term

This course will feature an introduction to the *New Keynesian* model - without all details

## The new-keynesian model (preview)

Short-term graphical version:



- ▶ Note that AD/AS have their own stories to tell

Quantitative model (adapted from NK)

- ▶ Aggregate Demand (AD)

$$\pi_t = \pi_{t-1} + \kappa(y_t - y_t^n)$$

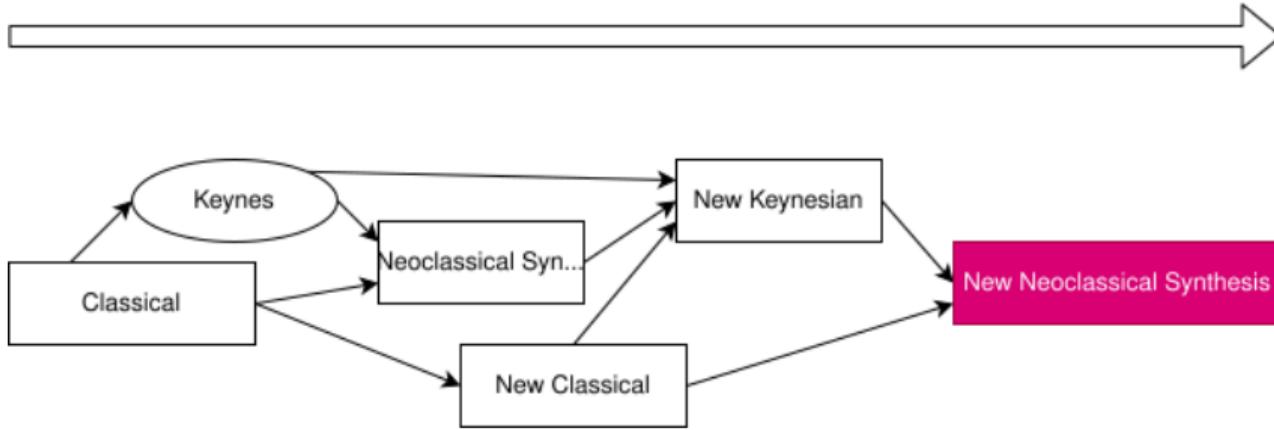
- ▶ Aggregate Supply (AS):

$$y_t = \theta_t - \sigma\gamma(\pi_t - \bar{\pi})$$

Notable features:

- ▶ dynamic ( $t$  and  $t - 1$ )
- ▶ two shocks:
  - ▶  $\theta_t$ : demand
  - ▶  $y_t^n$ : supply

## New synthesis



Most macroeconomists now adhere to the rational expectations framework and most real world models feature elements from the new-keynesian framework.

This state of affairs is called the *the new classical synthesis* (or by some *the new keynesian synthesis*).

## Executive Summary

To remember

- ▶ It took time for keynesian ideas to be developed and validated by economists...

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- ▶ It took time for keynesian ideas to be developed and validated by economists...
- ▶ ... but the need to smooth conjectural cycles through demand policies is recognized by virtually all macroeconomists nowadays ...
- ▶ ... who now have a common framework to develop and measure both keynesian and classical ideas.

# Learning guide

To understand

- ▶ the economy in the long run
- ▶ the intuition for demand stimulus
- ▶ the keynesian cross (and how to compute the fiscal multiplier)
- ▶ why demand stimulus only works if there is involuntary unemployment
- ▶ what are the main features of the new keynesian synthesis:
  - ▶ microfoundations (rationality everywhere, especially on the demand side)
  - ▶ nominal rigidities for aggregate supply to react to prices

## Coming Next

**Aggregate Demand:** how rational behaviour by consumers and firms can lead to a microfounded aggregate demand curve