

**Taking stock of the liberalization
of public utilities**

**Can structural reforms
bring the Lisbon strategy back on track?**

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Abstract

Over the last two decades the EU has put great efforts into completing its internal market, the reason being the major economic gains which achievement of this goal is expected to generate. This report, focusing on public utilities – more recently referred to as ‘network industries’ – seeks to ascertain whether the alleged benefits of liberalization are realised in practice. Has the promise of higher living standards, as measured by productivity growth, actually materialized? Are prices more affordable for consumers after privatization than before? Have more jobs been created? This study suggests that the results of full-scale privatization of previously publicly owned companies – in electricity, gas, transport, postal services, etc. – have been disappointing.

The theoretical promises of lower prices, productivity growth and more jobs are at odds with the reality. Indeed, the track record would seem to justify some pessimism: the network industries experienced 600,000 job lay-offs in the period 1991-2001. Productivity growth remains largely unchanged, while price levels increased in EU15 between 1992 and 2002. The report explains the negative result in terms of a market failure, insofar as parts of the network industries include strong elements of natural monopoly which hinder effective competition. The conclusion of this study is that structural reforms – and in this case privatization – are not to be regarded as a panacea for bringing the Lisbon strategy back on track.

Introduction

Already the Rome Treaty promotes economic integration between countries in Europe as a vehicle assumed to produce prosperity and peace. To that end, the creation of a European Single Market is the single most important EU achievement. It was attained after much resistance from certain countries to give up sovereignty on competition decisions during the 1970s and 1980s. The legislative road map for free movement of people, services, goods and capital was realized in 1987. It is based on the 1985 famous European Commission (EC) White Paper – Completing the Internal Market.

The ambitious objectives are set in the introductory paragraph:

“Unifying this market (of 320 million) presupposes that Member States will agree on the abolition of barriers of all kinds, harmonization of rules, approximation of legislation and tax structures, strengthening monetary cooperation and the necessary flanking measures to encourage European firms to work together...” (COM 85:310).

The completion of the internal market was due in 1992. Yet, today we know that this was not a realistic goal. The completion of the internal market is still ongoing. In addition, it has become the core element of the Lisbon strategy. The Lisbon strategy was born in 2000 and is the EU response to globalization. The strategic goal is defined: the Union shall by 2010 become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion. ‘Sustainability’ has a particular meaning for the energy, water and transport sectors. In fact, environmentally sustainable energy and transport implies an objective to reduce the consumption. Indeed, it would be misleading to understand it in a more narrow sense i.e. maintaining economic growth over the long term.

The Lisbon strategy is a diversified policy plan, consisting of three pillars – economy, employment (and social) and environmental issues. Yet, investments in knowledge coupled with structural reforms have been strengthened by the new start for Lisbon, after its mid-term review in March 2005.

The relationship between the internal market and the Lisbon strategy is not obvious. An independent expert report for the EU Commission (Sapir 2003)¹ suggests that the Lisbon strategy addresses the shortcomings of the Single Market Programme, notably the completion of the single market. From a legal point of view, most of the public utilities – more recently referred to as ‘network industries’ – are now fully or largely subject to competition (ECB 2005). Yet, despite extensive product market liberalization in recent years, the productivity growth rate has fallen and remained low since 1996. The EC hypothesis is that structural reforms (deregulation of product and labour markets) should transform the EU into the most competitive knowledge-based economy by 2010. To that end the EU must improve its productivity growth rate considerably in the coming years. Against this background, it should be borne in mind that the network industries represent

¹ “Already, some fields that were supposed to come under the delegation technique (powers to EU through framework laws and directives) as a part of the Single Market has somehow slipped into the Lisbon soft coordination category” (text in brackets added by author). Sapir does not indicate which areas he is referring to. It is likely that it is related to the Broad Economic Policy Guidelines, which are political recommendations to Member States, concentrating on structural reforms. Sapir, 2003 p. 85.

an important share, around 10%, of all production in the euro area and almost 7% of overall EU 15 employment (ECB 2005).

This paper sets out to test the claims of a positive association between price levels, employment, and productivity growth rate from the liberalization of public utilities and actual output. Is it possible, like in sectors without a natural monopoly, to achieve effective competitive pressure? Will liberalization in the network industries necessarily create greater wealth? This paper argues that the association between structural reforms in the network industries and productivity growth, with some notably exceptions, is insignificant. The benefits of structural reforms, such as lower prices, productivity growth, and positive employment output – promised and anticipated by the EC – have not (yet?) materialized.

One notably exception among network industries is the telecom industry. It has experienced a technological shift which was unthinkable some years ago. It has bypassed most monopoly structures. Today there is a free telephone service over internet (IP telephony). Broadband has not only replaced the old fixed line, but improved both quality and capacity. The telecom industry has been successful however it is measured (productivity, employment, prices). However, the characteristics of the telecom industry are unique and must not be made a role model to take further liberalization steps in other sectors.

The telecom sector is only transferable if there is scope for a technological breakthrough in other sectors: a technological shift which fundamentally challenges the monopoly structures. This does not seem to be the case for other network industries. For example, competing pipelines for gas is an unrealistic scenario. Against this background, the telecom industry will be excluded from this study.²

If the existence of only an insignificant relation between structural reform and economic growth can be proved, a series of questions follow: Is there a time-lag which could explain why there have not so far been any clear-cut positive outcomes from liberalization in most sectors? Are the promises from structural reforms inflated and out of line with reality? And/or is there a missing link between structural reforms and an automatic increase in productivity? Are some sectors more or less inclined to generate increased productivity growth? Is it possible to establish a typology of the variety of network industries which could explain the gap between growth claims and actual outcomes?

The outline of this paper is the following: the first section will discuss different forms of regulation and the logic of liberalization. Furthermore, it summarizes different indices on product market regulation in the EU. It serves to provide a background to illustrate the scope of structural reforms in the past two decades. The second section deals with the special characteristics of the network industries. In addition, it takes stock of the type and level of sector liberalization (electricity, gas, postal service, transport). In the following, a typology to classify the network industries is presented. Based on this, in section three, there will be a literature review of evaluations of the liberalization of network industries, with the aim to measure the impact on employment, price and productivity growth levels. Finally, we will test our theoretical claims in a case study in section four on the electricity sector in France, the least liberalized country, compared to the UK, which is fully liberalized.

² Unless otherwise mentioned, the figures in this report relating to all network industries exclude the telecom industry.

1. Liberalization – deregulation and re-regulation

Most of the liberalization started in the 1990s, and the result, so far, has been assessed in various studies. Prices, employment and productivity growth are fundamental aspects of these impact assessments.

The overall objective of the internal market is to remove physical, technical and fiscal barriers to trade. The aim is to increase the level of competition - to create a level playing field. However, the common market is not an end in itself "...but also building an expanding and flexible market". And more importantly "it must aim not simply to remove technical barriers to trade, but to do so in a manner which will contribute to increasing industrial efficiency and competitiveness, leading to greater wealth and job creation." (1985:18). Thus, it can be concluded, it is not only the level of barriers that is of concern in the liberalization process, but also the nature and quality of regulation.

Since the internal market was created, a social dimension of it has emerged. The social dimension was originally limited to providing social security to migrant workers, i.e. the purpose was to improve the functioning of the internal market. Today, the social dimension is a wider concept. The Lisbon strategy developed in the year 2000 is built on three mutually reinforcing dimensions: economy, employment and social reforms. There is soft governance, basically intergovernmental co-operation, on social questions such as health, pension and social inclusion. There is a social agenda, the EU Commission's road map for initiatives on social policy for 2006-2010. A strategy for employment at European level is sought to balance economic aspects of the internal market. The EU has politically committed itself to preserving the so-called European Social Model (ESM, see for example European Council summit conclusion March 2005).

Therefore, it is important to make a distinction between different forms of barriers to trade. However, there is little guidance in the White Paper to separate the barriers which do make a difference to wealth and the barriers that have no significant impact. This difficulty is reflected in evaluations of regulation: most studies fail to make any distinction between different forms of regulation with regard to impact assessment.

Regrettably, it simplifies the understanding of reality in which all barriers are considered to be inherently negative to trade. It gives the false impression that all liberalization equates with deregulation. Before liberalization of the network industries began, regulation protected national incumbents from competition. Today, after extensive liberalization, regulation is mainly used to curb anti-competitive behaviour of firms. Recent studies explain shortcomings of liberalization in terms of the lack of "quality" of the regulatory framework following liberalization (ECB 2005). In short, it is clear that the liberalization of the network industries involves considerable elements of deregulation but also, equally important for competition policy as for social aspects (for example equal access to services etc), a number of re-regulations.

Surveys measuring product market regulation

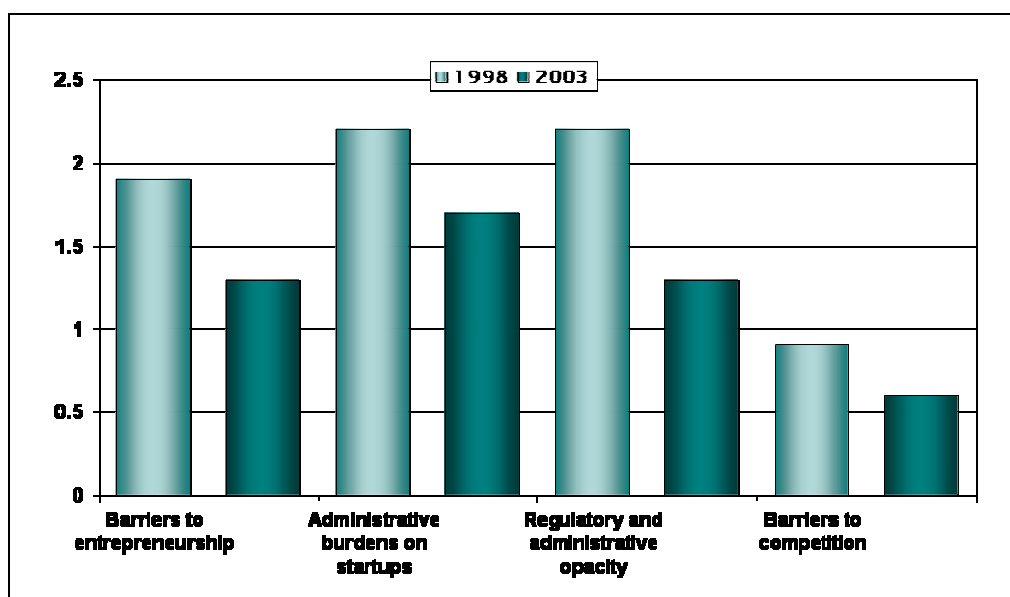
There are quite a few studies on product market regulation. Most of them do not directly measure the effect on the network industries alone. It is part of a wider index on product market regulation. Nevertheless, we shall discuss the results of some of these studies.

The Fraser index of Economic Freedom is founded by the Fraser Institute and Wall Street Journal. It measures the intervention of the State in trade and the economy in general in 161 countries. It grades countries according to 1) government spending (very low 5% or less and very high, greater than 40%) and 2) the share of revenues from State-owned enterprises and government-owned property. It is a simple index. Both factors are summed up and divided by two. Very low is equal to 1 and very high is 5. Hong Kong has topped the charts for some years. It is noteworthy that some of the best economically performing countries over the past 10 years in the EU have very different rankings. The UK is ranked 5th (1.83), Denmark 101st (3.55) and Sweden 89th (3.4). It lends some evidence to doubt the quality of the Fraser index – it says nothing about prices, employment performance and productivity performance, which must be regarded as a more precise indicator of product market liberalization.

The European Commission issues so-called **Structural Indicators** (SIs). SIs have measured the network industries, concerning prices, market shares³ and employment. For the electricity sector (1994-2004) the SI has detected no price reductions for households, although prices vary a lot between countries.

The OECD has developed a **time series** indicator to measure rigidities to competition (Alesina *et al.* 2002). It started already in 1975 until 1998 on a scale from 0 (free competition – no rules) to 6 (strong regulation)

Figure 1 – Product market regulation in EU15: 1998 to 2003



Source: OECD 2005a (scale 0-6 from the least to most restrictive of competition)

The figure illustrates that barriers to trade have declined substantially.

The **OECD Product Market Regulation** (PMR) indicators, also ‘Structural Policy Indicators’ measure the level of ‘rigidities’ to competition. It is more detailed than the time series. It covers a wide range of data and makes cross-country comparisons. It has been

³ Limited time period, 1999-2002, points to no changes in market share.

measured in 1998 and 2003⁴ and is consistent over time. It is based on questionnaires to the OECD Member States' governments. In respect of the network industries the section 'general policies' deals with market access, market dominance, etc. The State control has been reduced substantially in air transport. The other network industries (electricity, railways, water, gas, urban transport) have not experienced substantial changes between 1998-2003. In 55% of the countries there was at least one State-controlled company. More than 55% of the questionnaires replied that there are legal barriers to entry (OECD 2005; Nicoletti and Scarpetta 2003).

Positive effects of liberalization or unrealistic expectations?

Ongoing research by the ETUI-R does not suggest that there is a strong correlation between product market regulation in different OECD countries and employment and productivity performance.

The EU Commission made a simulation in 2002 on the employment effects of liberalization of the network industries. It estimates that on average 2,463,800 new jobs will be created by 2012 (EC 2005: Internal market website). The simulation is based on an econometric model called QUEST II⁵ (EC 1997).

Another recent study, published by the OECD (OECD 2005c), suggests that the abolition of all forms of product market regulation constitutes a viable path forward for higher growth. It claims that the removing of product market regulation (PMR) - specifically State ownership and regulation of enterprises, barriers to competition, barriers to FDI and tariff and non-tariff trade barriers - would permanently raise output in the OECD by between 1 1/4 and 3%. These results are calculated in a simulation exercise in which all forms of regulation in these areas are reduced to the minimum level prevailing in the least-regulated OECD country. The OECD claims that workers would gain a full year's income over their working lives if barriers were reduced.

The alleged benefits are hypothetical and based on massive scale liberalization (TUAC June 2005). They are calculations based on econometric simulations. The problem with econometric studies is that they are difficult to crosscheck by other researchers. In order to understand these it would require detailed study of the assumptions and methodology used to generate such results. Such caution is especially warranted given the fact that, as the OECD itself notes, member countries have in recent years already initiated a large-scale programme of liberalization and deregulation. Past liberalization efforts have been preceded by similar studies claiming positive effects from reforms. Particularly sobering is that, during this period, productivity in the European Union has fallen by half, whereas rising productivity is the key to reaping the promised output increases.

The OECD does not consider possible positive effects of regulation. A balanced assessment of such a study would require that an attempt be made to describe the nature and size of these effects.

⁴ No specific data on EU countries.

⁵ The previous model QUEST of 1991 was based on Keynesian tradition of econometric model building, whereas QUEST II is more neoclassical and supply-oriented. For details see Commission 1997.

It is also important to note that some sectors in the network industries are not normal markets. Unlike certain other sectors (for example rail transport) it is untenable to encourage higher consumption of gas, electricity and water. Certain governments even provide financial incentives to people to use less energy and water. In a normal market these types of financial incentives are fiercely fought, since they obstruct the price-setting in the market. Therefore, the widespread wisdom of lower prices always leading to higher consumption does not fit these sectors.

The logic of liberalization

Product market reforms are sought to improve the use of resources within companies. Prices should be set at optimal level, driving less efficient firms out of the market. The reduction in mark-up is supposed to yield increased investments and a higher demand for labour. However, in order to turn these theoretical beliefs into reality several assumptions should be met:

- 1) Liberalization leads to increased competition (market entry)
- 2) Competition leads to better use of resources (higher level of productivity)
- 3) Competition leads to dynamic investments (higher rate of productivity growth)
- 4) Better use of resources leads to lower prices (if market is not an oligopoly, then the economic profits would benefit owners of the company)
- 5) Lower prices lead to higher consumer demand (if the product is price elastic)
- 6) Lower prices lead to growth of the market and increased investments and/or increased employment (if the economies of scale allow for major investments and if lower prices are not an effect of labour-shedding in the first place)

Of course, it is very complicated to isolate these events from other influential factors, such as economic cycle, oil prices and other inflationary pressure, wage levels with regard to productivity growth, etc.

In discussions on liberalization, ownership and level of mark-up are often raised. Ownership is not considered to be of importance for the level of competitiveness (OECD 2005). In this regard, private or public ownership makes no difference (the quality of the service is another matter, not to be discussed here, in which the pros and the cons for privatization is of pivotal importance. It is not taken on board in this paper since the perception of public service responsibility is a debated issue from a certain normative standpoint).

Studies suggest that ownership per se is not sufficient to increase competition. It must also result in entry of competitors in order to result in significant price reductions (Nicoletti 2000). However, competition in the market is accomplished only if several companies challenge the market share of the incumbent company. It is of much greater importance that the mark-up level is low: it should be easy to enter (and exit) the market.

In a nutshell, it is not effective competition to have several companies replace the incumbent company if these may not be sufficiently challenged by other competitors. On the contrary, it is the definition of a market failure: monopoly structure replaced by oligopoly structure which does not create a level playing field.

2. Network industries

The network industries energy, transport, water and telecommunications are identified as major sectors in the Commission's White Paper. What constitutes the so-called network industries?

Network industries produce both products and services. They are delivered to the customer via a network infrastructure. The network is a structure of interconnecting lines between nodes. The network structure is typically costly to establish which embodies substantial fixed costs. Separations of networks are normally not economical which is why natural monopolies are an essential element of the network industries (see economies of scale below).

When evaluating the impact of liberalization on the economy certain specific characteristics of network industries play a role. For instance, the cost of capital is different for State-owned and private companies. State-owned companies can borrow at cheaper interest rates than private sector.

The productivity level may increase due to specialization leading to economies of scale. Secondly, there are network externalities, i.e. the social benefit to a customer if other customers are added to the existing network leading to less to pay for everyone. Thirdly, competition may increase productivity, especially if it leads to the adoption of new technologies. Let us discuss these three specificities in greater depth:

- 1) Economies of scale could be defined as the more of a good you produce, the less it costs for each additional unit – so costs fall. To add one customer to an existing pipeline for gas is inexpensive. These give rise to natural monopoly. Liberalization in these specific fields is about giving access to the fixed network for competing companies. It is about sharing the market between several companies.
- 2) The so-called network externalities concern the social benefits for consumers of increasing the existing network size. There are benefits from being connected to a larger network (e.g. banking machines) in terms of costs being shared by more consumers which implies less to pay for everyone. Liberalization of the network industries therefore requires a regulated liberalization so as to avoid network size that is smaller than would be socially efficient. That is why interconnection of networks between Member States is an EU priority. It entails a problem with regard to congestion; some networks are too small in capacity for several companies to compete.
- 3) The question of the level of competition remains highly uncertain. There are two contrasting theories dominating the discussion. On the one hand, tougher competition may increase the investments in research in order to stay innovative. On the other hand, studies confirm that competition has led to reduced innovative activity. There is a risk that investments do not pay off, when the monopoly advantages, in terms of profit margins, are reduced. At theoretical level, it is uncertain if innovative investments in R&D, important for economic growth, are supported or obstructed by liberalization. Economists in the tradition of Joseph Schumpeter have argued on this basis that some degree of monopoly was preferable to perfect competition.

Schumpeter never made it completely clear whether he believed innovation was sparked by monopoly per se or, rather, by the prospect of getting a monopoly as the reward for

innovation. Most economists accept the latter argument and, on that basis, believe that companies should be able to keep their production processes secret, have their trademarks protected from infringement, and obtain patents. It is clear, however, that there is an optimum level of competitive pressure which will be passed at a certain moment, when an oligopoly structure starts to dominate over effective competition. When an oligopoly structure dominates companies can take more profit from consumers. It is due to organized price-setting negotiated between the dominant oligopoly companies.

In this paper we will use a typology that classifies the different types of network industries according to potentially competitive and non-competitive areas. How can we methodologically separate those? In very simplified terms, the problem could be solved by testing the network industries, applying the following question: can or cannot, in a given network, the nodes (the stations in railway transport) and lines (the rails) be duplicated at a reasonable cost? If they can be duplicated, there is scope for effective competition. If either the nodes or the lines cannot, a natural monopoly exists at least partially.

Services of General Economic Interest (SGEI)

The network industries are an atypical market and often part of a governmental responsibility. Most of the network services were traditionally part of the public services. There are numerous reasons for this from a certain normative viewpoint.⁶

In the EU, the network industries are not necessarily part of the public sector domain. The Public Service Obligation (PSO), which requires direct provision of the good by the public sector, has been replaced by Services of General Economic Interest (SGEI). It aims at preserving some of the essential features of public service. However, it does not address considerations like the long-term impact of investment decisions, the security of provision, or environmental effects, etc. The EC uses SGEI to refer to a service of an economic nature which public authorities provide for the benefit of their citizens. The operator which is performing the service is acting under a specific universal service obligation (USO), where the market will not provide it without State intervention.

The USOs may take various forms: provision of minimal service, or minimal quality at an affordable price, a uniform price across regions. USOs may include social tariffs or subsidised tariffs for certain groups. The financing of USOs also take different forms: subsidies, by giving the operator monopoly situation in some segments, through access charges etc.

While no formal definition exists under the EC Treaty, Commission powers in respect of SGEI are set out in Article 86(2) of the EC Treaty and historically it has been largely at the discretion of individual Member States to determine what constitutes an SGEI. However, the EU Court of Justice (ECJ) has ruled that “any activity which consists of offering goods and services in a given market constitutes an economic activity” (case C-180 – 184/98). It has blurred the distinction between economic and non-economic services

⁶ It involves investments that call for long-term trade-offs which may be difficult to motivate in a free market. They also have a strong redistribution implication. Will the regulation of a free market ensure universal service, equal prices across regions and security of supply? How will the incumbent recover costs of investments that have lost part of their value as a result of liberalization, so called stranded costs?

of general interest. Health care, public housing, education and training as well as social services could be subject to liberalization if the new directive to liberalize the services sector in the EU is adopted as it stands (but major revisions to the text are foreseen in the European Parliament and the Council in the ongoing co-decision legislative procedure).

Type and level of liberalization in the network industries

In this section the type and level of sector liberalization in the network industries is illustrated. It also serves to identify the competitive and non-competitive areas.

Energy – electricity and gas

The deregulation of the electricity industry started in 1989. In 1996 the EU adopted a directive for the internal market for electricity. By 1999 the Electricity Market Directive was transposed into national legislation.

Liberalization of the electricity industry involves what is known as vertical and horizontal separation. Vertical separation refers to the separation between potentially competitive activities, i.e. generation and retailing, from transmission activity, which is a natural monopoly (non-competitive).

The horizontal separation is the break-up of similar activities formerly performed by the same company. For instance, dividing the generation capacities and allowing for new generators to enter the market. Liberalization also involves allowing third party access for all generators to the transmission grid (which is subject to available capacity).

The EU directives call for 1/3 liberalization by 2003. Some countries have liberalized 100% - in these countries all customers could freely choose their supplier. But there is no legal obligation for Member States to introduce a free market for the supply of gas and electricity to households. Ownership of the electricity market is still partially public. The degree of market opening in 2002 for the total market across Europe was estimated to be 80% (Commission 2004a).

The critical element relating to the classification is the transport infrastructure. As mentioned, the generator capacities may be opened for competition. But the duplication of power cables would be too costly. And since electricity is not storable, the nodes are also a natural monopoly.

The Gas Directive was due for transposition in 2000. It requires a 20% opening of the market initially, increasing to 1/3 by 2008.

In 2003 two important directives to liberalise the market were adopted. The directives open the market for electricity and gas for all non-household customers by July 2004 and for all customers by July 2007. Also, a legal separation between producers and distribution will be compulsory. To monitor the effective implementation of the directives a European Regulatory Group has been set up, acting as an advisory body.

The transport infrastructure for gas, the pipelines, is difficult to duplicate.

Postal services

In 2003 the Postal Services Directive entered into force. It aims at full opening up of the market for cross-border mail, and reduced the so-called reserved area for national mail weighing less than 100 grams and costing less than three times the basic tariff. Cross-border and direct mail will be completely liberalized from 2003 in most cases. Outgoing cross-border mail will be liberalized, but there are possible exceptions to ensure the provision of universal service. In 2006 the quantitative limits will be reduced to 50 grams. With regard to the possible liberalization of the reserved area, the EC will revise the liberalization of Universal Service Obligations in 2006. If this is adopted, it could lead to the creation of an internal market for postal services from 1 January 2009 (OECD 2004).

The nodes in postal services are obviously a natural monopoly, at least at national level. It would not be economically sustainable to have two competing post offices.

Transport (rail and air)

In the year 2000 the railway package was adopted, and entered into force in 2003. In a first phase, it opens up the trans-European rail freight network to international goods service, secondly, the entire network in 2008. In April 2004 a second railway package was adopted, providing for full opening of internal freight in January 2006 and of domestic freight in January 2007. The 2004 agreement also envisages opening up international passenger traffic by 2010, which is part of the third railway package, already under negotiation (ECB 2005).

In the railways, both nodes (stations) and rails (lines) are not easily duplicated.

Air transport has changed civilian transport profoundly. The aviation sector has moved from a highly regulated market to a more competitive market. In the past the market was divided between countries in bilateral agreements with little or no competition. A cornerstone in the liberalization is the regulation on slot allocation (Regulation 95/93). Member States are no longer in a position to impose discretionary measures on air companies. The companies are now able independently to fix fares and determine capacity according to the market situation. Yet, under current rules established carriers do not lose their landing and take-off slots, however little they actually use them (ECB, 2005). The accessibility of air transport and available seats are used to represent supply. The total number of weekly departures doubled during 1990-2003. Air space congestion plays a critical role to increase air traffic. The new "Single European Sky" package approved in the EU in 2004 paves the way for a single system of air traffic control in the EU (ECB, 2005).

In air transport, the airports play the same role as stations for trains. These are natural monopolies (yet there is some opening of the sector due to the use of regional airports, especially by low cost air companies). However, the lines can be opened to a large number of competitors.

3. Impact assessment of liberalization

The approach of this paper is to test promises of productivity growth against actual outcomes. There have been numerous studies on the effects of the liberalization of the network industries. The IMF, OECD, EU, the World Bank, other institutes and organizations have all made contributions.

Globalization plays a critical role in the pressure for more liberalization. Competition with low wage countries is speeding up the product market regulation in the EU. There is also a similar pattern within the enlarged EU. New Member States would like to reap the benefit of free movement of workers, while old Member States fear wage dumping. At global level, in the WTO there is an ongoing negotiation to open up the services sector to competition (GATS: General Agreement on Trade and Services). At EU level the Services Directive is aiming at the same objective. The freedom of movement of workers in the EU is closely related to the freedom of providing services in other Member States. However, the controversy over workers' rights and the undefined limits of the internal market will not be dealt with in this paper. It is important, though, to be aware of globalization and its effects on the EU.

It is very difficult to measure the impact of liberalization, mainly for two reasons: firstly, there is no easy way to separate technological progress from liberalization; secondly, it is complicated to define the appropriate time lag before reforms could be expected to produce results. Another dilemma is to measure the quality of services. While this is a crucial question, it is not the purpose of this paper which focuses on economic effects (for a discussion on the quality, see for example CIRIEC 2004). It could be worth noting, though, that from the official EU point of view, no clear link has been recorded between the quality of services and liberalization (EC 1999).

Another tricky issue is to take into account the difference in demand for services and price elasticity. The usual assumptions, which we shall try to address in this paper, are expected price falls, higher quality and greater entry and exit of companies into previously protected markets (EC 1999). The problem again arises of separating other possible explanations from liberalization: increased income levels (economic cycle), changes in prices of oil, technological breakthrough are some elements that could have a substantial effect on impact assessments. Having said this, conclusions must be seen in the light of these tremendous difficulties and should be drawn prudently.

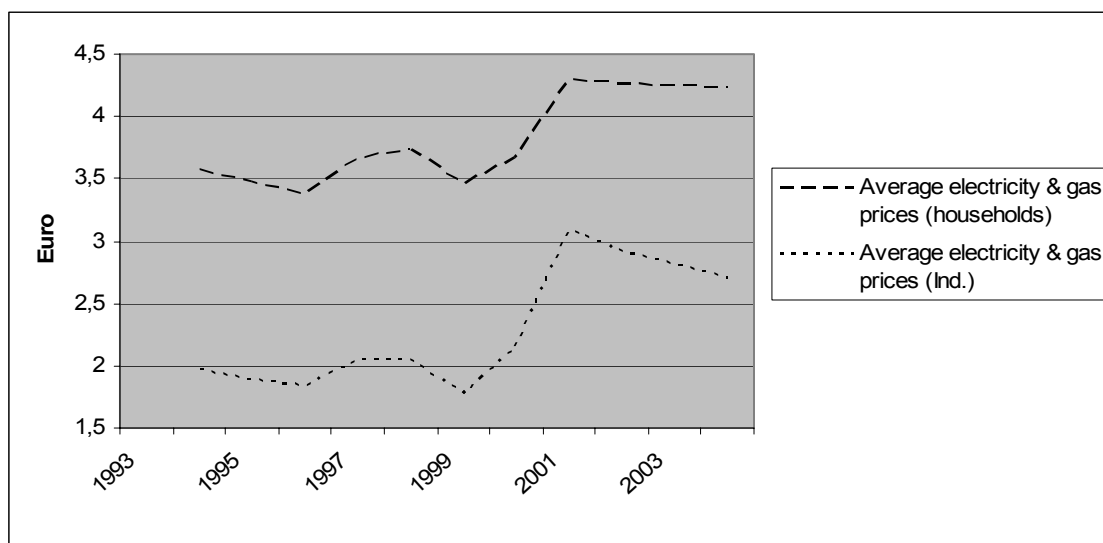
Prices

It is difficult to define the time-lags before liberalization is expected to result in lower prices. The downward pressure on prices is, according to one view, likely to continue until they reach a "steady state" with a permanently lower price level.

Until 1999, the ECB identifies a downward trend on electricity prices in most of the euro area. Electricity prices are strongly influenced by fuel prices, notably gas and oil, and changes in indirect taxes. Gas prices in Sweden and the UK show significant price falls due to competition according to a report by the ECB (ECB 2001). It is true for the time-period before 1999, but recently the price level in Sweden has skyrocketed. In order to get a realistic picture of the electricity market, price levels must be discussed in relation to

employment output. The relationship between price level and (cut in) employment is discussed in the next section.

Figure 2 – Price levels in the network industries EU15 1993-2003



Source: Eurostat 2005

Gas prices seem not to benefit from large gains from creating a European market for gas. London Economics (1997) considers that the very large scale in gas transmission, oligopoly in both production and transmission, and the location of major gas producers outside the EU, will make the possible gains very small.

There have been substantial liberalizations of **air transport**, which have led to lower air fares. Promotion fares decreased by 13% between 1984 and 1994 (Ciriec 2004 for Regional Policy DG), although prices for air passenger transport increased by 6.4% between 1998 and 2005 (relative to total Harmonised Index of Consumer Prices in EU15) (ECB 2005).

In the first horizontal evaluation by the EC it was found that only electricity has seen price reductions in the EU from 1996-2003 (increase lower than consumer index). The trends in **rail transport** and **postal services** have remained flat, while gas and road transport prices increased almost twice as fast as the consumer index (EC 2004). The UK was one of the first EU countries to liberalize rail transport, even though, notably before liberalization, British Rail successfully combined low public subsidies and high labour productivity, which were both considerably better than the EU average. Since then problems of underinvestment by the private companies has caused a massive increase in public subsidies (Catalyst 2004).

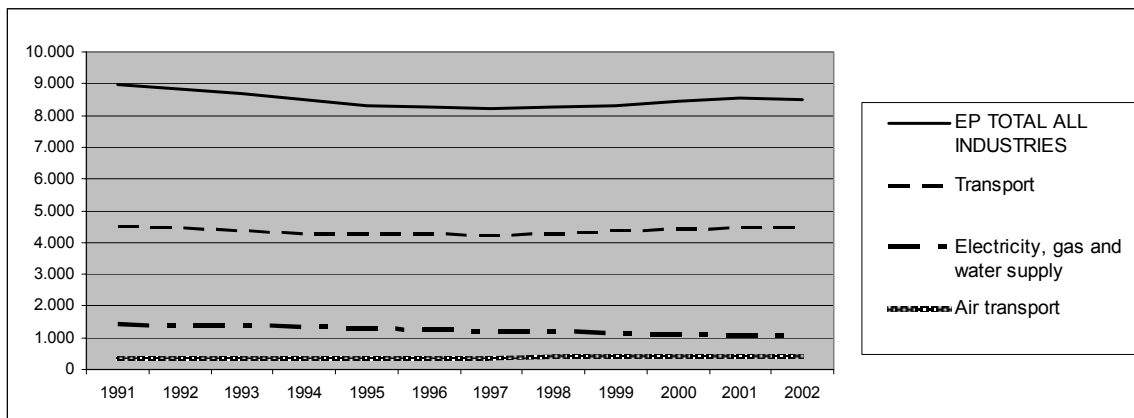
A recent ECB report concludes that “market’s liberalization has not yet provided tangible benefits for consumers...” (ECB, 2005, p. 26). An ECB report from 2001 estimated a time-lag of 10 years before prices would become permanently lower (ECB 2001). Yet, in 2005 this assumed time-lag has almost passed, without showing the expected price reductions.

Employment

An EU study shows that employment fell in the network industries from 8.8 million to 8.2 million. The decline represents a 7.5% decrease between 1991 and 2001 (EC 2004).

The liberalization of the incumbent **gas** company in England, British gas, had severe effects on employment. Two-thirds of its employees were laid off. The OECD supports the commonly held view that liberalization could expect adverse effects on employment in the short run, but after several years, employment should rise if there is increased innovation (ECB 2005). The crucial question is whether liberalization leads to dynamic investments and lower prices. We shall return to this issue later.

Figure 3 – Employed persons in network industries⁷ in thousands in EU15 1991-2002



Source: GGDC 60 Industrial database

Most observers are certain that employment in the **electricity** sector will fall because of liberalization and it is not predicted to recover due to very limited prospects for growth and innovation (ECB, 2001). There is evidence to support this conclusion also from the European Commission: between 1996 and 2001, the electricity, gas and water supply sectors, taken as one entity, have shed about 14% of their jobs in the EU (Commission, 2004).

Of course, job gains or losses vary across sectors (Commission 2004). The transfer of ownership from public to private had “significant and large economical effects” (Commission, 2004a) in labour cuts.

In the **postal services**, privatization is associated with significant labour cuts when compared to no privatization (EC 2004a). There is a significant and negative relation between competition and employment.

Air transport has produced a positive net result in employment. However, it is not possible to distinguish growth driven by liberalization from growth of a sector due to consumer habits. Employment is also highly dependent on cyclical changes, and the strong employment growth between 1996 and 2000 might therefore not be representative (EC 2004). Employment in the **railway sector** has fallen strongly in the past decade (OECD 2004).

⁷ Total all industries, including the telecom industry

Productivity level and productivity growth

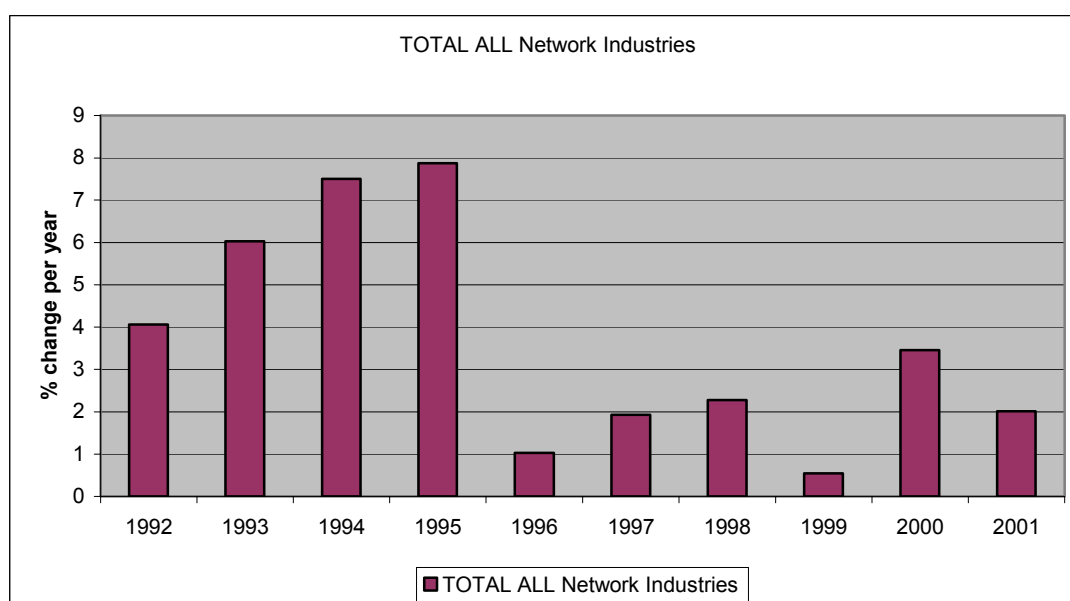
Productivity growth in the network industries in the 1990s appears strong, as their average growth in productivity per hour outpaced the average performance of the economy as a whole. Yet, there is no clear linkage to liberalization, since the productivity growth of the network industries was strong in the 1980s and 1990s, that is, before liberalization had begun.

Technological progress is assumed to be both triggered by and accelerated by structural reforms. That is a truer statement for high-tech sectors of which there are none in the network industries. The effect is arguably of less importance in the case of energy markets (ECB 1999).

In the **electricity market**, increased labour productivity has grown, but only at the expense of labour shedding, not through an expansion in output (EC 2004). There is a controversy as to whether there is productivity growth from liberalization. Hard evidence is very scarce: "...no significant impact of reforms was identified on the growth of labour productivity and this seems to suggest that deregulation is associated with on-off changes in the level of productivity." (EC 2004, p. 6). When measuring output the level of innovation and investment in productive technology is crucial. Another study reiterates the absence of dynamic effects expected from liberalization (EC 2004a: Griffith and Harrison CEPR-IFS, study commissioned by the EC).

Only air transport shows a positive relationship between employment and increased productivity growth per hour (EC 2004; CEPR/IFS 2003). The EC study regards productivity not purely at European level, but at world level. The message is worrying from a unionist perspective: whole countries in the EU may be losers in competition, but in a worldwide perspective everyone is better off (EC 2004). It gives legitimacy to a concern in certain EU countries which resist liberalization because they fear fierce competition.

Figure 4 – Labour productivity growth



Source: GGDC database and own calculations

In conclusion, in sectors which show an increase in the level of productivity, this is driven mainly by one-off labour cuts. The EC provides evidence which rules out a general growth of productivity, so-called dynamic gains, due to liberalization!

Competition in natural monopolies – mission impossible?

So far there has been little evidence of the large expected gains from liberalization. How come? Does it have to do with the nature of the network industries?

A short reminder of the liberalization logics:

- 1) Liberalization leads to increased competition (market entry or inventive competitive technology)
- 2) Competition leads to better use of resources (higher level of productivity)
- 3) Competition leads to dynamic investments (higher rate of productivity growth)
- 4) Better use of resources leads to lower prices (if market is not an oligopoly, then the economic profits would benefit owners of the company)
- 5) Lower prices lead to higher consumer demand (if the product is price elastic)
- 6) Lower prices lead to growth of the market and increased investments and/or increased employment (if the economies of scale allow for major investments.)

Against the background of the liberalization logics, which assumptions clash with reality?

4. Case study – UK and France performance in the electricity sector

It is rather challenging to conduct case studies in the field of the network industries. There is often a lack of available data and scarce empirical literature. Most of the databases focus on the level of labour productivity (not on the growth of productivity). There are no sectoral studies on productivity growth and the network industries are mostly measured as a group (gas, water and electricity supply). In addition, data often focus on the EU as a single entity, not country-specific studies. Yet, since liberalization within each of these sectors differs, the data do not accurately reflect these changes. Furthermore, there is a clear lack of time series measuring outcome before and after liberalization. Being aware of these methodological problems is critical.

We have picked the UK and France and especially looked at the electricity sector. It is a comparison between the most and the least liberalized countries in the EU, for which we have found reliable statistics over time. The UK was liberalized already in 1989, whereas France is one of the countries which is least liberalized. The French electricity market is regulated and market openness in respect of free choice of the supplier only exists for consumers up to 26% (minimal percentage of openness because of the EU internal market) of their overall consumption. Any access to the grid and electricity generation is regulated. For example, the electricity supply, the choice of energy source and production methods will be dictated by supply certainty and environmental protection and is fixed over the years. Prices have to be locally independent and social equality ensured (Hollos 2003).

Let us test our logics of liberalization assumptions, one by one:

- 1) Liberalization leads to increased competition (market entry or inventive competitive technology)

Effectively, in these terms there is more than one incumbent in the UK⁸, while France is very little liberalized.

- 2) Competition leads to better use of resources (higher level of productivity)

By using the National Institute sectoral productivity (NISEC) database, France is compared to the UK. Due to the fact that the NISEC database has no time series for RLPL, we are using the index of total factor productivity to calculate the development of France. We could see that France was always at a higher level than the UK between 1988 and 1999! Although the UK was liberalized in 1989, 10 years on it is still behind the level of France. Indeed, the French case suggests it is possible to achieve sustained productivity growth in a regulated market.

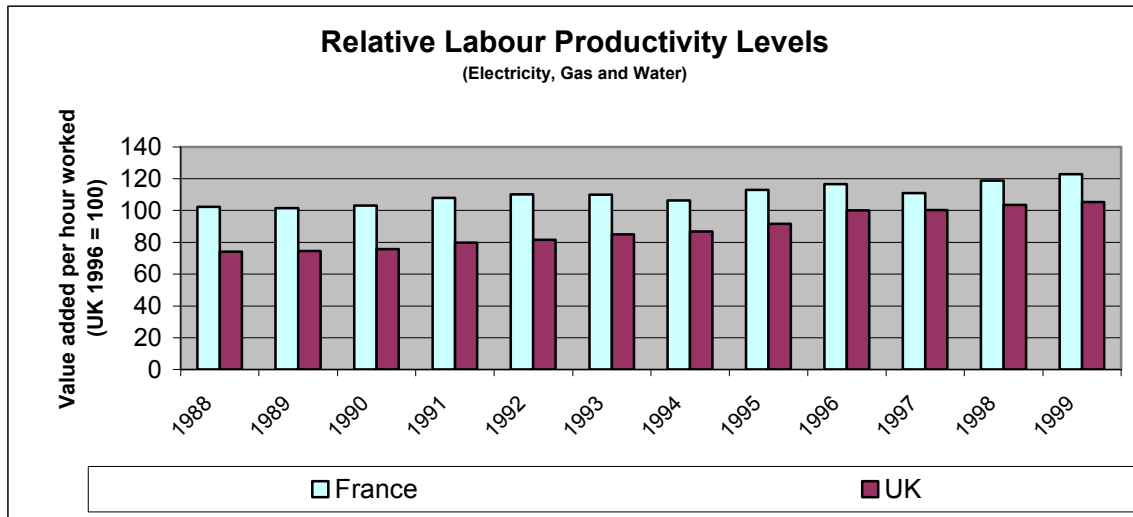
- 3) Competition leads to dynamic investments (higher rate of productivity growth)

Between 1979 and 1989 the average productivity growth in the electricity sector in France was 4.67% whereas the UK has developed by only 3.88%. After 1989, the UK started to perform better than France. What is it due to? We suggest that there have been investments in information and communication technology, which have been more substantial than in France, thus leading to higher productivity growth in the UK.

⁸ Given the bottleneck infrastructure such as in the electricity and gas market, it is economically inefficient to install competing systems. The only way to increase competition is for new market entrants to access the existing network.

As has been proved by many studies (Rodrigues 2003) investments in information and communication technology are a driver of growth (This paper is not able to explain if this is caused directly by liberalization)

Figure 5 – The relative labour productivity level (RLPL) in France and the UK 1988-1999

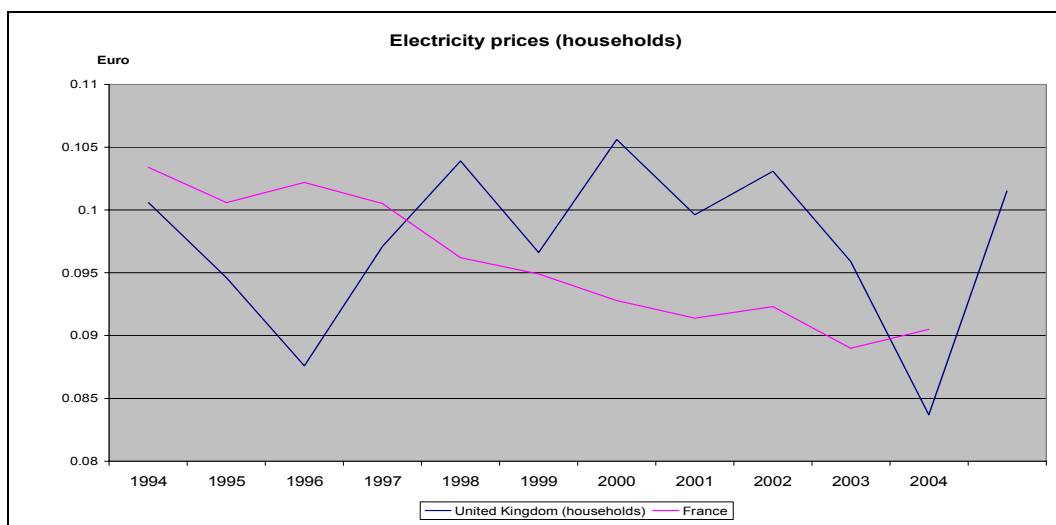


Source: NISEC and own calculations

- 4) Better use of resources leads to lower prices (if the market is not an oligopoly, then the economic profits would benefit owners of the company)

After a time of merger in the UK following liberalization, a lot of new players entered the electricity market. In 1990 there were 14 electricity companies. Yet, in 2002, only six major players remained dominating 99% of the market share (Jewell 2003). Hollos (2003) has found that prices in electricity clearly exceed production costs after liberalization. It is noteworthy that prices have not been reduced accordingly, which means that shareholders (and not consumers!) have got a large piece of the higher profit (Hollos 2003).

Figure 6 – Electricity prices UK and France

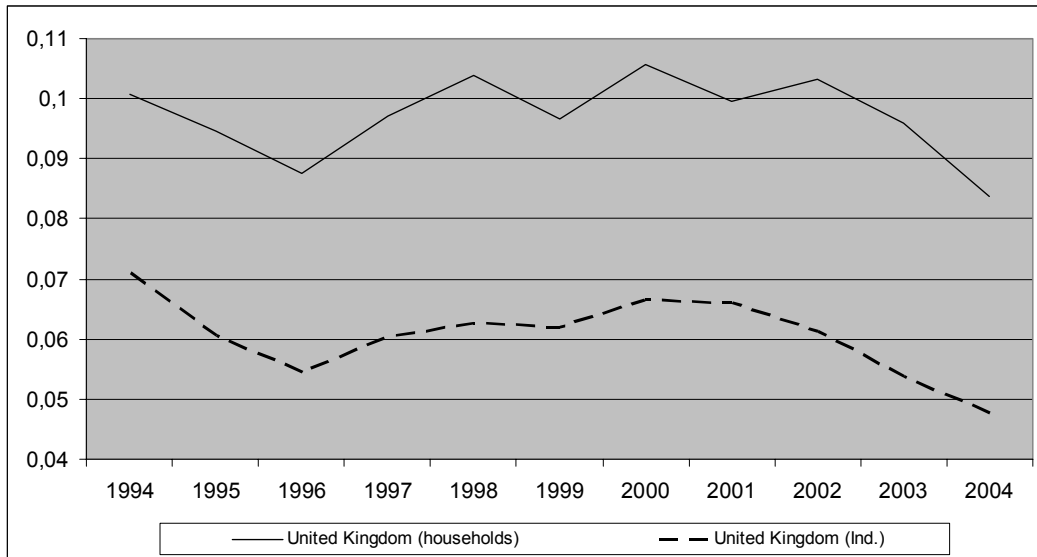


Source: Eurostat 2005

A first observation is that price trends in the liberalized UK and non-liberalized France are very similar. The EC claim that liberalization will lead to lower prices (than one State-owned company) cannot be sustained in our case study.

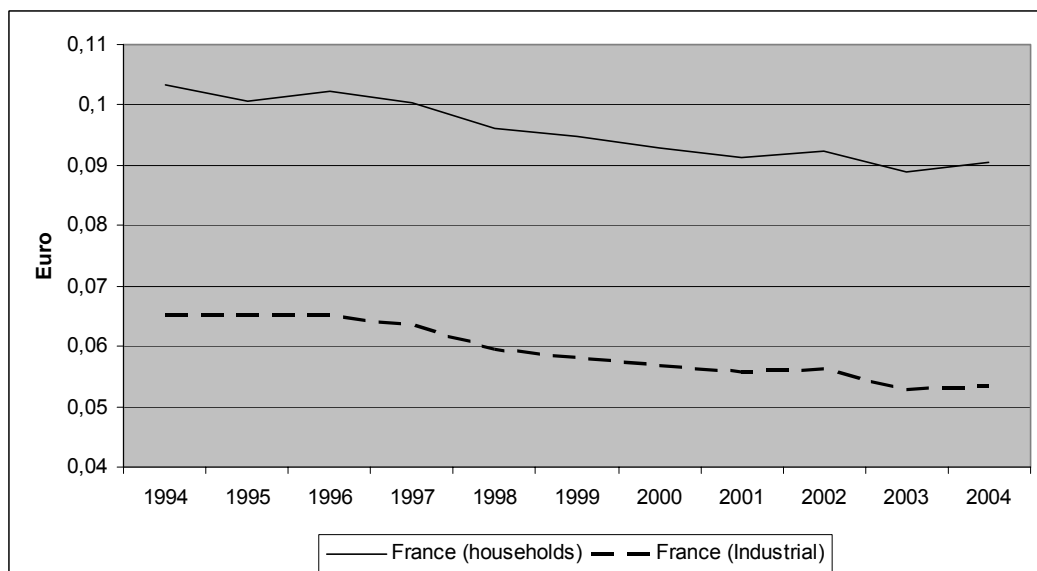
Let us take a closer look at the prices in the UK for households and industrial users.

Figure 7 – Electricity prices in the UK between 1994 and 2004



Source: Eurostat, 2005

Figure 8 – Electricity prices in France between 1994 and 2004



Source: Eurostat 2005

The reduction for industrial users between 1994 and 2004 is 33%. In contrast, the reduction for households during the same period is only 17%. It would mean twice the reduction in price for industrial users. In France the electricity prices declined by 18% for industrial users and 12% for households during the same time period.

5) Lower prices lead to higher consumer demand (if the product is price elastic)

The price elasticity of electricity is not 100%. In the UK 1992-2003 the overall consumption of electricity increased by just 20% (Eurostat 2005). Consumption in France has increased by 21%. Clearly, lower prices are not the only factor influencing the consumption of electricity. This is partially so because the demand for electricity is linked to that of electricity consuming products. Decisions on consumption could be related to investment decisions in new household products. For instance, the price of the product (TV, dishwasher) and their energy efficiency may impact on a purchase. It does not have to be only related to the consumption in electricity of the product.

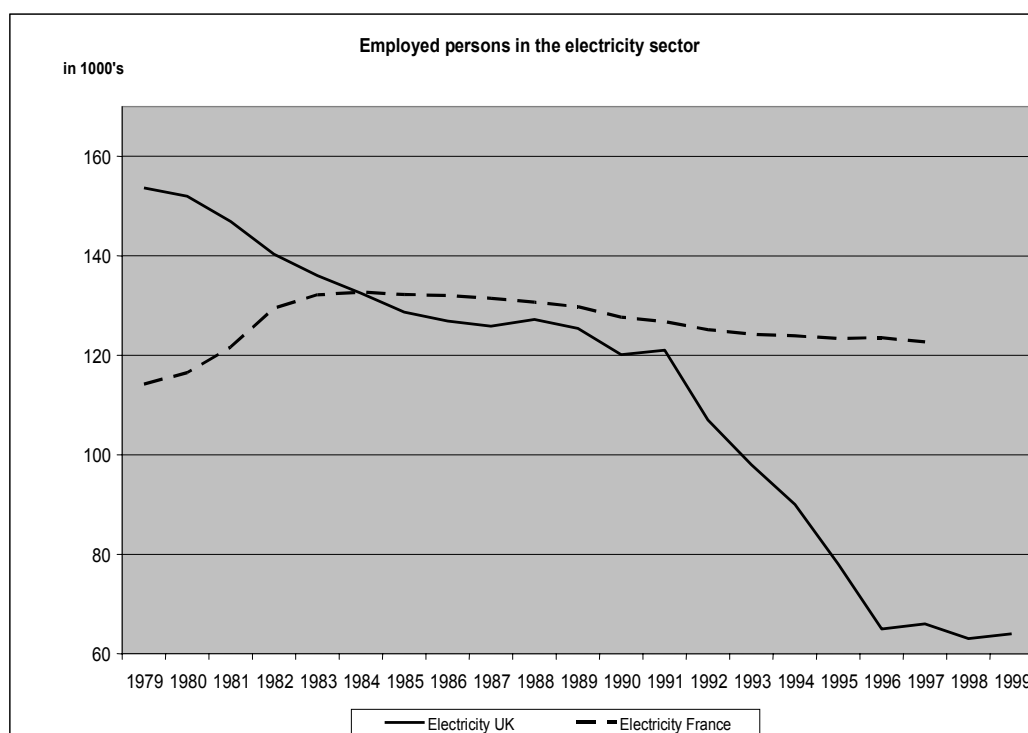
6) Lower prices lead to growth of the market and increased investments and/or increased employment (if the economies of scale allow for major investments.)

From the figures we detect a radical decrease in employment in the UK due to liberalization in 1989. France has experienced minor employment losses from 1989 onwards.

From this exercise we can conclude the following. The massive layoff in the UK has raised the level of productivity. It has been a one-off effect.

Our case study provides some evidence for the fact that the UK has achieved higher productivity growth after liberalization. Yet, it has to be assessed against the yardstick of the purpose of liberalization of the internal market, which is job creation and greater wealth. In the light of this, the case for liberalization is much less evident.

Figure 9 – Employment in the electricity sector



Source: NISEC Database

The consumers in the UK have not benefited from liberalization⁹ in contrast to the assumption; they pay about the same price for electricity as in France. This argument is especially consistent in a market with low competitive pressure – for example an oligopoly market. Importantly, there are also additional costs in a liberalized market for advertising and establishing a regulatory framework. It would be worthwhile for the future studies to calculate the expected gains from liberalization against the additional costs. Will there be a net gain?

As shown in our case study, a few years after liberalization, the market is shared between dominant market players – which is pretty much the definition of an oligopoly market. In conclusion, liberalization may lead to increased productivity growth, but consumers have their part of the cake stolen. This has severe effects on the overall economy: if lower prices will not be the result of liberalization, new jobs will not be created in other sectors which are supposed to re-employ the laid-off workers.

At theoretical level, in perfect competition, liberalization should lead to lower prices – consumers should have more money over at the end of the month to spend on other products – which, in turns, creates jobs in other sectors in society. Indeed, our case has proven that this does not seem to be possible in natural monopolies.

In short, it boils down to a difficulty to increase the pressure for competition in parts of the network industries. The ECB has tried to address the problem: The aim of deregulation is to enhance competition at least in those parts of the industry that are not natural monopolies (ECB 1999). It does acknowledge the difficulties of creating a competitive market for some network industries and does not rule out the claim by some observers that they will always remain monopolies, either in the hands of public authorities or private companies.

A revealing EC analysis foresees a liberalized, but oligopoly market in the network industry. It states that the more mature the network industries become the less competition will there be:

“When the industry becomes mature and each surviving firm has constructed a large installed base, as competition gets weaker the incentives to invest and to maintain the quality of service decrease. Then technological competition is not very intensive in mature technological industries, unless innovation creates some dramatic changes like wireless telephone or data compression did. Without a drastic technological improvement, the entry of challengers into a mature network industry is almost impossible. It would need a strong price-cut to compensate the club advantage of the incumbents” (EC 1999, p. 95).

Bearing in mind these problems of competition in a mature network industry: is it guaranteed that competition will increase with a few new market entrants, which quickly acquire market domination? Is the result of market opening risking creating new concentration of dominant market power? The new entrants are often the incumbent

⁹ There was an immediate price reduction after liberalization in 1989. Thomas argues that it coincided with liberalization but was not triggered by it. Other reasons could explain the price reduction: extremely advantageous fossil fuel prices, a significant improvement of the British nuclear power plants. (Thomas 2004)

operators in other EU countries. The market opening has allowed these companies to increase their market share due to mergers and acquisitions.

In the future, the ECB foresees increased cross-border competition because of the large price differences in Member States. Will this lead to a harmonization of prices downward or upward? It depends on where you are in the EU. Sweden, which had traditionally low electricity prices before liberalization, has seen an upward trend in recent years. To the regret of Swedish consumers, the prices in Sweden are harmonizing towards the higher general price level in other EU countries.

Conclusions

The purpose of liberalization, according to the 1985 White Paper, is not simply to remove obstacles to trade but also to create jobs and greater wealth. In recent years, structural reforms, such as the liberalization of the network industries, have gained in importance and the recent mid-term evaluation of the Lisbon agenda has increased the emphasis on such reforms as a core strategic policy. Within the European Commission the hopes invested in these reforms as a means of bringing the Lisbon agenda back on to its growth track seem unlimited. But are these hopes realistic? What is the track record of liberalization of the network industries?

At aggregate level, employment in these industries decreased by 600,000 between 1991 and 2001. In sectors where the level of productivity has increased this has been due to the one-off effect of laying off workers as a consequence of liberalization. The overall productivity growth rate remains largely unchanged after liberalization (its increase dates from the pre-liberalization phase). The usual drivers of productivity growth are innovation and dynamic investments, spurred by competition, but these drivers of growth are absent in most of the network industries where price levels actually increased in EU15 between 1992 and 2002. The real objective of liberalization, namely, job creation and greater wealth, has not materialized. In contrast to the European Commission's predictions, the picture that emerges is thus bleak. How can these poor results be explained?

We argue that effective competition in the network industries is obstructed by strong elements (present to varying degrees) of natural monopoly. What is more, these elements constitute deeply entrenched structures of the network industries that are unlikely to undergo substantial change in the foreseeable future and which hinder effective competition quite regardless of whether these industries are publically or privately owned. It might then appear that there is a missing link between structural reforms and an automatic increase in productivity, for the situation that has emerged is one in which a state monopoly is replaced by a private oligopoly. In stark contrast with the Commission's expectation that liberalisation would encourage effective competition, the actual result looks remarkably like a market failure, with a few giant corporations in a position to distribute the lion's share of the market between themselves.

Finally, a critical lesson can be drawn from this report. It is crucial that future studies be based on empirical evidence of what actually happens when sectors are liberalized. They should set their assessment of the expected impact of liberalization against evidence of actual developments for, as has been so clearly shown by this study, the gap between what is promised in theory and what happens in practice can be tremendous.

In conclusion, this paper has shown that, measured in actual outcomes, most network industries have, in the post-liberalization phase, continued to produce the same or worse results. This raises concern about the inflated expectations associated with structural reforms in the form of privatization. Might it be that the Lisbon Strategy stands to gain from less, rather than more, structural reforms?

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