7. Unemployment and business cycle

**1.** **Unemployment rate and participation rate**

Employment is the number of people having a job. Unemployment is the number of people not having a job but looking for one. The labour force is employment plus unemployment.

$$u = \text{Unemployment rate} = \text{Unemployment / Labour force}$$

$$\text{Participation rate} = \text{Labour force / Economically active population}$$

2. **Business cycle**

The business cycle consists of the ups and downs in overall economic activity. The figure on the right represents the business cycle in a stylized way. If real GDP is considered a good indicator of overall economic activity, then the business cycle can be roughly identified with fluctuations of real GDP.
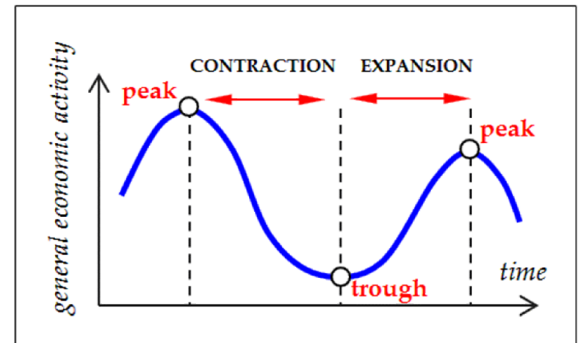
3. **Expansion and recession**

The period during which economic activity grows is an expansion or a boom. The highest point in the boom is called the peak. The period during which economic activity falls is a contraction, a downturn or a recession. A depression is a severe recession. The trough is the lowest point in the recession. A business cycle is given by a decline-recovery sequence from peak to peak or by a recovery-decline sequence from trough to trough.

4. **The business cycle during an expansion (the expansionary phase of the cycle)**

The final stages of the expansionary phase are characterized by an increasing GDP, an accelerating inflation rate, longer working hours, and lower unemployment (higher employment). The following self-sustained process powers the expansion:

$$\uparrow Y \Rightarrow \downarrow u \Rightarrow \uparrow \text{AD} \Rightarrow \uparrow \pi \Rightarrow \uparrow Y.$$

In this process, a growing production (GDP) leads to a fall in the unemployment rate. The fall in the unemployment rate stimulates aggregate demand AD (the overall demand for goods). The demand stimulus fuels inflation. Finally, a rising inflation rate encourages production.

5. **The business cycle during a contraction (the contractionary phase of the cycle)**

After the turning point of the expansion, economic activity decays and this is reflected in stagnating sales whose effects eventually propagate over most of the economy. The consolidation of the contractionary phase reverses the engine of the expansionary phase. Now, production is reduced, the inflation rate declines, working hours are shortened, and both part-time and full-time unemployment go up. The positive feedback process that sustains the contraction is captured by the sequence

$$\downarrow Y \Rightarrow \uparrow u \Rightarrow \downarrow \text{AD} \Rightarrow \downarrow \pi \Rightarrow \downarrow Y.$$

6. Asymmetry between expansion and recession

There is an asymmetry between expansions and contractions (as between inflation and deflation). Potentially, an expansion could go on forever: there is no conceptual limit to a rise in GDP or the inflation rate (AD could increase with constant unemployment rate: to consume more it is not necessary to have more people, as it suffices that the same people consumes each time more). But a contraction has a conceptual limit: production cannot go below zero and prices cannot turn negative.

7. The recovery

The recovery occurs during the initial stages of the expansionary phase. External events (typically, some measure of economic policy) may facilitate the transition between contraction and expansion. As a process, recovery is vulnerable because it is initially weak and subject to reversal. Once momentum is gained, with increases in production and prices being sustained, the recovery consolidates and the economy enters fully into a new expansionary phase.

8. Typology of recoveries

The V-type recovery just makes the new expansion follow, without a break, the last contraction. The W-type recovery (Spain between 2008 and 2013) illustrates the fragility of recovery after the contraction: in this case, recovery is interrupted by a short-lived new contraction, after which a stronger recovery unfolds and gives rise to a consolidated expansion. An W-type could develop into an WW-type if recoveries are hard to sustain or if negative side-effects of the contractionary phase persist, recur, or worsen. The L-type recovery is one in which the economy stagnates at the bottom of the cycle for an unsually long period. The economy remains in a short of limbo where economic activity neither improves nor worsens. The danger of this state is that, the longer the economy stays in it, the harder it is to get out of it. This is due in great part to the working of the Tinkerbell effect: the more people believe the economy will remain stagnated, the more it will remain stagnated. In this case, the L-type could become an ∟__-type. Otherwise, the result would be a U-type or a ∟_∣-type.

9. Some facts on unemployment
- Unemployment fluctuates in time.
- The fluctuations are more intense between than within business cycles.
- The longer a person remains unemployed, the more difficult for this person to fill a vacancy and find a job (so short-term and long-term unemployment look like different phenomena).
- Unemployment differs significantly between economies, age-groups, occupations and ethnic origins.

10. Unemployment as an expression of social conflict

In historical perspective, the relationship between employers and employees has been conflictual. This is why unemployment can be seen as an expression of the struggle between employees and employers, the latter having more power in the relationship. Labour organizations have recurrently asked for a higher wage and a shorter working time, particularly during the expansionary phase of the business cycle. Governments eventually

(following the Great Depression of the 1930s) stepped in to regulate this relationship, offering protection to employees by establishing minimum wages and legal limits to working time. Since the 1980s, government intervention in the labour market is in retreat.

Jean Vercherand (2014): *Labour: a heterodox approach*, ch. 1

11. Basic types of unemployment

- <u>Cyclical</u> (demand-deficient) unemployment is generated by the short-run fluctuations of GDP (rises with recessions, falls with booms).

- <u>Frictional</u> (or search) unemployment occurs while workers are changing jobs or looking for a better job.

- <u>Structural</u> unemployment labels the <u>trend</u> (even stable) <u>component of unemployment</u>. It is attributed to structural changes in the economy that create and eliminate jobs and to the institutions that match workers and firms. The presumed determinants of structural unemployment include firing and hiring costs, minimum wages, labour taxes, unemployment benefits, employment protection, mobility restrictions, workers' lack of adequate training…

- <u>Seasonal</u> unemployment is cyclical unemployment that occurs at regular intervals and can therefore be anticipated.

- <u>Technological</u> unemployment is structural unemployment caused by, associated with, or attributable to technological change/innovation. <u>Technological innovations tend to be labour-saving</u>: production activities previously carried out by persons is, with the innovation, conducted by machines. Since at least the Industrial Revolution, technological change has become a process by which human work is being replaced by mechanical work.

12. The (presumed) Luddite fallacy (IPA: /ˈlʌd.aɪt/)

[The Luddites were a technophobic movement of machine destroyers, active between the end of the 18th century and the beginning of the 19th century.] The Luddite fallacy refers to the presumption that <u>technological innovation reduces employment</u> on the activities where the innovation is introduced without creating employment in other activities. It expresses the fear of the displacement of human skill by machines. The historical evidence from the last two centuries seems to suggest that the jobs lost by technological progress are more than compensated by jobs created in new activities made possible by the technological progress or by the stimulus that technological progress in one sector produces on other sectors. Up to now, <u>innovation appears to have created more new employment opportunities than the jobs that it destroys: innovation reallocates and multiplies jobs</u>. The invention of motor vehicles reduced the jobs available to the drivers of coaches and carriages, but eventually created more jobs: some associated with new types of drivers (taxi drivers, bus drivers) and others arising from the car-making industry itself and from new business that exist because of automobiles (automobile repair shops, filling stations, parking facilities, insurance companies, road construction companies… and the list goes on). The Luddite fallacy can be viewed as an example of the zero-sum fallacy (one's gains is another's loss): as the total amount of work is supposed to be fixed, new labour-saving technology makes work previously done by people be transferred to machines.

13. Involuntary unemployment

<u>Involuntary unemployment</u> occurs when, at the prevailing wage rate in the economy, there are people willing to work but do not get a job (the qualifier 'involuntary' is actually redundant).

14. Explanations of involuntary unemployment

Reasons suggested to explain the existence and persistence of involuntary unemployment:

- wage rates that are 'too high' (this is the classical or orthodox explanation);
- insufficient labour demand, due to insufficient aggregate demand (Keynesian explanation);
- existence of market power on the supply side (because of trade unions);
- existence of labour discrimination (whether workers have or not some trait firms value);
- efficiency wages (workers are overpaid to motivate them to be productive);
- structural reasons (an economy does not exist to employ every one willing to be employed).

15. The efficiency wage hypothesis

The efficiency wage hypothesis holds that <u>the labour productivity of workers depends on the real wage they are paid</u>. This hypothesis justifies the willingness of firms to pay wages (called efficiency wages) higher than necessary and explains why firms might not find profitable to cut wages when unemployment is high. If enough firms pay efficiency wages above the market-clearing wage (the equilibrium wage in the orthodox labour market), the average wage will be above the equilibrium level and the ensuing unemployment will be involuntary: the unemployed workers would like to accept a job at firms offering efficiency wages.

16. Connections between wages and labour productivity

There are at least four connections between wages and labour productivity. These connections put forward <u>benefits that firms could obtain by paying wages above market levels</u>.

- High wages contribute to <u>reduce or eliminate shirking</u>, as such wages give workers an incentive to work rather than cheat or shirk.

- When labour turnover is costly for firms, high wages make workers more <u>reluctant to leave</u> the job.

- In cases in which a worker's productivity (skill, abilities) is positively correlated with the wage the worker demands to accept a job offer, firms paying higher than average wages are more likely to attract better job candidates. Higher wages help to <u>improve the average level of job applicants</u>.

- <u>High wages improve the workers' morale</u>. The relationship within a firm between employer and employees can be seen as expressing norms of gift exchange. The workers' gift is to supply work in excess of the minimum work that is expected or standard. The firm's gift is to reward workers with a wage higher than could be obtained in another job. The workers then may develop a collective sentiment making for the firm costly to deal with workers individually and, in exchange, as a collective, the workers accept the implicit norm of loyalty to the firm.

17. Insider-outsider theory

It is an unemployment theory that makes <u>labour turnover costs a source of unemployment</u>. The theory separates workers into insiders (incumbents) and outsiders (non-incumbents). Insiders participate in the wage setting process and, thanks to their powerful position, force increases in wages at the expense of outsiders, who would accept a job for wages smaller than those received by insiders.

- The existence of turnover costs gives insiders the privilege to get the largest wages that make firms still profitable to grant those wages instead of replace the workers with outsiders. The insiders typically exploit those advantages collectively by means of a union. Outsiders attempting to enter the firm are in a weaker position since they act individually.

- Some turnover costs arise from the different cost of employing insiders and outsiders (hiring and training recruits is costly). Others derive from the ability of insiders to negatively influence the productivity of entrants (insiders refuse to help new recruits, share information with them or harass the newcomers). <u>The higher the cost of replacing the workforce</u> (the less substitutable insiders by outsiders), <u>the more insiders can push wages up</u>.

18. Creative destruction

'Creative destruction' is an expression popularized by Joseph Schumpeter (1883-1950) meaning that <u>capitalism survives thanks to a process of continuous transformation in which whole sectors or industries are created at the cost of the destruction of other sectors or industries</u>. Creative destruction is the engine that keeps capitalism going. Innovation and technological change developed by entrepreneurs are fundamental disruptive forces that mutate economic structures.

19. Technological innovation segments workers

<u>Technological innovation appears to create a wedge between two kinds of workers: high-skilled</u> (those using and hence benefiting from the innovation) <u>and low-skilled workers</u> (whose production activities are more labour-intensive and do not require an investment in training to master the tools that embody technical innovations).

20. Technological innovation worsens wage inequality

'<u>Skill-biased technological change</u>' refers to technological change that increases the productivity of high-skilled workers (and thus the demand for them and their earnings) and reduces the need for low-skilled workers. As this sort of technological change makes the wages of high-skilled workers grow faster than the wage of low-skilled workers, it has been considered a <u>source of rising inequality among workers</u>.

21. The 'employer of last resort' proposal

L. Randall Wray, among other scholars, has proposed that, through a Job Guarantee Programme, the <u>government acted as an employer of last resort to provide a job to any person asking for a job</u>.

- Economic reality and economic analysis are both full of evident, curious, unquestioned, blind-spot asymmetries. For banks, the government has created a <u>lender of last resort</u> (the central bank) that implicitly rescues banks in distress. Most economists do not object to the existence of that lender. Contrariwise, it seems that people do not deserve to be rescued, as neither governments nor economists take seriously that governments could act as <u>employers of last resort</u>, giving a job to anyone that has not found one in the private sector.

- If unemployment represents a waste for the economy (unused production resources), would it not be a better utilization to give a job to unemployed people, giving them the opportunity to train and improve their skills, accumulate experience, remove the pyschological costs of remaining unemployed, and make their employability in the private sector more likely?

  L. Randall Wray (2015): *A primer on macroeconomics for sovereign monetary system*s

22. Stylized facts of the business cycle

- <u>The business cycle is recurrent but not periodic</u>: turning points (peaks and troughs) are certain to occur but at unpredictable moments.

- The length (<u>duration</u>) of the cycle is irregular (5 to 10 years).

- The magnitude of the fluctuation (<u>size</u> of the cycle) is relatively small ($\pm$ 5% of GDP). The <u>amplitude</u> of the business cycle of most OECD countries <u>seems to have declined</u> since the 1970s. The policy goal of trying to ensure low and stable inflation rates have probably contributed to damping business cycles.

- Each period is self-sustained for a while: both growth and decline tend to persist.

- Business cycle puzzle: <u>developed (rich) economies smooth GDP and consumption more than developing (poor) economies</u>.

- Unemployment tends to go up during a contraction and down in an expansion.

- Pressure on the inflation rate is eased during a contraction; in an expansion, inflation intensifies, with the inflation rate increasing more the more intense the expansion.

23. Okun's law

Okun's law (an empirical relationship suggested in 1962 by the US economist Arthur Okun, 1928-80) states that there is a negative relationship between the change $\Delta u = u - u_{-1}$ in the unemployment rate and the GDP growth rate $\hat{Y} = \frac{Y - Y_{-1}}{Y_{-1}}$. Figs. 1, 2 and 3 illustrate Okun's law.

24. A formal expression of Okun's law

A simple formal expression of Okun's law is

$$\Delta u = a - b \cdot \hat{Y}.$$

where a and b are positive constants: a represents <u>the rise in u when the economy does not grow</u> (if $\hat{Y} = 0$, then $\Delta u = a$) and b measures <u>the ability of the economy to transform GDP growth into a smaller unemployment rate</u> (increasing y by one point reduces u by b points).
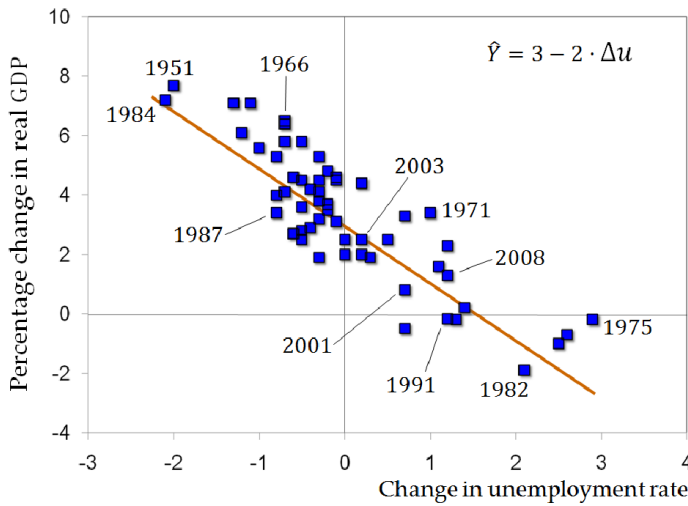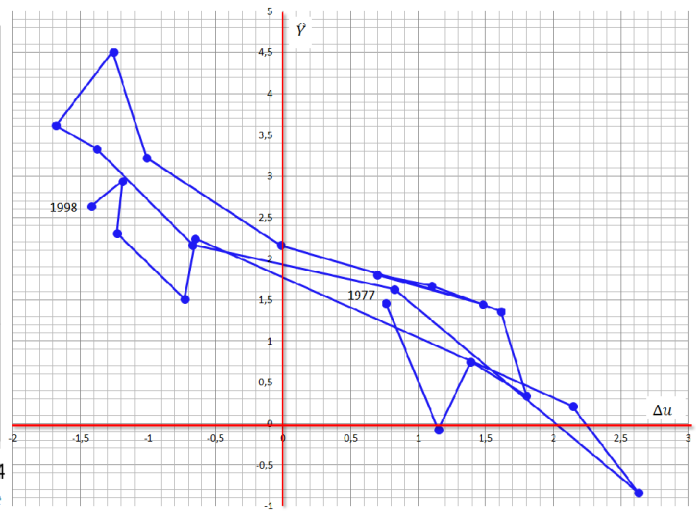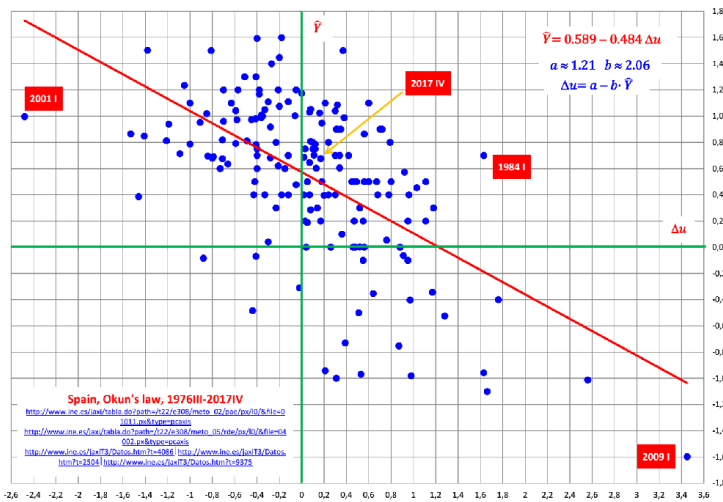
Fig. 1. Okun's law, US, 1951-2008
https://www2.bc.edu/~murphyro/EC204/PPT/CHAP09.ppt

Fig. 2. Okun's law, Spain, 1977-1998
http://www.ine.es

Fig. 3. Okun's law, Spain, 1976-2017
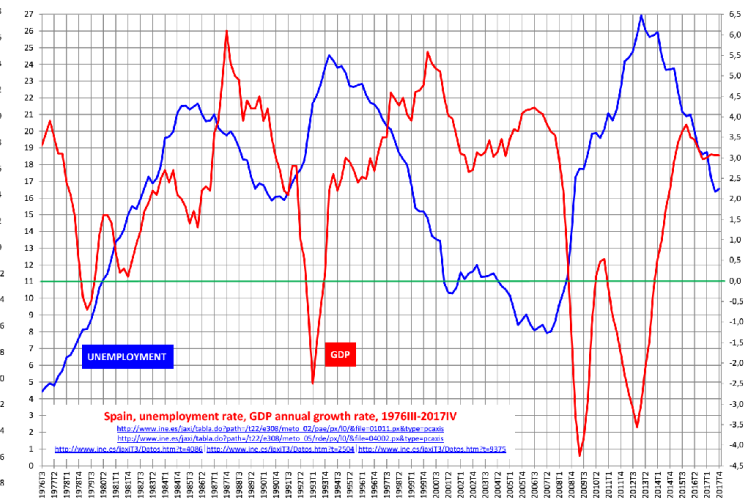http://www.ine.es

Fig. 4. GDP and unemployment, Spain, 1976-2017
http://www.ine.es

- Expressing the variables as annual percentages, in the US, $a \approx 1.5$ and $b \approx 0.5$ (see Fig. 1). Therefore, $\Delta u = 1.5 - \hat{Y}/2$ or, equivalently,

$$u = u_{-1} + 1.5 - \hat{Y}/2. \tag{1}$$

For instance, if $u_{-1} = 2\%$ and $\hat{Y} = 0$, then, by (1), $u = u_{-1} + a - \hat{Y}/2 = 2 + 1.5 - 0/2 = 3.5$. Hence, if the unemployment rate at the beginning of the year is 2% and the economy does not grow, at the end of the year the rate is 3.5%. If $\hat{Y} = 2\%$, then, by (1), $u = u_{-1} + 1.5 - \hat{Y}/2 = u_{-1} + 1.5 - 2/2 = u_{-1} + 0.5$. If $\hat{Y} = 3\%$, then $u = u_{-1} + 1.5 - \hat{Y}/2 = u_{-1} + 1.5 - 3/2 = u_{-1}$. Therefore, increasing y from 2% to 3% reduces u from $u_{-1} + 0.5$ to u_{-1}. There is a gain of 0.5 points: an additional 1% in y becomes 0.5 points less of u.

- Let $a = 1$ and $b = 2$, so $\Delta u = 1 - 2 \cdot \hat{Y}$. That is, $u - u_{-1} = 1 - 2 \cdot \hat{Y}$ or $u = u_{-1} + 1 - 2 \cdot \hat{Y}$. This equation yields the current value u of the unemployment rate when the unemployment rate u_{-1} in the immediately preceding period and the current GDP growth rate $\hat{Y}$ are known. The table below shows the values obtained from this equation for seven periods, given that the

sequence of GDP growth rates in those periods is 0%, 0.25%, 0.5%, 1%, 2%, 0%, and −1%. Even when GDP grows, the unemployment rate does not decline (this happens from $t = 1$ to $t = 2$, when $\hat{Y}_1 = 0\%$ and $\hat{Y}_2 = 0.25\%$). This is due to the fact that $\Delta u < 0$ (the unemployment rate falls) if and only if $a - b \cdot \hat{Y} > 0$; that is, if and only if $\hat{Y} > a/b$. With $a = 1$ and $b = 2$, $a/b = 0.5$. Accordingly, for the unemployment rate to fall, GDP growth must at least be 0.5%.

period t	0	1	2	3	4	5	6	7
$\hat{Y}$		0	0,25	0,5	1	2	0	−1
u	26	$26 + 1 - 2{\cdot}0 = 27$	$27 + 1 - 2{\cdot}0.2 = 27{,}5$	$27.5 + 1 - 2{\cdot}0.5 = 27{,}5$	$27.5 + 1 - 2{\cdot}1 = 26{,}5$	$26.5 + 1 - 2{\cdot}2 = 23{,}5$	$23.5 + 1 - 2{\cdot}0 = 24{,}5$	27,5

25. The Phillips curve

The Phillips curve postulates a negative relationship between the unemployment rate u and the inflation rate π: the lower u, the higher π. The Phillips curve is an empirical relationship described in 1960 by Paul Samuelson and Robert Solow based on a 1958 paper by the New Zealand economist Alban William Housego Phillips (1914–1975). In the paper, Phillips found, for UK in the period 1861–1957, a stable, inverse, and non-linear relationship between the rate of change of money wage rates and the unemployment rate. The interpretation was that wage inflation is triggered and speed up by an excess demand for labour (which appears more intense the lower the unemployment rate).

Fig. 5 below plots the inflation rate and the unemployment rate in Spain. The chart suggests that a falling unemployment rate tends to coincide with a rising inflation rate and, conversely, a rising unemployment rate tends to occur with a falling inflation rate. Fig. 6 depicts the Phillips curve for Spain (which in fact appears to be three such curves: it can be interpreted that the curves shift in time as Figs. 7 and 8 show).
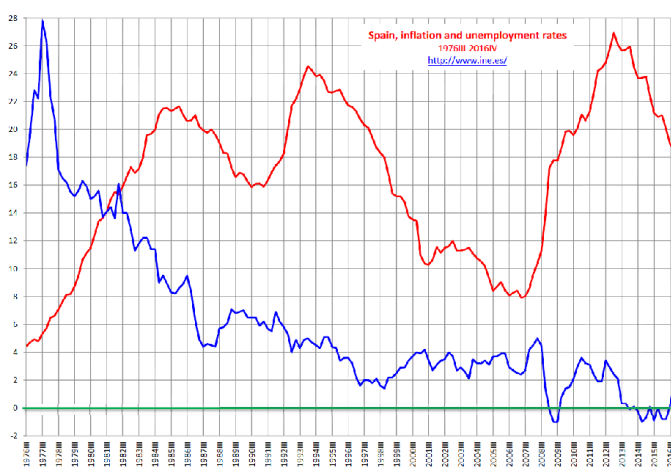

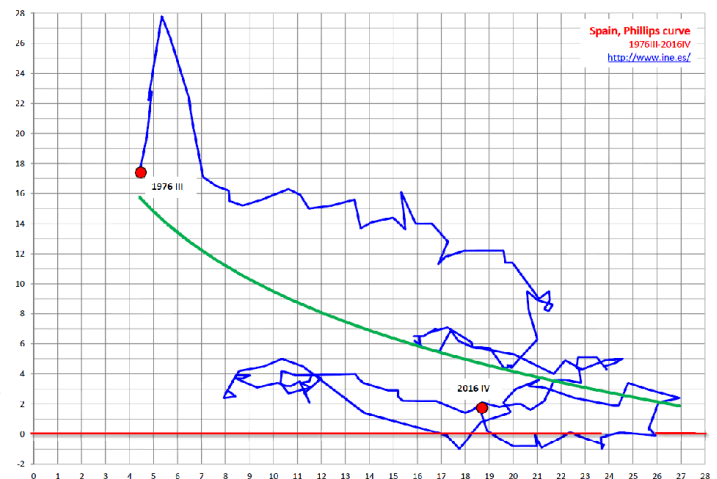Fig. 5. Inflation, unemployment, Spain, 1976III-2016IV   Fig. 6. Phillips curve, Spain, 1976III-2016IV

26. A formal expression of the Phillips curve

With α and β positive constants, a linear Phillips curve is represented by an equation of the sort

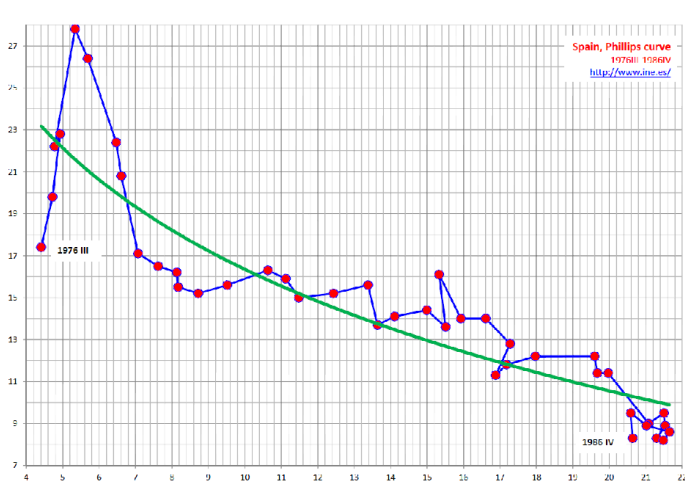$$\pi = \alpha - \beta \cdot u \,. \tag{2}$$

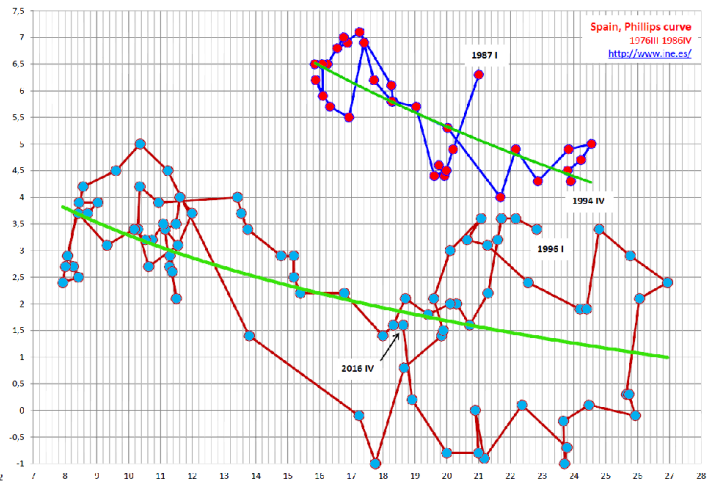Fig. 7. Phillips curve, Spain, 1976III-1986IV   Fig. 8. Phillips curve, Spain, 1987I-2016IV

Expressing π and u in percentage terms, that $\pi = \alpha - \beta \cdot u$ means that, <u>to reduce one percentage point the unemployment rate u, it is necessary to accept an increase in the inflation rate π of β points</u>. [If $u = 10\%$, then increasing u by one percent point means that u goes from 10% to 11%, while increasing u by one percent means that goes from 10% to 10.1%.]

- Exemple. Let $\alpha = 10$ and $\beta = 2$. If $u = 4\%$, then $\pi = 10 - 2 \cdot 4 = 2\%$. Then, for u fall one point (from 4% to 3%), π has to rise two percentage points (from $\pi = 2\%$ to $\pi = 10 - 2 \cdot 3 = 4\%$).

- Parameter α is the inflation rate under zero unemployment. It is a measure of <u>underlying inflation</u>. The Phillips curve seems to be more unstable than Okun's law. The reason is that α is a volatile parameter, because it depends on inflation expectations and the firms' cost structure: <u>an increase in expected inflation or in the production costs rises α. When α rises, the curve shifts upward</u>, so more inflation must be paid to reduce the unemployment rate.

- Parameter <u>β indicates how sensitive π is to changes in u</u>. It depends on institutional factors, like the bargaining power of trade unions (more power, higher β).

27. Demand-pull deflation

Demand-pull deflation is deflation caused by a reduction in aggregate demand.

- From the demand-side perspective, at least two types of deflation (and recession) can be defined: those caused by a change in the <u>decisions of lenders</u> and those caused by a change in the <u>decisions of borrowers</u>. In the former type, the contraction in aggregate demand arises from the lenders' decision to reduce lending (credit crunch); in the latter, it is caused by borrowers trying to pay down excessive debt.

- <u>The orthodox view regards inflation as a monetary phenomenon</u>: inflation occurs (persistent increase in prices expressed in monetary units) when there is 'too much money chasing too few goods'. Symmetrically, the orthodox view considers deflation a monetary (lender) phenomenon and, as such, solvable by the central bank. Japan's experience in the last three decades suggests this view to be mistaken: deflation was not a supply of liquidity problem, but a demand for liquidity problem in which firms and people aimed at minimize debt.

28. Cost-push deflation

Cost-push deflation (productivity-induced deflation) is deflation induced by productivity gains, typically due to rapid technological innovation. Cost-push deflation reflects supply-side technological improvements. Productivity-generated deflations appear, in the recent experience, to be the exception. Cost-push deflation is sometimes termed 'good deflation': prices fall because of a positive supply shock. Demand-pull deflation becomes then 'bad deflation': prices fall because of a negative demand (money) shock.

29. Fisher's debt-deflation mechanism

Irving Fisher, considered one of the greatest US economists, he suggested in 1933 a 'debt-deflation theory of great depressions,' according to which "Disturbances in these two factors – debt and the purchasing power of the monetary unit– will set up serious disturbances in all, or nearly all, other economic variables." Fisher's debt deflation theory (as the balance sheet recession theory explained below) starts with an overindebtedness that prompts everyone to try first and foremost to liquidate debt and generate the following sequence of events (high debt levels during the 1920s in the US where followed by an unprecedented deflation, which was unanticipated when the debt was issued):

debt liquidation $\Rightarrow$ $\uparrow$sale of assets (distress selling) & $\downarrow$bank deposits (bank loans are paid off) $\Rightarrow$

$\Rightarrow$ $\downarrow$net worth of business (due to $\downarrow$P) & $\uparrow$bankruptcies $\Rightarrow$ $\downarrow$profits $\Rightarrow$ $\downarrow$I & $\downarrow$employment $\Rightarrow$

$\Rightarrow$ $\downarrow$I & $\downarrow$C $\Rightarrow$ $\downarrow$AD $\Rightarrow$ $\downarrow$P & $\uparrow$pessimism & loss of confidence $\Rightarrow$ $\uparrow$savings & $\downarrow$borrowing $\Rightarrow$ $\downarrow$AD $\Rightarrow$ …

30. Stellar moments of some prestigious economists

Shortly before the 1929 crash predicted that stock prices had reached "a permanently high plateau." Nobel laureate Robert Lucas told in 2003 to the American Economic Association that the "central problem of depression prevention has been solved." Olivier Blanchard, chief economist at the International Monetary Fund, proclaimed in the crisis year in 2008 that "the state of [macroeconomics] is good."

31. Deflationary spirals

There are several mechanisms contributing to trigger a deflationary spiral.

• Purchases are delayed

$\downarrow$P $\Rightarrow$ expectation that $\downarrow$P $\Rightarrow$ $\uparrow$incentive to delay purchases $\Rightarrow$ $\downarrow$C $\downarrow$I $\Rightarrow$ $\downarrow$AD $\Rightarrow$ $\downarrow$P

If prices are expected to fall, purchases are delayed. Reasons for postponing consumption: deal-hunting; wait-and-see; necessity (jobs lost, wage cuts). Production is cut. Unemployment goes up. More unemployment further reduces demand. Prices drop in response, as firms try to stimulate sales. The drop in prices reinforces the expectation that prices will continue to fall, so purchases are further delayed. Firms go out of business. Unemployment surges. Additional cuts in spending follow from fear of losing the job and pessimistic expectations about the economy. Firms slash prices even more. And the spiral continues.

- Fall in profits

Anticipation of ↓revenues by firms ⇒ anticipation of ↓profits ⇒ ↑sales of shares ⇒ ↓business spending ⇒ ↓I & ⇒ ↑difficulty of refinancing debt ⇒ ↑jobs eliminated ⇒ ↓prices to attract consumers ⇒ anticipation of ↓revenues

- More bankruptcies

↓P ⇒ ↑debt in real terms ⇒ ↑debt default ⇒ ↑bankruptcies ⇒ ↓credit ⇒ ↑unemployment & ↓wages ⇒ ↓C ↓I ⇒ ↓AD ⇒ ↓P

In a deflation, the real value of nominal debt increases: since money gains purchasing power, monetary payments involve a higher transfer of purchasing power. People and firms that are highly indebted decrease expenditures to cope with the higher value (in real terms) of their debts. Debt deleveraging may substantially contribute to sustain a deflation process (Spain in 2008-2014?). If businessmen think deflation will persist, they may delay investment projects (less spending) and/or close down factories (higher unemployment).

- Wealth reduction

↓P ⇒ ↑debt default ⇒ ↓purchases of financial assets ⇒ ↓prices of financial assets ⇒ ↓wealth ⇒ ↓C ↓I ⇒ ↓AD ⇒ ↓P

↓prices of financial assets ⇒ ↓collateral (due to ↓wealth) ⇒ ↓loans ⇒ ↓C ↓I ⇒ ↓AD ⇒ ↓P

Under a deflation, falling prices cause a drop in the firms' profits. This reduces the value of shares, so the financial wealth of consumers decrease. Morevoer, deflation discourages borrowing money. A declining salary lowers the repayment chances. A fall in prices means paying the loan back with money that is worth more than the borrowed money.

32. Mechanisms exacerbating deflationary pressures
Summarizing, deflation mechanisms exacerbating deflationary pressures include:

- financial distress caused by falling prices;

- credit restriction;

- difficulties to pay back money borrowed at a time when prices were higher; and

- reverse causation: asset price deflation leading to CPI deflation

33. The difficulties of fighting deflation
To combat inflation, further rises of the interest rate are always possible in order to cause a demand contraction. To combat deflation instead (trying to stimulate spending), the (nominal) interest rate cannot be below zero (Japan in the 1990s), so monetary policy becomes ineffective. Moreover, deflation also affects negatively the government: High debt/GDP & ↓GDP ⇒ ↓taxes collected ⇒ ↓G and/or ↑tax rates ⇒ ↓AD ⇒ ↓P & ↓GDP ⇒ ↑debt/GDP (this was the situation Spain recently faced).

34. How deflation may increase debt in real terms

Suppose a firm has a nominal debt of $B = 1,000$ EUR and the price level is $P = 100$. Then, in real terms, the firm owes $B/P = 1,000/100 = 10$. Assume that the firm pays 10% of the debt but the price level falls by 20%. Now the firm owes $B' = 900$ EUR and the price level is $P' = 80$. Therefore, in real terms, the firm's debt is $B'/P' = 900/80 = 11.25$. Thus, the firm's real debt has increased (by 12.5%) despite the fact that the debt has been lowered (by 10%) in nominal terms.

35. The balance sheet recession theory

Suggested by Richard Koo to explain Japan's deflation in the last decades, the balance sheet recession theory holds that:

(i)   a fall in asset prices forces a shift in the focus of businesses from profit maximization to debt minimization; and

(ii)   the shift initiates a spiral of declining aggregate demand and leaves the economy unresponsive to changes in interest rates.

In Fisher's explanation, deflation is the driver of the recession and the real sector is affected after many steps (price and monetary changes occur first). In Koo's explanation, the driving force behind the recession is the fall in the value of assets and deflation is an effect not a cause of the recession: in a balance sheet recession, GDP declines first, as firms stop borrowing and spending, and redirect cash flows to debt repayment. As a result, demand drops, the economy slumps, and prices (of goods and assets) fall. The contraction in asset prices ignites a vicious cycle by making more urgent for firms to reduce debt. Fisher's process relies on a fall in prices faster than the debt contraction: for debt to grow in real terms, a reduction in nominal debt by x% must be accompanied by a drop in prices greater than x%. In Koo's view the source of the problem is the contraction in the firms' borrowing.

Koo's process requires no distress selling of assets or a fast decline in prices to trigger a recession. What is needed is just a large drop in the value of assets (as typically occurs when a speculative bubble bursts) that damages so seriously the firms' balance sheet that they are forced to give priority to debt minimization (and forget profit maximization). A firm suffering from a debt overhang gives priority to debt repayment and clean up the balance sheet, regardless of how cheap borrowing is. A balance sheet recession is invisible and silent, as only firms now how damaged their balance sheets are. Balance sheet problems are a blind spot. Those aware of a balance sheet problem (the firm's owners and managers) do not talk about it. Orthodox economic analysis tends to presume that he firms' balance sheets are healthy.

36. The mechanism behind a balance sheet recession

The balance sheet recession theory explains a recession as follows (mainly the first steps: once a declining aggregate demand is set in motion, all the mechanisms activated during a deflation to self-sustain the deflation will eventually enter the picture if the deflation is not stopped):

↓asset prices $\Rightarrow$ ↓borrowing by firms $\Rightarrow$ ↓I & ↑unemployment $\Rightarrow$ ↓AD & ↓borrowing by households $\Rightarrow$ ↓P $\Rightarrow$ ↑debt in real terms & ↑bankruptcies $\Rightarrow$ ↓borrowing by firms & aversion to debt …

37. Liquidity trap

In a balance sheet recession the problem is not a shortage of supply of liquidity by the central bank but a lack of demand for liquidity by firms and households. This makes monetary impotent, as it can only deal with problems of scarce liquidity. A liquidity trap is a situation in which aggregate demand is not responsive to interest rates that are close to zero.

- The orthodox view of a liquidity trap holds that, when the interest rate is close to zero, cash and interest-bearing financial assets (like T-bills and bonds) become perfect substitutes. In this case, suppliers of liquidity may prefer holding cash than buying financial assets with very low rates: lenders develop a 'liquidity preference'. In sum, the behaviour of lenders is declared the cause of the liquidity trap.

- Yet, this cannot be the right explanation when during the time in which the interest rate approaches zero, aggregate demand shows no reaction to the continuous drop in interest rates. In this case, the cause of the liquidity trap rather lies with borrowers: the trap is not caused by zero interest rates but by behavioural changes on the part of borrowers (who aim at debt minimization), changes having effects at any interest rate not just zero interest rates. When the priority is debt minimization, the interest rate becomes irrelevant.

38. The orthodox response to deflation is ineffective

A recession is aggravated by a fallacy of composition effect: exaggerating a bit, everybody repaying debt, nobody borrowing nor spending. If the private sector does not borrow nor spend, then the public sector must borrow and spend to keep economic activity afloat. Fiscal policy is required to mobilize surplus savings through a fiscal stimulus. With falling asset prices and a drop in economic activity, tax receipts decline. Hence, the orthodox recommendation is 'fiscal consolidation': to keep the government budget balanced. But attempts to reduce the government budget deficit is doomed to fail, as it hurts the economy. Orthodox economists claim that monetary policy is more effective than fiscal policy to handle economic fluctuations. The orthodox final suggestion is that, in the last instance, central banks should adopt the 'helicopter money solution': scatter banknotes from a helicopter under the presumption that this measure will put the economy in motion. But…

> "… the helicopter-money argument is almost always pitched from the perspective of buyers of goods and services and almost never from that of sellers. The first reaction of any seller of goods and services to the helicopter money would be to close shop immediately, or demand a credible foreign currency in exchange for his or her goods. With no one knowing the value of money raining down from the sky, it would be unthinkable for sellers to accept it in return for actual goods and services. Eventually, sellers around the country would close their stores, and the economy would collapse."
> Richard C. Koo (2008): *The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession*, p. 135

[Is 'helicopter money' the solution for the recession that the response to the COVID-19 is generating?]

39. Stagflation

Stagflation (stagnation + inflation) is a phenomenon consisting of having at the same time inflation (and, more specifically, reflation) and recession (GDP contraction). Since stagflation involves a negative supply shock, <u>demand-side policies</u> (monetary policy by the central and fiscal policy by the government) <u>are incapable of neutralizing stagflation</u>. If the demand-side policy implemented is expansionary, then recession is relieved but inflation worsened; if it is contractionary, then inflation is relieved at the expense of deepening the recession.

40. The orthodox view of how an economy gets out of a recession

The most orthodox among the orthodox position holds a rather peculiar view of how an economy works: its central proposition is that, left an economy by itself, <u>gluts of production, savings, or labour</u> (excess of production, liquidity, or unemployment) <u>cannot last</u>. The orthodox consensus is that 'the natural order of things' is that <u>economies escape from recessions by themselves</u>, almost automatically. In a recession, prices are expected to rise slowly or fall, encouraging buying by consumers; wages stagnate or fall, encouraging hiring by firms; and interest rates slide downward, encouraging capital investment. If any, only modest government (or public) intervention is needed: to control inflation; to give a hand those losing a job; to accelerate the interest rate decline… Anything else would simply do harm, by creating inflation, keeping wages too high through regulation, or competing with firms for savings to finance budget deficits. The main concern of the government, in this view, is to <u>keep the budget balanced</u>. The theoretical underpinning of this view goes by the name of 'Say's law'.

41. Say's law (Jean-Baptiste Say, 1805)

Say's law (*loi des débouchés*; also known as 'law of the markets') is very often condensed by the expression or motto '<u>supply creates its own demand</u>' (Keynes tried to prove in *The general theory* that Say's law does not hold in a modern economy).

- Say's law relies on the contention that <u>the creation of value by production activities is the source for demand</u>: the sale of goods provides the source of the income that finances purchases. People must first sell in the market to be able to buy from the market. To buy (to demand) one must first sell (supply). The answer to a glut (excess) of goods or workers is to make more goods, thereby employing workers. Prices and wages will adjust to balance supply and demand.

- By Say's law, if businesses make products, the wages paid to the workers employed will <u>enable</u> them to buy all that is produced. There will never be too many workers because their wages would fall until all are hired.

- Thus, any glut of goods or workers will be only temporary. Say's law views <u>demand is constituted by supply</u> and, thus, <u>demand failure is a symptom, not a cause</u>.

42. What explains severe contractions in economic activity?

- **Explanation 1.** It is associated with the so-called (orthodox or mainstream) '<u>fresh-water' economists</u>. They hold that the market system works well as long as market forces are free

from government interferences (like lowering interest rates too much or worsening the crisis through stimulus packages).

- **Explanation 2.** It is associated with the so-called (orthodox or mainstream) 'salt-water' economists. In their view, crises and recessions are caused by market failures, insufficient information and/or lack of appropriate regulation and supervision.

- **Explanation 3.** It is associated with heterodox, non-mainstream economists. Explanation 2 is deepened by invoking the existence of deeper structural causes of crises and recessions, like income distribution. These economists point out that, since the 1980s:

    (i)   economic policies are no longer aimed at promoting full employment but at targeting low inflation levels;

    (ii)   society has come to accept conservative ('neoliberal') views and precepts;

    (iii) firms do not attempt to make profits through investment but by reducing the workforce;

    (iv)   the bargaining power of labour has been weakened and this has been reflected in a decline in the share of wage in aggregate income and an increase in wage and income inequality; and

    (v)   the growth of the economy does no longer rely on wage-led consumption supported by wages rising in parallel with labour productivity, but is now based on household debt ('debt-led growth') or on "competitive" (low) wages able to sustain exports ('export-led growth'). According to Explanation 3, the debt and export-led growth strategies have proved to be unsustainable.

43. A macroeconomic sketch

The arguably simplest description of an economy is given by the loop

$$\ldots \rightarrow \textbf{production} \rightarrow \textbf{income} \rightarrow$$

$$\rightarrow \textbf{expenditure} \rightarrow \textbf{production} \rightarrow \ldots$$

The sketch on the right inserts labour in this loop. First, production creates a derived demand: the demand for labour. Second, the income the economy generates is a key variable helping workers to decide the amount of labour supplied. Lastly, the level of employment, once determined, significantly contributes to establish aggregate demand, which in turn affects production.
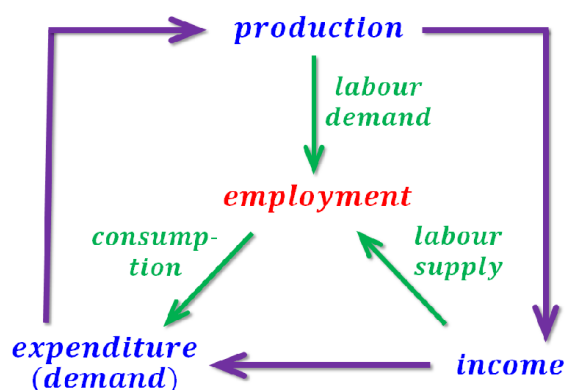
The orthodox view of this process attributes to the labour market the leading role. Employment is first established, this next determines production, and production is finally used. The hetereodox view inverts the order. First, expenditure decisions are made. These decisions indicate the necessary production level. Finally, the labour required to carry out the production plan is hired.