
United States of America, European economy and inequality: A perspective from the economic history, 1910-2010¹

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Abstract

This paper analyzes the impact of the Great Recession on the economies of the United States and the major economies of Europe (Germany, France, United Kingdom, Italy, Spain), based on the analysis of the national accounts of the countries chosen. The paper provides additional weight to the conclusions reached by Piketty, but using different sources: a reduction in the share of wages in national income and an increase in social inequality. This can be explained because the downward trend in capital productivity cannot be corrected, so an increase in the share of gross operating surplus in national income (q) and in social inequality is bolstered to maintain the rate of profit, a process which is accompanied by the growing financialization of the economy.

JEL: B22, B52, C40

Keywords: business cycle, rate of profit, business profits, capital productivity, economic inequality, European Union, United States, Piketty.

1. Introduction

The Great Recession has opened up a new panorama in analysis of the economic crisis, with economic approaches that are less conventional. The more conventional arguments are based primarily on financial, stock-market and monetary factors, but the ongoing recession is forcing social scientists – with holistic views of their disciplines – to work with parameters that are more permeable. They offer perspectives that, though rejected by most of academia, could help to establish a different analysis of the economic crisis. Reviving the concept of the business cycle is one of the key ideas. Although the very existence of the business cycle had been called into question by the staunchest proponents of equilibrium economics, it is very much present in real-world economics, and is beginning to be accepted by its main detractors. Historically, the “industrial cycle” was identified and was linked to fluctuations in investment demand in the form of inventory restocking or fixed capital, the two variables most closely tied to the short-run cycle or industrial cycle, which spans no more than ten years (Sylos Labini 1988). However, there were also analyses of long-run cycles driven by technological developments (Fagerberg and Verspagen 2009; Castro-Fernández de Lucio 2013). It is in this long-term perspective that the hypothesis on the law of the tendency of the rate of profit to fall (LTRPF) and the severe crisis of capitalism was developed (Marx 1894).

These long-term hypotheses are especially fascinating for analysis of capitalist behaviour. However, it is these hypotheses that are most prone to errors resulting from a lack of rigorously constructed supporting statistical data with which to contrast the hypotheses with reality. In this type of analysis, the prevailing idea is that the capitalist economy fluctuates around long-term positions. These positions can either be stable, as

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in the classical equilibrium hypothesis supported by Adam Smith and David Ricardo; unstable, due to technological progress (examples include Karl Marx and the LTRPF, and Joseph Schumpeter and the hypothesis of technological revolutions [Schumpeter 1942]); or due to a lack of aggregate demand (Keynes 1936), which in the Cambridge school variety (Kalecky 1937; Kaldor 1940; Robinson 1956) is reinterpreted, in terms of income distribution, as a recurring bias in favour of profit and to the detriment of wages.

These basic assumptions about US are guiding our research on the Great Recession, which has already offered some results (Manera, 2013, 2015; Manera, Navinés, Franconetti, 2015). These results constitute the main platform to provide a clear roadmap for economic research. Our arguments focus on selected economies in Europe (the UK, Germany, France, Italy and Spain), which may be representative of what is happening in northern and southern Europe. Greece is excluded as it is considered an extreme example of the very conclusions we initially reached.

The first section of this paper details the methodology followed, using the United States as a benchmark, as mentioned above. In the second section the case of the United States serves as an essential reference for our new methodological analysis. The third section presents four fundamental lines of research related to the US and the European economies considered. The final section presents some initial conclusions, which are still under development and need further research to be validated. This paper is therefore more a document for provoking research than a project with a closed perspective. Our aim is to analyse the points put forward in this paper in greater depth and make a modest contribution to a better understanding of the Great Recession and its contribution to the analysis of the economic crisis.

2. Methodological lines

The methodological lines used are as follows:

Paolo Sylos Labini's contribution (Sylos Labini 1988), who establishes an income distribution range within which aggregate demand will remain sustainable. It remains sustainable either because wages are sufficient to maintain acceptable levels of consumption, or because the "animal spirits" of business consider the consumption levels sufficient to ensure profits that will maintain the investment and capital accumulation process, thus reaffirming the sustainability of the economic growth process.²

A historical approach, as advocated by Joseph Schumpeter (Schumpeter 1942) and, more recently, Thomas Piketty (Piketty 2014; also Atkinson et al. 2009, Coase, 2012), which is supported by better access to the national statistical services of the main OECD countries. This approach includes original contributions covering aspects related

² The works of Sylos Labini (1988) enable us to construct a timeline of the different regulation trends between 1929 and 2010, on which we will place two major accumulation crises:

The 1929 crisis: in terms of income distribution equilibrium, this was a demand crisis resulting from the excessive rise in profits as a proportion of national income. As a result, the contribution of wages to national income fell, driving down consumption and sparking a crisis due to insufficient demand.

The 1970s-1980s crisis: in stark contrast to the 1929 crisis, company wages and production costs increased (due to the 1973 and 1979-1980 oil shocks), leading to an investment crisis because of the lower profits.

The more recent works by Flassbeck (2012, 2014) were inspired by Sylos Labini's approach.

to wages, inequality and growth, including works based on applied analysis in France (Duménil and Lévy 2000, 2012, 2014); works looking at the US economy (Shaikh 1983, 1992, 2010; Stiglitz 2012; Galbraith 2014; Galbraith and Ferguson 1999; Galbraith and Travis Hale 2014); and contributions looking at the global economy, published by international bodies such as the OECD (2011, 2014) and the IMF (2014; including the research by IMF technical staff members Ostry, Berg and Tsangarides [2014]).³ The research by Piketty (2014) stands out. He analyses changes in inequality by consulting US tax records and using as a reference variable the changes in the share of the national income of the wealthiest 10% or 1% of the American population.

This paper focuses on these detailed aspects of the US economy between 1910 and 2010, with two specific objectives:

To analyse inequality using the share of gross operating surplus (E) in national income (Y) as the reference variable, where the reference variable $q = E / Y$. E includes the benefits accrued by defined benefit pension plan participants through services to employers in the period, which are recorded as income as part of business profits. The data are taken from national macroeconomic accounts (see Appendix, where we explain: Figure 1). The line of argument is consistent with that put forward by Robert Brenner, though he replaces the definition of gross operating surplus (E) with net profits (P), i.e. net value added minus the sum of compensation of employees and indirect business taxes (Brenner 2006).

To address the analysis of income distribution by observing the rate of profit (r) based on the previous objective. The rate of profit (r) is the share of corporate profits of nonfinancial corporate business (P) in the stock of capital (K), where $r = P / K$. Meanwhile, the rate of profit (r) can be expressed as the product of three factors: the share (a) of corporate profits of nonfinancial corporate business (P) in gross operating surplus (E), where $a = P/E$, the share of gross operating surplus in national income ($E / Y = q$) and capital productivity ($Y / K = \pi_k$). Therefore: $r = P / E \times E / Y \times Y / K = a \times q \times \pi_k$. The value of a can be interpreted as a reverse estimating variable of the degree of financialization of the economy. If R is the capital ownership income not accounted for as P and included in E , then $E = P + R$, and $1 = a + R / E$. Therefore, higher values of a indicate less financialization of the economy and lower values indicate more financialization.

This research applies the United States model to selected European economies, but does not include analysis explained above in paragraph a), which is already in our previous paper (Manera, Navinés, Franconetti, 2015), to define the accrual of the US economy (1910-2010) from the databases of the Bureau of Economic Analysis (BEA) and the Bureau of Labor Statistics (BLS). Another difference to note is that this time we used the AMECO database⁴ for both the European economies and the United States (for a description of the AMECO database and the differences between it and the BEA and LSB databases, see the Appendix 2). We therefore could not define the rate of profit as corporate profits of non-financial companies over capital stock ($r = P / K$), so we defined it as the ratio of total business profits (including profit of financial firms) to capital stock ($r = E / K$). This also forced us to redefine the profit rate as $r = E/K =$

³ The 2013 European Commission report *Research and Innovation Performance in the EU: Innovation Union Progress at Country Level 2014* highlights the surprising fact that the EU economies are following a similar structural-change dynamic to the US economy.

⁴ Online database available at: http://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm.

$E / Y \times Y / K = q \times \pi_k$. With this new definition of the rate, we could no longer analyse changes in the rate of financialization of the economy.

To use the new definition, we had to model two behaviour patterns for the United States that explain the dynamics of the rate of profit. This is summarized in Figures 4 and 6. The two models produce very different results. Under the first, there is a sharp drop in the rate of profit between the Keynesian and the neo-liberal phase, but under the second model, the rate of profit increases. This is due to the financialization effect of the economy, with q having remained stable and π_k having fallen since 2000.

It should also be noted that the analysis presented here gives greater weight to the variable Unit Labour Costs (ULC), which we introduced from q , given that if $Y = E + W$, then: $1 = E / Y + W / Y = q + W / Y = q + W / L / Y / L = q + w^* / \pi_l$, y , $1 - q = W / Y = w^* / \pi_l = \text{ULC}$; where $w^* = W / L$, the labour costs per worker and $\pi_l = Y / L$, the productivity of labour.

Finally, it should be noted that for Germany, AMECO publishes two series: the first for 1960-1991, under the title "West Germany", and another for 1991-2015, under the name "Germany", covering the post-unification era. For 1991 there are data for both series, so we took the arithmetic mean of the two.

3. Business cycle, distribution of income and rate of profit in us

Economic growth is measured as the compound annual growth rate of an economy's real GDP ($g(Y)$). Changes in income distribution were calculated from changes in the share of gross operating surplus in national income (q). We argue that this variable q can predict GDP falls and recoveries based on whether its value is within its equilibrium range (q^*) (see Figure 1).⁵ According to Sylos Labini, the periods of stability of animal spirits in which GDP growth is maximized fulfil the rule that defines the equilibrium range for the share of gross operating surplus in national income (q^*).

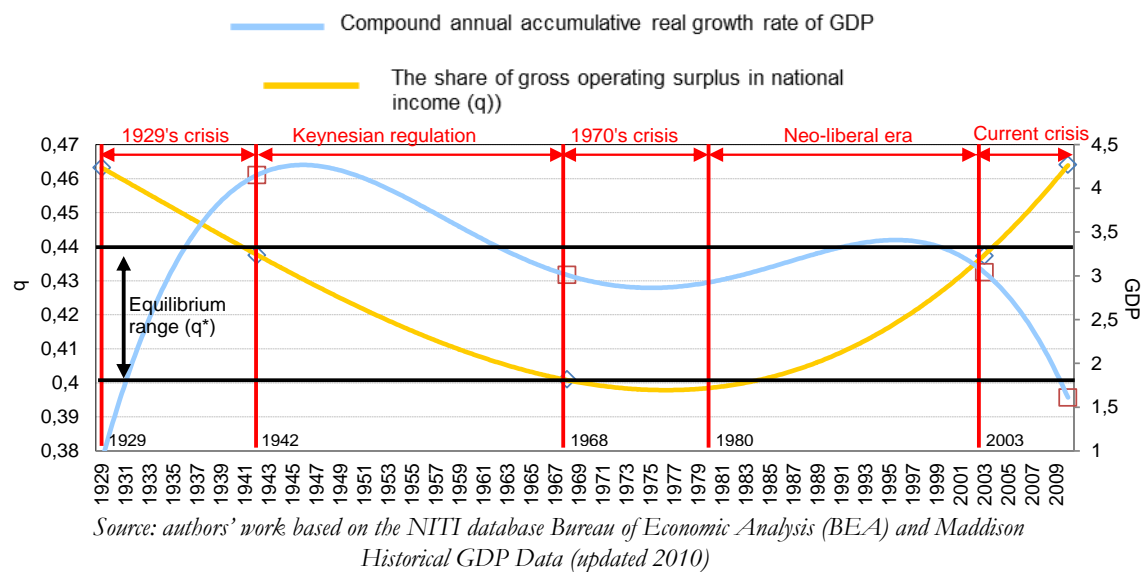
This rule of behaviour infers equilibrium periods for q^* in which there is a tendency to negotiate collective bargaining agreements, so the real growth rate of unit labour costs ($g(w)$) depends on the growth in labour productivity ($g(\pi_l)$). If the two growth rates are identical, q remains static, resulting in a period of perfect stability in the distribution of income between wages and business profits. In the real economy, the two growth rates are unlikely to match perfectly, but if, in the dominant area of collective bargaining negotiations, large companies outline such a wage agreement, the bulk of the economy tends to reflect a recovery in economic growth and income distribution stabilizes somewhat, which means equilibrium values can be inferred and obtained when the economy goes through one of these periods of stability in growth and income distribution. Therefore, in the real economy it is not so important to identify when there is a perfect match between the two growth rates as it is to see their tendency to shape a period of stability, which we shall refer to as the equilibrium range for the share of gross operating surplus in national income (q^*). Between 1910 and 2010, the period in which the US economy had the most stable q values was during the Keynesian regulation phase. More specifically, the values were in the equilibrium range from 1950 to 1968, when the Treaty of Detroit was in full force (Noah 2012). The Treaty of Detroit had the following characteristics (Austin et al. 2013):

⁵ Figure 1 uses the term *stylized series* because a polynomial function of degree 3 has been calculated for the variable q and a polynomial function of degree 4 has been calculated for GDP (see notes in Statistic Appendix).

- Purchasing power and aggregate consumption were supported by wages, rather than by growing household debt.
- Business profits and their expected rise thanks to sustained growth in consumer demand were sufficient to ensure that investment financing, economic growth and employment remained sustainable.

The values of q^* were taken for the years during which the Treaty of Detroit was in full force. They oscillated between a minimum of 40% and a maximum of 43.7%. The two periods within this range were 1942-1968 (Keynesian regulation) and 1980-2003 (which we have referred to as the neo-liberal era) [see Figure 1)].⁶

Figure 1. United States. Gross operating surplus share of national income (q) and GDP growth. Stylized series (1929-2010)



Sylos Labini's contribution also serves to explain the imbalances that occur when the share of gross operating surplus in national income falls outside the equilibrium balance (q^*), taking into account the following:

Growth in consumer demand is related to growth in unit labour costs ($g(w)$) and an increase in jobs.

Growth in aggregate supply is related to growth in labour productivity ($g(\pi_L)$) and an increase in jobs.

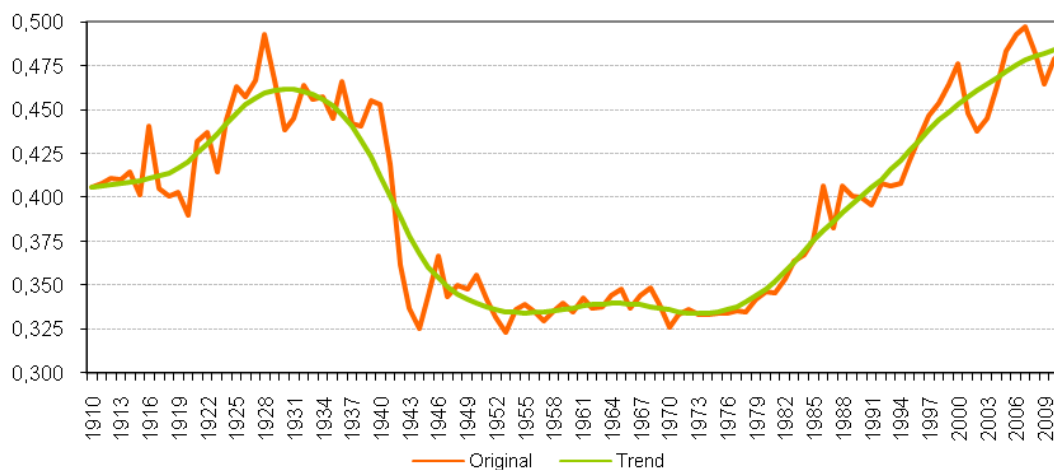
For a given level of job growth, if the rate of increase in unit wage costs ($g(w)$) is above or below the rate of labour productivity gains ($g(\pi_L)$), which would not ensure that q values were within the equilibrium range (q^*), growth in demand and aggregate supply do not balance each other out. If it is due to excess wage rises, it may lead to inflation problems because of the excessive production costs, meaning that the economy's global

⁶ The difference between these two phases of regulation within the equilibrium range (q^*) is that, while in the Keynesian regulation phase household consumption was sustained by wage rises and labour productivity gains, in the neo-liberal phase, because wage increases were curbed, household consumption was financed by increased borrowing, which led to the credit bubble and eventually the Great Recession (Bricall 2013; Lapavistas 2013). In turn, the credit bubble fuelled income inequality and vice versa, especially from 1980 onwards (Bellatini and Delbono 2013).

competitiveness may not be sustainable in the long term (producing a stagflation-induced crisis such as that observed in the 1970s, which was aggravated by the oil shocks of 1973 and 1979-1980). If it is due to a lack of wage growth, it leads to demand problems and excess supply, which could lead to a process of adjustment with falling prices (as occurred in the 1929 crisis and the Great Recession) (Blanchard et al. 2012; Crafts 2013).

Figure 1 shows that changes in q anticipate changes in the compounded annual growth rate of GDP: q values outside the equilibrium range (q^*) forecast falls in GDP growth, while q values within the range forecast that GDP growth will stabilize or recover. In other words, the behaviour of q was able to predict the three major US economic crises of the last hundred years. On the one hand it was able to predict the demand crises of 1929 and the present day, with q values above the equilibrium range, and on the other hand it was able to predict the 1970s crisis of excessive production costs due to excessive wage rises, with q values below the equilibrium range (Minsky 2008; Crafts 2013; Galbraith 2014b).

Figure 2. Contribution of the wealthiest 10% to US national income (1910-2010)
(Hodrick-Prescott filter trend component, $\lambda = 100$)

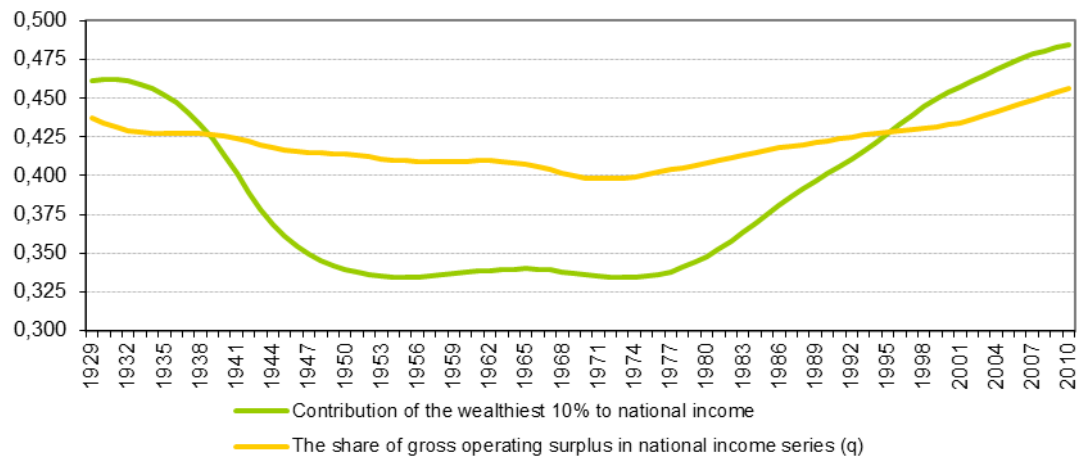


Source: authors' work based on Piketty (2014)

The contribution of the wealthiest 10% of the American population to national income follows a “U” shape. The greatest inequalities were before 1929 (the Great Depression) and after 2007 (the Great Recession). Between these two events is a somewhat stable valley in income inequalities that more or less coincides with the period (in terms of q) of Keynesian regulation, although in Piketty’s study this valley extends from 1945 to 1980 (Krugman 2012; Milanovic 2010). Piketty used US tax records, arguing that they are the only source that can be used to conduct long-run studies on the dynamics of income inequality. However, changes in q , as shown in Figure 1, are also a good indicator of income distribution for the period 1929-2010, since q represents the total value of capital income with regard to national income. Piketty’s distribution, however, appears only to include a subset: the contribution of the wealthiest 10% to national income. In our calculation of q , these highest incomes earned by top executives from pension plans, insurance policies, etc. are accounted for as income in the form of gross operating surplus (E).

Nevertheless, despite the different sources used (as already explained, tax records for Piketty's data and national macroeconomic data for our q estimates), we can conduct a comparative analysis of the two cycle-trend series types, as shown in Figure 3.

Figure 3. Contribution of the richest 10% and share of gross operating surplus to national income. United States. (1929-2010) (Hodrick-Prescott filter trend component, $\lambda = 100$)



Source: authors' work based on Piketty (2014) and NITI database Bureau of Economic Analysis (BEA)

Table 1. Statistical relationship between the contribution of the wealthiest 10% and the share of gross operating surplus to national income (q) (1946-2010)

	Correlation coefficient	Coefficient of determination
1946-1968	0,5153	0,2656
1968-1980	0,9268	0,8590
1980-2003	0,9950	0,9901
2003-2010	0,9919	0,9839
1946-2010	0,9580	0,9177

Source: authors' work based on Piketty (2014) and NITI database Bureau of Economic Analysis (BEA)

Table 1 supplements Figure 3: it shows that there is a strong correlation between the R and R^2 values in the two series, and that the correlation is particularly strong after 1980. This implies that the trend of q was influenced by other capital income until 1980 and by the top earners after 1980, when the share of the wealthiest 10% in national income began to grow exponentially. This analysis is consistent with the previous findings, since the period of Keynesian regulation favoured progressive taxation of the highest incomes and moderation in the remuneration of senior executives through profit sharing schemes; this Keynesian regulation was completely abandoned during the neo-liberal phase. Deregulation of the financial sector gave free rein to regressive tax policies and the payment of scandalous proportions of profits to top executives (Galbraith 2014a; Piketty 2014, 2015; OECD 2014).

The neo-liberal period, which began during Ronald Reagan's presidency and Margaret Thatcher's premiership in the 1980s, brought a halt to the fall in the rate of

profit (r) by controlling wage-cost increases, since if wages had continued to grow at their pre-1980 rates, by 2007 the rate of profit would have been only 2%, i.e. only a tenth of its initial value (Shaikh 2010). So, was neo-liberal regulation effective?

The key variable that determines the changes an effective regulation model is the rate of profit (r),⁷ which between 1945 and 2007 had the following values: 20% in 1947, 10% in 1980 and 10% in 2007. The table below shows updates of Shaikh's figures for the period 1947-2010 using the sources presented in this paper.

⁷ In Figure 1 we argue that variable q can predict GDP falls and recoveries based on whether its value is within its equilibrium range (q^*), so we use q as the key variable that determines the business cycle, and the rate of profit (r) as the key variable that determines a change to the effective regulation model.

TABLE 2. United States. Rate of profit (r), share of corporate profits of nonfinancial corporate business in gross operating surplus (α), share of gross operating surplus in national income (q) and capital productivity (π_k) (1946-2010)

		1946	1968	1980	2003	2010	Growth factors				
							1946-1968	1968-1980	1980-2003	2003-2010	1946-2010
1	Nonfinancial Profits	16,0	88,1	171,8	602,6	1012,0	5,5063	1,9501	3,5076	1,6794	63,2500
2	K_{t-1}	133,7	631,1	2404,5	8727,6	12445,3	4,720	3,810	3,630	1,426	93,084
3	r (1/2)	0,1197	0,1396	0,0714	0,0690	0,0813	1,166	0,511	0,967	1,177	0,679
4	E	84,4	340,2	964,5	4343,8	5892,7	4,031	2,835	4,504	1,357	69,819
5	α (1/4)	0,1896	0,2590	0,1781	0,1387	0,1717	1,366	0,688	0,779	1,238	0,906
6	q	0,4189	0,4088	0,3974	0,4404	0,4626	0,976	0,972	1,108	1,050	1,104
7	αq (5*6)	0,0794	0,1059	0,0708	0,0611	0,0794	1,333	0,669	0,863	1,300	1,000
8	π_k (3/7)	1,5071	1,3185	1,0093	1,1302	1,0236	0,8749	0,7655	1,1198	0,9057	0,6792
9	$r = \alpha q \times \pi_k$	0,1197	0,1396	0,0714	0,0690	0,0813	1,167	0,512	0,966	1,178	0,679

Note: File 1, 2, 4 in Billions of dollars. File 3, 5, 6, 7, 8, 9 are in ratio

Pro-memory of the table 2: Decomposition of Gross Operating Surplus € (Billions of dollars).							Growth factors				
		1946	1968	1980	2003	2010	1946-1968	1968-1980	1980-2003	2003-2010	1946-2010
1	Gross Operating Surplus	84,4	340,2	964,5	4.343,8	5.892,7	4,031	2,835	4,504	1,357	69,819
2	Nonfinancial Profits	16,0	88,1	171,8	602,6	1.012,0	5,506	1,950	3,508	1,679	63,250
3	rs' income with IVA and CCAdj	35,7	73,8	171,6	900,1	1.032,7	2,067	2,325	5,245	1,147	28,927
4	l income of persons with CCAdj	6,9	20,1	19,7	238,0	402,8	2,913	0,980	12,081	1,692	58,377
5	rest and miscellaneous payments	1,9	27,6	186,2	466,2	489,4	14,526	6,746	2,504	1,050	257,579
6	Taxes on production and imports	16,8	76,4	200,3	808,0	1.057,1	4,548	2,622	4,034	1,308	62,923
7	Less: Subsidies (1)	1,4	4,2	9,8	49,1	55,9	3,000	2,333	5,010	1,138	39,929
8	Financial Profits	8,5	58,4	224,7	1.378,0	1.954,6	6,871	3,848	6,133	1,418	229,953

(1) Note: File 8 = 1-2-3-4-5-6+7

Pro-memory of the table 2: Descomposition of Share of Wages and Salaries in National Income (1-q).							Growth factors				
		1946	1968	1980	2003	2010	Growth factors				
							1946-1968	1968-1980	1980-2003	2003-2010	1946-2010
1	Wages and salaries (W)	112	472	1.373	5.138	6.378	4,2143	2,9097	3,7409	1,2413	56,9420
2	All Employees (L)	41.759	68.023	90.533	130.318	130.275	1,6289	1,3309	1,4395	0,9997	3,1197
3	w^* (1/2)	2.682,0566	6.938,8295	15.170,1589	39.425,0986	48.954,1355	2,5871	2,1863	2,5989	1,2417	18,2525
4	(1-q)	0,5811	0,5912	0,6026	0,5596	0,5374	1,0172	1,0193	0,9288	0,9603	0,9248
5	Labour productivity π_L (3/4)	4.615,1528	11.737,7517	25.176,0526	70.447,2606	91.086,5235	2,5433	2,1449	2,7982	1,2930	19,7364

Note: File 1, in Billions of dollars. File 2 in Millions. Files 3 and 5 Dollars by employees; File 4, Ratio

Source: authors' work based on series published by the National Income and Product Accounts (NIPA), the Bureau of Economic Analysis (BEA) and the Bureau of Labor Statistics (BLS)

The dynamics of the rate of profit and the explanatory variables a , q and π_k allow us to infer the following patterns in the behaviour of the US economy:

The greatest recovery of r was during the Keynesian regulation phase (1946-1968, when q was within the equilibrium range (q^*)), when the growth factor was 1.17, thanks exclusively to the growth of a (phase of investment in industrialization and growth in the corporate profits of nonfinancial corporate business, which were greater than $g(E)$ by a factor of 1.37, while q and π_k fell slightly, with factors of 0.98 and 0.87 respectively.

The 1970s crises (1968-1980, when q was below q^*) was marked by a sharp decline in r to values of just over half what they were during the final phase of Keynesian regulation, with a factor of 0.51. This decline is explained by the sharp fall of $g(a)$ to 0.69 (industrial crisis and financialization phase) and π_k , with a factor of 0.76, since q fell slightly during the same period by a factor of 0.97. The main feature of this early phase of the financialization of the economy was the growth of net interest and miscellaneous payments by a factor of 6.75 and of financial profits with a factor of 3.85.

The neo-liberal period (1980-2010) can be divided into two very distinct sub-periods: 1980-2003, when q was within the equilibrium range (q^*), and 2003-2010, which included values of q greater than q^* following the Great Recession sparked by the subprime crisis that broke out during the third quarter of 2007.

During the first of these two sub-periods, the decline slowly came to a halt at around 7% due to changes to the behaviour of the explanatory variables of r compared with their values during the 1970s crisis. The q variable had a growth factor of 1.108, due to the neoliberal change in the labour market; the π_k variable had a growth factor of 1.119; and the financialization of the economy continued, with a $g(a)$ value of 0.779. During this period, the main features of the financialization of the economy were: growth in the rental income of persons by a factor of 12.08 as a result of the boom of stock-market investments by dot-com businesses in the second half of the 1990s, the continued growth of financial profits by a factor of 6.13, and growth in proprietors' income by a factor of 5.25, marking the start of the real estate boom.⁸

There is a notable contrast in the behaviour of the explanatory variables for r in the two periods in which q is in the equilibrium range (q^*), as is the case between the Keynesian regulation phase (1946-1968) and the neo-liberal period (1980-2003). The main differences are: changes to the behaviour of (a), which had growth rates above 1 during the period of strong investment in industry from 1946 to 1968 and below 1 between 1980 and 2003, following the major industrial crisis of the 1970s, which accentuated the growing financialization of the economy between 1968 and 1970; the

⁸ "I point out in my book (...) that the rise of top income shares in the United States over the 1980-2010 period is due for the most part to rising inequality of labor earnings, which can itself be explained by a mixture of two groups of factors: rising inequality in access to skills and to higher education over this time period in the United States, an evolution which might have been exacerbated by rising tuition fees and insufficient public investment; and exploding top managerial compensation, itself probably stimulated by changing incentives and norms, and by large cuts in top tax rates (...) In any case, this rise in labor income inequality in recent decades has evidently little to do with r , and it is clearly a very important historical development" (Picketty, 2015). As Picketty correctly points out, the growing inequality of labour earnings has little to do with the inequality of wealth, a subject not dealt with in this article, but which is the subject of a new debate proposed by Matthew Rognlie (2015). He argues that increasing capital returns have only occurred in the real estate sector. This theory would explain the role of the variable a , or reverse rate financialization of the economy, in our model for explaining the rate of profit (r), since real estate activity is linked to financial activity, which experienced a particularly large boom between 1968 and 2003 (see the comments on the behavior of a in Table 2 and Figure 4).

exceptional nature of the recovery of (π_k) between 1980 and 2003, fuelled by the benefits of the dot-com explosion, especially in the late 1990s; and the recovery of q as a result of the new type of regulation introduced in 1980 to recover from the 1970s crisis, as a result of which, in real terms, wages grew more slowly than labour productivity (see Table 2).

In the 2003-2010 period, P once again grew faster than E , the corporate profits of nonfinancial corporate business recovered and r also recovered (1.177). The financialization of the economy therefore also fell during this period ($g(a) = 1.238$) due to the deep financial crisis that began in the late summer of 2007. As a result, it was the period with the weakest growth in financial profits (1.42). The value of q also improved by a factor of 1.05, and π_k returned to its historical trend, with a growth factor of 0.90.

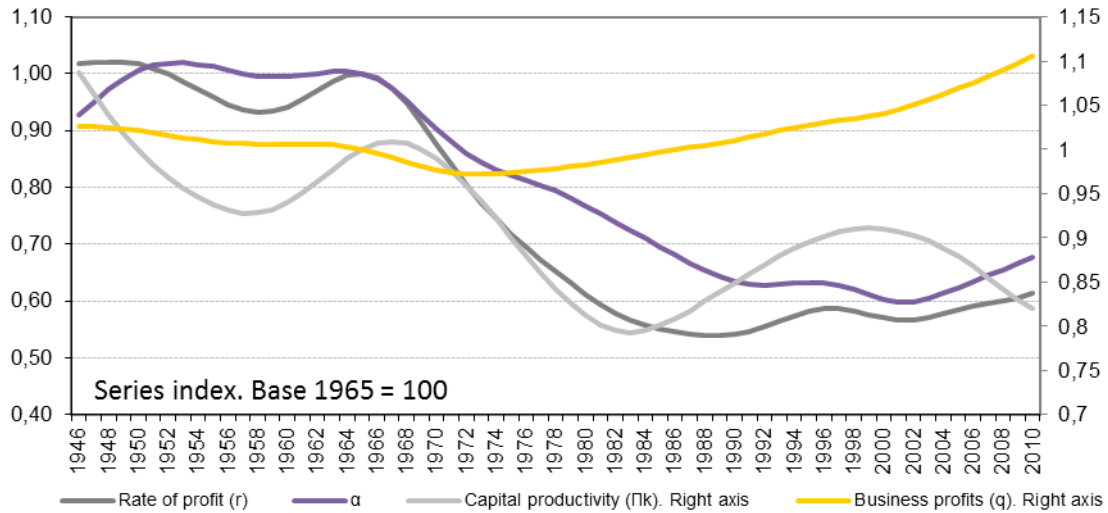
Finally, it is interesting to observe that $a \times q$ has the same values for the start (1946) and the end (2010) of the analysed period. This stability is because the growth of the first factor (q), meaning that inequality grew, was compensated by a fall in the second factor (a), meaning that financialization of the economy increased. In other words, the flip side of the growing financialization of the economy is that inequality also grew.

Figures 4 and 5 are revealing in this respect. Figure 4 shows cycle-trend estimates for the four variables for the period from 1946 to 2010. The graph shows that r levels off after 1980 thanks to the growth of q , while π_k shows an upward trend, especially in two sub-periods: 1957-1967, thanks to the mass consumption boom of the 1960s, with a notable improvement in the use of productive equipment (see Statistical Appendix); and 1982-1999, thanks especially to widespread use of ICTs from the mid-1990s onwards, leading to a new peak in 2000, followed by a decline to 1982 levels by 2009, as a result of the dot-com crisis, suggesting a phase of diminishing returns of productive capital, particularly after the turn of the century, in line with the historical trend.⁹ The cycle-trend of a shows that its values peaked in 1953, then declined until 2001, before returning to its 1982 level by 2010. In Table 2, the periods of financialization where $g(a) < 1$ are 1968-1980 and 1980-2003; the period 2003-2010 includes the impact of the spring 2000 dot-com financial crisis and subsequent stock-market divestments in technology, as well as the impact of the summer 2007 subprime crisis that led to the financial crisis and the Great Recession that began in September 2008.

Figure 5 shows that r began a downward trend in 1968. It began to stabilize in 1980, in the neo-liberal phase, with a multiplying factor of between 1.5 and 2, resulting in the average rate of profit seen during the period of Keynesian regulation.

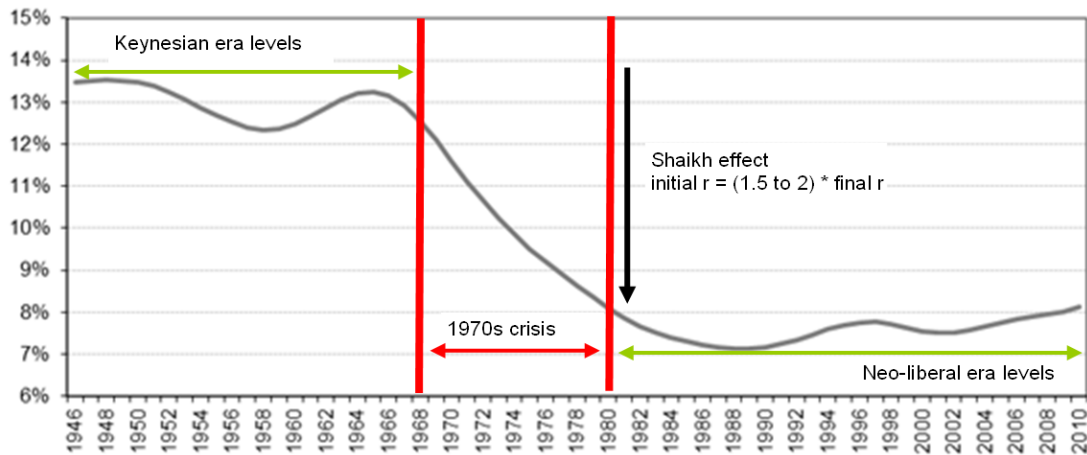
⁹ Picketty said: "Maybe robots and high capital-labor substitution will be important in the future. But at this stage, the important capital-intensive sectors are more traditional sectors like real estate and energy. I believe that the right model to think about rising capital-income ratios and capital shares in recent decades is a multi-sector model of capital accumulation, with substantial movements in relative prices, and with important variations in bargaining power over time." (Picketty 2015)

Figure 4. United States. Rate of profit (r), share of corporate profits of nonfinancial corporate business in gross operating surplus (α), share of gross operating surplus in national income (q) and capital productivity (π_k) (1946-2010)
(Hodrick-Prescott filter, $\lambda = 100$)



Source: authors' work based on the Fixed Assets (FA) series published by the National Income and Product Accounts (NIPA) series published by the Bureau of Economic Analysis (BEA)

Figure 5. United States. Rate of profit (r) (1946-2010).
(Hodrick-Prescott filter trend component, $\lambda = 100$)



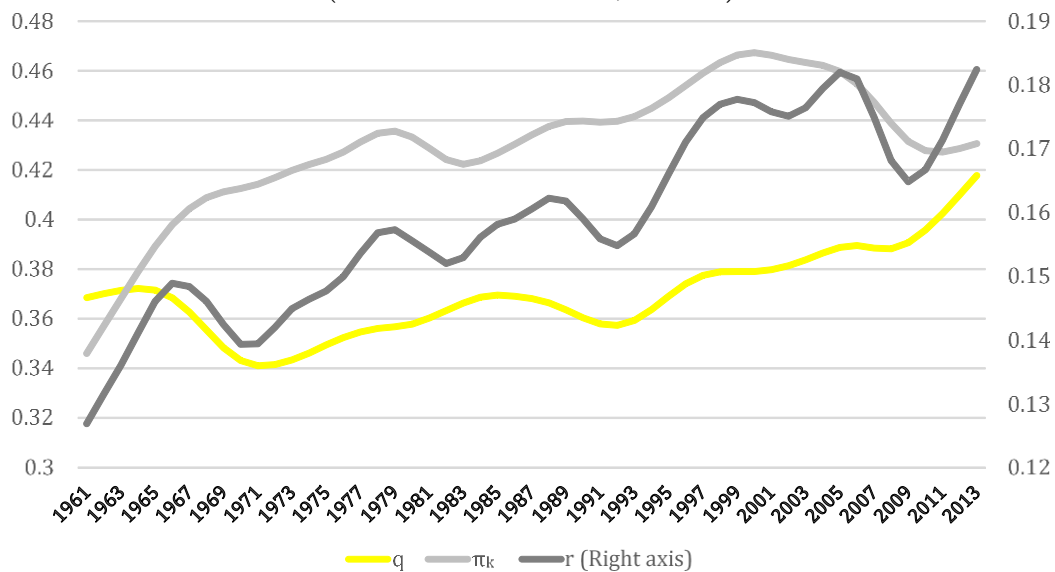
Source: authors' work based on the Fixed Assets (FA) series published by the National Income and Product Accounts (NIPA) series published by the Bureau of Economic Analysis (BEA)

4. United States, Europe: An economic contrast

The analysis of the United States is used as a reference model for analysis of the selected European economies (Germany, France, Italy, UK and Spain) for the period available from the AMECO database (1961-2013) and we have used this periods: 1961-1968; 1968-1980; 1980-2000; 2000-2007; 2007-2013.

The main results of the explanatory model (Manera, Navinés, Franconetti, 2015) support the conclusion that the shift from the Keynesianism model to neo-liberalism since 1980 has substantially reduced the rate of profit of non-financial companies, which are representative of the productive economy, while the financialization of other companies has increased. This significant loss in the level of profit of non-financial companies is explained by a substantial loss of capital productivity, which these companies attempted to counteract during the neo-liberal regulation phase by increasing inequality, significantly raising the share of gross operating surplus in national income (an upward trend of q) and, consequently, reducing the share of wages in national income (Lapavitsas, 2013; Manera, 2015). Meanwhile, consumption levels were maintained by increasing the rate of financialization of the economy.

Figure 6. United States. Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k) (1961-2013)
(Hodrick-Prescott filter, $\lambda = 100$)



Source: Authors' work from the AMECO database.

Table 3. Variables for the United States

	r	q	πK	1-q	W	L	W*	πL	Checksum
	%	%	Bil. Euros	%	Bil. Euros	1,000 People	Euros	Euros	(1-q)=w*/ πL
1,961.00	0.13	0.40	0.32	0.60	309.21	60,773.09	5,087.94	8,479.48	0.60
1,968.00	0.15	0.39	0.38	0.61	531.01	73,443.45	7,230.19	11,806.63	0.61
1,980.00	0.15	0.38	0.40	0.62	1,626.30	93,564.00	17,381.69	28,087.73	0.62
2,000.00	0.18	0.40	0.45	0.60	5,863.10	128,942.00	45,470.83	75,394.36	0.60
2,007.00	0.17	0.41	0.42	0.59	7,908.80	137,876.00	57,361.69	97,770.46	0.59
2,013.00	0.18	0.44	0.41	0.56	8,848.70	136,779.00	64,693.41	114,945.28	0.56
Factors of Growth									
1961-1968	1.2	0.97	1.20	1.02	1.72	1.21	1.42	1.39	1.02
1968-1980	1.0	0.98	1.05	1.01	3.06	1.27	2.40	2.38	1.01
1980-2000	1.2	1.04	1.13	0.97	3.61	1.38	2.62	2.68	0.97
2000-2007	1.0	1.04	0.94	0.97	1.35	1.07	1.26	1.30	0.97
2007-2013	1.0	1.06	0.96	0.96	1.12	0.99	1.13	1.18	0.96
1961-2013	1.4	1.09	1.28	0.94	28.62	2.25	12.72	13.56	0.94

Source: Authors' work from the AMECO database.

These results, as we have already shown, differ from those which we recalculated from the AMECO database for the United States for the reasons explained above. In the case of the United States, the rates of profit of financial and non-financial companies shown in Figure 4 and 5 differ substantially from the rates of profit of non-financial companies (Figure 6). The rates of profit of the non-financial companies did not recover during the neo-liberal phase, but the rates of the financial companies did recover after 1980, which may explain why the growth of q – and the financialization of the economy, as illustrated by the drop in α from 1965 shown in Figure 4 – and the reduction in ULC compensate capital productivity after 2000. It is crucial to understand the effect of financialization of the economy to understand the behaviour of total aggregate profit. In 1968, at the end of the phase of industrialization and the growth of Keynesian regulation, the profits of non-financial companies peaked at 77.4% of total company profits. Their lowest level during the neo-liberal phase was 31.9% in 2000 (see Table 4).

Table 4. Profits of non-financial companies as a percentage of total profit (1961-2010)

1961	59.9%
1968	77.4%
1980	43.3%
2000	31.9%
2007	35.7%
2010	34.1%

Source: Manera, Navinés, Franconetti, 2015, statistical appendix.

The contrast between the European economies and the United States economy highlights four central ideas that open up new avenues for research:

1. Economic differentiation: Anglo-Saxon capitalism vs. European capitalism.

Empirical evidence shows that between 1961 and 2013, there were two distinct blocks among the major capitalist economies analysed: the Anglo-Saxon capitalist model used by the United States and the United Kingdom, and continental European capitalism, used by Germany, France, Italy and Spain. During the neo-liberal phase (1980-2013), the continental European economies adopted new patterns of behaviour inspired by the Anglo-Saxon model.

2. The central weight of Germany.

In the continental European model, this paper analyses the differences between Germany and the southern European economies.

3. The gaps among European countries.

Southern European economies broke away from the continental model much later than Germany.

4. A difficult exit from the crisis.

Finally, analysis of current strategies to exit from the Great Recession shows that all the capitalist economies analysed opted for a false solution to the crisis, focusing on recovering the rate of profit by controlling ULC without being able to increase the efficiency of capital and productive investments.

Let us look at these four proposals in more detail:

1) Economic differentiation: Anglo-Saxon capitalism, European capitalism.

In the Anglo-Saxon model, countries grew their rate of profit (r) by controlling ULC, especially throughout the neo-liberal phase, which explains the growth of the share of national income surplus (q) along with growth in the productive efficiency of capital measured by productivity growth (π_k). By contrast, in the continental European model, there is no growth in the rate of profit (r) or any decrease in ULC to explain the fall of q , and there is no growth in capital productivity (π_k). In the Anglo-Saxon model, the United States has greater productive efficiency than the UK, which is reflected in the better performance of capital productivity (π_k), allowing the country to maintain a higher growth rate of profit (r) despite exercising less control over ULC (see Figure 6 and Table 3 for the United States and the statistical annex for the UK). In the other continental European countries that were analysed, the rate of profit fell (Spain experienced the sharpest drop, followed by Italy, France and Germany) due to a fall in q , an increase in ULC (most evident in Spain) and a fall in capital productivity (π_k) (see Table 3 and the statistical annex for the European countries).

Table 5. Growth factors of the rate of profit (r), share surplus (q), capital productivity (π_k) and Unit Labour Costs (ULC) (1961-2013)

	r	q	π_k	ULC
USA	1.404	1.093	1.284	0.938
UK	1.214	1.144	1.061	0.918
Germany	0.915	0.928	0.985	1.063
France	0.792	0.856	0.925	1.123
Italy	0.725	0.930	0.779	1.100
Spain	0.596	0.830	0.718	1.236

Source: Authors' work from the AMECO database.

2) The central weight of Germany.

As seen in the previous paragraph, the Anglo-Saxon pattern of behaviour is compatible with growth in the rate of profit (r), growth in q and a fall in ULC, as well as developments in capital productivity (π_k). For the period from 1980 to 2013, this growth pattern was achieved only by West Germany for 1980-1989 and Germany for 2000-2007. The other continental European countries did not achieve this pattern in any of the sub-periods analysed, as shown in Table 5 and 6.

Table 6. Growth factors of the rate of profit (r), share surplus (q) capital productivity (π_k) and Unit Labour Costs (ULC) (1980-2013)

	r	q	π_k	ULC	Period
West Germany	1.241	1.007	1.233	0.996	(1980-1989)
Germany	1.171	1.131	1.035	0.906	(2000-2007)

Source: Authors' work from the AMECO database.

In the case of Germany, the costs of reunification were paid during the period 1991-2000 (see table of Germany in the statistical annex), with falls in r and π_k . During the next period (2000-2007) there was a strong recovery in r , q and π_k and a reduction in ULC. This is based on two key facts: the implementation of Agenda 2010 by Chancellor Schröder, and EU enlargement, in which Germany will bolster its industrial conglomerate (Simonazzi-Ginzburg, 2015) and reinforce its export quota to the rest of the EU, the United States and emerging nations (essentially BRICS). This pattern of growth is more in line with the Anglo-Saxon model and is accompanied by a stronger financial sector and financialization (Wallwitz, 2011).

3) Gaps among European countries.

The key variable marking different patterns of behaviour among continental European countries is capital productivity (π_k), given that neo-liberal policies and control of ULC have been implemented in Europe throughout the sub-periods analysed: 1980-2007 in France, 1980-2000 in Italy, 1980-2000 and 2007-2013 in Spain, and 1991-2007 in Germany. However, since 1980 only West Germany (1980-1989) and Germany have boosted growth in capital productivity. Table 7 shows the evolution of capital productivity for countries in southern Europe between 1968 and 2013.

Table 7. Growth of capital productivity (π_k) for France, Italy and Spain (1968-2013)

	1968-1980	1980-2000	2000-2007	2007-2013
France	1.019	0.919	0.997	0.899
Italy	1.241	0.738	0.944	0.855
Spain	0.944	0.821	0.925	0.790

Source: Authors' work from the AMECO database.

As can be seen, since 1980, France and Italy have distanced themselves from the process of growing capital productivity (π_k). Spain did the same throughout the crisis of the 1970s.

4) A difficult exit from the crisis.

By “false exit from the crisis”, we mean one that occurs due to a lack of capital productivity (π_k). As outlined below, no country analysed fulfils this condition, not even the United States, which over the period from 2007 to 2013 recovered its rate of profit (r), as shown in Table 8.

Table 8. Growth factors of the rate of profit (r), share surplus (q) capital productivity (π_k) and Unit Labour Costs (ULC) (2007-2013)

	r	q	π_k	ULC
USA	1.017	1.058	0.961	0.959
UK	0.933	1.020	0.915	0.986
Germany	0.914	0.925	0.988	1.067
France	0.847	0.943	0.899	1.042
Italy	0.835	0.976	0.855	1.030
Spain	0.825	1.044	0.790	0.962

Source: Authors' work from the AMECO database.

In Table 8, two strategies appear to emerge in response to the crisis in an attempt to achieve the impossible task of raising capital productivity (π_k). The more overtly neo-liberal strategy, adopted by the United States, the United Kingdom and Spain, involves a commitment to accelerate growth of q and cut labour costs while increasing labour productivity. In the United States, however, only the profit rate recovered, as mentioned previously. The other European countries – Germany, France and Italy – follow a different strategy, allowing ULC to grow and q to fall, but without offsetting this increase in wage costs by raising capital productivity (π_k), which also reduces the rate of profit (r).

5. Initial conclusions

For comparative analysis of the United States and the European economies of Germany, France, Italy, Spain and the United Kingdom, four lines of research with partial results are explained below:

1. There are two models of behaviour for 1961-2013.

The Anglo-Saxon model, used by the United States and the United Kingdom, and the model observed by the other European economies: Germany, France, Italy and Spain. Under these models, the key variables behave very differently, as shown in the

following table, in which plus signs (+) represent a variable that grows and minus signs (-) represent those that fall.

Growth factors of the rate of profit (r), share surplus (q) capital productivity (π_k) and Unit Labour Costs (ULC) (1961-2013)

	r	q	π_k	ULC
Anglo-Saxon model	+	+	+	-
Continental European model	-	-	-	+

2. *Only the former West Germany (1980-1989) and Germany (2000-2007) have managed to emulate the Anglo-Saxon model.*

3. *The key variable: capital productivity (π_k).*

All European countries have used neo-liberal policies to control ULC. The following table shows whether growth in capital productivity (π_k) was achieved or not in different periods between 1968 and 2013:

Growth of capital productivity

	1968-1980	1980-2000	2000-2007	2007-2013
West Germany/Germany	+	+	+	-
France	+	-	-	-
Italy	+	-	-	-
Spain	-	-	-	-

The table shows that Germany maintained growth until the Great Recession, but France and Italy were unable to do so throughout the neo-liberal phase, and Spain has had negative capital productivity growth since the 1970s.

4. *The exit from the crisis is false without growth in capital productivity (π_k).*

Comparison of the growth model during the Golden Age of capitalism (the 1960s) with that of the current phase (the Great Recession) shows that the United States has inverted its growth pattern, as shown in the following table:

Growth factors of the rate of profit (r), share surplus (q) capital productivity (π_k) and Unit Labour Costs (ULC) in the United States

	r	q	(π_k)	ULC
Golden Age	+	-	+	+
2007-2013	+	+	-	-

In other words, during the Golden Age, growth in the rate of profit (r) was achieved by increasing capital productivity (π_k), despite growth in ULC, allowing economies to sustain the growth in consumer demand. Now, however, given that growth in capital productivity has stagnated, measures to exit the Great Recession and recover the rate of profit focus on controlling and reducing labour costs, which drags down consumption, leading to a growing dependence on credit. This is not sustainable

in the long term, as spiralling debt leads to recurring financial crises that drag down the real economy.

A final note:

Whichever database is used, there is no indication that the current ICT-based technology revolution will enable capitalist economies to move out of the current phase of development. These economies have been unable to reverse the downward trend of π_k . Since 1980, only the United States (1980-2000), West Germany (1980-1989), Germany (2000-2007) and the United Kingdom (2000-2007) have been able to reverse this trend. If π_k continues to fall, developed capitalist economies will struggle to tackle secular stagnation (Blanchard, Cerutti, Summers, 2015; Summers, Fatás, 2015). We hope these explanations will open up new perspectives for research on the Great Recession, and more broadly, on the nature and development of economic crises.

Bibliography

- Atkinson A., Piketty T., and Saez E. (2009), 'Top Incomes in the Long Run of History', *NBER working paper*, 15408.
- Austin G. *et al.* (2013), *Labour-Intensive Industrialization in Global History*. London and New York: Routledge.
- Bellatini G., Delbono F. (2013), 'Persistence of high income inequality and banking crises', *Quaderni-Working Paper DSE*, 885.
- Blanchard O. *et al.* (2012), *In the Wake of the Crisis*, The MIT Press, Cambridge-London.
- Blanchard O., Ceuktti E., Summers L., (2015), Comment on 'Inflation and Activity', Laurence Ball, August 2015 in <http://www.econ2.jhu.edu/People/Ball/BlanchardComment.pdf>
- Brenner R. (2006), *The Economics of Global Turbulence: The Advanced Capitalist Economies from Long Boom to Long Downturn*, Akal, Madrid.
- Bricall J. M. (1999), 'Estructura de un proceso de acumulación' in *Economía política del crecimiento, fluctuaciones y crisis*, J.M. Bricall and Óscar de Juan (coord.), Ariel Economía Barcelona.
- Bricall J. M. (2013), *Cinco ensayos sobre la crisis y sus consecuencias para el estado de bienestar*, RBA Libros, Barcelona.
- Castro E. , Fernández De Lucio I. (2013), *El significado de innovar*, CSIC-Catarata, Madrid.
- Coase, R. (2012), 'Saving Economics from the Economists' in <https://hbr.org/2012/12/saving-economics-from-the-economists>.
- Crafts, N. (2013), *The Great Depression of the 1930s: Lessons for Today* , Oxford University Press, Oxford.
- De Bernis, G.D. (1988), *El capitalismo contemporáneo. Regulación y crisis*, Nuestro Tiempo, Mexico.
- Duménil G., Lévy D. (2000), *Crise et sortie de crise: Ordre et désordres néolibéraux*, Presses Universitaires de France, Paris.
- Duménil G., Lévy, D. (2012), 'Being PostKeynesian [sic] in the Medium Term and Classical-Marxian in the Long Term?' in <https://www.jourdan.ens.fr/levy/dle2012o.pdf>
- Duménil G., Lévy D. (2014), *La crisis del neo-liberalismo*, Lengua de Trapo, Madrid.
- Easterly W. (2014), *The Tyranny of Experts: Economists, Dictators, and the Forgotten Rights of the Poor*, Basic Books, New York.

- European Commission (2013), *Research and Innovation Performance in the EU: Innovation Union Progress at Country Level*, European Commission, Brussels.
- Fagerberg, J., Verspagen, B. (2009), 'Innovation studies: The emerging structure of a new scientific field', *Research Policy*, 38, 218-233.
- Fatás A., Summers L.S. (2015), *The permanent Effects of Fiscal Consolidations*, a paper by INSEAD, ABFER and CEPR.
- Fernández J., Pérez F., Serrano L. (2016), *Crisis económica, confianza y capital social*, Fundación BBVA, Bilbao.
- Flassbeck H. (2012), 'The Economics and Politics of Inequality Reconsidered', in *Trade and Development Report, 2012*, UNCTAD, New York and Geneva.
- Flassbeck H. (2014), 'Labour markets and economic development' in H. Flassbeck, P. Davidson, J.K. Galbraith, R. Koo and J. Ghosh, *Economic Reform Now: A Global Manifesto to Rescue our Sinking Economies*, Palgrave Macmillan, New York and Basingstoke.
- Galbraith J.K. (2014b), *The End of Normal*, Free Press, Austin.
- Galbraith J.K. (2014a), 'Capital in The Twenty-First Century', *Dissent*, spring, 25-3-2014.
- Galbraith J.K., Ferguson T. (1999), 'The American Wage Structure, 1920-1947', *Research in Economic History*, 19, 205-257.
- Galbraith J.K., Travis Hale J. (2014), 'The Evolutions of Economic Inequality in the United States, 1962-2012: Evidence from Data on Inter-Industrial Earnings and Inter-Regional Incomes', *World Economic Review*, 3, 1-19 in <http://tinyurl.com/my9oft8>
- Hodrick R.A. (1980), 'Postwar U.S. Business Cycles: An Empirical Investigation', *Carnegie-Mellon University Discussion Papers*, 451, Northwestern University, Pittsburgh.
- IMF (2014), 'Fiscal Policy and Income Inequality', *IMF Policy Paper*, January 23 in <http://www.imf.org/external/pp/ppindex.aspx>
- Kalecky M. (1937), 'A Macrodynamics Theory of Business Cycles', *Econometrica*, 3, 327-344.
- Keynes J.M. (1936), *The General Theory of Employment, Interest and Money*, Macmillan, London.
- Krugman P. (2012), *End This Depression Now*, W.W. Norton & Company, New York.
- Lapavistas C. (2013), *Profiting without Producing*, Verso, London and New York.
- Madrack J. (2011), *Age of Greed*, Alfred Knopf, New York.
- Madrack J. (2014), *Seven Bad Ideas*, Alfred Knopf, New York.
- Manera C. (2013), *The Great Recession: A Heterodox View*, London School of Economics-Sussex, London.
- Manera C. (2015), *La extensión de la desigualdad*, La Catarata, Madrid.
- Manera C., Navinés F., Franconetti J. (2015), 'Income Distribution, Profit and Inequality: Their Role in U.S. Economic History, 1910-2010', *Economies et Sociétés*, 50, June 2015, série AF: 'Histoire économique quantitative'.
- Marcet A., Ravn O. (2003), *The HP-Filter in Cross-Country Comparisons*, available at <http://www.econ.upf.edu/docs/papers/downloads/588.pdf>.
- Maudos J. (2014), 'Sostenibilidad de la deuda pública: España en el contexto europeo', *Cuadernos de Información Económica*, 239.
- Milanovic B. (2010), *The Haves and the Have-Nots: A Brief Idiosyncratic History of Global Inequality*, Basic Books, New York.
- Minsky H. (2008), *Stabilizing an Unstable Economy*, McGraw-Hill Education, Yale University Press, New York.
- Noah T. (2012), *The Great Divergence: America's Growing Inequality Crisis and What We Can Do About It*, Bloomsbury Press, New York.

- Oecd (2011), *Divided We Stand: Why Inequality Keeps Rising*, in www.oecd.org/els/social/inequality
- Oecd (2014), *Focus on Top Incomes and Taxation in OECD Countries: Was the Crisis a Game Changer?*, Directorate for Employment, Labour and Social Affairs, Paris.
- Ostry J.D., Berg A., Tsangarides C.G. (2014), 'Redistribution, Inequality, and Growth', *IMF Staff Discussion Note*, February, SDN/2014.
- Piketty T. (2014), *Capital in the Twenty-First Century*, Belknap Press, Cambridge MA .
- Piketty T. (2015), 'About Capital in the Twenty-First Century', *American Economic Review: Papers & Proceedings 2015*, 105(5), 1-6.
- Robinson J. V. (1956), *The Accumulation of Capital*, Macmillan, London.
- Rognlie M. (2015), 'Deciphering the fall and rise in the net capital share', *Brookings Papers on Economic Activity*, BPEA Conference Draft, March 19-20.
- Schui F. (2014), *Austerity: The Great Failure*, Yale University Press, New Haven and London.
- Schumpeter J. A. (1942), *Capitalism, Socialism and Democracy*, Harper & Row, New York, San Francisco and London.
- Shaikh A. (1983), 'The Falling Rate of Profit' in J.J. van Duijn, *The Long Wave in Economics Life*, Allen and Unwin, London.
- Shaikh A. (1992), 'The Falling Rate of Profit as the Cause of Long Waves: Theory and Empirical Evidence' in A. Kleinknecht, E. Mandel, I. Wallerstein (ed.), *New Findings in Long Wave Research*, St. Martin's Press, New York.
- Shaikh A. (2010), 'The First Great Depression of the 21st Century', *Socialist Register 2011: The Crisis this Time*, in <https://sites.google.com/a/newschool.edu/anwar-shaikh/publications>.
- Simonazzi A., Ginzburg A. (2015), 'The interruption of the industrialization processes in Southern Europe: a centre-periphery perspective'. Presentation. AELN; Pavia Congress, April 2015, in <http://www.aenl.org/ita/index.htm>
- Stiglitz J.E. (2012), *The Price of Inequality: How Today's Divided Society Endangers Our Future*, W.W. Norton, New York.
- Sylos Labini P. (1988), *The Forces of Economic Growth and Decline*, Cambridge, The MIT Press, MA and London.
- Wallwitz G. Von, (2011), *Odysseus und die Wiesel. Eine fröhliche Einführung in die Finanzmärkte*, Berenberg Verlag, Berlin.

Methodological appendix

Appendix 1¹⁰

In this article, which focuses on analysis of the US economy, we used one of the main official US databases: the National Income and Product Account (NIPA) published by the Bureau of Economic Analysis (BEA) and the Bureau of Labour Statistics (BLS).^{11, 12} Below we explain how the selected BEA and BLS series were processed for each table and figure.

Figure 1. For the share of gross operating surplus in national income series (q), we used the “National Income by Type of Income” data (Table 1.12). We defined the share of gross operating surplus in national income (q) as the ratio between gross operating surplus (E) and national income (Y). We calculated the gross operating surplus (E) by taking the “National Income” (row 1) and subtracting “Compensation of Employees” (row 2) minus “Employer contributions for employee pension and insurance funds” (row 7), then dividing the result by the “National Income” (row 1). The reason we subtracted contributions to pension funds, insurance policies, bonds, etc. from the total wage bill was because we understand that these funds were financed by business profits, so we classified them as such, since they began to increase significantly in 1980 and are, for the most part, included in the remunerations of senior executives. The increase in these contributions began precisely when there was a slowdown in the average increase in wages per worker, which do not include these emoluments. The compound annual accumulative real growth rate of GDP was taken from “Maddison Historical GDP Data” (updated 2010).

In this figure we use the term “stylized series” because a polynomial function of degree 3 has been calculated for the variable q and a polynomial function of degree 4 has been calculated for GDP. All variables are expressed in current terms. Given that we established that $q = 1 - w / \pi$, where w is the wage cost per worker and π is the labour productivity, for values of q within the equilibrium range q^* , $g(q)$ will maintain values of q compatible with q^* , provided that $g(w) = g(\pi)$. However, q may be above q^* if $g(w) < g(\pi)$, and may be below q^* if $g(w) > g(\pi)$.

Figure 2. For the series “Contribution of the wealthiest 10% to US national income (1910-2010)”, we used Piketty’s database (<http://piketty.pse.ens.fr/fr/>), applying the Hodrick-Prescott filter to obtain the trend.

Figure 3. For the series “Contribution of the richest 10% and share of gross operating surplus to national income”. Figure 2 and Figure 1.

Table 1. For the periods indicated, we calculated the Pearson product-moment correlation coefficient and the coefficient of determination for the series shown in Figure 3, and the relationship between those series.

¹⁰ We appreciate the comments on this section of Juan Antonio Vicente Virseda (jvicente@cee.uned.es).

¹¹ Bureau of Economic Analysis, last revised on 25 November 2014: (<http://www.bea.gov/national/index.htm>) and (<http://www.bls.gov/>).

¹² For more information see <http://www.bea.gov/about/mission.htm>.

Table 2. The table shows the values we obtained for the years and periods indicated. For the corporate profits of nonfinancial corporate business (P) we used the Shaikh method: corporate profits with IVA and CCAdj (row 11, table 1.14 NITI) plus other private business (row 11, table 7.11 NITI) minus nonprofit institutions (row 18, table 7.11 NITI). For the rate of profit we calculated the ratio between the corporate profits of nonfinancial corporate business (P) and the private fixed assets of nonfinancial corporations at t_1 (row 4, table 6.1 Fixed Assets). For the share of business profits (P) in gross operating surplus (E) we used the formula $P / E = a$ (see Figure 1). We calculated capital productivity as the ratio between the rate of profit (r) and $a \times q$ (see Figure 1).

In the addenda to Table 2 we calculated financial profits as the difference between gross operating surplus (E) and the sum of: corporate profits of nonfinancial corporate business (P), proprietors' income with VAT and CCAdj (row 9, Table 1.12 NITI), rental income of persons with CCAdj (row 12 NITI, Table 1.12), net interest and miscellaneous payments (row 18, Table 1.12 NITI), taxes on production and imports (row 19, Table 1.12 NITI), and subsidies (row 20, Table 1.12 NITI).

The wage cost per worker (w) was calculated as W / L , where W refers to wages and salaries (row 3, Table 1.12 NITI) and L refers to "all employees" as calculated by the Bureau of Labor Statistics (BLS). We estimated labour productivity (π) as $w / (1-q)$, where the growth factor ($g(1-q)$) is equal to $g(w) / g(\pi)$.

Finally, in the statistical annex, we used π_k to estimate the value of the change in the utilization of productive equipment (UT), using the formula $UT = \pi_k / \pi_{kmax}$, where π_{kmax} is the maximum value of π_k for the period 1946-2010, and 1946 is the base year, with a value of 100.

Figure 4. Trend series of the rate of profit (r), the share of gross operating surplus (q), the share of business profits in gross operating surplus (a), and capital productivity (π_k).

Figure 5. Trend series of the rate of profit (r).

Appendix 2

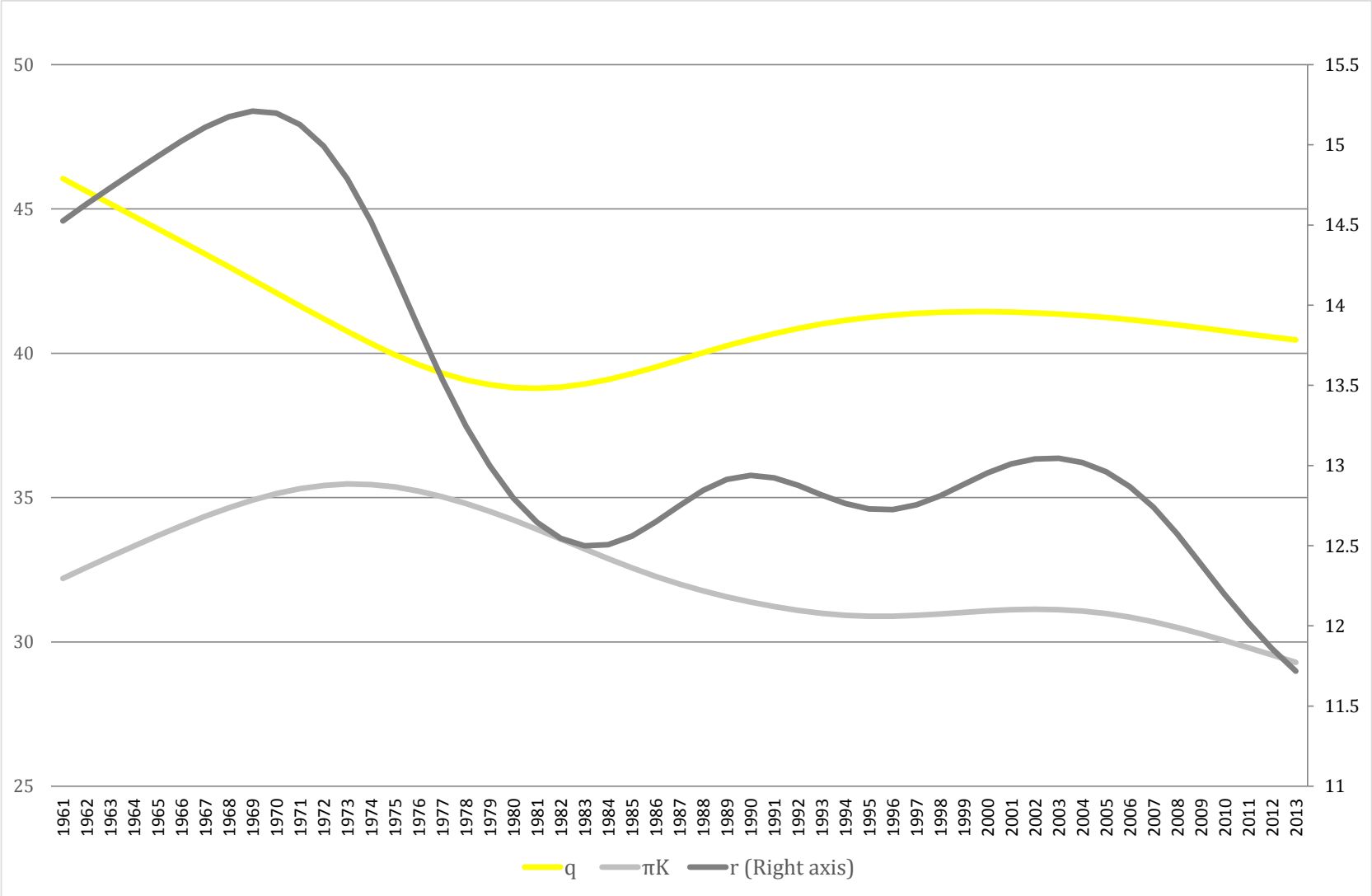
The AMECO database is published annually and is managed by the Directorate General for Economic and Financial Affairs of the European Commission (DG ECFIN). It presents information primarily for the period 1960-2013 and projections until 2016. Because AMECO does not provide such a detailed breakdown from the BEA and LSB database, we have had to make adjustments and approximations regarding our previous work (Manera, Navinés, Franconetti, 2015):

- National Income was taken from the series with the code UVNN (Net National Income at current prices).
- The Gross Operating Surplus (GOS) was obtained from the coded series UOGD (Gross Operating Surplus).
- Corporate profits (P) could not be estimated from the data available, so the variable described in the previous paragraph as Gross Operating Surplus (UOGD) is used as a proxy.
- The capital stock of non-financial companies is another variable that could not be obtained, so the coded series OKND (Net Capital Stock at constant prices), converted to current prices from the coded series PVGD (Price Deflator Gross Domestic Product), has been used as a proxy instead. As in the case of the United States, it is delayed by a period (Kt-1).
- Therefore, in this case, a Rate of Profit (r) was used that could better be classified as Gain, obtained by dividing the gross operating surplus (GOS) by the series of total Gross Value Added at basic prices (GVA).
- For this last series, we left the Gross Operating Surplus (AMECO code UOGD) and added the compensation of employees (W) (AMECO code UWCD), resulting in Gross Added Value at basic prices.
- Under the AMECO code UGVAC, Gross Added Value at basic prices of corporations is collected. This series is part of 1980 for Germany and Italy, 1989 for the United Kingdom, and only part of 1960 for France. That is why the Gross Value Added at basic prices was chosen (AMECO code UVGD), since it covers the entire period analysed for all the selected economies.
- By adding taxes on production and imports to the previous series and subtracting subsidies (AMECO code UTVN), we obtain Gross Domestic Product at market prices.
- Capital Productivity (πK) was calculated by dividing the total Gross Value Added at basic prices (GVA) by the Net Capital Stock at current prices (Kt-1).

Statistical appendix

FRANCE

Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k) (1961-2013)
(Hodrick-Prescott filter, $\lambda r=55,95$; $\lambda q=690,60$; $\lambda \pi_k=317,56$)



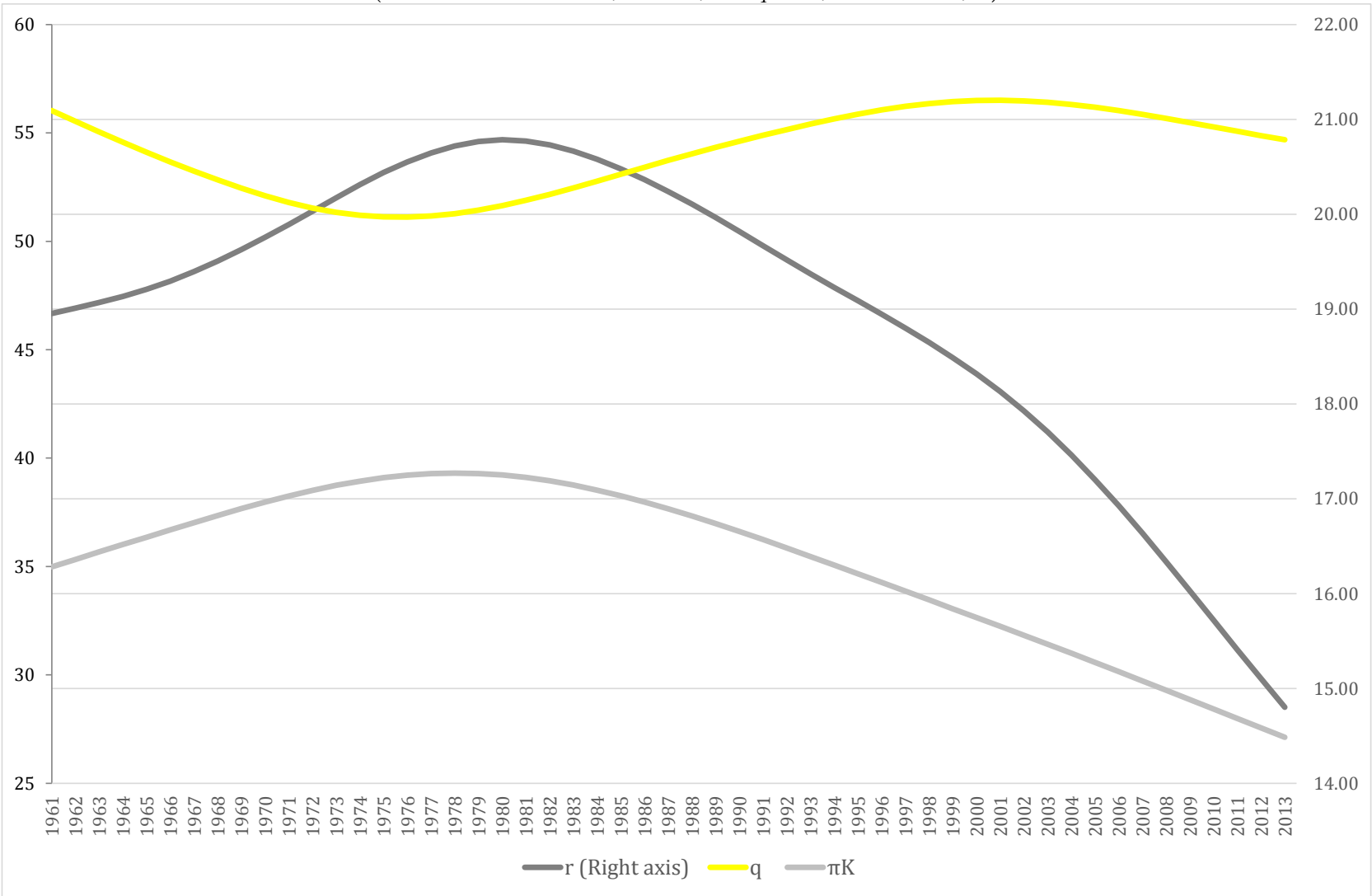
	r	q	πK	1-q	W	L	w*	πL	Checksum
	%	%	Bil. Euros	%	Bil. Euros	1,000 People	Euros	Euros	(1-q)=w*/ πL
1,961.00	0.14	0.46	0.31	0.54	23.49	14,696.00	1,598.12	2,972.37	0.54
1,968.00	0.15	0.44	0.34	0.56	48.03	16,074.00	2,987.81	5,289.16	0.56
1,980.00	0.13	0.37	0.35	0.63	249.94	19,078.00	13,100.90	20,743.00	0.63
2,000.00	0.13	0.42	0.32	0.58	751.51	23,347.00	32,188.55	55,086.56	0.58
2,007.00	0.13	0.42	0.32	0.58	979.93	24,649.00	39,755.37	68,554.42	0.58
2,013.00	0.11	0.40	0.29	0.60	1,104.45	24,435.00	45,199.55	74,831.39	0.60

	Factors of Growth								
1961-1968	1.04	0.94	1.10	1.05	2.04	1.09	1.87	1.78	1.05
1968-1980	0.86	0.85	1.02	1.12	5.20	1.19	4.38	3.92	1.12
1980-2000	1.04	1.13	0.92	0.93	3.01	1.22	2.46	2.66	0.93
2000-2007	1.01	1.01	1.00	0.99	1.30	1.06	1.24	1.24	0.99
2007-2013	0.85	0.94	0.90	1.04	1.13	0.99	1.14	1.09	1.04
1961-2013	0.79	0.86	0.93	1.12	47.03	1.66	28.28	25.18	1.12

Source: Authors' work from the AMECO database.

ITALY

Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k) (1961-2013)
(Hodrick-Prescott filter, $\lambda_r=531,07$; $\lambda_q=668,40$; $\lambda_{\pi_k}=2786,80$)



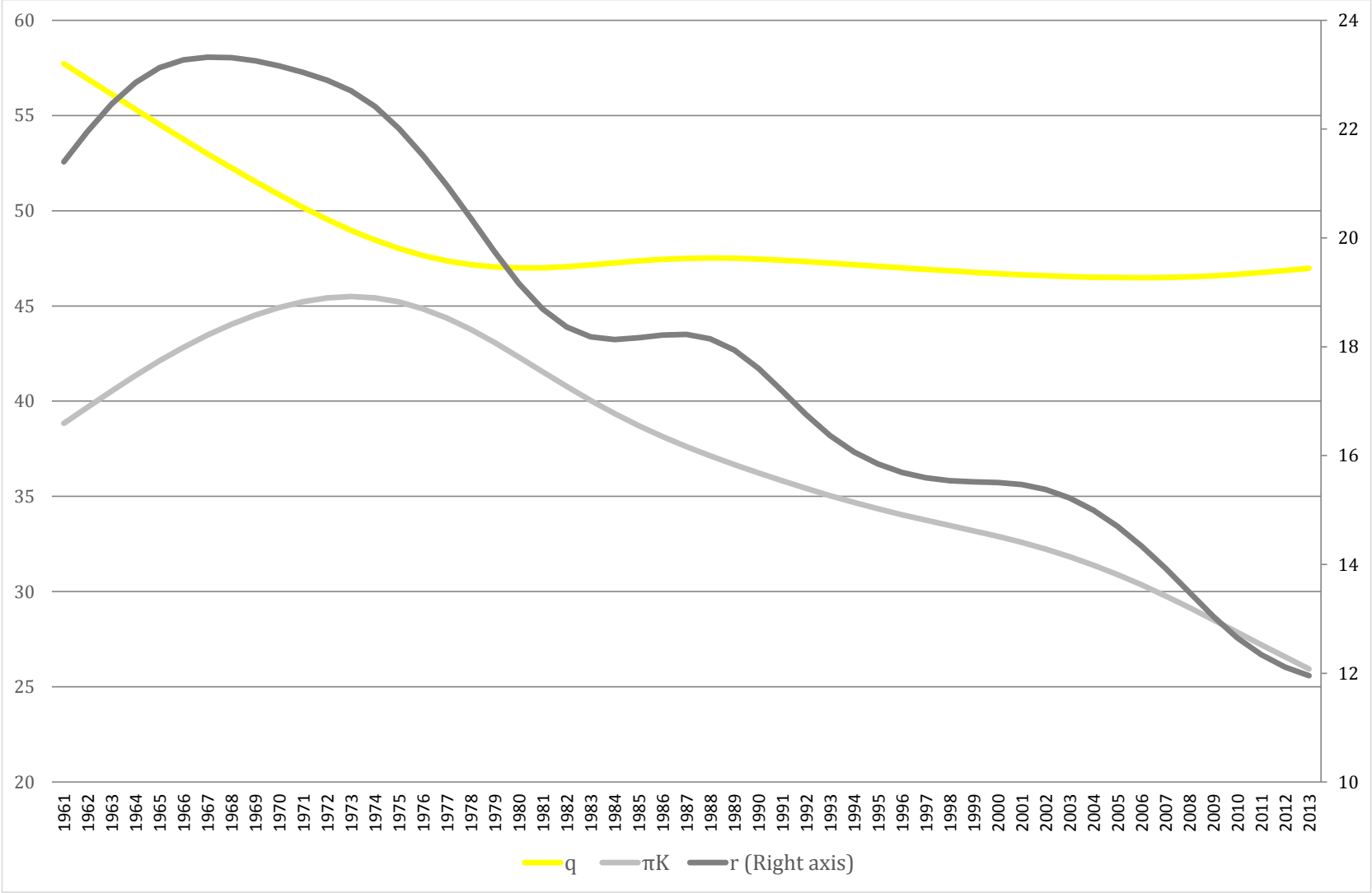
	r	q	πK	1-q	W	L	w*	πL	Checksum
	%	%	Bil. Euros	%	Bil. Euros	1,000 People	Euros	Euros	(1-q)=w*/πL
1,961.00	0.20	0.59	0.34	0.41	5.66	13,173.16	429.39	1,040.10	0.41
1,968.00	0.19	0.54	0.36	0.46	12.39	13,592.90	911.16	1,993.28	0.46
1,980.00	0.23	0.52	0.44	0.48	96.15	15,462.35	6,218.45	12,964.15	0.48
2,000.00	0.19	0.58	0.33	0.42	458.00	16,664.70	27,483.14	64,876.78	0.42
2,007.00	0.17	0.56	0.31	0.44	617.21	18,639.70	33,112.77	75,120.63	0.44
2,013.00	0.14	0.55	0.26	0.45	636.32	18,082.70	35,189.27	77,509.67	0.45

	Factors of Growth								
1961-1968	0.97	0.92	1.05	1.11	2.19	1.03	2.12	1.92	1.11
1968-1980	1.19	0.96	1.24	1.05	7.76	1.14	6.82	6.50	1.05
1980-2000	0.82	1.11	0.74	0.88	4.76	1.08	4.42	5.00	0.88
2000-2007	0.92	0.97	0.94	1.04	1.35	1.12	1.20	1.16	1.04
2007-2013	0.84	0.98	0.86	1.03	1.03	0.97	1.06	1.03	1.03
1961-2013	0.72	0.93	0.78	1.10	112.50	1.37	81.95	74.52	1.10

Source: Authors' work from the AMECO database.

SPAIN

Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k) (1961-2013)
(Hodrick-Prescott filter, $\lambda r=25,04$; $\lambda q=549,10$; $\lambda \pi_k=350,81$)



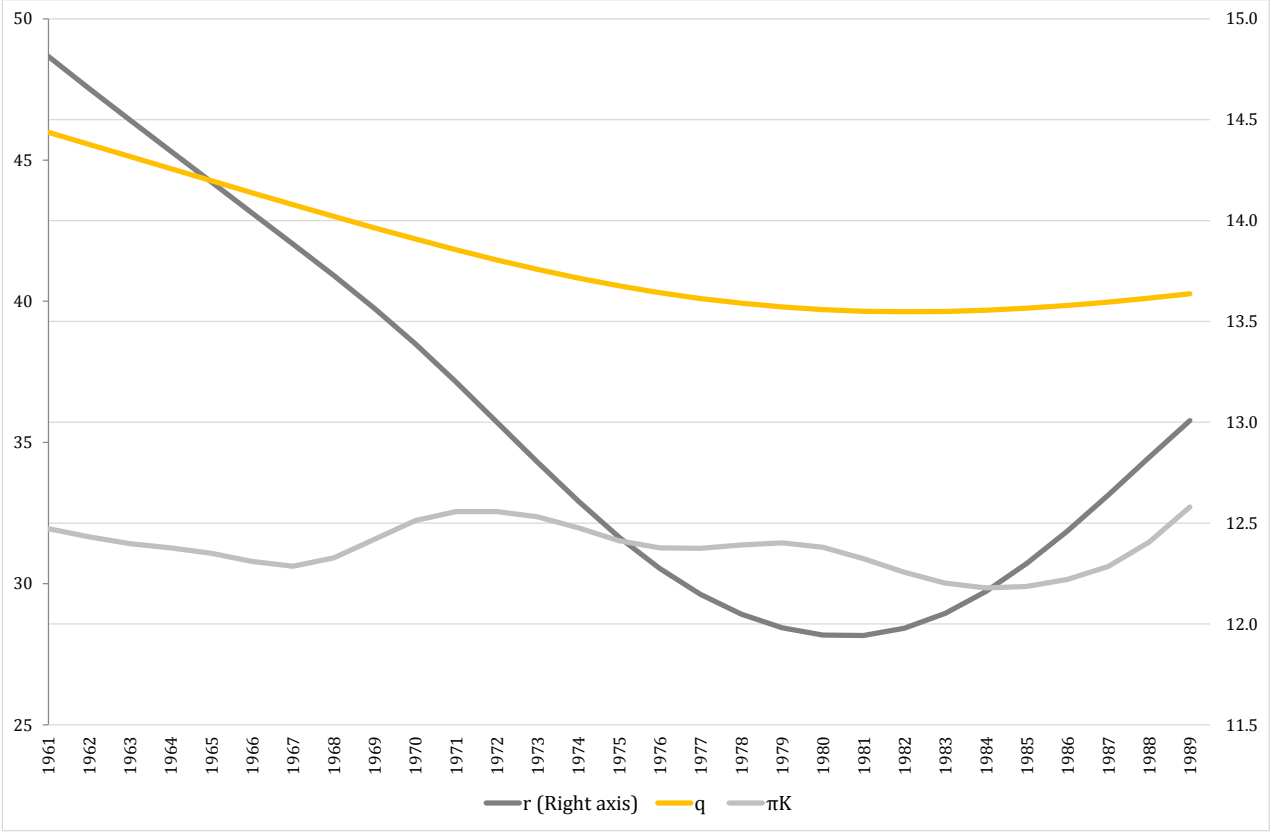
	r %	q %	πK Bil. Euros	$1-q$ %	W Bil. Euros	L 1,000 People	w^* Euros	πL Euros	Checksum ($1-q=w^*/\pi L$)
1,961.00	0.20	0.58	0.34	0.42	1.95	8,528.20	228.68	547.16	0.42
1,968.00	0.23	0.53	0.43	0.47	5.79	9,113.60	635.13	1,360.23	0.47
1,980.00	0.19	0.46	0.41	0.54	50.27	9,502.18	5,290.00	9,815.28	0.54
2,000.00	0.16	0.46	0.34	0.54	313.26	13,855.90	22,608.64	42,155.11	0.54
2,007.00	0.14	0.46	0.31	0.54	522.56	18,375.80	28,437.18	52,935.16	0.54
2,013.00	0.12	0.48	0.25	0.52	490.25	15,389.40	31,856.54	61,655.62	0.52

	Factors of Growth								
1961-1968	1.16	0.92	1.27	1.12	2.97	1.07	2.78	2.49	1.12
1968-1980	0.82	0.86	0.94	1.15	8.68	1.04	8.33	7.22	1.15
1980-2000	0.83	1.01	0.82	1.00	6.23	1.46	4.27	4.29	1.00
2000-2007	0.92	1.00	0.92	1.00	1.67	1.33	1.26	1.26	1.00
2007-2013	0.82	1.04	0.79	0.96	0.94	0.84	1.12	1.16	0.96
1961-2013	0.60	0.83	0.72	1.24	251.39	1.80	139.31	112.68	1.24

Source: Authors' work from the AMECO database.

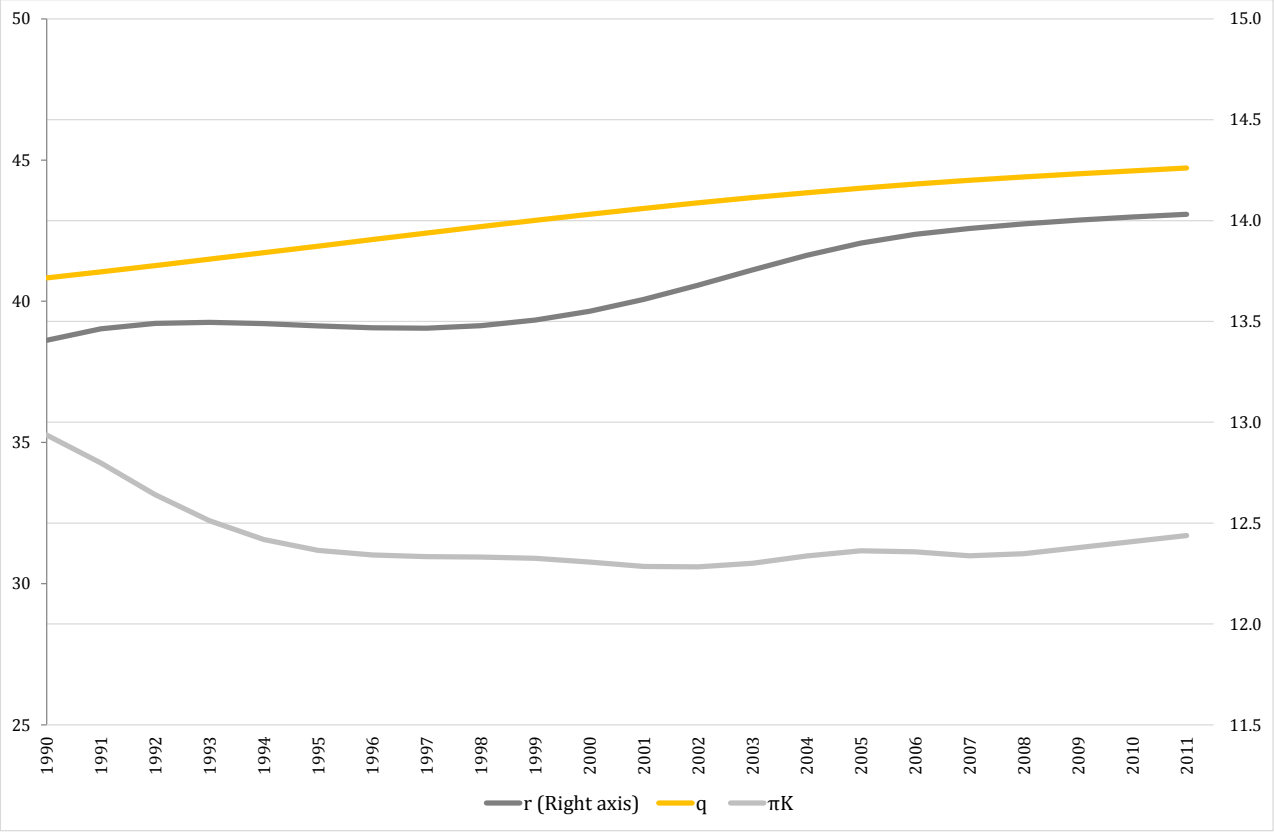
WEST GERMANY

Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k)
(1961-1989)
(Hodrick-Prescott filter, $\lambda r=154,16$; $\lambda q=2.647,92$; $\lambda \pi_k=3,09$)



GERMANY

Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k)
(1990-2013)
(Hodrick-Prescott filter, $\lambda r=154,16$; $\lambda q=2.647,92$; $\lambda \pi_k=3,09$)



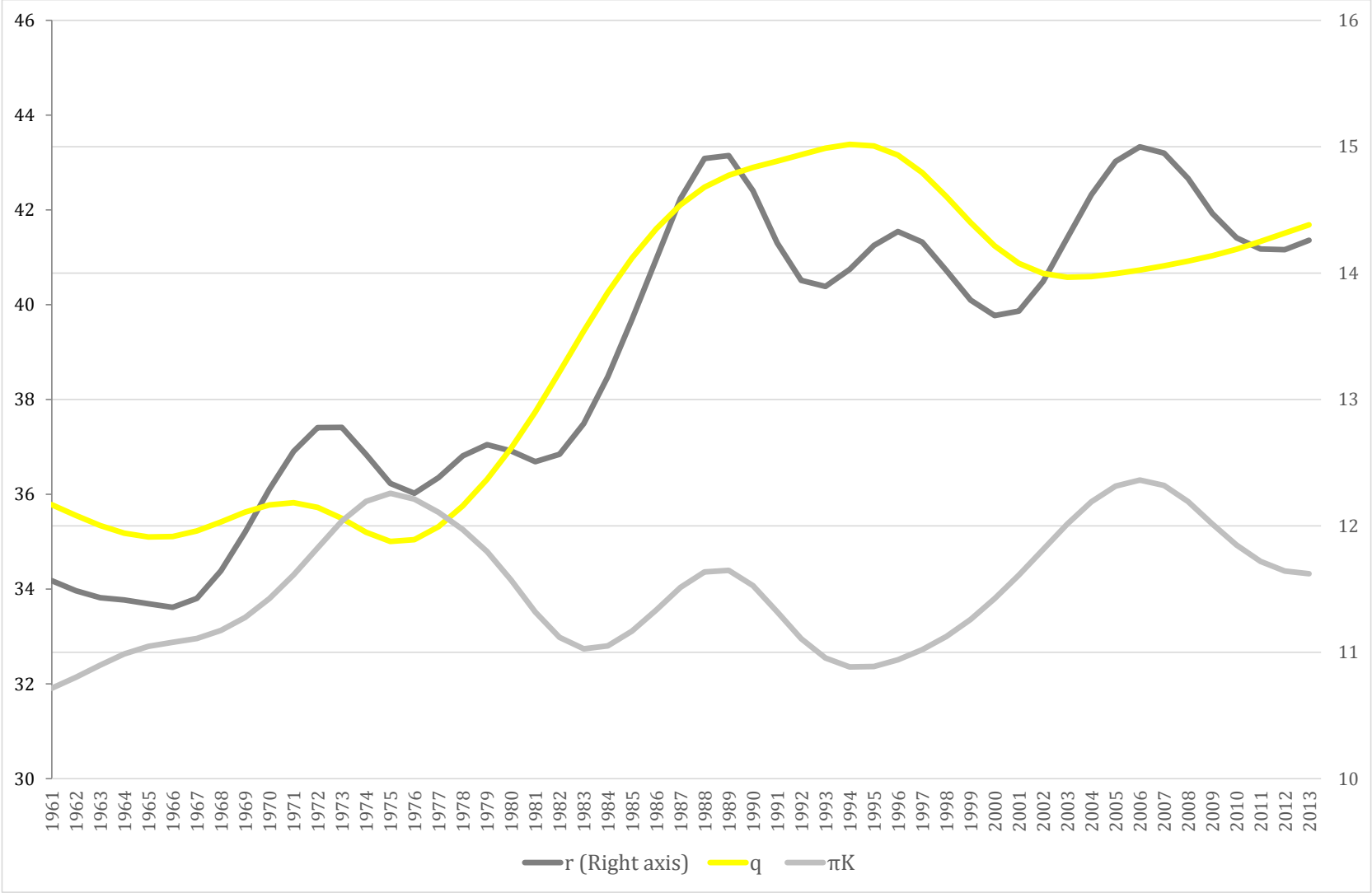
	r	q	πK	1-q	W	L	w^*	πL	Checksum
	%	%	Bil. Euros	%	Bil. Euros	1,000 People	Euros	Euros	(1-q)=w*/ πL
1,961.00	0.15	0.47	0.32	0.53	82.42	20,701.21	3,981.53	7,513.59	0.53
1,968.00	0.14	0.46	0.30	0.54	137.04	21,156.85	6,477.22	12,007.25	0.54
1,980.00	0.12	0.37	0.32	0.63	444.33	24,266.00	18,310.81	29,246.68	0.63
1,991.00	0.15	0.38	0.39	0.62	934.07	31,670.50	29,493.22	47,293.22	0.62
2,000.00	0.13	0.42	0.31	0.58	1,120.53	35,922.00	31,193.31	53,515.14	0.58
2,007.00	0.15	0.47	0.32	0.53	1,197.07	35,798.00	33,439.58	63,322.36	0.53
2,013.00	0.14	0.44	0.32	0.56	1,426.23	37,824.00	37,706.93	66,909.45	0.56

	Factors of Growth								
1961-1968	0.92	0.98	0.94	1.02	1.66	1.02	1.63	1.60	1.02
1968-1980	0.86	0.81	1.06	1.16	3.24	1.15	2.83	2.44	1.16
1980-1991	1.24	1.01	1.23	1.00	2.10	1.31	1.61	1.62	1.00
1991-2000	0.87	1.11	0.79	0.93	1.20	1.13	1.06	1.13	0.93
2000-2007	1.17	1.13	1.03	0.91	1.07	1.00	1.07	1.18	0.91
2007-2013	0.91	0.92	0.99	1.07	1.19	1.06	1.13	1.06	1.07
1961-2013	0.92	0.93	0.99	1.06	17.30	1.83	9.47	8.91	1.06

Source: Authors' work from the AMECO database.

UNITED KINGDOM

Rate of profit (r), share of gross operating surplus in national income (q) and capital productivity (π_k) (1961-2013)
(Hodrick-Prescott filter, $\lambda_r=4,40$; $\lambda_q=34,04$; $\lambda_{\pi_k}=11,79$)



	r	q	πK	1-q	W	L	w*	πL	Checksum
	%	%	Bil. Euros	%	Bil. Euros	1,000 People	Euros	Euros	(1-q)=w*/ πL
1,961.00	0.12	0.36	0.32	0.64	16.03	21,979.92	729.07	1,145.64	0.64
1,968.00	0.12	0.35	0.33	0.65	25.86	22,397.98	1,154.57	1,779.40	0.65
1,980.00	0.13	0.36	0.36	0.64	138.68	22,510.01	6,160.64	9,613.90	0.64
2,000.00	0.14	0.40	0.34	0.60	535.35	24,360.20	21,976.50	36,734.06	0.60
2,007.00	0.15	0.41	0.37	0.59	777.59	25,755.13	30,191.66	50,982.70	0.59
2,013.00	0.14	0.42	0.34	0.58	877.28	25,959.76	33,793.96	57,870.30	0.58

	Factors of Growth								
1961-1968	1.00	0.97	1.03	1.02	1.61	1.02	1.58	1.55	1.02
1968-1980	1.11	1.02	1.09	0.99	5.36	1.01	5.34	5.40	0.99
1980-2000	1.06	1.12	0.94	0.93	3.86	1.08	3.57	3.82	0.93
2000-2007	1.11	1.02	1.10	0.99	1.45	1.06	1.37	1.39	0.99
2007-2013	0.93	1.02	0.91	0.99	1.13	1.01	1.12	1.14	0.99
1961-2013	1.21	1.14	1.06	0.92	54.74	1.18	46.35	50.51	0.92

Source: Authors' work from the AMECO database.