Demand, employment, and labour productivity in the European economies

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Abstract

This paper presents an explanation of the causes of the slowdown in growth in labour productivity in European economies in recent decades. In first instance, the weakness of domestic demand is what determines this slowdown in productivity. However, differences with the (mediocre) rates of productivity growth between European countries are also related to the specific features of their respective labour markets because, in a context of weak domestic demand, there is a trade-off between employment and productivity.

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The paper is divided into five sections. The first lays out some of the main reasons why the mainstream explanation for labour productivity is unsatisfactory. The second puts forward an alternative theoretical approach in which the demand dynamic is the structural conditioner of the pattern that productivity follows. The third section analyses the empirical evidence which relates demand and productivity in the European economies between 1960 and 2004. The fourth section examines those characteristics of labour markets which allow economic growth to generate employment, and it concludes presenting the different styles of economic growth in terms of employment and productivity performance. The final section synthesises the conclusions obtained in the previous sections.

The countries considered (EU-14) are those which made up the European Union before the latest enlargements with the exception of Luxembourg. The distribution of periods from 1960 to 2004 does not follow the conventional rounding-up to decades or half-decades, corresponding
instead to the evolution of business cycles of European economies during the interval. 1960–1973 is the final leg of the strong expansion that characterised the Golden Age; this is followed by the crisis period of 1974–1983. Afterwards, each of the cyclical periods of 1984–1993 and 1994–2004 includes a phase of expansion and recession. The main source of statistical information used in this work is the Annual-Macroeconomic Database (AMECO), developed by the European Commission’s Directorate General for Economic and Financial Affairs.

1. The distorted focus of the mainstream

Most studies on the behaviour of productivity respond to a supply approach that is characteristic of the neoclassical theory. Briefly summarised, the main features contained in those studies are six. First, the analysis is conducted through aggregate production functions which define the economy’s balance in the long-term. Second, productivity growth is split between variations in capital intensity (capital–labour ratio), expressing an accumulation dynamic, and the total productivity of factors, expressing the overall efficiency generated by technical progress. Third, although long-term capital intensity in a static state is considered constant, the majority of work analysing productivity in the 1990s highlights new information and communication technologies (ICT) as the fundamental determinant, because these increase both the capital intensity around production of those technologies as well as total productivity throughout sectors which employ such technologies.

Fourth, the strengthening of technological capital (through research and development efforts) and of human capital (through higher education) is found to be closely related to diffusion of ICT. Fifth, macroeconomic stability and institutional flexibility also favour the diffusion of ICT and, in general, act as an important stimulus towards improvement of total factor productivity. Stability is guaranteed through orthodox economic policy aimed at controlling the public deficit and inflation. Flexibility is guaranteed through liberalisation of markets in order to establish a predictable economic framework facilitating both the creation of companies and the entry of foreign capital. In particular, the absence of labour market regulation favours the generation and mobility of employment, redoubling to greater efficiency of the labour market.

Sixth, the favourable performance of productivity is exemplified in the evolution of the United States from the mid-1990s. The accelerated pace of US productivity growth is explained through the strong impulse of ICT, rooted in both the technological push and the improvement in human capital, in a context of macrostability and flexible markets. As Fred Bergsten, director of the Institute for International Economics, stated in 1997: “[The American model] . . . is definitely better for everybody”.

Such an interpretation was developed in the U.S. during the late 1990s in academic and professional circles tied to the Federal Reserve and the National Bureau of Economic Research, and later adopted by international organisations like the IMF and the OECD to become the uniform discourse of a majority of institutes, research departments, and circles of political power. It is the same vision that runs through the European Pact for Stability and Growth (or “Lisbon Strategy”) approved by the European Council in 2000, as well as through subsequent evaluations carried out by the Commission and Council of the European Union (the Sapir and Kok Reports).

Nevertheless, the presumed direct causal link between ICT, liberalisation of markets, and growth in labour productivity comes into conflict when confronted to the data. We will limit ourselves to underlining the three following points. First, when productivity levels are calculated per hour of work (in purchasing power parity dollars), the U.S. does not top the list but has in fact lagged behind three European countries (Belgium, the Netherlands, France) for decades, also falling behind Ireland in the last few years and maintaining levels similar to Germany and Austria. Therefore, the “technological frontier” is set by countries which do not stand out as models (even within Europe) for the generation and diffusion of ICT, nor for R&D efforts, nor higher education.

Second, the importance of foreign deficit to the growth dynamic stands out in any analysis of the US economy since the 1990s. The large deficit is frequently referred to as exceptional, due to the position the US occupies in the world economy and above all in international financial markets. In terms of macroeconomic dynamics, this deficit favours the expansion of domestic demand for investment (also consumption), beyond what could be achieved if there was a more severe foreign restriction. However, the role of this external disequilibrium is completely ignored when the evolution of American productivity is analysed, and when it is compared with that of the European economies, because of the theoretical limitations imposed by the supply focus (based on production functions).

Third, evident paradoxes spring up when one examines the growth of investment in new technologies (ICTI) and labour productivity during the second half of the 1990s. Finland registers ICTI increases which are double those of Greece (average annual rates of 16% and 8%), although both countries show similar growth in labour productivity. Still lower were the ICTI increases in Portugal and Austria (at 5–6% annually), while productivity growth in those

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1 Wolff (1997) includes an extensive selection of works by the main authors analysing productivity from a neoclassical perspective, such as Solow, Denison, Griliches, Abramovitz, Jorgenson, Baumol, and others.
2 The standard formula is: \( y/l = a_k/l + a_l \), so that the rate of variation of labour productivity is equivalent to the sum of the variations of capital intensity (weighted by the share of capital in income) and technical progress.
3 Among the extensive literature available, five representative works are: Jorgenson (2002), Jorgenson and Stiroh (2000), Bartelsman and Doms (2000), Colecha and Schreyer (2002), and Olifer and Siceli (2000).
countries exceeded that of Finland. And while ICTI in the United Kingdom and Netherlands grew at a similar rate, productivity in the UK increased substantially more than in the Netherlands. The same is true of Spain and Austria, which have similar rates of ICTI growth, but whereas Spain shows the lowest productivity increase in the EU, Austria’s is among the highest.

The same lack of a causal link can be seen when technological effort and productivity are compared, or when the synthetic indicator developed by the OECD as “Investment in Knowledge” is used, in which expenditures on R&D and higher education and investment in software are considered. Therefore, the data do not show a clear and direct relationship between ICT and labour productivity, nor do they show a link between productivity and the relative “flexibility” of markets. The most evident example of this is found in the United Kingdom, whose level of liberalisation since the Thatcher years exceeds even that of the US in many regards. Yet UK productivity growth is lower than that of Austria, Finland, Greece, or Sweden—countries with significantly more regulated markets.

These conflicting points give rise to serious doubts about the explanation prevalent in the mainstream. But, beyond these doubts, the ultimate reason why this analysis is not satisfactory lies with the theoretical framework on which the explanations about productivity behaviour are based. Our three main criticisms to this framework are the following.

The first criticism concerns the way productivity growth is analysed with the aim of concentrating the impact of technological progress into the component of total factor productivity, considering that the capital–labour ratio represents a uniform accumulation of factors. However, to maintain that there is no incorporation of technical progress in the K/L dynamic is illogical. If that assumption is rejected, the “total productivity” component becomes doubtful.

The second criticism concerns the direct causal relationship established between technology and productivity. This end-of-the-century discovery, flavoured with a Schumpeterian bouquet by traditional neoclassical authors, remains rather far from the interpretative proposals of specialists who study the evolution of technology. These include Pavitt, Freeman, Soete, Dosi, Chandler, and Rosenberg, whose argumentation assumes a greater complexity and weaker direct links in the relationship. Some, such as the technology historian von Tunzelmann (2000), are more emphatic in stressing that technology and productivity are separate entities that move at different times and can even head in opposite directions. The elements which mediate the productivity–technology relation are diverse, operate in a discontinuous way, and generate notable differences between countries and/or regions. All of this is ignored in the pan-technologist version which has dominated the analysis of productivity since the end of the 1990s.

The third criticism is a continuation of the second, where the oversimplification of the connection between technology and productivity is further exaggerated, as technical progress is virtually equated with advances in new information and communication technologies. While it is one thing to stress the importance of ICT to current economic and social life, it is quite another to consider technical progress exclusively through ICT, inflating the technologist interpretation to an exponential degree. The distortion is so clear that when many studies refer to the importance of research and education as elements which promote labour efficiency, they relate them only to the generation and diffusion of ICT.

Therefore, without denying the interest of certain neoclassical contributions, we consider that any model stemming from an aggregate production function is failing in putting the focus of analysis over the variables and the structural relations that explain productivity behaviour. This failure is then translated into a wrong diagnosis of the European situation, as well as into wrong proposals formulated to improve labour efficiency.

2. An alternative focus for analysing productivity

From a wide perspective, there is no doubt that investment in new technologies, educational level, and institutions all influence the development of labour productivity. Furthermore, from an analytical perspective which accepts the existence of long cycles in the historic trajectory of capitalism, it seems evident that waves of technological and institutional changes (concentrated in determined historical moments) are what determine the creation of new periods of prosperity, also incorporating a greater level of productivity efficiency. However, not even in such moments of sharp transformation as the post-war decades known as the Golden Age, did techno-institutional changes alone provide an adequate explanation of the productivity dynamic.

Presuming an economy that meets its full productive potential, the identity which relates the rise in production (y) to growth rates in employment (l) and labour productivity (y/l) can be expressed as a causal relationship of the type (1+y/l) → y. However, in real terms, such a situation would be clearly exceptional, given that economies almost always operate below full use of their resources. Given this, hypotheses coming from the Keynesian and

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7 The same happens when technological effort and productivity in 1994–2004 are compared with that of 1984–1993 in a given country. Only half the countries in the EU-14 show parallel performance in both variables (Spain, Portugal, Finland, Belgium, and Denmark do not). Increases in technological effort are not matched by larger increases in labour efficiency; indeed, in the Netherlands, the inverse situation is produced. It is no less paradoxical that the two countries which make a far greater technological effort than the rest, Sweden and Finland, obtain productivity increases inferior to those registered by several countries which rank lowest in R&D expenditure.

8 This kind of criticism can also be found in Felipe and McCombie (2001, 2005, 2006, 2007).

9 Lipsey and Carlsw (2000) provide an extensive list to the “total productivity of factors”.

10 It is fitting to draw an analogy between the artificiality of the stock exchange rise of ICT companies and the distorted theoretical importance given to these technologies, with the crucial observation that, while the stock exchange bubble burst in 2000, returning listings to more realistic values, the analytic exaggeration has persevered.
Kaleckian traditions make a lot of sense, inasmuch as consider that the level of effective production compared to potential production is determined by the size of aggregate demand.\(^{11}\)

That being the case, variations in productivity are determined primarily by the performance of aggregate demand. Therefore, if \(\Delta D_E \rightarrow \Delta Y_E\) the identity between production growth rate \((y)\) and both productivity \((q = y/l)\) and employment \((l)\) rates of growth, that is, \(y = l + q\), does not allow the a priori establishment of any causal relationship; rather – in the face of a particular demand dynamic – increases in production admit a combination of variations between employment and productivity. Employment variations, as part of economic growth, will be different in each country and period, and are found to be closely related to factors that influence the functioning of the labour market.

Therefore, the analysis we propose about labour productivity dynamics presents two levels of determination. In first instance, the evolution of aggregate demand (by determining the effective production, and influencing productivity results, given that the amount of work created for growth in the economy, but only partly conditions labour productivity) is the key variable which fundamentally determines both the tendency and the rate of growth of labour productivity.\(^{13}\) It does this through three channels:

(a) Scale effect: market increase by any component of aggregate demand, either private or public, will permit wider use of installed capacity, through the reduction of the capital–output ratio. Considering the identity: \(Y/L = (K/L)/(K/Y)\), the labour productivity growth rate \((q)\) equals the difference between the rates of growth of both ratios: capital–labour \((k)\) and capital–output \((s)\). At the same time, the capital–output ratio can be understood as the inverse of \((K_u/K) \times (Y/K_u)\), where \(K_u\) is the degree of capital effectively used, so that \(K_u/K\) is a quite proper proxy for the rate of utilisation of productive capital \((a)\), while \(Y/K_u\) can be considered as a constant variable for a fixed technological level \((b)\). In dynamic terms, the same relation can be expressed through the rates of growth of each variable: \(1/s = a + b\), where \(b\) is constant.

Thus, any rise of the aggregate demand makes \(a\) to grow and, then, \(s\) to decrease. As a consequence, \(q = k - s\), which is labour productivity growth rate, increases.

(b) Capitalisation effect: if among the different components of aggregate demand the one which increases is non-residential investment, then this rise leads to a subsequent growth in potential supply through a rise in productive capital. In this way there will be an increase in the capital–labour ratio \((k)\) as well as in the labour productivity growth rate \((q)\).

(c) Modernisation effect: considering a long enough period of time – that of the expansion phases of medium cycles\(^{14}\) – the increase in the capital stock is not constant any more from a technological point of view; rather, levels are increased via the incorporation of technical innovations, organisational improvements, and “learning by doing”, resulting in a rise of capital per worker and/or a decrease in the capital–output ratio. In other words, after a certain time technical progress will lead to positive variations in \(Y/K_u\) so that \(s\) will decrease and, then, \(q\) will increase.\(^{15}\)

Accepting that, in first instance, labour productivity is structurally conditioned by aggregate demand. In second instance, productivity also varies depending on the elements which influence the rate of employment, in the context of either expansive or recessive demand. On the one hand, the evolution of the labour force participation rate (labour force/total population) is influenced by demographic factors – including migration flows – and by social and institutional factors which affect the willingness of certain segments of society (women, young people) to participate in the labour market.\(^{16}\) On the other hand, the rate of employment relates the number of persons employed to the labour force \((ER = E/LF)\). This rate is conditioned by supply side factors (willingness of persons of working age to become active; willingness of unemployed active individuals to seek work), as well as from the labour demand side (expectations of businessmen, wage earners, and other institutional aspects which affect labour costs).

Therefore, the dynamics of demand, which may be more or less expansive, largely determines the capacity for growth in the economy, but only partly conditions productivity results, given that the amount of work created through growth also depends on factors which influence the rate of employment. In this way, in the presence of a particular demand context, where \(\Delta D_E \rightarrow \Delta Y_E\), it is possible to suggest a trade-off between employment and productivity growth, or an inverse relationship between labour increases and productivity. This is what we are


\(^{12}\) We avoid to tackle here the debate about the degree of autonomy of aggregate demand, through each of its components, or other issues such as: its relationship with the profit rate, and expectations under uncertainty, or other elements which may also influence aggregate demand. Different schools integrated in the Keynesian-Kaleckian tradition respond differently to the elements that determine aggregate demand performance. A good example of this plurality is found in Setterfield (2002).

\(^{13}\) The following explanation presents certain differences with that of Verdoorn’s law, although both are very alike. Among the huge amount of literature which has discussed the relevance and significance of Verdoorn’s formulation, since it was published in 1949 and, especially, after being rescued by Nicholas Kaldor in 1966, we recommend the collection of essays edited by McCombie et al. (2002). McCombie and Thirlwall (1994) should also be consulted.

\(^{14}\) See Palazuelos (2006).

\(^{15}\) From an empirical point of view and at a macroeconomic level, it is not possible to ascertain to what extent investment generates capitalisation or modernisation effects (the proxies employed being too basic), though it is possible to claim that we are dealing with two distinct roads forking from the common assumption that demand influences labour productivity.

\(^{16}\) LF Rate = LF/P = (LF/PA) × (LA/P). LF being the labour force, LA the population of working age, and \(P\) the total population. Therefore, the variation in activity rate depends on demographic changes which influence LA/P and on the social and institutional changes which affect LF/LA.

investigating for the case of European economic growth performance during the last 30 years.17

3. Domestic demand as a structural limit to labour productivity growth: 1974–2004

3.1. Weakening of domestic demand: evidence and reasons

The data in Table 1 reveals an incontestable fact: an intense deceleration in domestic demand took place in European countries from 1974, while exports and imports maintained a faster pace of growth.18 The strong demand deceleration was shared by all EU-14 countries except Ireland, which in the latest period saw exceptional growth due to a massive inflow of foreign direct investment (FDI) by large transnational corporations, mainly electronics and chemical-pharmaceuticals.19 Leaving that exception aside, no other country recorded average growth above 3% annually. In fact, in the majority of countries, the growth rate fell repeatedly, period on period, seldom exceeding 3% average.

We are not dealing, therefore, with episodic “shocks” in which economic activity temporarily contracts, but rather with a period of several decades in which the economic dynamic underwent severe restriction in terms of domestic demand. That restriction affects both private consumption and public demand, and even more so the gross formation of fixed capital – especially non-residential investment – whose growth has suffered a sustained slowdown, reaching only moderate levels even during times of strong economic dynamism.

The reasons behind this “anaemic growth”, in the words of Aglietta and Berrebi (2007), have to do with the interaction among various factors, including: (a) the falling profit rate in the industrial sector in the 1970s; (b) the growth of financial power; and (c) the restrictive character of budgetary and monetary policies implemented since the 1980s. These factors led to the breakdown of an institutional net

Table 1
Evolution of domestic demand and productivity.

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* In order to guarantee the coherence of the data prior to and after reunification in 1990, the series of the period 1984–1993 has been created from 1991 by applying the variation rates of the unified country to the FDR data. Drawn up from Annual-Macroeconomic Database (AMECO) and Groningen Growth and Development Centre (GGDC) Database.

Average rates of annual variation in each period.

17 Authors like Buchele and Christiansen (1999), Gordon (1997) and Gordon (2004) have proposed, although from different points of view, that there is an inverse relationship between the evolution of employment and productivity. On the same issue there is a very recent empirical work by Dew-Becker and Gordon (2008).

18 Averaging the 14 countries for the entire 1974–2004 period, the average rates of growth of exports and imports of goods and services were, respectively, 5.4% and 4.9% annually, while the rate of growth of domestic demand (excluding stocks) was 2.3% annually. Calculations stem from Annual-Macroeconomic Database (AMECO).

19 The massive inflow of FDI between 1995 and 2000 – 70% of which came from the United States – was concentrated in industry and the financial sector. Within that, 71% went to electrical–electronics production and chemical-pharmaceuticals. In precise terms, the intense growth in the Irish economy has been based on finance and industry, with annual average growth of 31% and 38%, respectively. Both sectors increased their joint proportion of industry from 37% to 57% during the period, also concentrating 60% of investment in the sector and 62% of exports. Foreign capital represents 94% of investment and almost all exports in both sectors. And the influence of transnational corporations is greater still greater due to notable presence in sectors such as food or graphic arts, and especially in finance and commercial distribution. Therefore, the determining factor in the Irish growth has been its exogenous character—the decision...
The slump in the industrial profit rate emerged at the end of the 1970s and deepened during the 1980s as a symptom of exhaustion in the Golden Age accumulation model. This fall in the profit rate broke the pace of growth in industrial investment, encouraging its move towards other countries, other activities, and other ways of unlocking marketability and escaping governmental regulations.

Financial supremacy became the economic hallmark as growing volumes of money moved quickly toward the sole aim of obtaining short-term gains. This boom in financial markets increasingly conditioned other forms of investment. In large companies, shareholder value became paramount, fomenting short-term profitability strategies seeking quick profits to distribute among shareholders. As a consequence, the reference variables which determine corporate strategies are those which define investment in capital markets (i.e., stock market quotations, interest rates of other financial assets, exchange rates, and inflation). The strengthening of financial activity gives further impetus to large banks and other financial institutions that benefit from growing profits, influence economic policies, and manage to ensure that the relationship between domestic savings and consumption remains subordinate to the relationship between financial investment and financial debt.

To sum up, financialisation means that the coordination of the economic dynamic get tied to the strategies, agents, and operations of a financial character, with grave consequences. Investment in productive activities loses relevance, its viability dependent on its profitability vis-à-vis financial investments. Mergers and acquisitions of companies become largely financial choices, as do the purchase, break-up, and/or sale of production lines. Large companies convert the management of their liquid assets into gains through investments and sales of financial assets. Short-term profitability demands consistent reduction in labour costs, which becomes an obsessive and permanent objective. The growth of private consumption depends on increased financial yields and/or increased indebtedness, given that salary raises are limited.

At the same time, European governments opted for economic policies based on orthodox budgeting, monetary restrictions, and the liberalisation of markets, assuming a business discourse (above all financial) which advocated the elimination of controls on capital movement, reduction in taxes, minimisation of public expenditure, and the fight against inflation as its priority and permanent goal.

This decline of fiscal policy began in the 1980s in several countries (Belgium, the Netherlands, the United Kingdom, and Ireland) and spread throughout the EU from 1992, when the Maastricht Treaty established a limitation on the public deficit as a prerequisite for creating the monetary unit, even as the governments reduced fiscal pressure.

Since then, tax cuts have been made, and public expenditure commitments have been reduced, to the extent that a majority of European governments have achieved positive, null, or very mild deficit balances (apart from Germany, France, and Portugal, where deficits have remained above 3% of GDP). Imposing this budgeting orthodoxy led to the weakening of redistributive policies, as well as the containment of public demand and its drivers toward consumption and private investment.

This uniformity of governmental behaviour was even greater in monetary policy. In the 1980s, the pendulum swung from the relaxed monetary policies of the previous decade (when most countries maintained negative or null real interest rates) toward monetary rigour, when inflationary pressures showed their persistence while, at the same time, the monetary hardening led since 1979 by the US Federal Reserve stimulated the increased outflow of European capital to the US. Nominal interest rates hovered between 4 and 6 points above inflation, while exchange rates remained almost fixed from the mid-1980s until the crisis that shook European currencies in September 1992. The Maastricht Treaty meant that anti-inflationist rigour was again imposed by the summer of 1993, although toned down slightly during the process of the creation of the single currency (in what has been called the Brussels-Frankfurt Pact between the European Commission and the European Central Bank).

Therefore, the weakening of industrial profit, the rise of financial supremacy, the deregulation of markets, and the restrictions imposed by budgetary and monetary policies together destroyed the institutional order created in the Golden Age, all to the detriment of wage growth, investment in productive activity, public expenditure, and redistributive activity by governments.

3.2. Deceleration of labour productivity and restrictions on demand

The evolution of productivity per hour worked (Table 1) reveals that its growth rate was cut drastically during the 1960s. Deceleration was persistent to the extent that in 1994–2004 a majority of countries showed growth rates below those seen in previous periods, and far below those attained in the second part of the Golden Age. The EU-14 average (calculated according to the relative weight of each country in the aggregate GDP, and measured in purchasing power parity dollars) successively reduced its average annual growth rate from 4.9% in 1960–1973 to 3.1% in 1974–1984, to 2.3% in 1984–1993, and finally to 1.7% in 1994–2004.

When we consider the two most recent periods, Ireland shows a growth rate above 4% annually while only

23 In some countries (Spain, Greece, mainly), due to high inflation at the beginning of the nineties, the process of monetary convergence has allowed them to take advantage of strong and rapid decline in interest rates (nominal and real). This has helped to the dynamism of investment and domestic demand as a whole. However, in these economies, employment and productivity have behaved in very different ways. The case of Spain is in line with the explanations of Dew-Becker and Gordon (2008), but Greece is very different.
three countries (Finland, Portugal, and Austria) exceed 2.5% annually in either period. Other countries are around 2% annually, except Italy, the Netherlands, and Spain, which have lower rates. In the final period (1994–2004), excluding Ireland, only Greece and Austria exceed 2.5%, while in the case of the three “tortoises” (to use the expression of Dew-Becker and Gordon, 2006), the Netherlands and Italy scarcely exceed 1%, and Spain fails to reach even that meagre rate of productivity growth.

It is clear, therefore, that since the 1960s the economic dynamic in the European countries has been characterised by a simultaneous weakening of domestic demand and labour productivity, with the sole exception of Ireland. Fig. 1 represents the evolution of both variables between 1960 and 2004. The regression line has a fairly positive gradient and a rather good fit.

However, if the same graphic is drawn for each of the cyclical periods, it can be noted that only in 1960–1973 a similar match occurred between the rates of growth in domestic demand and productivity. By contrast, in the three subsequent periods, when demand was weakening and productivity decelerating, the data are more disperse. In fact, the correlation between the annual rates of variation of both variables is very weak in almost all the EU-14 countries.

Therefore, the empirical evidence shows a demand–productivity relationship that, from the theoretical framework of the previous section, must be viewed as a consequence of the structural conditioning that domestic demand imposes on the labour productivity performance. This structural conditioning explains the rapid growth in demand during the Golden Age, which drove an intense increase in productivity through the three aforementioned channels. Market increases (the scale effect) provided the incentive for a greater use of installed capacity, reducing the capital–output ratio. The strong growth in non-residential investment generated a capitalisation effect, which increased the capital–labour ratio, and a modernisation effect, which accentuated the fall in the capital–output ratio and/or an increase in capital intensity.

Subsequently, the weakening in demand held down all three effects and structurally conditioned productivity growth, meaning modest growth rates even in an economy replete with technological innovations, as was the case in the 1990s. Therefore, the weakening in demand was followed by a slowdown in productivity increases. In the same way, when the results of each country for the period 1994–2004 are compared with those of the period 1984–1993, some degree of improvement in the rate of increase in domestic demand is evident, along with a similar evolution in productivity (as in Greece, Sweden, the Netherlands). On the other hand, worsening of domestic demand is followed by a fall in the rate of productivity growth (as in Portugal, France, Belgium, Germany, Italy).

However, as this is not merely a direct and mono-causal relationship, it is obvious that labour productivity has a margin of variation that is not only determined by domestic demand performance. This is perfectly clear when the evolution of both variables is observed (Table 1), with Spain, Austria, Finland, and Denmark being the countries where the lack of connection between both variables is most obvious. The explanation for these anomalies, as well as for the generally low correlation between rates of variation in demand and productivity since the 1970s, is to be found in modifications undergone by the labour market during that time.

4. Productivity and changes in the labour market

4.1. The “labour market” of the Golden Age: from erosion to disappearance

During the immediate post-war decades, acceleration in productivity took place within an archetype model of labour market comprised of seven main features:

![Fig. 1. Evolution of domestic demand and productivity, 1960–2004: average rates of annual variation.](image-url)
### Table 2
Evolution of the labour market: average rates of annual variation in each period.

<table>
<thead>
<tr>
<th></th>
<th>Labour force/pop working age</th>
<th>Employed population/labour force</th>
<th>Unemployment/labour force (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Austria</strong></td>
<td>−0.4</td>
<td>−0.1</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Belgium</strong></td>
<td>0.2</td>
<td>−0.2</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Denmark</strong></td>
<td>0.6</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Finland</strong></td>
<td>−0.7</td>
<td>0.8</td>
<td>−0.5</td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>−0.2</td>
<td>−0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Germany</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td>−0.2</td>
<td>−0.4</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Greece</strong></td>
<td>−1.1</td>
<td>0.4</td>
<td>−0.3</td>
</tr>
<tr>
<td><strong>Ireland</strong></td>
<td>−0.6</td>
<td>−0.1</td>
<td>−0.1</td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td>−0.9</td>
<td>0.1</td>
<td>−0.2</td>
</tr>
<tr>
<td><strong>Netherlands</strong></td>
<td>0.1</td>
<td>−1.1</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Portugal</strong></td>
<td>0.3</td>
<td>−0.1</td>
<td>−0.2</td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td>0.1</td>
<td>−0.9</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Sweden</strong></td>
<td>0.1</td>
<td>0.8</td>
<td>−0.4</td>
</tr>
<tr>
<td><strong>United Kingdom</strong></td>
<td>0.1</td>
<td>0.0</td>
<td>0.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total employment (total hours worked)</th>
<th>Number of employed people</th>
<th>Hours worked per person engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(average rates of annual variation)</td>
<td>(average rates of annual variation)</td>
<td>(average rates of annual variation)</td>
</tr>
<tr>
<td><strong>Austria</strong></td>
<td>−0.7</td>
<td>−0.7</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Belgium</strong></td>
<td>−1.1</td>
<td>−1.2</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Denmark</strong></td>
<td>0.7</td>
<td>−1.1</td>
<td>−1.0</td>
</tr>
<tr>
<td><strong>Finland</strong></td>
<td>−0.1</td>
<td>−0.2</td>
<td>−2.1</td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>0.0</td>
<td>−1.3</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Germany</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td>−0.8</td>
<td>−1.1</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Greece</strong></td>
<td>−0.9</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Ireland</strong></td>
<td>−0.7</td>
<td>−0.4</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td>−1.1</td>
<td>−0.2</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Netherlands</strong></td>
<td>0.1</td>
<td>−1.7</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Portugal</strong></td>
<td>−0.3</td>
<td>−1.0</td>
<td>−0.3</td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td>1.0</td>
<td>−2.3</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Sweden</strong></td>
<td>−0.5</td>
<td>0.0</td>
<td>−0.1</td>
</tr>
<tr>
<td><strong>United Kingdom</strong></td>
<td>−0.5</td>
<td>−1.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>

<sup>a</sup> In order to guarantee the coherence of the data prior to and after reunification in 1990, the series of the period 1984–1993 has been created from 1991 by applying the variation rates of the unified country to the FDR data. Drawn up from Annual-Macroeconomic Database (AMECO) and Groningen Growth and Development Centre (GGDC) Database.
A notable increase in real wages. The real wage per employee grew above 5% annually in half the countries, dropping below 4% in only three (Table 3). This is considered as a period of intense economic growth led by entrepreneurial attacks on the rest of its components. Real wages; then the next phase, which started in 1974, might be seen as the beginning of the destruction of that regime, despite keeping some of their features such as the "push effect" that wages still had. The fact that the adjustment to a crisis situation centered on employment is what allowed the deceleration in labour productivity to be of weaker intensity than the reduction suffered by demand. In a simple average of the EU-14 countries, the rate of growth in domestic demand fell from 5.3% to 1.8% (for the periods 1960–1973 and 1974–1983), while the productivity slowed more smoothly, from 5.6% to 3.0% (Table 1).

The post-war growth regime, including its labour model, disappeared almost completely over the course of the following period, 1984–1993. The rate of activity grew in almost all countries, while total employment continued to show negative growth, because even when levels of employment began to rise again, the number of hours per employee shrunk more quickly (Table 2). As a consequence, unemployment continued its upward trend – exaggeratedly in Ireland and Spain – but reaching levels of 10% in four other countries and above 6% in the rest (except Austria and Sweden, whose governments remained intent on their commitment to maintain low percentages of unemployment).

In parallel, the model suffered harsh political and entrepreneurial attacks on the rest of its components. Real compensation scarcely rose (an average of 1.4% in the EU-14), causing wages as a proportion of income to decline generally, with losses of three to five points in almost all countries (Table 3) compared to the previous period.

### Table 3

<table>
<thead>
<tr>
<th>Country</th>
<th>Real compensation per employee(^a) (average rates per annual variation)</th>
<th>Proportion of Compensation per Employee in the GDP at market prices (%)</th>
<th>Variation 1994/2004 compared to 1974/1983 (points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>4.6  2.4  1.9  0.9</td>
<td>72.8  73.9  69.2  64.8</td>
<td>−9.1</td>
</tr>
<tr>
<td>Belgium</td>
<td>5.0  3.0  1.4  1.1</td>
<td>57.0  65.3  62.7  62.1</td>
<td>−3.2</td>
</tr>
<tr>
<td>Denmark</td>
<td>3.6  1.1  1.1  1.5</td>
<td>61.6  63.0  59.8  57.1</td>
<td>−5.9</td>
</tr>
<tr>
<td>Finland</td>
<td>4.1  2.4  2.3  1.4</td>
<td>67.0  65.4  63.7  55.9</td>
<td>−9.6</td>
</tr>
<tr>
<td>France</td>
<td>4.6  3.0  1.1  1.1</td>
<td>61.9  65.5  60.3  57.5</td>
<td>−8.1</td>
</tr>
<tr>
<td>Germany(^b)</td>
<td>4.5  1.6  1.4  1.7</td>
<td>62.2  65.0  61.6  59.0</td>
<td>−6.0</td>
</tr>
<tr>
<td>Greece</td>
<td>5.5  2.3</td>
<td>−1.2  2.5</td>
<td>74.4  65.9  64.7  58.7</td>
</tr>
<tr>
<td>Ireland</td>
<td>3.9  3.4  2.7</td>
<td>67.8  68.2  61.9</td>
<td>51.5</td>
</tr>
<tr>
<td>Italy</td>
<td>5.7  1.9  1.1</td>
<td>65.9  67.6  62.5  54.9</td>
<td>−12.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5.1  1.7  1.0  0.9</td>
<td>62.0  66.8  61.2  59.3</td>
<td>−7.5</td>
</tr>
<tr>
<td>Portugal</td>
<td>6.7  3.6  2.4  1.5</td>
<td>61.6  73.9  61.9  61.8</td>
<td>−12.6</td>
</tr>
<tr>
<td>Spain</td>
<td>7.0  3.1  1.4</td>
<td>−0.5  64.4  66.7  61.0  58.9</td>
<td>−7.8</td>
</tr>
<tr>
<td>Sweden</td>
<td>3.4  0.9  1.2  2.5</td>
<td>64.5  66.2  60.3  57.9</td>
<td>−8.3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3.0  1.2  2.0  1.7</td>
<td>65.7  67.1  65.5  63.6</td>
<td>−3.5</td>
</tr>
</tbody>
</table>

\(^{a}\) Deflated according to the GDP deflator.

\(^{b}\) In order to guarantee the coherence of the data prior to and after reunification in 1990, the series of the period 1984–1993 has been created from 1991 by applying the variation rates of the unified country to the FDR data. From Annual-Macroeconomic Database (AMECO).

(a) Relative stability in the activity rate (active population/population of working age), which experienced a slight fall in a majority of the countries (Table 2).

(b) Limited employment creation. Occupation levels grew slowly while the number of hours worked per employee fell, so that total employment in hours worked registered a minimal increase, even falling in some countries (Table 2).

(c) Minimal unemployment rate. In the majority of countries unemployment represented less than 2% of the active population, reaching between 4.5 and 5.5% in only three countries (Table 2).

(d) A notable increase in real wages. The real wage per employee grew above 5% annually in half the countries, dropping below 4% in only three (Table 3).

(e) Social pacts established through centralised negotiation between employees and employers, which institutionalised the distributive struggle via adjustments between wages and productivity.

(f) Employment protection through public regulations, which protected the right to work and set dismissal costs at a high level.

(g) Public aid to the unemployed and social benefits for non-active populations, awarded by the social policies of the "Welfare State".

The dismantling of this model began with the harsh employment adjustment of the period 1974–1983. While the activity rate showed a greater diversity of performance among countries (Table 2), total employment by hours worked contracted sharply – at an annual rate above 1% in many countries – causing employment levels to be weakened while the number of hours per active person rapidly diminished. As a consequence, the unemployment rate rose significantly, nearing 10% in Spain and Ireland and reaching 6–7% in five other countries.

Simultaneously, the growth rate of real compensation per employee slowed but still kept a reasonable growth rate (2.25% annually as an average of the EU-14), at least in part because workers retained some negotiating power due to the maintenance of centralised negotiation and to other social and political factors which allowed workers not to yet lose all their power. In this way, during the seventies, the wage contribution to national income rose quite sharply in most of the countries (Table 3), in spite of the economic crisis. At the same time, most of these economies maintained the main forms of employment protection, and public aid was given to the unemployed.

Therefore, if the Golden Age, at least during the sixties, is considered as a period of intense economic growth led by wages; then the next phase, which started in 1974, might be seen as the beginning of the destruction of that regime, despite keeping some of their features such as the "push effect" that wages still had. The fact that the adjustment to a crisis situation centered on employment is what allowed the deceleration in labour productivity to be of weaker intensity than the reduction suffered by demand. In a simple average of the EU-14 countries, the rate of growth in domestic demand fell from 5.3% to 1.8% (for the periods 1960–1973 and 1974–1983), while the productivity slowed more smoothly, from 5.6% to 3.0% (Table 1).
In some countries the system of union negotiation was more or less decentralized, even as budgetary policies limited social benefits, and contractual forms were introduced which diminished employment protection.

Nevertheless, a rather varied panorama of situations arose throughout the period, precisely because the disappearance of basic Golden Age uniformity gave way to diverse evolution within individual countries. This is why in terms of total employment, countries like Finland and Denmark suffered losses of 2% and 1% annually, while others like Greece and Spain presented positive rates of 0.5%; the Netherlands came close to 2% annually, and the nine remaining countries showed rates of growth of scarcely 0.1%. This diversity of performance carried over to the relationship between the dynamics of demand and productivity, in such a way that Spain and the Netherlands, which had increases in domestic demand superior to the Nordic countries, nevertheless obtained inferior increases in terms of productivity. The Netherlands above all showed extremely strong job creation, only leaving margin for an increase in productivity below 1% a year.

4.2. “Maastricht Treaty”: employment creation and productivity weakening

The disappearance of the labour model having reached completion, the new diversity of situations gave way to a reconstruction of some uniformity in the labour market during the 1990s, although the notable differences registered by EU-14 countries in terms of job creation would have important consequences for the evolution of labour productivity.

At the start of the nineties, European leaders had to face a raw reality: the harsh labour adjustment of the 1970s, followed by a weak capacity for employment creation – alongside an increasing activity rate – had generated a growing structural unemployment, making difficult the incorporation of inactive sections of society (young people, women), at the same time frustrating the re-entry to employment for a growing percentage of long-term unemployed, especially among less-qualified and older workers.

In those years, in the midst of a consolidation of financial predominance and of orthodox policies in the fiscal/monetary sphere, a new labour model came to be accepted which was poles apart from the Golden Age model. From the European summits in Edinburgh (1992) and Essen (1994), to the “Pact for Stability and Growth” (1997) and the “Lisbon Strategy” (2002), a thesis declaring the “rigidities” of the continental European labour market and the necessity to assimilate the “flexible” working of the US and UK was gradually established.26

The Maastricht Strategy, afterwards maintained by the Brussels-Frankfurt Pact, prepared to reform the labour market in order to promote employment, above all among sections of society most affected by inactivity and unemployment.

As a whole, the measures adopted can be classified in two types27: those directly aimed at the cheapening of company labour costs, through subsidies, tax breaks, and cuts to social security, and those aimed at increasing employment turnover, conceding measures to facilitate dismissals, cut employee rights, encourage temporary and part-time contracts, and limit overtime and other regulations with a tendency to reduce working time.

In countries where governments have maintained a stronger social commitment, measures tending to promote employment mobility and to weaken job stability have been combined with active policies designed to increase professional training and guarantee protection during periods when employees find themselves out of work. The clearest cases currently in practice are the flexisecurity reforms applied in Denmark and the promotion of part-time work in the Netherlands, which has been carried out since the 1980s in conditions that fully guarantee employee rights. However, in the majority of cases, “structural” reforms of the labour market have directly supposed the dismantling of basic pillars such as centralised negotiation, which had facilitated the homogeneity of salaries and labour rights. The result has been: a slow increase in wages; the weakening or dismantling of the mechanisms of employment protection; a reduction in job security; a rise in contracts that are detrimental to full-time work stability; and the weakening of unemployment benefits.

In this way, in 1994–2004 an economic regime has consolidated that is based on moderate growth very much conditioned by financial markets supremacy. During this period, the operating surplus (both gross and net) has been growing (3% average for the EU-14) and ratio operating surplus (both gross and net)-GDP has also grown, whereas wages have hardly grown and their share in national income has been continuously decreasing in all EU-14 countries (Table 3).28 This wage role in the new regime appears narrowly related to the radical transformation promoted in labour conditions, which is exerting a strong influence on the performance of labour productivity in European countries.29

The objective of increasing employment in the EU-14 was irrefutably attained. Employment levels showed positive rates in all 14 countries, exceeding 1% annually in the UK, Finland, and the Netherlands, nearing 3% in Spain, and topping 4% in Ireland. In terms of total employment as hours worked, 12 countries recorded positive rates, even if the number of hours worked per occupied person fell very slightly (more significantly in Ireland and France). Total employment grew strongly, at around 3% annually.

26 Pisan-Ferry (2004) run through the elements contained in those theories, argued for many years by authors like those cited in note 6.

27 Artus and Cetet (2004) includes an annex in which the main measures are detailed, as do successive editions of Employment Outlook published by the OECD (see OECD, 2007).

28 Speaking in dynamic terms, as far as employment has increased (mostly through low qualified jobs), but these economies have remained still far from full employment, real wages have grown very little and profits have done more, boosting investment, but not with great force, so that the growth of domestic demand has not been strong.

in Ireland and Spain and above 1% annually in the Netherlands and Finland. Among the other six countries, only in France did the rate not exceed 0.5% annually (Table 2). The two countries where total employment did not grow were Austria and Germany, where the fall in the number of hours per person engaged was greater than the increase in the number of employed people.

Nevertheless, the goal of reducing unemployment was achieved in a more limited way. This was due in some cases to a slow rate of job creation, while in others a faster rate was offset by an equally strong increase in the labour force participation rate (either for endogenous demographic reasons, or due to the inflow of immigrants, or else because of expectations created among inactive social groups attracted to the labour market). All the countries except Greece and Italy managed to reduce the unemployment rate through the end of the 1990s, but several saw it rise again during the recession initiated in 2000. If the whole period is considered, the greatest falls in unemployment were recorded in three countries (Spain, Finland, and Ireland) which had initially shown very high rates (between 14% and 20%), as well as in the UK and Sweden (Table 2). That said, by the end of the period (2004), half the countries in the EU-14 continued to carry an unemployment rate above 8% of the active population.

Meanwhile, various phenomena converged and competed against wages. A large portion of jobs created were low-skilled jobs, through part-time contracts and/or of limited duration, enabling above all the incorporation of women who were previously inactive or unemployed, while in several countries (Spain, Ireland, Italy) many such jobs went to immigrants. At the same time, levels of unemployment were maintained (and continue to be significant), even as the mechanisms of centralised negotiation deteriorated or disappeared, along with the frameworks that protected stable and full-time employment. This combination of elements resulted in real compensation per employee growing by barely 1.2% annually on average, with some EU-14 countries showing even zero or negative rates (Spain, Italy).

Aside from that regressive redistribution of income, the greatest “paradox” caused by labour reform undertaken in the name of employment creation, flexibility, and labour market efficiency has been a negative impact on labour productivity. The anomalies described at the end of Section 3 (between the dynamic of domestic demand and the performance of productivity in 1994–2004) are precisely explained by the evolution of the labour market and its effect on job creation.

Leaving aside Ireland, the most significant case is that of Spain, whose domestic demand has grown most in the EU (at 3.9% annually), though its productivity has only increased by 0.7% annually. The same lack of correlation can be observed in Finland, Denmark, and the United Kingdom, while the weak productivity increase in the Netherlands was still more striking. All are countries which have achieved major increases in employment according to the conditions described above. At the other extreme is Austria, whose demand growth has weakened while productivity growth has increased, resulting in a decline in the level of total employment.

Therefore we find ourselves looking at an inverse situation to that generated in 1974–1983. In that case, the economic crisis imposed harsh labour adjustments, with fierce attacks on employment, in such a way that productivity slowed its pace of growth rather less markedly than domestic demand. In 1994–2004, however, mediocre growth in demand led to a substantially lower increase in labour productivity, with greater shortfalls according to the amount of employment creation achieved by the aforementioned countries. A large part of that employment was low-skilled, frequently substituting work which had previously demanded more skills; this includes low-paid jobs such as found in construction, services, and low value-added manufacturing, limiting employment’s contribution to the overall efficiency of the economy. Put another way, within the limitation which operates on demand, an increase in employment slows the rise in capital intensity, concentrating in activities where the capital–output ratio scarcely falls (or even increases), so

---

Table 4
The relationship between variations in employment and GDP.

<table>
<thead>
<tr>
<th>Total Employment (people engaged)</th>
<th>Total employment (hours worked)</th>
</tr>
</thead>
<tbody>
<tr>
<td>----------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Austria</td>
<td>0.00</td>
</tr>
<tr>
<td>Belgium</td>
<td>0.01</td>
</tr>
<tr>
<td>Denmark</td>
<td>0.02</td>
</tr>
<tr>
<td>Finland</td>
<td>0.10</td>
</tr>
<tr>
<td>France</td>
<td>0.05</td>
</tr>
<tr>
<td>Germanya</td>
<td>0.05</td>
</tr>
<tr>
<td>Greece</td>
<td>-0.03</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.02</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.03</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.23</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.03</td>
</tr>
<tr>
<td>Spain</td>
<td>0.06</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.11</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.08</td>
</tr>
</tbody>
</table>

---

In order to guarantee the coherence of the data prior to and after reunification in 1990, the series of the period 1984–1993 has been created from 1991 by applying the variation rates of the unified country to the FDR data. From (AMECO) and GGDC.
that both aspects limit the capacity for productivity growth \[ \Delta Y/L = \Delta K/L - \Delta K/Y \].

4.3. Growth styles: employment and productivity

Analysis of the empirical evidence leads to the hypothesis that an important change in the style of economic growth has been taking place in European countries since the 1990s. This becomes crystal clear through observation of Table 4 and Fig. 2. The table presents the significance of new employment to economic growth, as expressed by employment-GDP elasticity (in other words, the variation in employment – total people engaged and total hours worked – compared to the GDP variation). We can see that during the sixties, the economic growth of the 14 countries gave rise to weaker sensitivity in terms of employment levels, which turned slightly negative in the case of total employment. In fact, only three countries (Denmark, the Netherlands, and Spain) achieved positive values, and those remained under 0.15.

During the following periods we see that employment proved even less significant to economic growth. In 1974–1983, in all but three countries, the elasticity between employment and GDP turned more negative, and in spite of the fact that this tendency attenuated in 1984–1993, six countries continued with negative values in terms of total employment, while two others showed no change and three more showed positive values under 0.1. Only Portugal, Greece, and (above all) the Netherlands registered higher values, where employment played a larger role in economic growth.

Conditions were modified substantially in the 1994–2004 period, when elasticity registered generally positive values, considerably higher than those previously seen. Such was not the case in Austria, Germany, and Greece, where elasticity in terms of occupation level was positive.
but decreasing, while Greece also saw a fall in total employment and the other two countries recorded negative values. Another particular case was that of the Netherlands, where the elasticity value diminished but remained high, since in the previous period it had reached very high values. In the other 10 countries production growth clearly included a larger contribution from labour—especially in Spain, but also in Finland, Denmark, Ireland, Italy, Belgium, and the UK, with values of around 0.3, and less so in France, Portugal, and Sweden, with values under 0.2.

The transformation in the style of growth is captured equally clearly by analysing the correlation between annual variations in productivity and annual variations in production and employment, respectively. Fig. 2 shows the sequence of both correlations throughout the four periods spanning 1960–2004.

First, in 1960–1973, almost all the countries are found in the upper right part of the fourth quadrant, with a strong correlation between productivity and GDP and low negative correlation between productivity and employment. Therefore, during that period of strong economic growth, the strong connection is that which relates the dynamics of productivity and production.

Following on, in 1974–1983, the high positive correlation between productivity and GDP is maintained, but with two new elements. Here there are more countries where the productivity–employment correlation, although low, has turned positive. In addition, three countries record a low productivity-GDP correlation; two of these, France and the Netherlands, record high negative correlations between variations in productivity and employment.

Later, in 1984–1993, although 10 of the 14 countries are still found in the fourth quadrant, the sample has become more spread out, combining a wide range of negative values in the productivity–employment correlation and positive values in the productivity-GDP correlation. Finally, in the period 1994–2000, most of the countries have moved to the lower part of the fourth quadrant, defined by coordinates referring to (medium and high) negative values in the productivity–employment correlation and values more disperse in the productivity-GDP correlation, where only five countries exceed –0.5. Therefore, these graphic representations confirm the thesis that in the 1990s an economic context was created in which a tight relationship between the variations in productivity and employment was consolidated, the extremes of which are represented by two countries situated in the third quadrant – Spain (with strong employment creation and weak productivity creation) and Austria (with falling total employment and larger productivity creation).

5. Conclusions

This paper formulates an interpretative proposal that explains the dynamic of labour productivity through two levels of determination. First, aggregate demand determines effective production and structurally conditions the performance of productivity through three channels or effects: scaling, capitalisation, and modernisation. Second, in the face of either an expansive or recessive context in demand, changes in the labour market directly affect the role played by employment and, therefore, productivity.

The empirical evidence reveals two simultaneous phenomena in the European economies beginning in 1974: on the one hand, an intense deceleration in domestic demand affecting all the EU-14 countries in a general way; and on the other hand, a persistent fall in the rate of labour productivity. The only exception is Ireland, where the massive inflow of foreign investment managed to maintain a notable rate of growth in demand and productivity.

The structure of the Golden Age’s economic regime was dismantled during the period 1974–1983. And a new regime started to be built during the period 1984–1993, which was completely consolidated during the next period (1994–2004). This new regime has been based on a moderate economic growth under the increasing influence of capital markets.

The Maastricht Strategy played a decisive role in the institutionalization of such a new regime and it has become a severe restriction against labour productivity growth to the extent that it hampered wage growth, productive investment, and public expenditure. This strategy led to the maintenance of slowdown in domestic demand, limiting the impact of the three expansive effects of productivity, even in the presence of a new wealth of technological innovations, as was the case in the 1990s. The limitations on market expansion (or scaling effect) reduced the degree of use of installed capacity and, along with it, limited the reduction in the capital–output ratio. The moderate increase in non-residential investment slowed the increase in the capital–work ratio as well as the decrease in the capital–output ratio (given that it limits the capitalisation and modernisation effects). At the same time, this strategy came with the implementation of policies based on the thesis of those who complained about “rigidities” of labour markets. These policies achieved a remarkable increase in employment, but also at the same time they achieved the dismantling of centralised bargaining, the stagnation in real salaries, the reduction in company labour costs, the proliferation of low-skilled jobs, the weakening of employment protection, the extension of part-time and temporary contracts – at the cost of full-time work stability – and the reduction in unemployment benefits.

The result of this has been a clear change in the style of economic growth in European economies as the analysis of the empirical evidence reveals. The employment-GDP elasticity during that period registered rising positive values. At the same time, the correlation between the variations in productivity and the respective variations in production and employment in a majority of countries presented a high (negative) correlation between the dynamics of productivity and employment. Finally, the empirical evidence confirms that there is no direct and mono-causal relationship between demand and labour productivity: the mediocre productivity growth rate showed margins of variation not defined exclusively and directly by demand.

It is therefore not surprising that countries whose growth incorporates a larger amount of employment are those which showed greater deviation between domestic demand growth and productivity growth, which in a context of demand weakness signifies that the increase in
productivity is reduced as employment increases, because employment slows the increase in capital intensity and is concentrated in activities where the capital–output ratio hardly declines (and even rises). In this way, for instance, Spain and Greece, with quite intense and similar domestic demand rates of growth, reach very different productivity rates (very low in Spain, quite high in Greece), because employment grows fast in the former and slow in the latter. In the same way, Austria and Italy show slow demand growth, but productivity quickly increases in Austria because of employment destruction, while it hardly rises in Italy due to a certain employment growth.

Among the other countries, there are not such big differences, but there are also trade-off evidences. Portugal and the Netherlands show moderate demand growth with different productivity growth rates because of the inverse relationship between this variable and the employment creation capacity, which has been weak in Portugal and stronger in Netherlands. Reversely, Finland, United Kingdom and Sweden have similar productivity growth rates, despite the first two countries reaching higher domestic demand increases than the third one, where employment growth is lower. Finally, Denmark, France, Belgium, and Germany obtain weaker productivity increases, although Danish demand grows faster than French and Belgian, and much faster than German. Once again, this is because Germany destroys employment, while the others create a little and Denmark a bit more.

This diagnosis of the situation in European countries can be projected onto a diagnosis of the effectiveness of policies to increase labour productivity. The only way in which the significant creation of employment can be made compatible with a larger increase in labour productivity is by strong dynamism in domestic demand—something which is evidently related to research efforts, educational training, and investment in new technologies; but also to increased consumer demand through wage growth, to the incentive given to productive investment; and to the recovery by governments of economic and social commitments. In other words, this can be achieved by substituting the Maastricht Strategy for another more in keeping with the fulfilment of the objectives mentioned.

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