

ANNEXES

to the

COMMISSION STAFF WORKING DOCUMENT

**Evaluation of the Performance of Network Industries Providing
Services of General Economic Interest**

2006 Report

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1. Introduction

Article 16 of the EC Treaty requires the European Community and the Member States to safeguard services of general economic interest (SGEI) while respecting the principle of undistorted competition in the internal market. The network industries, which provide most of the services of general economic interest, account for around 7.5% of the EU15's total value added. In the new Member States, this share is much higher, ranging from 9.8% in Hungary to 14.3% in the Slovak Republic¹. In 2005, slightly more than 10.5 million people were employed in EU25 network industries, corresponding to about 5.4% of the total workforce². However, output and employment figures understate the importance of the network industries, since the whole of society depends on the inputs and services provided by them.

This report constitutes the third horizontal evaluation exercise produced in accordance with the methodology adopted by the Commission in its June 2002 Communication (COM(2002) 331). The sectors covered are telecommunications, electricity, gas, transport and postal services. The report attempts to give a general overview of the performance of the industries concerned, focusing in particular on the compatibility of market outcomes with the economic and social objectives of the European Union. The report seeks to cover the sectors in question and all the Member States in a comparable, comprehensive and balanced way, but this cannot be guaranteed as the background material is quite diverse in terms of scope and quality.

The methodology and its application in the horizontal evaluation reports are currently being assessed. The main objectives of this assessment are to evaluate the need for horizontal evaluations at the EU level, to provide analysis on how this process could be improved and to determine whether the Commission is best placed to carry out these evaluations.

The second chapter presents policy and legislative developments since the publication of the last report. Chapter 3 examines the extent to which the market opening of the different sectors has influenced the evolution of their structures and characteristics and how selected performance indicators have evolved. Chapter 4 analyses the degree of market integration in EU network industries and presents an illustrative set of remaining barriers to integration. The fifth chapter analyses the distributional effects of market opening in network industries on different groups of households and regions. Chapter 6 looks at how public service obligations and quality have evolved in the industries covered. The results of consumer satisfaction surveys are presented in chapter 7. It should, however, be noted that developments in the structure and in the performance of the sectors covered by this report have been influenced by many factors unrelated — or only indirectly related — to market opening. This should always be borne in mind when interpreting the indicators.

¹ Based on data for 2003 from the Groningen Growth and Development Centre, 60-Industry Database, October 2005. Electricity, gas and water supply are included as one sector.

² Eurostat Labour Force Survey.

2. The evolution of the competitive and legislative framework

Following the adoption by the European Parliament of its opinion, the Commission is expected to present early in 2007 its follow-up to the White Paper on services of general interest³.

In April 2006, the Commission submitted an amended proposal for a directive on services in the internal market⁴. This proposal, subject to amendments, was adopted in legislation by the European Parliament and the Council in December 2006.⁵ Its aim is to remove obstacles to trade in services, thereby promoting the development of cross-border operations. As a result, this should improve the competitiveness of service enterprises and, by extension, of European industry as a whole. Most services of general economic interest are subject to most of the requirements of the amended proposal. They are, however, explicitly exempted from the application of Article 16 of the Directive dealing with the freedom to provide services. Rules established by sector-specific Community instruments in any case prevail over the provisions of the Services Directive.

2.1. Telecommunications

In June 2006, the Commission services launched a public consultation on the draft second edition of the Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation⁶. The Commission also launched a consultation on the review of the EU regulatory framework for electronic communications networks and services⁷, outlining possible changes to the regulatory framework.

In April 2006, the Commission adopted a Report regarding the outcome of the Review of the Scope of Universal Service⁸. Member States and a majority of stakeholders have endorsed the Commission's view that there is at present no need to extend the scope of universal service to mobile and high-speed internet services. In June 2006, the Commission adopted a proposal for a Regulation of the European Parliament and of the Council on roaming on public mobile networks within the Community⁹, which would cap the wholesale charges for carrying calls from foreign networks. It also proposes a price cap at retail level, with operators allowed to add to their wholesale cost a retail mark-up of up to 30%. National regulators would be tasked to monitor closely the development of roaming charges for short message services (SMS) and multi-media message services (MMS).

In February 2006, the Commission issued the 11th Report on European Electronic Communications Regulation and Markets for 2005¹⁰. It confirmed that telecom operators in Europe are again investing in new technologies to cut costs and seize new opportunities such as those offered by the convergence of communication networks. Competition, especially in retail markets, is bringing increased consumer benefits. While a number of Member States have virtually completed the legislative and regulatory process ensuring implementation of the framework, the remainder still have to make substantial progress. Market reviews, which are a key aspect of the framework, were late in several Member States.

³ COM(2004) 374 final

⁴ COM(2006) 160 final

⁵ Directive 123/2006 of 12 December 2006 on services in the internal market, published in the J.O. L 376 of 27.12.2006. The three years implementation period will expire on the 28 December 2009.

⁶ SEC(2006) 837

⁷ COM(2006) 334 final

⁸ COM(2006) 163 final

⁹ COM(2006) 382 final

¹⁰ COM(2006) 68

In February 2006, the Commission issued a report on the state of play of competition on electronic communications markets¹¹. Its main findings are that regular economic analysis by EU Member States and the Commission and scrutiny of draft national rules are paving the way for free markets.

2.2. Electricity and gas

In January 2006, the Directive on measures to safeguard security of electricity supply and infrastructure investment¹² was published. The objective of this Directive is to improve the functioning of the internal electricity market by ensuring an adequate level of generation capacity, an adequate balance between supply and demand and an appropriate level of interconnection between Member States. This Directive has to be implemented by the Member States by February 2008. On 26 April 2006, the Commission services released a guidance document¹³ following the decision of the Court of Justice relating to preferential access to transport networks under the electricity and gas Internal Market Directives¹⁴. In this decision, the Court rejected the arguments relating to the specificity of long-term supply and capacity reservation contracts. According to the Court, the existence of these contracts prior to the entry into force of the Directives does not justify the granting of priority allocation of transport capacities. As the Regulation on conditions for access to the natural gas transmission networks¹⁵, applicable as from 1 July 2006, provides for similar principles as for the electricity sector, the guidance establishes that the reasoning of the Court also applies to the gas sector. Ratified by participating states, the Energy Community Treaty entered into force on 1 July 2006. Signed on 25 October 2005 in Athens, the Treaty between the European Union and nine partners of South East Europe – Croatia, Bosnia and Herzegovina, Serbia, Montenegro, the Former Yugoslav Republic of Macedonia, Albania, Romania, Bulgaria and UNMIK on behalf of Kosovo – will create the legal framework for an integrated energy market. Negotiations with Turkey for joining the treaty at a later stage are ongoing. As a result of the treaty, the relevant *acquis communautaire* on energy, environment and competition will be implemented.

The Commission continued its competition sector inquiry into the functioning of EU electricity and gas markets (concentration, market integration, vertical integration, transparency, pricing). The final results were published as part of the energy policy review early in 2007¹⁶. The main findings point to :

- too much market concentration in most national markets,
- a lack of liquidity in the markets, preventing successful new entry,
- too little integration between Member States' markets, and
- an absence of transparently available market information, leading to
- distrust of the pricing mechanisms.

The energy sector still faces significant problems of application – both in terms of effective unbundling of wholesale and retail operators and as regards the need to open up retail electricity and gas markets in line with the Community timetable. Indeed, in March 2006, the Commission began infringement procedures against 17 Member States for not opening their energy markets correctly. Whereas a number of countries appear to have made considerable progress in opening up electricity markets, active competition for household consumers remains the exception in the electricity sector and is almost totally absent from the gas sector. In a number of countries the regulator does not have power to issue or modify licences, which limits the power of the regulator to bring about changes in the market. A further point to be made is that there is already some European, regional and

¹¹ Communication on Market Reviews under the EU Regulatory Framework – Consolidating the internal market for electronic communications (COM(2006)28 final)

¹² Directive 2005/89/EC of the European Parliament and of the Council

¹³ SEC(2006) 547

¹⁴ Decision C-17/03 of 7 June 2005 of the Court of Justice

¹⁵ Regulation (EC) No 1775/2005 of the European Parliament and of the Council of 28 September 2005

¹⁶ COM (2006) 851 final

international cooperation in the energy sector. This is largely handled through the European Group of Energy Regulators (ERGEG) and the Council of European Energy Regulators (CEER), with regional and bilateral groupings also formed between Member State regulators. In the 2005 report on the functioning of the electricity and gas markets, adopted by the Commission in November 2005, the Commission stated that it would carry out detailed country reviews on the functioning of the markets. This was supported by the Council conclusions under the UK Presidency. A final report on the outcome of this exercise was presented early in 2007 as part of the energy policy review. In it, the Commission concludes that a clearer separation of energy production from energy transport and distribution must be achieved, and calls for stronger independent regulatory control, taking into account the European market, as well as national measures to deliver on the European Union's target of 10% minimum interconnection levels, by identifying key bottlenecks and appointing European coordinators. Proposals will be submitted in 2007.

Following an analysis of the state of implementation of cross-border interconnection projects by putting the emphasis on underlying structural problems and obstacles to investment, the Commission has also adopted a priority interconnection plan¹⁷ in which it proposes measures to improve the situation.

2.3. Transport

In January 2006, the European Court of Justice confirmed the validity of EU legislation on air passengers' rights. This legislation, which came into force on 17 February 2005, has greatly improved the protection of air passengers' rights in the European Union in the event of denied boarding, flight cancellation or long delays. The Commission plans to prepare, by April 2007 a full report on the functioning of the Regulation. In March 2006, the Commission adopted a first list of airlines banned in the European Union¹⁸, which has since been updated on a quarterly basis. Several European aviation bodies have launched initiatives in support of the system. Chapter III of the Regulation on the establishment of the Community list of air carriers subject to an operating ban within the EU gives passengers the right to be informed about the identity of the airline which will operate the flight(s) for which they have made a reservation. This part of the Regulation entered into force in July 2006. In June 2006, the Council adopted a Regulation strengthening the rights of disabled persons and persons with reduced mobility when travelling by air¹⁹. In June 2006, the EU and New Zealand signed an international aviation agreement removing nationality restrictions in the bilateral air services agreements between EU Member States and New Zealand. Such nationality restrictions were found to be incompatible with EU law by the European Court of Justice in the "open skies" judgments of 5 November 2002. During the past 18 months, the Commission and the EU Member States have brought more than 400 bilateral air services agreements into legal conformity with European Community law. A total of 62 countries now allow European air carriers to operate flights between any EU Member State and those countries. Further negotiations are currently taking place. In July 2006, the Commission adopted a proposal to modernise the Single Market legislation for aviation²⁰, designed to ensure transparency in fares announced to passengers and to prevent pricing that discriminates on the basis of residence. This measure completes the Unfair Commercial Practices Directive which requires that information on prices should include taxes as of December 2007. The proposal simplifies the "third aviation package" adopted in 1992, streamlining the financial conditions that all EU airlines have to fulfil and the monitoring of these by Member States. It clarifies the criteria for the granting and validity of the licence to operate in the EU. The proposal eases the leasing of aircraft registered in the Union but introduces stricter requirements for the leasing of third-country aircraft to ensure safety standards and minimise adverse social consequences.

¹⁷ COM(2006) 846 final

¹⁸ Commission Regulation (EC) No 474/2006

¹⁹ Regulation (EC) No 1107/2006

²⁰ COM(2006) 396

In May 2006, the European Commission published a report on the implementation of the first railway package in the Member States. The package aimed in particular at a gradual opening of rail freight markets and providing railway undertakings with a non-discriminatory access to rail infrastructure. Such access had to be guaranteed mainly through the separation of essential functions (capacity allocation, infrastructure charging and licensing) from transport operations and through the establishment of national regulatory bodies responsible for the monitoring of the proper functioning of the railway markets. As regards the implementation of the second railway package, which provides for the full opening of the market for international freight transport by rail as of 1 January 2006 and of the domestic rail freight markets by 1 January 2007, five Member States received a reasoned opinion for failing to notify the European Commission of their transposition measures. In July 2006, the Council of the European Union issued a Common Position on the proposals of the third railway package. This package contains provisions for the opening of the market for international passenger transport by rail, improving the rights of passengers using international railway services and establishing a certification system for locomotive drivers. In January 2007, the European Parliament adopted its recommendation on the proposals of the third railway package in its second reading. The European Commission also undertook various legislative actions to improve cross-border railway interoperability within the EU. Firstly, measures on the simplification of the certification of railway vehicles, including a proposal to recast the existing Railway Interoperability Directives and a proposal to modify the Regulation establishing a European Railway Agency and the Railway Safety Directive, were adopted in December 2006. Furthermore, the Commission adopted technical specifications for interoperability for five subsystems of the conventional trans-European rail system.

In January 2006, the Directive on the use of vehicles hired without drivers for the carriage of goods by road²¹, was published. This makes it possible to hire commercial vehicles for professional traffic between Member States. The main conditions are that the hired vehicle is registered in the same Member State as the transport company that hires it and that personnel of this hiring company drive it. In March 2006, a Regulation²² and a Directive²³ were published, providing for a common set of Community rules for maximum driving times as well as minimum rest periods for all drivers of road haulage and passenger transport vehicles, and inspection by Member States' competent authorities of the minimum level of enforcement required to ensure compliance with the rules on driving times, rest periods and tachographs. In April 2006, public consultations were organised on the rights of passengers in international bus and coach transport, on safer roads through infrastructure safety management and on safer trucks through blind spot mirrors. In May 2006, Directive 99/62/EC was modified by Directive 2006/38/EC, setting common rules on annual taxes for heavy goods vehicles (above 12 tonnes). The Directive also sets common rules on distance-related tolls and time-based user charges for goods vehicles (above 3.5 tonnes) for the use of certain infrastructure. A specific provision of the Directive allows Member States to co-operate for the purpose of introducing a common system of user charges (the 'Eurovignette' system). The Directive fixes a maximum level for user charges in accordance with the given period and with the environmental performance of the vehicle. The thresholds will be adapted by 10 June 2008 at the latest. It also requires that tolls be set in relation to the cost of constructing, operating and developing the infrastructure concerned. Member States may vary the toll rates according to vehicle emission classes and the time of the day. In certain areas, tolls may be increased to reflect the environmental sensitivity of the area and provide a further fiscal incentive to reduce traffic. In June 2006, the Commission issued its 22nd report on the implementation of the social legislation relating to road transport²⁴. In June 2006, the public consultation on revision of the Community legislation on access to the road transport market and on admission to the occupation

²¹ Directive 2006/1/EC of the European Parliament and of the Council

²² Regulation (EC) No 561/2006 of the European Parliament and of the Council, amending Council Regulations (EEC) No 3821/85 and (EC) No 2135/98 and repealing Council Regulation (EEC) No 3820/85

²³ Directive 2006/22/EC of the European Parliament and of the Council on minimum conditions for the implementation of Council Regulations (EEC) No 3820/85 and (EEC) No 3821/85 concerning social legislation relating to road transport activities and repealing Council Directive 88/599/EEC

²⁴ COM(2006) 321 final; SEC(2006) 791.

of road transport operator was opened. In June 2006, the Commission sent a reasoned opinion to two Member States for discriminative road pricing.

In May 2006, the Commission issued a Report on the Implementation of the Rail Infrastructure Package in the Member States²⁵, three years after the deadline for transposing the European Directives of the first railway package. The report concludes that legal implementation is complete. However, greater efforts need to be made in some countries to ensure an effective regulatory framework and the satisfactory functioning of the rail service market. Member States must also complete the restructuring of their railway undertakings and adapt them to the new, open and competitive market context in the European Union. Concerning the legal implementation of the first railway package, the report stresses that Member States have to ensure the strict neutrality of the company or body responsible for granting non-discriminatory access to the railway network. Member States must also endow their rail regulatory bodies and safety authorities with appropriate resources, competences and expertise. The full independence of these institutions is a key factor for their credibility. For rail infrastructure charging, the report underlines the need to take the infrastructure charges for other modes into account. The Commission is conducting a study of the powers and competencies of energy and transport regulators. Interim findings for the transport sector indicate a lack of compliance, producing rather fragmented regulation in the Member States, and gaps where regulation required under the Community framework does not appear to take place in practice. It is an established fact that there is extensive European, regional and international cooperation existing in the transport sector.

2.4. Postal services

From 1 January 2006 postal services may only be reserved for correspondence up to a weight of 50g (or two and a half times the public tariff for an item in the first weight step of the fastest standard category). Public undertakings providing postal services are subject to the public procurement procedures laid down in Directives 2004/17/EC and 2004/18/EC. These Directives should be implemented by the Member States by 31 January 2006. In April 2006, the Commission announced infringement proceedings against three Member States for the manner in which the postal services VAT exemption is applied. The Commission noted that, whilst no agreement has been reached on its proposals to modernise the VAT treatment of postal services, it is under an obligation to ensure that the current postal exemption is applied in a way that avoids distortions of competition between former monopolies and market entrants.

In October 2006, the Commission issued a proposal to open EU postal markets fully to competition by 2009 while maintaining the current provisions on Universal postal service and improving consumer protection, in line with the agreed target date set out in the original Postal Directive. The proposal was accompanied by a prospective study on the impact of full market opening on universal service, an impact assessment and the third report on the application of the Postal Directive.

²⁵ COM(2006) 189 final

3. Market performance

This chapter outlines the economic justification for the opening of network industries and presents a series of market structure and performance indicators which can help in assessing to what extent the expectations are fulfilled. It should be borne in mind, however, that the performance of the network industries is influenced by many factors that are unrelated — or only indirectly related — to market opening (e.g. technological change, climate factors or world oil price movements).

3.1. The rationale for market opening and its macroeconomic implications

The rationale behind the liberalisation of network industries is to improve their sectoral performance and thereby to generate wide-ranging macroeconomic benefits. A defining structural characteristic of most network industries, which distinguishes them from other industries, is the presence of bottleneck segments separating producers and customers, notably the grid itself – e.g. transmission lines, pipes, railway tracks – or a major part of it. These industries are also exceptional in that they provide essential inputs for virtually all of the rest of the economy.

Prior to liberalisation, network industries were generally organised as vertically-integrated state-owned monopolies, including both production facilities and the bottleneck infrastructure. A cornerstone of the market opening process is the separation (unbundling) of non-competitive segments, which generally have inherent natural monopoly features, from those that are potentially competitive (such as production, supply and maintenance). The main reason for this unbundling is to avert vertical foreclosure, i.e. to prevent network operators from granting privileged (or even exclusive) access conditions to their own production facilities, at the expense of competitors. The stronger the separation (e.g. ownership separation rather than legal or mere accounting separation), the lower the risk of anti-competitive conduct. On the other hand, potential synergies arising from vertical integration may be lost in some cases.

While the monopolistic segments always require adequate sector-specific regulation, in the other segments such regulation should become unnecessary once workable competition is in place. However, it seems clear that where governments impose obligations on operators in the network industries to provide services of general interest, there must be some form of regulation to ensure that the obligations are fulfilled. Good regulatory framework conditions are thus necessary if macroeconomic gains are to be reaped, and many criticisms – and indeed failures – of network industry liberalisation arise because these conditions fail to hold completely. The competitive pressure should entail higher productivity (and productivity growth) and a downward pressure on prices, ultimately translating into higher economic growth. Efficiency gains are expected to arise through four different channels:

- Increased *allocative efficiency* should occur as prices and marginal costs move towards each other, thereby correcting distortions in the structure of production and adjusting the level of output to a social optimum.
- Increased *productive efficiency* would arise as firms move closer to their production possibility frontier by using their inputs more efficiently (i.e. producing more with the same inputs, or the same with fewer inputs).
- Reduction of *x-inefficiency* would raise the productive performance by reducing managerial slack and improving the organisation of work.
- *Dynamic efficiency* would be enhanced as competition from existing and prospective competitors creates incentives for investment and product and process innovation. Firms thereby shift the production possibility frontier outwards.

To assess the macroeconomic impact of liberalisation, one has to distinguish between direct effects on the network industries, effects on customers and indirect economy-wide effects. Some direct effects on

the industries themselves are likely to be negative as the competitive pressure and the drive for more efficient production are likely to exert downward pressure on the level of employment and economic rent of the incumbent firms. Nonetheless, lower prices and product innovation ensuing from the competitive pressure may lead to higher demand and output and thus mitigate adverse employment effects. Although the effects of liberalisation on customers are expected to be positive and much greater than the effects on the incumbent firms and their employees, they are by and large more dispersed and less tractable. Indeed, lower network industry service prices would enhance welfare by raising real household incomes and lowering the costs for those industries which rely heavily on inputs from network industries. Furthermore, given the considerable weight of network industries in the Harmonised Index for Consumer Prices (HICP), price developments in network industries may also have important consequences for the conduct of monetary policy²⁶.

In contrast to the direct effects on firms and employees in the sector, the indirect effects are far less visible and thus hard to measure and quantify. Moreover, in terms of timing, one can expect the incumbent firms and their employees to feel the effects of liberalisation quite abruptly ("shock"), while customers reap benefits somewhat later and the indirect effects would take much longer to materialise. The uncertainties and asymmetries arising from the market opening process in terms of timing and in terms of distribution of gains and losses often complicate and slow down the implementation of reforms.

3.2. Market structure and competition

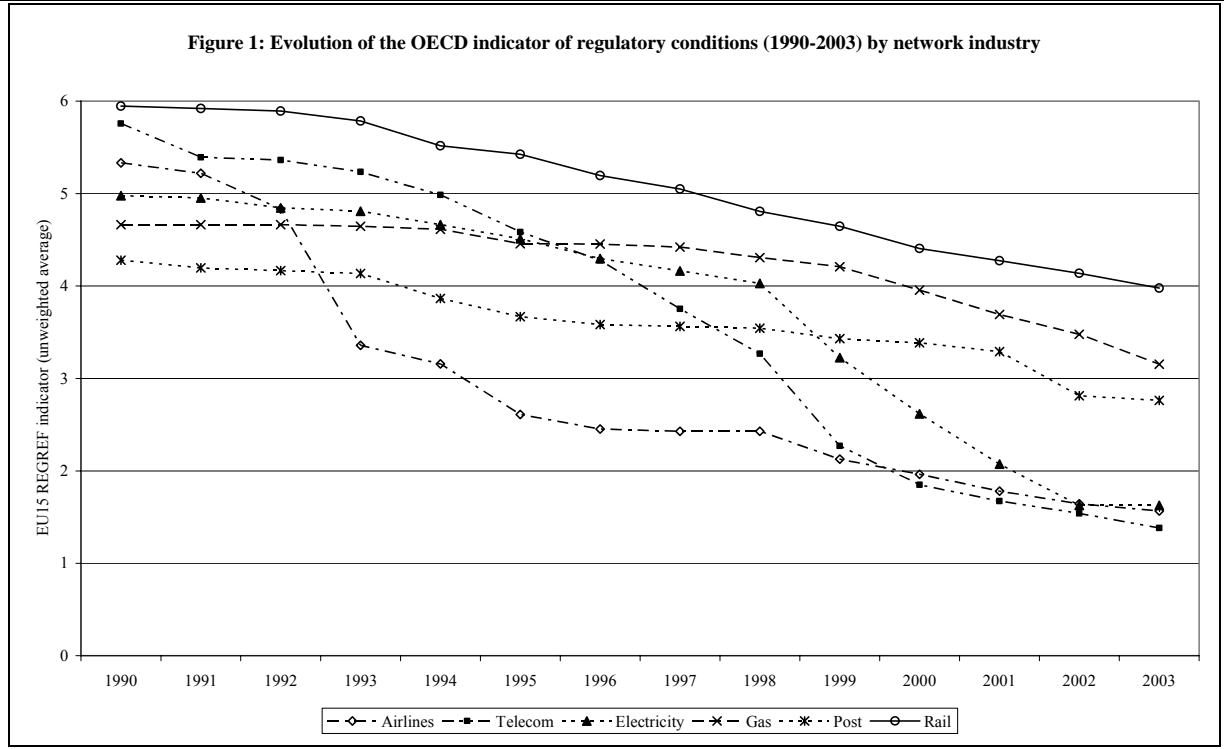
The process of opening network industries has had two main structural effects. Firstly, as explained above, the unbundling of the vertically-integrated monopolies made certain market segments more contestable by allowing firms to enter a market and thereby potentially affect its structure. Furthermore, liberalisation has affected the boundaries of the individual markets by making them more permeable with regard both to capital flows (allowing cross-border mergers and acquisitions) and to cross-border trade. Indeed, potential cross-border trade can – subject to sufficient interconnection capacity – exert competitive pressure arising outside national borders without directly affecting the national industrial structure. These market integration effects are further addressed in chapter 4. Box 1 illustrates how changing regulatory conditions over the past decade laid the groundwork for changing market structures.

Box 1: OECD indicators of regulatory conditions in network industries

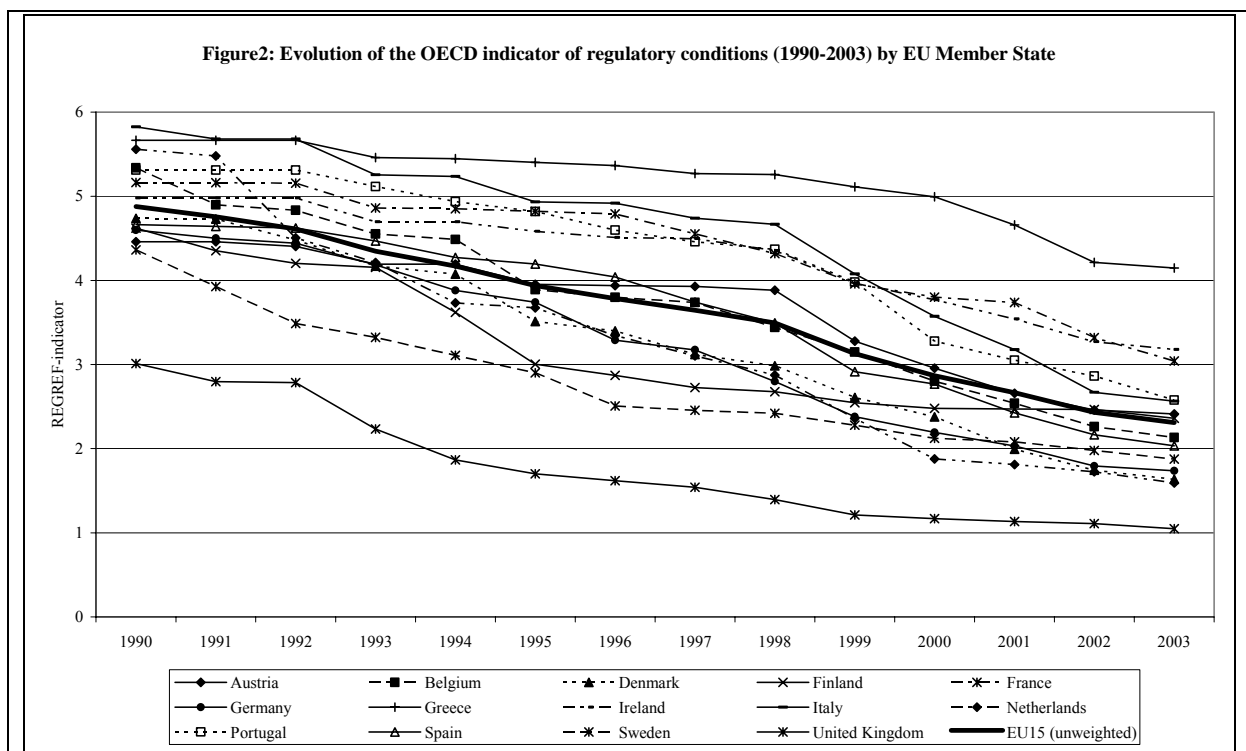
Figure 1 below presents the evolution of the OECD indicator of regulatory conditions over the period 1990-2003 for six network industries²⁷. These indicators are based on different industry characteristics *including* entry regulation, public ownership, market structure, vertical integration and price controls. Figure 1 below displays unweighted averages of the sectoral indicators for the EU15 Member States. It clearly shows the strong deregulation drive during the 1990s. However, the pace of reforms varied across sectors. While regulatory conditions remained tight in the rail sector, they loosened up considerably in others – notably in telecommunications and airlines. One would thus expect the potential for changes in market structure, and the effects thereof, to be relatively significant in these sectors.

²⁶ For a further discussion of this link see Martin R., M. Roma, I. Vansteenkiste, 2005, *Regulatory reforms in selected EU network industries*, ECB Occasional Paper No. 28, April 2005.

²⁷ Conway, P. and G. Nicoletti (2006), *Product market regulation in non-manufacturing sectors in OECD countries: measurement and highlights*, OECD Economics Department Working Paper No. 530.



The OECD REGREF indicator, depicted for all EU15 Member States in figure 2 below, shows how regulatory conditions in network industries as a whole evolved over the period from 1990 to 2003. Three observations can be made on this figure. The first is that from a very tight regulatory environment in 1990, the indicator fell in all Member States. A second observation is that the speed of reforms (measured by the change in the indicator) varied by Member State. The most substantial regulatory reforms over that period were undertaken in the Netherlands, Italy and Belgium. The smallest changes in the indicator were observed in Greece, Ireland, Austria and the UK. However, this reform speed needs to be considered in the light of each Member State's regulation levels in 1990 and 2003. A case in point is the situation of those Member States where changes in the indicator have been the smallest – and whose lines in the graph lie more or less parallel to each other: while Ireland and in particular Greece remained relatively strongly regulated, Austria started at a lower level and remained close to the EU average thereafter. For the UK, the change in the indicator, while small in comparison to other Member States, has been very big relative to its initial level. Indeed, the UK set out from a very low regulation level in 1990 and maintained its position as the EU15 Member State with the lowest level of network industry regulation. The third observation from this figure is that the timescale of reforms has varied across Member States. While some Member States showed relatively higher reform activity in the beginning of the period covered (e.g. Netherlands), others only accelerated towards the end (e.g. Italy). Effects on market structure and performance are thus also likely to be delayed.



Two important lessons can be drawn from analysing the regulatory framework in network industries of EU Member States: Firstly, market structure and market performance are likely to vary strongly across Member States, as do the timing and scale of reforms, and the starting and resulting levels of regulation. Moreover, the effects of reforms on the organisation of these industries are also likely to be country-specific inasmuch as they depend both on the proper implementation and enforcement of the legal provisions, and on the friction that accompanies any adjustment process²⁸. Secondly, this analysis is a reminder that the "necessity" of further reform efforts varies by Member State and – if undertaken – their significance should be assessed against their regulation level at the time of reform.

Telecommunications

In the telecommunications sector the period since 2001 has been one of consolidation in the EU15. Regulatory reforms, and in particular changes in public ownership, appear to have had a significant impact on the sectoral structure. Recent trends (2005-2006) also indicate a move away from vertical integration and the emergence of Europe-wide market strategies by the operators.

Regarding market entry, the number of voice telephony operators in the fixed market in the EU rose to 1 996 in 2005 (from 1 608 in 2004). These entries predominantly occurred in the new Member States, where the liberalisation process started later. While the number of mobile service providers has also grown in 2006, the number of network operators has remained constant.

Table 1 below shows for every Member State the number of major players in the fixed telecommunications segment and the market share (in retail revenues) of incumbents for local, long-distance and international calls, at the end of 2004. While the market is still concentrated and the incumbent often holds a very large share of the market, the number of major players increased in many Member States between 2003 and 2004 (it was reduced by one in Sweden and France), and the market share of the incumbent dropped almost everywhere and in each segment.²⁹

²⁸ The indicator already partly takes this into account by including both the legal framework and some market structure elements.

²⁹ The average market share of the incumbent in the EU25 on the voice telephony market in December 2004 (December 2003) was 70.9% (74.4%) for local calls, 68.5% (70.6%) for long-distance calls, 64.0% (67.5%) for calls to mobile and 59.0% (62.6%) for international calls.

It can also be seen that the market share of the mobile subsidiaries of the incumbent fixed operators is generally lower than the market share observed in fixed telephony markets. This may be attributed in part to lower technical entry barriers in that industry and to the fact that mobile telephony is still relatively recent, thus lacking both long-established incumbents and possibly exhibiting a lower degree of customer loyalty. While the average national market share of the leading mobile operator in the EU15 has been constantly falling – from 64% in 1998 and 47.1% in 2002, down to 39.5% in 2005 – the market shares of the main mobile operators have remained stable in between 2005 and 2006, showing some signs of maturity. Competition also arises through innovation, such as internet telephony (Voice over Internet Protocol).

Table 1 Market structure in the telecommunications market

Member State	Number of major competing players in fixed telecommunications (September 2005)*	Market share of the incumbent in local calls (December 2004)	Market share of the incumbent in national calls (December 2004)	Market share of the incumbent in international calls (December 2004)	Overall mobile market share based on subscribers of the subsidiary of the incumbent fixed operator (October 2005)
Belgium	8	73.0%	73.0%	46.5%	47.0%
Czech Rep.	3	confidential data			confidential data
Denmark	7	n.a.	n.a.	n.a.	31.0%
Germany	12	57.0%	59.0%	40.0%	38.0%
Estonia	3	confidential data			46.0%
Greece	4	82.1%	74.6%	68.6%	confidential data
Spain	6	76.8%	72.2%	66.1%	48.0%
France	4	78.9%	66.9%	65.7%	47.0%
Ireland	n.a.	84.0%	87.0%	69.0%	no subsidiary
Italy	4	68.6%	67.9%	56.8%	40.0%
Cyprus	1	n.a.			93.0%
Latvia	1	99.0%	98.6%	73.7%	no subsidiary
Lithuania	1	97.8%	90.5%	81.3%	no subsidiary
Luxembourg	2	confidential data			58.0%
Hungary	5 local monopolies	99.3%	95.7%	88.3%	45.0%
Malta	1	100.0%	100.0%	100.0%	48.0%
Netherlands	2	75.0%	75.0%	45.0%	36.0%
Austria	6	53.0%	73.0%	53.0%	40.0%
Poland	3	88.8%	76.9%	78.5%	34.0%
Portugal	3	n.a.	79.3%	81.5%	confidential data
Slovenia	1	100.0%	100.0%	90.9%	74.0%
Slovak Rep.	1	100.0%	100.0%	100.0%	44.0%
Finland	3	95.0%	45.0%	41.0%	confidential data
Sweden	10	confidential data			confidential data
United Kingdom	11	54.0%	54.4%	54.4%	no subsidiary
EU25		70.9%	68.5%	59.0%	

Note (*): Operators that along with the incumbent have a combined market share of at least 90% of the voice market (based on revenues, including all types of calls).

Source: European Commission (DG INFSO), 2006, *European Electronic Communications Regulation and Markets 2005, COM (2006) 68 final*.

Electricity and gas

Market opening in the electricity sector was well advanced by the end of 2005, especially in the EU15 (for detailed information see Table 27 in the annex). Having opened the market for household consumers, many Member States were ahead of the time schedule set by the Directive³⁰. The picture for market opening in the gas market was comparable. Regarding the unbundling of production and supply from transmission and distribution, the situation in all Member States is that the electricity transport system operators (TSO) have been at least legally unbundled. By 2005, 12 Member States (8 belonging to the EU15) had introduced ownership unbundling – four of which (Denmark, Finland, Sweden and the United Kingdom) had already done so by 2001. In the gas market, unbundling was not as advanced as in the electricity market, which is particularly true in the new Member States (NMS)³¹. The number of Member States with ownership unbundling was also lower than in the electricity

³⁰ The electricity (2003/54/EC) and gas (2003/55/EC) Directives of the European Parliament and the Council require the eligibility threshold to be extended to all customers on 1 July 2007 at the latest. For non-household customers the date was 1 July 2004.

³¹ New Member States include the ten countries that have joined the EU on 1 May 2004. Bulgaria and Romania are thus not included.

market (four: Denmark, the Netherlands, Sweden and United Kingdom). As confirmed by the Commission's energy sector inquiry, there is still much need and scope for further unbundling in the EU energy sector, and ownership unbundling is indeed the form of unbundling that is most likely to put aside any conflicts of interest characteristic for vertically integrated firms. Then again, to put the current situation in perspective and to give an impression of the effects of regulatory reforms, a comparison with 2001 (limited to the EU15) reveals that at that time only very few Member States had fully opened their markets. Unbundling was also far less advanced, as mere accounting or management unbundling was still the norm in many Member States.

Given the traditional industry organisation, technological characteristics and the inherited market power of incumbents, it is to be expected that in spite of the ongoing market opening process, the electricity and gas markets are still highly concentrated. Evidence on the change in concentration ratios across Member States in the electricity market between 2001 and 2004 is mixed (detailed information is provided in Table 28 in the annex). Regulated prices in many Member States, in particular for gas in the small commercial and household sector, but also electricity in some cases, may also distort competition and represent a significant barrier to entry. However, some market entry has been occurring in the energy sector, notably through some highly visible cross-border mergers involving incumbents³² (see chapter 4).

Rail transport

Despite the ongoing opening of the rail sector (rail freight in particular), the market share of new entrants in the EU, measured in tonne-km, is still relatively low (10% on average)³³. However, concentration is noticeably lower in Member States which opened up their markets earlier. Taking into account the fact that the pace of entry to the market is slowed down by high entry barriers, this observation is encouraging in that it points to gradual development of competition. It is nevertheless unclear whether reductions in costs would ultimately benefit consumers directly (through price cuts) or indirectly (by reducing the need for government support).

Postal services

In postal services competition has also been fostered by the gradual opening of the markets for different product items. Here as well, new communication technologies (e.g. electronic mail) are likely to intensify the competitive pressure. A recent survey³⁴ has attempted to measure the *perceived* intensity of competition in different market segments. It reveals that the perceived degree of competition varies by segment, and that it is generally very high ('intense') for unaddressed items, high ('substantial') for newspapers, periodicals and magazines, and relatively low ('emerging') for delivery of letter post (items of correspondence and addressed direct mail). Given the ongoing opening process in respect of letter post, this lower degree of perceived competition is not surprising. Nonetheless, perceived competition for letter mail has increased between 2000 and 2005 and is even considered to be intense in Spain, Finland, France and Lithuania (for details see Table 29 in the annex).

3.3. Prices

The competitive pressure induced by market opening should exert downward pressure on prices, since firms aiming to maintain their market share would have an incentive to undercut each other. To sustain such a strategy while maintaining or increasing their profit margin, firms would have an incentive to lower their costs by becoming more efficient. Both regulation and the competitive process should

³² In some cases entry by foreign incumbents simply involves them buying a local player without affecting the number of players in the market. In these cases the effect on competition is ambiguous.

³³ Steer Davies Gleave, *RAILIMPLEMENT – Implementation of EU Directives 2001/12/EC 2001/13/EC and 2001/14/EC*, 2005. Study prepared for the European Commission (DG TREN).

³⁴ Survey of national regulatory authorities and universal service providers (wik-Consult, *Main Developments in the Postal Sector (2004-2006)*, 2006).

ultimately ensure that these cost reductions are passed through at least partially to prices³⁵. Price developments are therefore one of the best indicators for measuring the impact of liberalisation. However, given the complexity of the sectors reviewed here, one should remember that the observed prices depend on a range of variables other than the degree of regulation or liberalisation. It should be stressed at this point that changing (real) prices *per se* are not necessarily a sign of liberalisation success or failure, and that they should ideally be judged against a 'no liberalisation' counterfactual situation. A recent empirical study carried out by Copenhagen Economics³⁶ – and extensively reviewed in the previous edition of this report – attempts to do this and suggests that telecommunications and rail transport prices in the EU15 were more than 20% lower in 2001 than they would have been without market opening. For electricity the equivalent figure is 8%, while only a modest price reduction is attributed to market opening in the gas industry (1%). For air transport, no significant relationship was found in the study and the results for urban passenger transport and postal services suggest that the reforms actually led to slight increases in prices.³⁷

Table 2 below displays the inflation rates observed in six EU network industries over the past ten years³⁸. For the purpose of orientation, the overall inflation rate as measured by the Harmonised Index of Consumer Prices (HICP) and the inflation rates for goods and services are also reported. Over the period January 1996 to November 2006, the all-items HICP rose by 27%, corresponding to an annual increase of 2.5%, while the price index for goods and services rose by 21% and 34% respectively. The first column of the table displays the weight of the different network industries in the EU25 HICP, totalling 7.5%. Price developments in network industries thus have important effects on macroeconomic conditions and ensuing economic policy decisions, such as those linked to the conduct of monetary policy.

Table 2: Inflation in EU25 Network Industries

	HICP-weight (2006)	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	January 2006	November 2006
Telecommunications (EU15)	2.3	-3.9	-1.6	-5.1	-2.1	-10.4	-2.0	-0.5	0.0	-0.8	-2.0	74.5	73.8
Electricity	2.1	0.1	0.0	-0.9	1.0	3.3	3.1	3.4	3.3	3.3	4.5	122.9	129.9
Gas	1.5	4.6	2.6	-2.5	4.7	17.3	2.8	1.1	3.0	8.0	14.4	169.8	188.7
Railways	0.5	1.4	3.1	3.0	2.4	2.4	2.3	3.3	2.2	4.5	2.9	131.2	132.9
Air	0.7	1.4	3.9	0.9	-0.1	5.0	-0.3	3.1	-2.3	6.7	2.1	122.0	124.7
Postal services	0.2	2.4	6.7	0.3	0.9	1.6	1.9	0.9	4.6	1.4	2.9	126.1	128.9
All-items HICP	100	3.1	2.2	1.4	2.2	2.3	2.6	1.9	1.9	2.0	2.3	124.1	126.8
Goods	59.6	2.6	1.3	0.6	2.0	2.0	2.2	1.1	1.2	1.4	2.2	118.1	120.8
Services	40.4	3.2	2.9	2.4	2.3	2.5	3.3	3.2	2.7	2.8	2.4	131.2	133.7

Notes: The last two columns display the price level index (1996=100). Price changes are calculated for January of each year. The telephone and telefax services price index refers to the EU15 only.

Source: Eurostat.

Figure 1 shows the evolution of real price indices in network industries, i.e. relative to the overall HICP. It becomes immediately apparent that no common pattern holds for all network industries since respective price developments have varied in sign, magnitude and volatility. Indeed, while prices have changed gradually in some industries (electricity, rail and air passenger transport, once seasonal adjustments are made), there are noticeable jumps at specific points in time in other industries (gas and telecommunications).

Since 1996, the price index for telecommunication services *in the EU15* has fallen by around 27%, corresponding to an annual decline of 2.4%. In real terms this represents a 40% decrease. Prices dropped considerably up to 2001 and have continued to do so, albeit at a slower pace, since 2002. This price fall has occurred in parallel with increasing competition, as documented in the previous section, and technological progress.

³⁵ However, where regulated prices were set below costs prior to liberalisation, they could even increase as compensations to firms for the provision of services are cut down.

³⁶ Copenhagen Economics, *Market Opening in the Network Industries*, September 2005. http://ec.europa.eu/internal_market/economic-reports/index_en.htm.

³⁷ cf. footnote 35

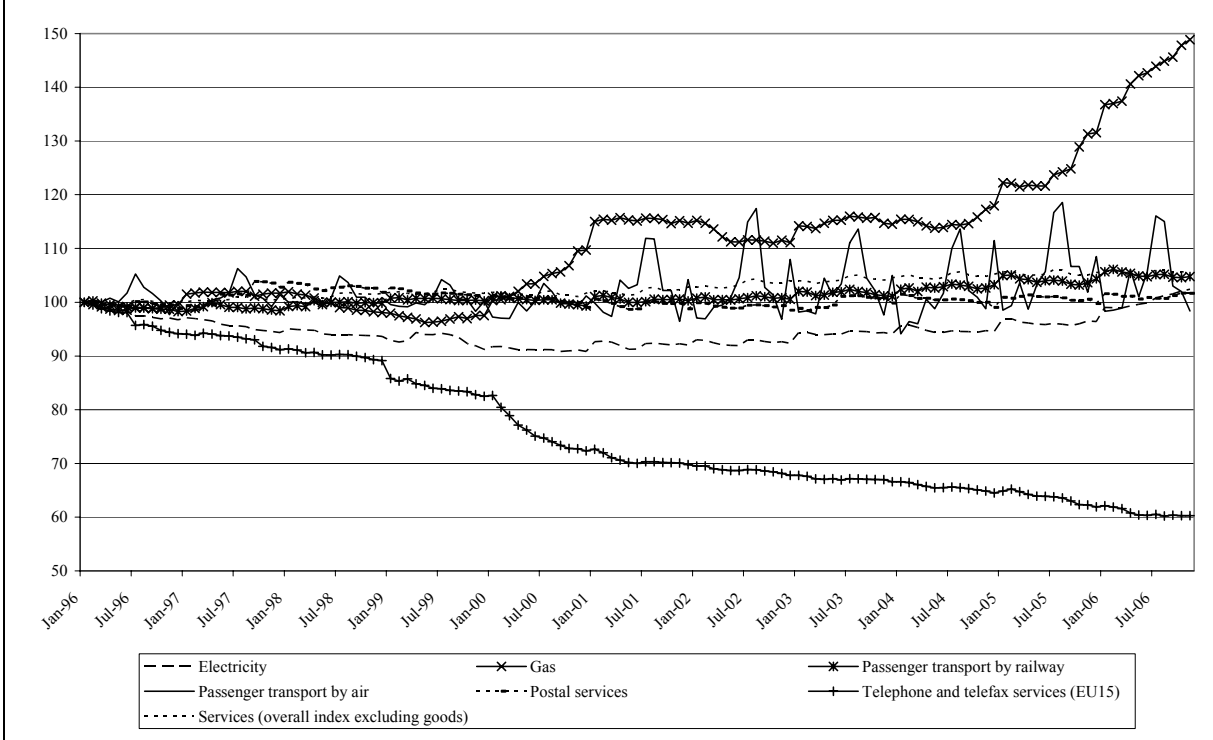
³⁸ Data for telecommunication services refer to the EU15.

Real electricity prices were slightly higher in November 2006 compared to 1996. However, the underlying trend has been significantly different from that of the general price index. In nominal terms, the electricity price index remained constant between 1996 and 2000, but has risen at an annual rate of 4.2% thereafter. The increase between January and November 2006 was particularly strong (6.2%). This price increase is certainly not independent of gas price developments, since gas is a major input to electricity production. Indeed, as shown in the graph, the evolution of the electricity price index since 2001 trails that of gas, albeit with less volatility and smaller fluctuations. However, there may be other explanations for this recent price rise, including a lack of competitive pressure.

In strong contrast to the two sectors above, the price level of gas increased by nearly 90% over the last decade, an annual average of 8.1%. Measured relative to the all-items HICP, gas prices are about 50% higher now than in 1996. After a sharp increase in 2000, real gas prices remained fairly stable until the end of 2004, then started to increase rapidly again. This pattern clearly follows that of the oil price, albeit with a certain lag. It should be noted here that European gas prices are linked to the oil price and any downward pressure on gas prices that would have resulted from liberalisation would therefore most likely be masked by the recent strong rise in oil prices.

The price of rail and air passenger transport (allowing for seasonal variations) increased relative to the overall price level, but followed the trend of the overall price of services. The evolution of the price index for postal services was comparable to that of the all-items HICP.

Figure 1: Evolution of network industry price indices relative to the all-items HICP since 1996, EU25



Note: The telephone and telefax services price index refers to the EU15 only.

Source: Own calculations based on Eurostat.

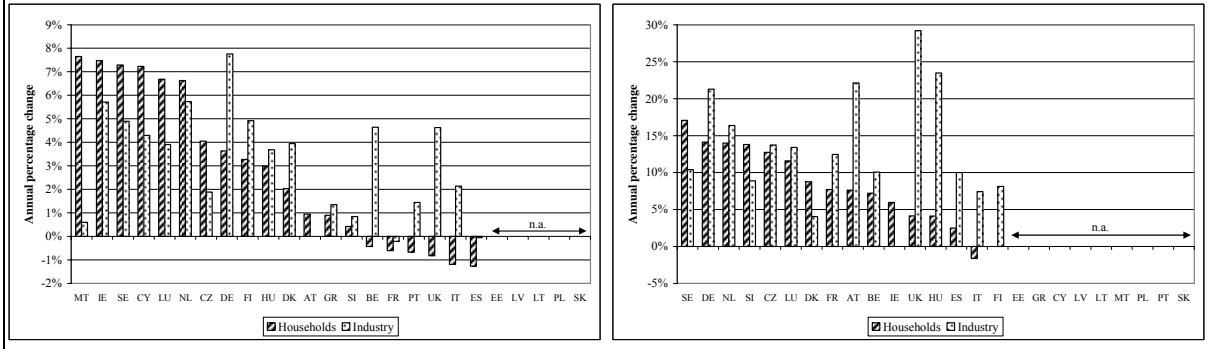
The falling telecommunication price index masks some diverging trends for different types of services and for individual Member States. Price falls are in general more pronounced for international and national calls than for local calls, as illustrated in Figure 37 in the annex³⁹. A comparison of tariffs for calls to different destinations charged by the incumbent and its largest competitor reveals, that

³⁹ The relatively lower price fall, and indeed price rise in some Member States, for local calls may partly be explained by tariff rebalancing.

regardless of the type of call (but particularly for long-distance and international calls), the entrants undercut incumbents' tariffs in most Member States (see Figure 38 in the annex). This helps to explain the falling market share of the incumbents and supports the observation made in the previous section that there is genuine growing competition in the telecommunication sector.

Figure 2 below displays the annual change in electricity (left-hand panel) and gas (right-hand panel) prices faced by households and industry⁴⁰, measured in purchasing power standards (PPS) between 2000 and 2006. Household electricity prices have increased most in Malta, Ireland, Sweden, Cyprus, Luxembourg and the Netherlands.⁴¹ In contrast they have fallen in Belgium, France, Portugal, the United Kingdom, Italy and Spain. Industry electricity prices have risen most strongly in Germany, the Netherlands and Ireland, while decreasing slightly in Spain and France. Divergent price developments may of course also be attributed to input mixes that are country-specific and to differences in energy taxation.

Figure 2: Evolution of Prices in Electricity and Gas, 2000-2006



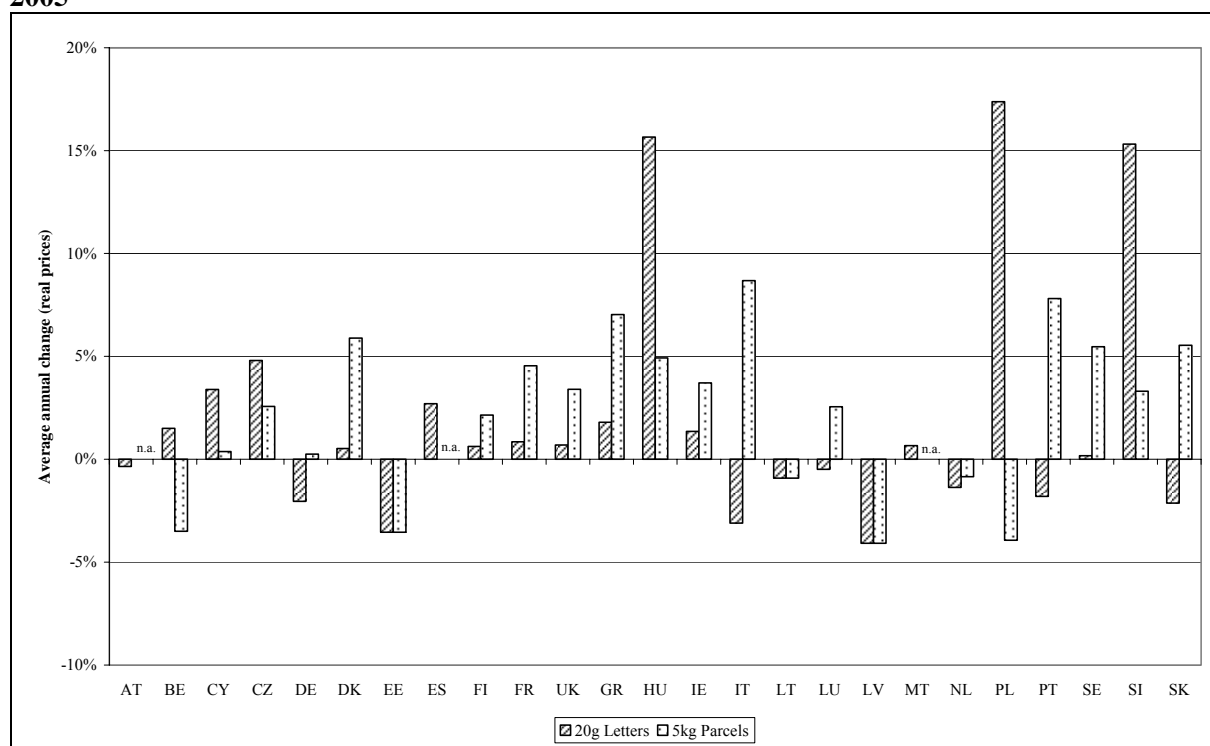
Note: Prices measured in Purchasing Power Standards.
 Source: Own calculations based on Eurostat.

As suggested by our analysis above (cf. Figure 1), nominal and real gas prices in the EU have risen considerably in recent years. The right-hand panel of Figure 2 confirms that this increase occurred for both households and industry across Member States⁴². Households in Sweden, Germany, the Netherlands and Slovenia have faced the biggest price increases, while Italian households were the only ones to benefit from a price fall. Over the period analysed, no country recorded a decrease in industry gas prices. Indeed, prices more than doubled in the United Kingdom, Austria, Hungary and Germany. It should be pointed out, however, that most of this upsurge has occurred after 2004 and is largely attributable to the oil price hike.

Figure 3 below shows average annual changes in the real price of postal services between 2000 and 2005 – in this case 20g letters and 5kg parcels. With the notable exceptions of Hungary, Poland and Slovenia, real letter tariffs did not vary drastically. For parcels, the real price increase was generally higher.

⁴⁰ Households and industry relate to standard household Dc (annual consumption of 3 500 kWh) and standard industrial consumer Ie (annual consumption: 2 000 MWh). Prices include all taxes.
⁴¹ For Malta and Cyprus in particular, a large part of the increase occurred between 2004 and 2006.
⁴² Households and industry relate to standard household D3 (annual consumption: 83.70 GJ) and standard industrial consumer I3-1 (annual consumption: 41 860 GJ). Prices include all taxes.

Figure 3: Average annual change of USP tariffs for 20g letters and 5kg domestic parcels, 2000-2005



Note: the tariffs considered are the lowest available public tariff and fastest standard category for parcels and letters respectively.

Source: wik-Consult (2006).

3.4. Output

Network industries contributed around 7.5% of the EU15's total value added in 2003⁴³, a share that has slightly decreased over time (in 1993 it was 8.2%). In the NMS, this share was much higher, ranging from 9.8% in Hungary to 14.3% in the Slovak Republic. Except in Poland, where the share increased from 9.8% in 1993 to 11% in 2003, the relative size of the value added of network industries decreased in the NMS as well. In the EU as a whole, most of the decline was in the electricity, gas and inland transport sectors. As far as electricity and gas are concerned, this decline reflects the steady downward trend in the energy intensity of the EU economy (energy consumption per unit of GDP) and is therefore to be welcomed from the point of view of sustainable growth policy. On the other hand, the relative importance of the communications sector in the total output of network industries is noticeably increasing, and is particularly pronounced in the NMS.

3.5. Employment

This section analyses employment trends in various network industries. From a theoretical point of view, the effect of liberalisation in network industries on the economy-wide employment level is ambiguous. While productivity gains in network industries may imply direct job losses, positive employment effects may occur in network industries which increase their output and their range of

⁴³ In what follows and unless mentioned otherwise, the data presented in this section are based on the Groningen Growth and Development Centre (GGDC) 60-Industry Database (Groningen Growth and Development Centre, 60-Industry Database, October 2005, <http://www.ggdc.net/>), which covers the EU15 countries, the Czech Republic, Hungary, Poland, the Slovak Republic and some non-EU countries. The industries covered are: electricity, gas and water supply; inland, water and air transport; and communications (which includes telecommunications and postal services). Due to data revision, the figures presented here may not always be fully in line with data presented for certain countries in previous editions of this report.

products as a result of the competitive process⁴⁴. Furthermore, the indirect effects of liberalisation may well outweigh any negative direct effects, as industries using inputs from network industries at lower prices may expand output and employment (see first section of the chapter). For instance, a recent empirical study estimates the economy-wide number of newly created jobs attributable to market opening in network industries in the EU15 over the period 1990-2001 at around 500 000⁴⁵.

As far as the direct effects in network industries are concerned, it should be stressed first of all that liberalisation is just one of several factors that may explain employment changes. Indeed, some of the industries in question have recently undergone significant technological change, which has also had an effect on both the employment level and the composition of the workforce. A further reason for changes in employment figures is purely statistical: in the course of industrial restructuring, certain activities may be outsourced and classified under different economic activities.

In 2005, slightly more than 10.5 million people were employed in EU25 network industries, corresponding to about 5.4% of the workforce. With slightly over 3% of the workforce, transport (and in particular land transport) is the largest sector, followed by post and telecommunications (1.6%), and electricity and gas (0.7%). The share of persons employed in network industries ranges from about 4% in Portugal to about 10% in Latvia. In general, this share is significantly higher in the NMS (in particular the transition countries, with about 7.4%) than in the EU15 (about 5%)⁴⁶. In the EU15 about 8.5 million people were employed in network industries – 100 000 less than in 2000 and about half a million less than during the 1980s and the early 1990s⁴⁷. The share in the total workforce has constantly fallen from 6% in 1980.

A first general remark when analysing employment trends in network industries is that they have varied across industries. Figure 4 below shows the average annual change in employment levels between 1996 and 2003 in the electricity, gas and water supply sectors combined for the EU15 and four NMS. Over that period, employment in both regions dropped by over 15%, corresponding to an annual average decline of 2.3%. This pattern is mirrored in most Member States, the UK having suffered the fastest annual decline at an average rate of 5.1%. Only Luxembourg, France, Portugal and Slovakia registered modest employment increases in these sectors.

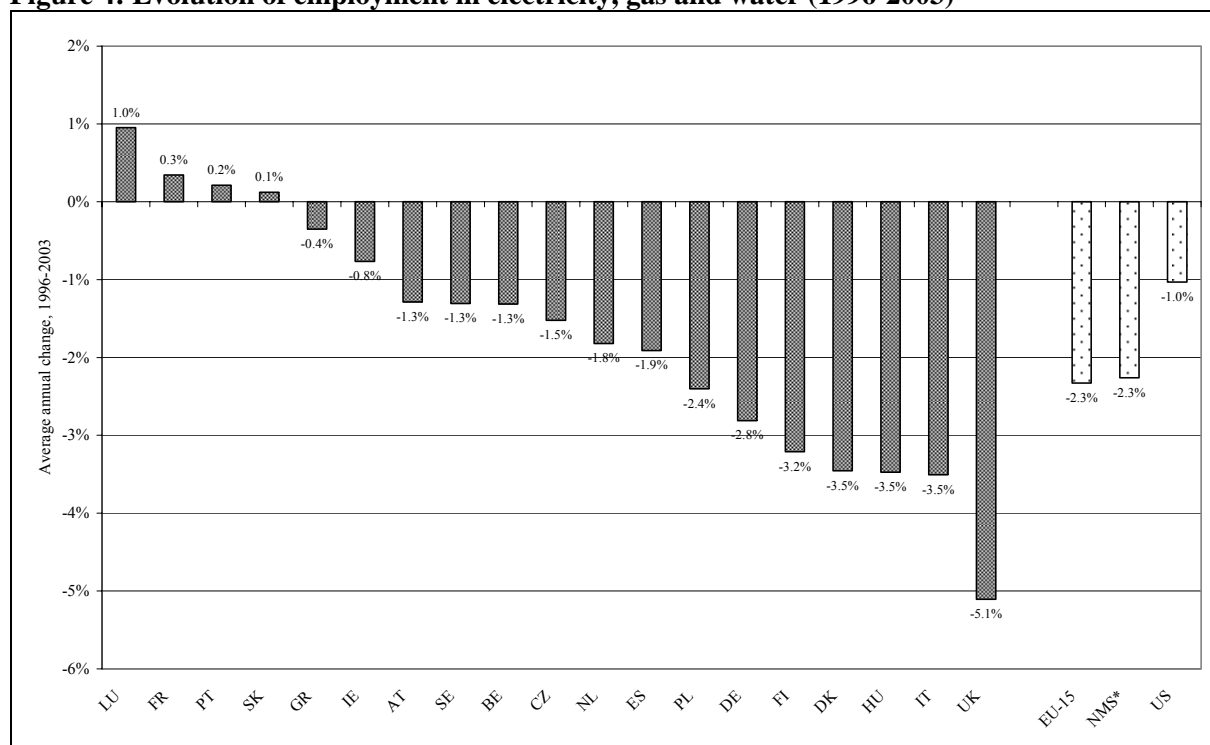
⁴⁴ An interesting and illustrative example regarding postal services can be found in the 2005 National Reform Programme of Germany, which notes that "[t]he extensive competition that now exists in the courier, express and package areas has resulted in many new and innovative services". It further notes that "[t]he licence-holders have created over 30,000 new jobs since 1998 [which] has more than offset the loss of over 20,000 full-time jobs at Deutsche Post AG [the incumbent] since the end of 1997."

⁴⁵ This study covers seven network sectors (electricity, natural gas, telecommunications, rail transport, urban transport, air transport and postal services) in the EU15 Member States over the period from 1990 to 2003 (see footnote 36).

⁴⁶ Based on the Eurostat Labour Force Survey. The sectors concerned are: Electricity, gas, steam and hot water supply (NACE 40); Land transport; transport via pipelines (NACE 60); Water transport (NACE 61); Air transport (NACE 62); Post and telecommunications (NACE 64).

⁴⁷ Groningen Growth and Development Centre (GGDC) 60-Industry Database

Figure 4: Evolution of employment in electricity, gas and water (1996-2003)



Note: NMS includes the Czech Republic, Hungary, Poland and the Slovak Republic.*

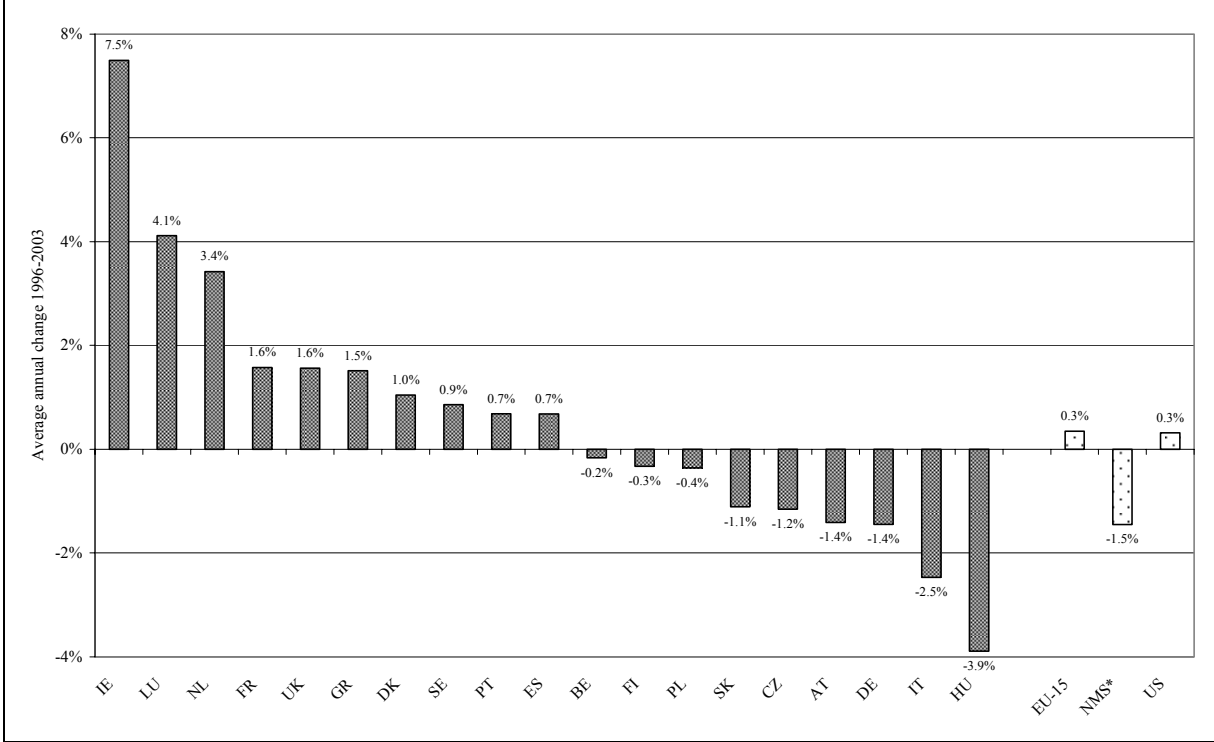
Source: Own calculations based on Groningen Growth and Development Centre, 60-Industry Database (2005).

Employment changes in communication services (post and telecommunications) are depicted in Figure 5. Between 1996 and 2003 employment in the EU15 increased on average at a rate of 0.3% per year. However, developments were quite uneven between Member States. On the one hand, communications sector employment in Ireland increased at an annual rate of 7.5%, followed at some distance by Luxembourg (4.1%) and the Netherlands (3.4%). On the other hand, employment levels fell on average by 1.5% per year in the four NMS considered here: Poland, Slovak Republic, Czech Republic and Hungary recorded on average annual employment falls of 0.4%, 1.1%, 1.2% and 3.9% respectively.

Table 30 in the annex contains figures on employment levels in the telecommunications sectors of EU Member States, which amounted to about 1.25 million in total in 2004⁴⁸. Even though there was a slight decline between 2003 and 2004, employment increased at an annual average of 1.5% between 1995 and 2004. In postal services, conclusive data are not available and clear trends in employment are more difficult to detect (see Table 31 in the annex). The available data only concern the incumbents (universal service providers) and do not cover new entrants.

⁴⁸ Eurostat data

Figure 5: Evolution of employment in communication services (1996-2003)

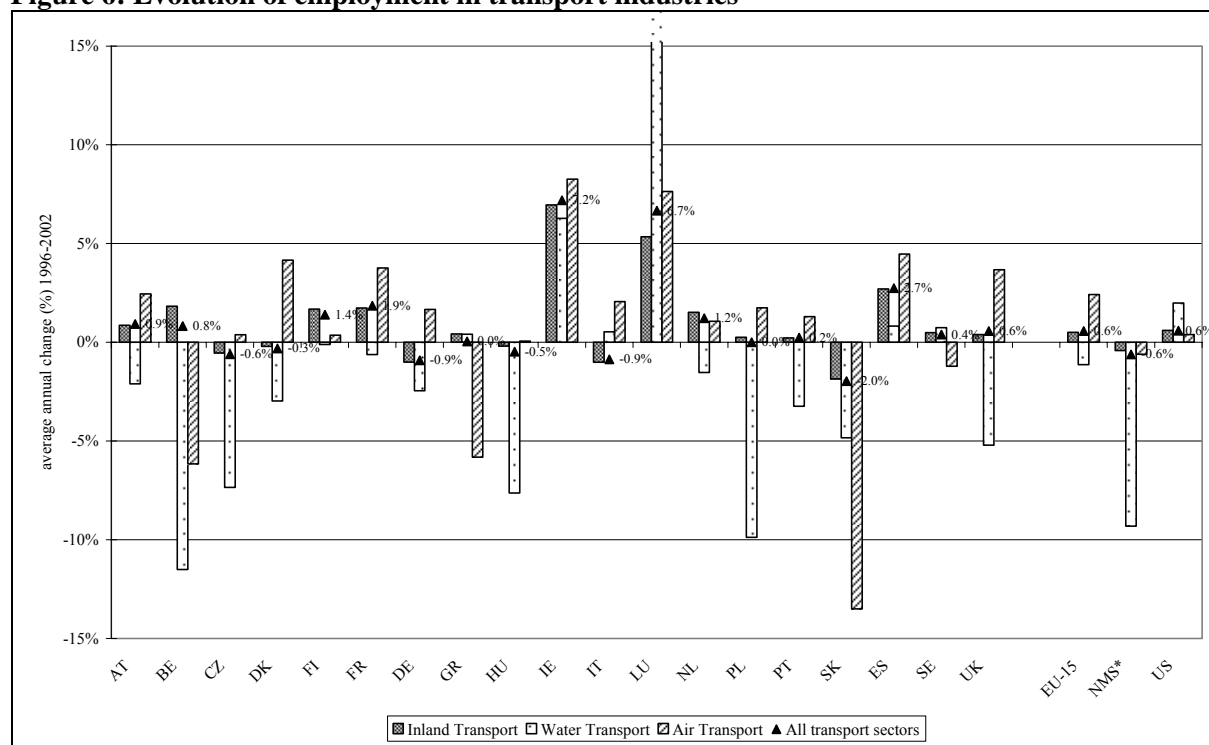


Note: NMS* includes the Czech Republic, Hungary, Poland and the Slovak Republic.

Source: Own calculations based on Groningen Growth and Development Centre, 60-Industry Database (2005)

Employment in EU15 transport industries expanded at an annual average of 0.6% between 1996 and 2003, an increase that can be attributed to inland and air transport (see Figure 6). This pattern holds for most Member States. Large employment increases were recorded in Ireland (7.2% per year), Luxembourg (6.7%) and Spain (2.7%), while the main decline occurred in the Slovak Republic (-2.0%), Germany and Italy (both -0.9%). In the NMS, employment fell on average in all transport sectors, even though there were country-specific differences.

Figure 6: Evolution of employment in transport industries



Note: NMS* includes the Czech Republic, Hungary, Poland and the Slovak Republic.

Source: Own calculations based on Groningen Growth and Development Centre, 60-Industry Database (2005)

3.6. Labour productivity

Figure 7 presents an index of labour productivity per hour in EU15 network industries between 1993 and 2003. Over that period, productivity in communication services (average annual growth rate of 7.6%)⁴⁹ and in electricity, gas and water supply combined (5.9%) grew at a considerably faster pace than in the economy as a whole (1.8%). Air transport labour productivity grew relatively faster than overall productivity until 1998 and at about the same pace subsequently (a drop in productivity after 2001 can be partly attributed to the impact of terrorist acts and fuel price rises). Inland transport productivity developments were similar to those of the economy as a whole. It is also noteworthy that after 1996 the productivity growth in communication services and in air and inland transport occurred in conjunction with employment increases in these sectors, as seen in the previous section. This underlines the fact there is not necessarily a trade-off between productivity and employment growth.⁵⁰

Comparing the developments in the EU15 to those observed in the NMS (in Figure 8) reveals that the fast labour productivity growth in the communications sector is also present in the NMS (average annual growth rate of 9%), where productivity growth was particularly high after 1999. On the other hand, labour productivity in the energy and water sector has remained constant. Just as in the EU15, the evolution of inland transport labour productivity was comparable to that of the economy as a whole. The airline sector has been omitted owing to lack of data.

While liberalisation should have a positive effect on productivity (growth and levels) through different channels, as explained above, it is difficult to discern "one-off" impacts of market opening from the data considered here. The absence of an evident break in the time series may indicate that adjustments in productivity levels were spread over a longer period (indeed, productivity gains do not necessarily materialise on the date of liberalisation, but may occur in anticipation of liberalisation or with lags, in

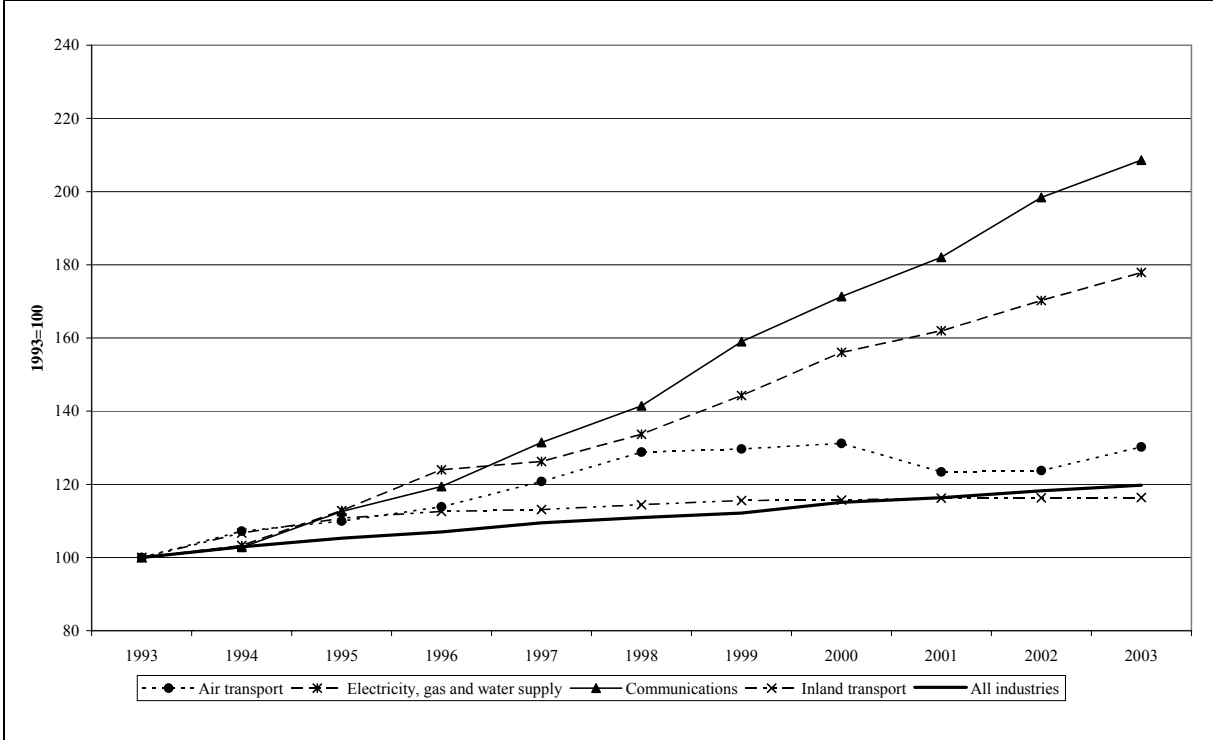
⁴⁹ This high growth is not surprising given the technological advances in this sector and the shift in labour composition towards higher-skilled employees.

⁵⁰ The outsourcing effect mentioned above may also lead to a bias in productivity figures.

particular in sectors in which rigidities hamper rapid adjustments), and that liberalisation led to higher structural productivity growth. Furthermore, market opening has been a continuous process of so-called legislative "packages", rather than an event linked to a single point in time. It should also be emphasised that these data only refer to labour productivity and that productivity gains may arise for other reasons (e.g. better capacity utilisation).

A recent empirical study⁵¹ finds a positive statistical relationship between market opening and productivity in most of the network industries covered. The set of productivity measures used in that study is wider than labour productivity. The market-opening variables used to explain sectoral productivity performance include either particular elements of market opening (unbundling, third-party access, congestion management, etc.) or a combination of these different elements. The study suggests that productivity in 2001 in rail freight and telecommunications was 47% and 24% higher than it would have been without market opening. The equivalent figures for postal services, air transport, electricity and urban transport are 28%, 13%, 2.3% and 1%. In rail passenger transport the study finds a negative effect of market opening.

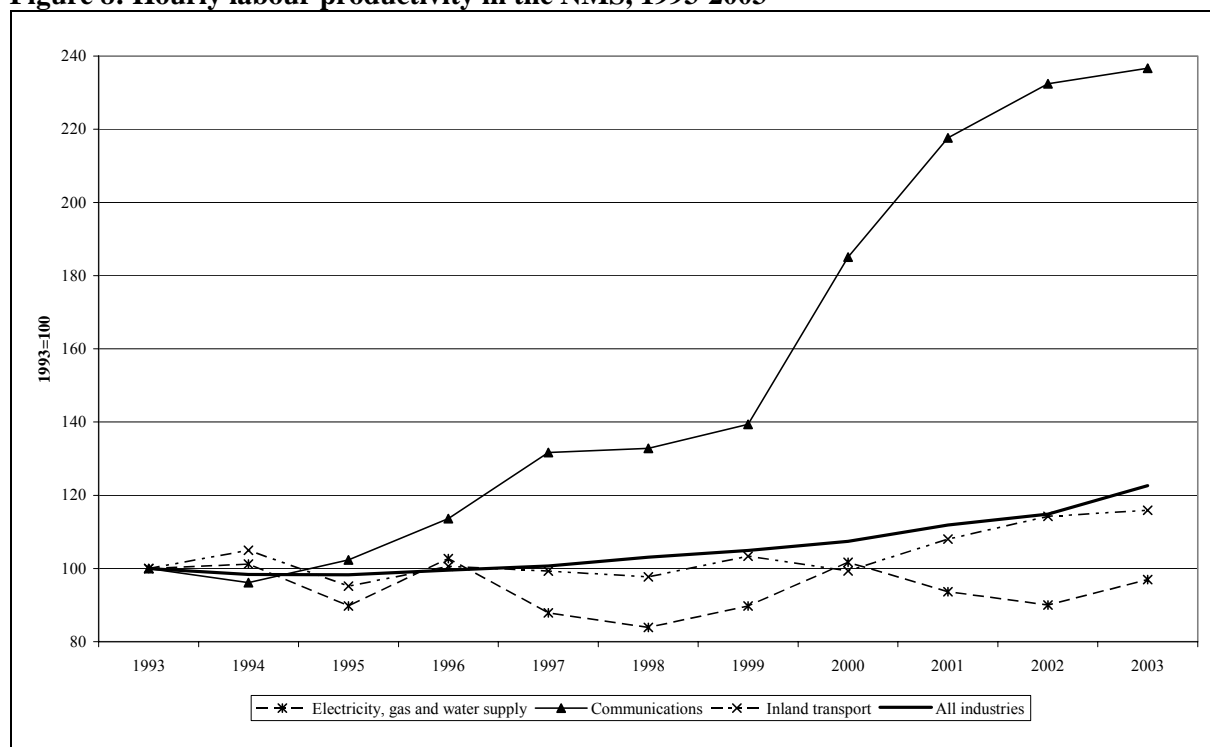
Figure 7: Hourly labour productivity in the EU15, 1993-2003



Source: Own calculations based on Groningen Growth and Development Centre, 60-Industry Database (2005)

⁵¹ Copenhagen Economics, *Market Opening in the Network Industries*, September 2005.

Figure 8: Hourly labour productivity in the NMS, 1993-2003



*Note: NMS include Czech Republic, Hungary, Poland and Slovak Republic. The indices are unweighted averages.
Source: Own calculations based on Groningen Growth and Development Centre, 60-Industry Database (2005)*

4. Market integration in network industries

Market integration is a key issue for the European Union and its Member States. The Single Market Programme (SMP) implemented in the 1980s and 1990s was a cornerstone of the process of market integration. Since the completion of the SMP in 1993 the Internal Market has been further developed and strengthened.

The benefits of greater market integration include increased efficiency through producers taking advantage of economies of scale that could not be achieved at the national level, industrial restructuring and more efficient geographic allocation of economic resources. Market integration also increases the competitive pressure on firms to keep prices down and to provide a better quality of service for consumers.

To achieve a fully integrated EU market, the geographic market for a particular product or service, that is, the area in which it is bought and sold, must be at least as wide as the EU. As will be seen in this chapter, the goal of full market integration is still a long way off for all of the network industries covered by this report, and this is reflected in significant price differences between Member States. However, in some network industries the physical infrastructure for integration is already in place, making it more likely that the remaining legal and economic barriers to integration can be overcome. Examples include air travel, telecommunications and postal services, where a well-established Europe-wide physical network already exists. This contrasts with the electricity and gas sectors, where the interconnection capacity between countries would remain insufficient even if use of the current infrastructure were optimised. Until the physical infrastructure is in place, the scope for integration will remain restricted.

4.1. Barriers to integration

The concept of a barrier to integration is closely linked to that of a barrier to entry, which can be defined as “anything that allows incumbent firms to earn supranormal profits without threat of entry” into their market⁵². By extension, a barrier to integration could be defined as anything which, in addition, prevents removal of the geographic boundaries of markets. In concrete terms, the main difference between the two concepts is that barriers to integration specifically relate to the (potential) entry into a particular geographic market of firms already established in, or potentially originating from, other geographic markets. Whereas the threat of entry in a given market (its contestability) suffices to force incumbent firms to behave competitively, the threat of cross-border entry will in addition to that have *de facto* unified several geographic markets into a larger, single, market. In certain industries (e.g. electricity and gas), which are in some segments characterised by large economies of scale and scope, the size of the market can in itself constitute a barrier to entry. In such cases, the most credible threat of entry often comes from a foreign firm. Hence, integration may be a necessary condition for competitive markets.

This section describes in more detail five different types of barriers to market integration: technical barriers, legal and regulatory barriers, consumer inertia, some practices of incumbent firms which tend to perpetuate the segmentation of markets along national lines, and the protectionist behaviour of governments vis-à-vis their domestic incumbents. This list is not necessarily exhaustive and the examples provided should be seen as an illustration of barriers to market integration.

4.1.1. Technical barriers to integration

In some network industries, physical market integration is already well advanced, generally where there is considerable consumer demand for a cross-border service, for example international telephone

⁵² See Tirole, 1988, *The Theory of Industrial Organization*, MIT Press.

calls, international passenger flights, international postal services. For industries where the cross-border linkages occur upstream and are not of direct concern to final consumers, progress towards physical integration has been much slower, even if the supply side of the market is at least potentially international.

In the electricity sector in particular, and to a lesser extent in the gas sector, further investment is needed to improve interconnection capacity between Member States⁵³. Sufficient interconnection is particularly important in the former case as electricity cannot be stored and supply and demand have to match at any given point in time. In the gas sector, on the other hand, adequate storage facilities can to a certain extent compensate for poor interconnection. Table 3 lists some "key" projects supported by the European Commission to address interconnection problems in the electricity sector in those Member States most affected by low interconnection – partly because of their peripheral geographical location. An examination of congestion at different borders in the first five months of 2004 and 2005, carried out as part of the energy sector inquiry, shows that most interconnectors were congested to some degree, and that congestion increased in 60% of the cases analysed (see Table 32 in the annex). While this fact highlights the problem of congestion, it also shows that there is an increasing demand for trade in electricity. In the gas sector, the sector inquiry looks closely at five major transit pipelines and finds evidence of some congestion at peak periods on three of them.

Table 3: Member States with low levels of electricity interconnection capacity

	Installed generation capacity (GW) ⁽¹⁾	Import capacity NTC (GW) ⁽²⁾	Import capacity as % of installed capacity	Projects to improve interconnection	Current Status
Italy	80	6.0	8%	San Fierano- Robbia	complete
Portugal	12	0.8	8%	Balboa-Sines	complete
				Duroro internacional	in progress
				Minho	proposed
				Algarve	proposed
Spain	56	2.2	4%	Balboa-Sines	complete
				Baixas-Bescano	delayed
UK	80	2.3	3%	UK-NL DC link	proposed
Ireland	5	0.3	6%	second ROI-NI	agreed
				GB-ROI DC link	proposed
Poland	34	3.4	10%	Poland - Lithuania	no progress
Baltic States		0.0	0%	Estlink	in progress
				Poland - Lithuania	no progress

Notes: (1) UCTE July 2003 forecast, Nordel winter 2003-4 forecast, NGC and ESBNG 7 year statement. (2) Based on ETSO Winter 2004-05 net transport capacity (NTC) data, includes capacity from Switzerland and South East Europe, excludes Morocco, Ukraine and Russia

Source: DG TREN, "Report on Progress in Creating the Internal Gas and Electricity Market" based on ETSO data on available interconnection capacity

A sufficient number of interconnection nodes between national railway grids are also a precondition for ensuring an integrated European railway network. However, further technical barriers to integration arise from the lack of interoperability between networks, which may prevent operators from offering services outside their domestic network. While most of the technical features and norms applicable in railway networks have developed within national markets over time, integration requires harmonisation at the European level. This is likely to take a long time to achieve and to slow down the

⁵³ The 2002 Barcelona European Council set the target for electricity (import) interconnector capacity in 2005 at 10% (at least) of each Member State's production capacity. Some Member States (United Kingdom, Italy, Spain, Ireland and Portugal) have not yet met this objective (Energy Sector inquiry).

pace of integration. Examples of different standards preventing interoperability include differences in the rail gauge (i.e. distance between two rails), different traction and electrification systems and different signalling types⁵⁴. Nonetheless, it should be noted that a number of measures have successfully been put in place at the European level in order to achieve interoperability between national railway markets, in particular in the field of technical standardisation. The recent creation of the European Railway Agency should also accelerate this process.

4.1.2. Legal barriers

The differences between the legal systems of the Member States, which are quite wide in respect of company and contract law, are generally recognised as a major obstacle to the cross-border expansion of companies. In the case of the network industries, this difficulty may sometimes be compounded by the existence of sector-specific legislation and regulation. The main principles of regulation in the network industries are laid down at EU level and their principal purpose is to open up markets to competition. The EU legislation therefore aims, amongst other things, to make it easier for firms to enter markets in other Member States. Nevertheless, the national legislators and regulators have wide discretion to apply their own rules in the light of domestic circumstances. This means that a business model developed in one country may encounter regulatory objections in another, so that some operators may be deterred from entering new national markets. It also means that potential entrants may be frustrated or delayed by cumbersome legal procedures and the reluctance or inability of some national authorities to enforce the Community rules vigorously. Citing just a few of the many examples available, we illustrate below the wide range of problems that may be caused by legal obstacles to integration.

In some Member States, appeals against decisions of a national regulatory authority (NRA) may have an automatic suspensory effect. Since the NRA's decision is often directly relevant to the ease of entry into the market, incumbents in these countries can exploit the appeals mechanism as a means of deterring or delaying the entry of new rivals, even when there is little prospect that the decision will be overturned by the appeal tribunal. Even where the suspensory effect is not automatic, appeals tribunals in some Member States regularly grant a suspension of the NRA's decision as soon as an appeal is lodged. The Commission has frequently drawn attention to these problems in the electronic communications sector, for example⁵⁵.

A quite different problem specific to the rail transport sector is that of train drivers' qualifications. At present, both locomotives and drivers have to be changed at national borders because of the absence of a common European train driver's licence. Although there are technical differences between the national railway networks and language differences may be a problem at many borders, there is already some potential for train drivers to operate across borders if the difference in certification systems does not form an absolute barrier. This has been demonstrated on the Øresund link between Denmark and Sweden as well as on German-Czech freight links. In its Third Railway Package of 2004 the Commission therefore included a proposal for common rules on the certification of train drivers⁵⁶. The full benefits of a European train driver's licence will, however, only be realised once the measures to improve interoperability in the European rail network, currently in progress, come to fruition.

Another example of a legal barrier to market integration specific to the railway sector is the existence of national railway safety rules. Such rules have been set up in the Member States for historical reasons and constitute a major hindrance for new railway undertakings wishing to become established in another Member State or to operate on the infrastructures in other countries. In order to achieve

⁵⁴ More detailed information on barriers to market integration and market opening in general can be found in Steer Davies Gleave, *RAILIMPLEMENT – Implementation of EU Directives 2001/12/EC 2001/13/EC and 2001/14/EC*, 2005. Study prepared for the European Commission (DG TREN).

⁵⁵ See Annex to European Electronic Communications Regulation and Markets 2005 (11th report), Volume I, SEC(2006) 193 of 20/2/2006.

⁵⁶ Proposal for a Directive of the European Parliament and of the Council on the certification of train crews operating locomotives and trains on the Community's rail network, COM(2004) 142 final of 3/3/2004.

gradual harmonisation, the so-called Railway Safety Directive 2004/49/EC aims at introducing a common rail safety system in the Community.

In the postal sector, the Postal Directive⁵⁷ still allows Member States to reserve a segment of the domestic letters market as the monopoly of the universal service provider, which is in practice the incumbent⁵⁸. While Member States make use of this possibility to a different extent, this often constitutes an obvious barrier to entry. The exceptions are Sweden, Finland and, since January 2006, the UK. The national procedures for the authorisation of postal operators may constitute another entry barrier in this sector. In some Member States these procedures seem to be so difficult to comply with that they significantly restrict the possibility of new firms entering the market⁵⁹.

4.1.3. Inherited advantages of incumbents that hinder integration

In most cases it will be in the interests of incumbent firms to resist market integration since additional external competition is likely to erode their profits. In addition to the above-mentioned example of delaying the entry of new firms into the market by appealing against the NRA's decisions, there are a number of ways in which incumbents can either act to slow down market integration or benefit from inherited advantages previously granted to them. For example, the energy sector inquiry highlights the problem of long-term reservation of gas transport capacity, often dating from before liberalisation. It finds that significant amounts of primary capacity on major gas transit routes will become available in the coming years in two new Member States only. In all other Member States, primary transit capacity is almost entirely booked for the long term. In many cases, the provisions included in the contract may create further impediments to market opening by conferring on current holders of capacity preferential rights for prolongation of the capacity reservations beyond the originally foreseen end date.

An analysis of forty gas transit pipelines in the EU between January 2003 and June 2005 presented in the inquiry found that while the primary transport capacity for the majority of them was nearly fully booked, the actual utilisation of the pipelines suggested otherwise. Despite this excess of contracted over utilised capacity, only a small share of the unused capacity was actually sold as interruptible capacity. The high level of future contracted capacity suggests that this problem of contractual congestion (as opposed to physical congestion) is likely to stay for some time (see Table 33), artificially reducing gas trade and thereby making it unattractive for firms to enter a market.

Incumbent firms often enjoy privileged access to the network infrastructure in other sectors as well. These privileges may result from the exercise of traditional rights, such as "grandfather rights" to airport take-off and landing slots, or from a special relationship with the infrastructure operator, especially in the electricity, gas and railway sectors, where the unbundling of ownership is not obligatory.

4.1.4. Customer behaviour

Efforts by customers to find lower prices can drive market integration. By the same token, if consumers are unwilling to switch to new – including foreign – suppliers, then the development of a competitive, let alone an integrated market will be hampered. A forthcoming study carried out on behalf of the Commission looked at the switching behaviour of business customers for their electricity and gas supply. In cases where both households and businesses have the ability to switch, business consumers are likely to switch more readily than households as they are likely to be better informed of their options and also likely to be less risk-averse, and in some energy-intensive sectors energy costs

⁵⁷ Directive 97/67/EC of the European Parliament and of the Council of 15 December 1997 on common rules for the development of the internal market of Community postal services and the improvement of quality of service, amended by Directive 2002/39/EC.

⁵⁸ The Directive provides for a review of the reserved segment and its possible abolition by 2009. This timetable has been confirmed in the proposal for a new postal services Directive (COM(2006) 594 final).

⁵⁹ Second Commission Report to the European Parliament and the Council on the application of the Postal Directive, COM/2005/102 of 23/3/2005.

will make up a much larger proportion of total costs than for households. However, even amongst businesses the rate of switching in the energy sector is relatively low and is mainly confined to electricity. There exist various reasons for a lack of willingness to switch, including the administrative costs and uncertainty associated with switching to a new supplier, lack of market transparency, and simply too few benefits to justify the effort of switching. The views of consumers with regard to switching are further analysed in chapter 7.

Of course, customer switching figures give only a very imprecise picture of the extent to which customers can drive the process of market integration. On the one hand, the switching by businesses in the energy sector described above may be an overstatement because switching could be mainly between existing domestic suppliers rather than new foreign players. On the other hand, it may be an understatement because the threat of entry by foreign firms may lead domestic suppliers to lower their prices or improve service in order to reduce the risk of customers switching.

4.1.5. Protectionism and government intervention

Some Member States may resist market opening in response to lobbying by vested interests, through reluctance to lose influence over major sectors of the economy or through fear that the public interest may not be adequately served in a liberalised environment. This resistance may take the form of slowness in transposing EU directives into national law, weak enforcement of the provisions relating to market opening or the introduction of unnecessarily cumbersome and time-consuming procedures that discourage new entrants, as discussed in section 4.2.2.

Some Member State governments also seem to pursue a policy of promoting incumbent enterprises as "national champions". On the one hand, these governments may encourage incumbents to engage in some mergers and acquisitions to strengthen their market positions. Examples include the proposed takeover of Gás de Portugal by the electricity incumbent Energias de Portugal and the Italian company ENI, which was forbidden by the Commission in 2004. On the other hand, governments sometimes intervene to discourage or block mergers which would result in a change of nationality of ownership of the domestic enterprise. The French government, for example, is reported to have exerted pressure on the public utility company Suez to reject a bid by the Italian company ENEL and favour an alternative deal with Gaz de France. In Spain the government was hostile to a bid by the German company E.ON for the electricity undertaking Endesa and the merger was subject to burdensome regulatory conditions whose legality has been challenged by the Commission.⁶⁰

Wherever possible, the Commission takes vigorous action against nationality-based restrictions of ownership under the Internal Market rules. Through both persuasion and the use of infringement procedures, this action has led to a marked reduction, for example, in the number of "golden shares" held by Member States. In addition, where appropriate, the Commission defends the "one-stop shop" principle under the Merger Regulation, whereby the Commission has sole competence to decide on mergers with a Community dimension. By defending its sole competence in major cross-border merger cases, the Commission can ensure that decisions are taken on an objective basis, not influenced by nationalistic considerations.

Indeed, the nationality of the controlling shareholders of a company is a very poor guarantee of the public interest. Where a legitimate public interest is at stake, the best approach is to ensure that the company has the right incentives. The best ways of getting the incentives right are through effective competition policies, both at national and at EU level, and strong and efficient national regulators who can ensure that services of general interest are adequately provided and public service obligations (including security of supply in energy sectors) are respected. EU competition policy and sectoral legislation provide a good framework within which these tasks can be carried out.

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<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1853&format=HTML&aged=0&language=EN&guiLanguage=en>

Impartiality and transparency of are of crucial importance in a liberalised sector. Like governments, regulatory bodies can also be unduly influenced by industry and thereby be led into taking decisions that create barriers to entry. Regulators are in daily contact with the operators in the industry they oversee. The firms with which they have the longest-standing relationship are, of course, the incumbents. If this relationship becomes too close, it can be exploited to the incumbents' benefit, giving rise to what is known as "regulatory capture". The risk is exacerbated by the fact that the established operators possess better information about many aspects of the industry than the regulators, who may therefore base their decisions on biased information.

4.2. Indicators of market integration

4.2.1. Price dispersion in network industries

Differences in the prices for goods and services (net of transport costs) are likely to persist even in completely integrated markets – for example, due to different production structures (including the content of local services) or the cost of supplying services of general interest, which will generally be higher in less densely populated countries. Nonetheless, market integration should, as a result of arbitrage activities, lead to price convergence, or at least to price co-movements. As markets become integrated, suppliers from low-price countries would benefit from selling their products to countries with a higher price level. Likewise, consumers would gain from purchasing cheaper products from abroad. Once legal and behavioural barriers to trade are removed, market integration becomes conditional on physical trade links (e.g. roads, pipelines). Price differences that persist after the full use of these trade facilities, also known as congestion prices, would indicate that trade flows are restricted. As explained above, this trade restriction may simply be of a physical nature (i.e. exhaustion of the transportation capacity), but could also reflect trade forgone because of non-physical trade barriers. The remedies to the congestion problem would consequently differ according to the situation⁶¹.

The energy sector inquiry analysed electricity prices by Member State and revealed that in spite of the ongoing integration, very large price differences exist even at the wholesale level, where cost differences, such as those incurred for the provision of SGEI, should not play a major role. Table 4 below presents some indicators tracing how the dispersion of electricity and gas prices for households and industry evolved in the EU over the period 2001-2006. As seen earlier in this report, electricity prices have risen slightly over that period, in particular in the last two years. Even though a comparison of the two indicators of price dispersion (the coefficient of variation and the ratio of highest to lowest price charged in EU Member States) in 2001 and 2006 is suggestive of some price convergence, a clear and convincing trend is harder to discern. In the gas sector, prices fell initially, but increased after 2004. The evolution of the indicators of price disparity mirrors that observed in the electricity sector. Just as in the electricity sector, an increase in price disparities after 2004 is observable. While insufficient market integration, extensively discussed in this chapter, is a very plausible explanation for this, rising oil and gas prices may be another one: Indeed, while in principle these price rises act as a common external shock, their effects are asymmetric due to different production structures (i.e. reliance on those products as inputs) and market structures (determining how an external price shock is passed through to customers) across the EU.

The third part of Table 4 presents an analogous analysis over the period 2000-2005 for telecommunications, with the prices of local, national and international telephone calls (within the EU and to the USA). In contrast to the two other sectors included in the table, prices fell significantly over that period. According to the indicators presented here, some prices seemed to converge, even though the picture is less clear for national calls and calls within the EU⁶². Nonetheless, if one compares the

⁶¹ Investment in infrastructure (e.g. interconnector capacity in the case of electricity; storage facilities in the case of gas) in the first case, better congestion management in the second case.

⁶² This can partly be explained by a very sharp reported price increase in Latvia in 2005.

levels of the price-disparity indicators in the telecommunication sector with those in electricity and gas, they seem to be still very high. In the case of telecommunications, one should however consider the price-disparity indicators with caution, since they may be distorted by the increasing trend to bundle offers of voice, data and video services.

Table 4: Price dispersion in different network industries

Electricity		2000	2001	2002	2003	2004	2005	2006
Industry (Annual consumption: 2 000 MWh)	Average	n.a.	6.51	6.39	6.40	6.23	6.74	7.64
	Median Price	n.a.	6.03	6.14	6.36	6.2	6.46	7.21
	Coeff of variation	n.a.	20.3%	15.0%	17.0%	19.9%	18.1%	18.3%
	Max/Min Ratio	n.a.	3.4	2.9	2.2	1.9	2.2	2.7
Households (Annual consumption: 3 500 kWh)	Average	n.a.	10.57	10.59	10.59	10.38	10.65	11.25
	Median Price	n.a.	8.37	8.59	8.9	8.98	9.0	9.23
	Coeff of variation	n.a.	25.6%	21.0%	22.3%	23.3%	23.5%	22.9%
	Max/Min	n.a.	3.4	3.0	3.0	2.9	2.5	2.5
Gas		2000	2001	2002	2003	2004	2005	2006
Industry (Annual consumption: 41 860 GJ)	Average	n.a.	6.07	5.76	5.58	5.33	6.17	8.22
	Median Price	n.a.	5.57	5.29	5.30	5.06	5.56	7.28
	Coeff of variation	n.a.	22.4%	16.8%	13.4%	13.7%	16.8%	19.5%
	Max/Min Ratio	n.a.	3.3	2.5	2.3	2.2	2.9	3.9
Households (Annual consumption: 83.70 GJ)	Average	n.a.	8.68	8.64	8.55	8.33	8.88	10.49
	Median Price	n.a.	7.63	7.27	7.40	7.93	8.80	10.40
	Coeff of variation	n.a.	24.4%	18.3%	18.3%	17.3%	17.4%	17.9%
	Max/Min Ratio	n.a.	4.3	3.7	3.5	3.2	3.3	3.8
Telecommunications		2000	2001	2002	2003	2004	2005	2006
Local Calls	Average	0.40	0.40	0.39	0.39	0.38	0.36	n.a.
	Median Price	0.31	0.35	0.32	0.33	0.36	0.33	n.a.
	Coeff of variation	28.9%	29.2%	27.9%	28.1%	21.5%	24.4%	n.a.
	Max/Min Ratio	8.63	4.31	3.63	2.90	2.93	2.71	n.a.
National calls	Average	1.30	1.14	1.06	1.04	0.90	0.72	n.a.
	Median Price	1.16	0.97	0.94	0.88	0.73	0.66	n.a.
	Coeff of variation	28.8%	28.5%	26.7%	26.3%	35.1%	39.4%	n.a.
	Max/Min Ratio	13.53	12.82	8.72	10.40	6.98	5.80	n.a.
International calls (near EU country)	Average	3.20	2.93	2.58	2.46	2.13	2.13	n.a.
	Median Price	4.05	3.33	2.36	2.19	2.10	1.91	n.a.
	Coeff of variation	50.3%	63.7%	69.7%	70.7%	61.6%	66.2%	n.a.
	Max/Min Ratio	15.60	17.98	17.98	21.21	17.13	27.06	n.a.
International calls (USA)	Average	3.40	3.03	2.61	2.50	1.98	1.99	n.a.
	Median Price	3.79	2.98	2.52	2.39	2.12	2.08	n.a.
	Coeff of variation	51.7%	64.1%	69.4%	70.6%	37.3%	38.0%	n.a.
	Max/Min Ratio	16.28	16.28	16.71	14.84	7.44	9.02	n.a.

Note: Prices are indicated in €-cent/kWh excl. taxes (electricity), €/GJ excl. taxes (gas) and in € per 10 min call, VAT incl. (telecommunications). The average and the coefficient of variation are weighted by HICP-weights. Gas prices are not available for Greece, Cyprus, Malta and Finland (households).

Source: Eurostat (Electricity and Gas), Teligen Ltd. (Telecommunications)

As the evolution of price dispersion indicators suggests, price convergence in network industries in the EU is not readily apparent. Furthermore, co-movements of prices (i.e. convergence in inflation rates), do not seem to occur either, as the patterns of sectoral HICP-indices in Member States (not shown here) suggest. As explained above, there may be different explanations for these disparities, one of them being incomplete market integration.

4.2.2. Cross-border mergers and acquisitions activity in network industries

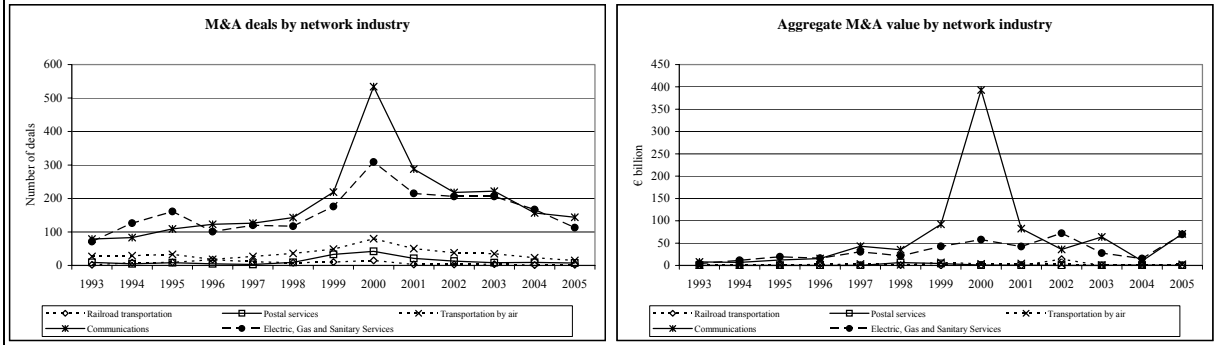
Cross-border mergers and acquisitions (M&A) are another indicator of the intensity of market integration⁶³. General positive effects that are expected from M&A include a more efficient combination and geographic allocation of company assets that should ultimately translate into benefits

⁶³ As an indicator of market integration, cross-border M&A activity is, however, imperfect, as it is strictly speaking an indicator of financial integration. Furthermore, it overlooks the possibility of anti-competitive motives behind cross-border mergers, some of which may aim to keep markets segmented and to eliminate potential or actual competitors.

for customers. Cross-border M&A in particular are also likely to lead to spillovers and to the dissemination of technological know-how. With the reduction of legal obstacles both for the establishment of firms abroad and for trade, firms have more possibilities to optimise their location choice and to supply their traditional home markets in part through cross-border trade. The intensity of cross-border M&A gives a rough indication of the extent to which the opportunities arising from lower barriers and a larger market are seized. Increased M&A activity is also indicative of firms' strategies transcending national borders. As a consequence of liberalisation and the development of the internal market, the M&A activity in EU network industries ought to have two observable effects: Firstly – following the development of new M&A opportunities, resulting from the break-up or privatisation of former monopolies – an increase in network industry M&A activity both in absolute terms and relative to all M&A activity. Secondly – as a result of lowered market barriers – an increase in the share of EU cross-border M&A deals.

In 2005, slightly less than 300 M&A deals involved EU firms belonging to network industries⁶⁴. Figure 9 (a,b) presents the evolution of M&A activity by network industry between 1993 and 2005. As shown in the left-hand panel displaying the number of deals, telecommunication and electricity, gas and water services are the network sectors in which M&A activity has traditionally been highest. The right-hand panel confirms this observation in terms of aggregated values. While the underlying trends are slightly distorted by the impact of the merger wave which characterised global M&A activity around the year 2000, M&A activity expanded over time. As one would naturally expect from the break-up and privatisation of vertically-integrated firms, the share of network industries in overall M&A deals grew considerably – from 4.3% in 1993 to 9.2% in 2005 (not depicted in the graphs). As a share of the aggregate value of M&A deals, the figure for network industries rose from 17% to 27% over the period 1993-2005. While the majority of deals covered by this analysis are of a small size, the aggregated values are typically dominated by a very few large-scale deals, often involving incumbents or major firms. For instance, about 60% of the value of M&A deals in network industries recorded in 2000 can be attributed to two cross-border deals only. These large deals also explain the year-on-year fluctuations in aggregate values.

Figure 9 a, b: Evolution of M&A activity in network industries



Source: Own calculations based on Thomson Financial Services

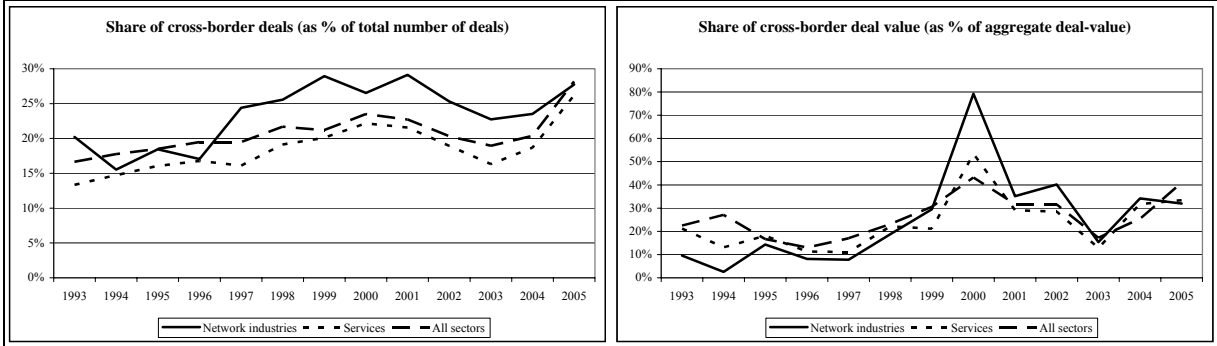
The majority of the deals that occurred in 2005 involved firms located within the same Member State. At around 25% in 2005, the share of EU cross-border deals (i.e. involving firms from two different EU Member States) in network industries was roughly equal to the share of EU cross-border deals in all sectors combined, as shown in the left-hand panel of Figure 10. This illustrates how EU cross-border M&A activity has been steadily intensifying across all sectors, from around 15%-20% in the mid-1990s to over 25% in 2005. The evolution in the services sector (including network industries), which is included here for comparison, is similar. In network industries, this increased cross-border activity developed much more abruptly in the mid-1990s and stabilised at around 25% thereafter. This sudden

⁶⁴ M&A data refer to targeted firms and include completed and pending deals. Network industries include Railroad transportation (SIC code 40); Courier services except air (SIC 4215) – referred to here as postal services; Transportation by air (SIC 45); Communications (SIC 48); Electric, Gas and Sanitary Services (SIC 49).

increase coincides with the period of discussion and the adoption of the first electricity and gas Directives⁶⁵, and the adoption of the so-called "1998 package" in the telecommunications sector.

In value terms, the cross-border M&A share has generally been higher than the cross-border share in the total number of deals (right-hand panel of Figure 10), indicating that cross-border deals generally involve large targets. The patterns for the share of cross-border M&A deals in network industries and for cross-border M&A deals in all sectors taken together have developed similarly. While an upward trend in the share of cross-border deals can be discerned, there are strong fluctuations, which can be attributed to individual deals and merger waves.

Figure 10 a, b: Evolution of the share of cross-border deals in network industries



Source: Own calculations based on Thomson Financial Services

While the trends and figures presented above include a very large number of small deals, it is instructive to complement this analysis by data on mergers with a 'Community dimension' defined in accordance with the EC Merger Regulation⁶⁶. A 'Community dimension' exists where the merged entity has an aggregate Community-wide turnover exceeding a certain threshold, of which two-thirds at most are achieved in one and the same Member State. In other words, the merged entity will have a significant presence in more than one Member State, which can have an effect on both the level and speed of market integration. As this Regulation defines mergers in a very restrictive way, the absolute number of mergers is bound to be much lower, but the trends should be comparable to those presented above. Furthermore, the definition of a merger also encompasses certain types of joint ventures, which is relevant in the telecommunications sector.

Table 5 contains data on final decisions published by the European Commission on the 439 notified mergers in network industries since 1995⁶⁷. The vast majority of them (86%) were declared compatible with the common market after the first investigation phase and without imposing remedies on the merging parties. Five per cent of notified deals were cleared after the first phase of investigation subject to remedies. Only two out of the 17 deals that underwent an in-depth second-phase investigation were actually prohibited⁶⁸, while the other 15 were cleared subject to conditions and obligations being implemented. While it is difficult to discern a clear trend in the data (which would anyway be slightly affected by EU enlargement), it seems that merger activity has been intensifying since 1995. The peak in merger activity around the year 2000 observed earlier is clearly confirmed by the data contained in the table.

⁶⁵ Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, and Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas.

⁶⁶ Council Regulation (EC) No 139/2004 of 20.01.2004 on the control of concentrations between undertakings.

⁶⁷ Network industries are defined according to the NACE classification in the following way: Electricity and Gas (40.0), Electricity (40.1), Gas (40.2), Postal Services (64.1), Telecommunications (64.2), Air transport (62), Rail transport (60.1), Water transport (61), Land transport (other) (60.0, 60.2 and 60.3).

⁶⁸ Case No COMP/M.1741 - MCI Worldcom/Sprint (Commission Decision of 28.6.2000) and Case No COMP/M.3440 – EDP/ENI/GDP (Commission Decision of 9.12.2004)

Most of the examined deals occurred in the telecommunications sector (42%), followed by electricity and gas (31% taken together). These were also the only sectors in which in-depth investigations (Phase II) were necessary to assess the compatibility of the mergers with the common market. All notified mergers in the transport sectors on which the Commission took a decision were cleared after the first phase. Detailed sectoral data are presented in Table 34 in the annex.

Table 5: Final decisions under the Merger Regulation involving firms of network industries, 1995-2006

Type of decision	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total	%
Outside scope of regulation	2	1	2	1		1		1					8	1.8
Full referral to Member State		2	1				1	2	7	1	2		16	3.6
Phase I clearance with remedies	1			2	3	5	1	1		3	4	2	22	5.0
Phase I clearance without remedies	6	13	23	28	41	42	64	43	20	27	38	31	376	85.6
Phase II clearance with remedies			1	1	1	3	3	1	2		1	2	15	3.4
Prohibition						1				1			2	0.5
Total	9	16	27	32	45	52	69	48	29	32	45	35	439	100

Source: European Commission (DG Competition website), 20/09/2006

5. Distributive effects of market opening

5.1. Distributive effects on consumers

In this section, we analyse the extent to which price changes induced by market opening in network industries have led to changes in the purchasing power of different categories of households. Often, the question is raised whether different types of households are affected differently by changes in the regulatory environment and by the liberalisation of network industries in particular. Obviously, the share of expenditure for services of general economic interest in a low-income household will be different from a household with higher income. But not only might the relative share be different, the absolute volume of services consumed may also depend on the level of income.

Where prices depend on the volume purchased, as for example in the electricity or the gas sector, this would then imply that households with different consumption levels are also faced with different prices per unit of service purchased. Last but not least, consumers also react to price changes by adjusting their behaviour. Again, the extent of this adjustment can be different for low-income than for high-income households.

All in all, there are reasons to assume that effects of market opening can vary considerably. To analyse the effects in detail, we look at five different groups of households, according to their income level. Eurostat provides information on the structure of household expenditures for five groups of households, according to their income level. The first group is composed of the 20% of households with the lowest income (quintile 1). The second quintile (Q2) refers to the next 20% of households with higher income, and so on, up to the fifth group of 20% of households with the highest income.

In the following, we present illustrative results for the electricity and telecommunications sectors. Work has also been carried out for the other network industries.⁶⁹ The overall effects are summarised in section 5.1.3 and include the effects in those sectors which are not presented here in detail.

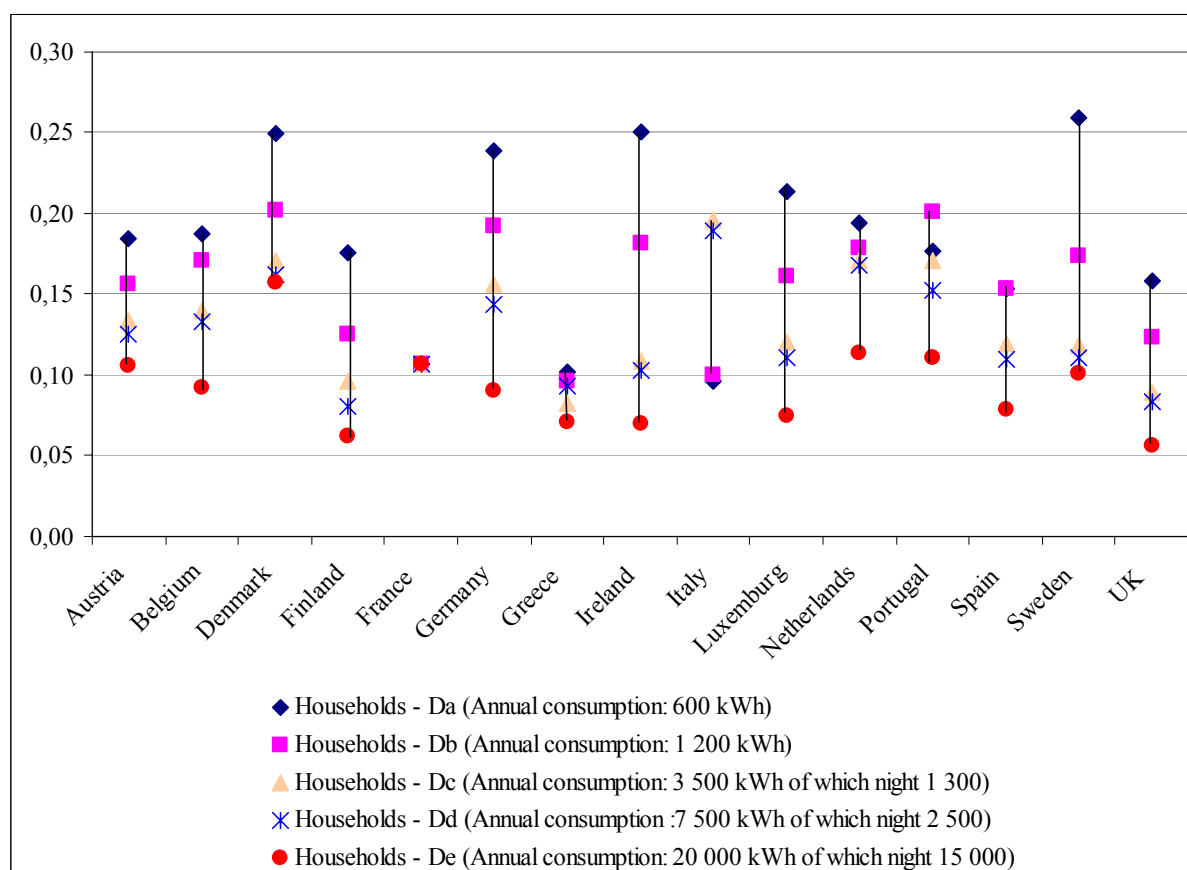
5.1.1. Electricity

In all Member States, with the exception of France, the price of electricity varies depending on the level of consumption, with lower prices linked to higher levels of consumption. To monitor developments, Eurostat has determined five levels of electricity consumption for domestic customers (categories Da – De) and collects price data for each household category in every Member State. In 2004, **electricity prices for low consumption levels ranged between 10 cents in Greece and more than 25 cents per kWh in Denmark, Ireland and Sweden** (cf. Figure 11). **For high consumption levels, prices were much closer and varied mostly between 5 and 10 cents per kWh**, with a substantially higher price charged in Denmark (15 cents).

Between 1994 and 2004, prices for electricity changed quite differently in the EU15. Looking at prices for median consumption levels (category Dc), households in Greece, Spain, Italy, Portugal, the UK and France benefited from a price reduction of between 1% and 2½% per year on average (c.f. Table 6). In other Member States, prices increased. The highest price increases have been recorded for the Netherlands and Sweden with an average of 6% increase per year between 1994 and 2004. In the case of the Netherlands, this can be at least partly ascribed to sharp increases in energy taxation over the last decade.

⁶⁹ The following sections draw on results of analysis prepared by Eurostrategies on economic effects of market opening in network industries, complemented by additional data and analysis (available on http://ec.europa.eu/internal_market/economic-reports/index_en.htm).

Figure 11: Electricity Prices 2004 by Consumption Level and Member State



Source: Eurostat

Comparing prices across Member States, we can observe that the price dispersion for lowest (category Da) and highest (category De) consumption levels did not change considerably, while **prices for the median consumption level converged substantially across Member States** (see Table 6).

Table 6: Electricity Prices 1994-2004 by Consumption Level – EU15

		1994	1999	2004
Median Price Levels for:	Low Consumption (Da)	0,186	0,192	0,187
	Median Consumption (Dc)	0,116	0,117	0,124
	High Consumption (De)	0,078	0,07	0,09
Coefficient of Variation for:	Low Consumption (Da)	23,6	22,2	25,1
	Median Consumption (Dc)	37,1	32,5	26,7
	High Consumption (De)	28,8	27,5	28,3

Note: Prices are in Purchasing Power Standards, including all taxes. The coefficient of variation describes the dispersion of prices across Member States and is given in %

Source: Eurostat

When looking at the prices charged for different consumption levels, it should be stressed that it is not accurate to take the price for low consumption as an appropriate indicator of the price charged to low-income households. Unfortunately, detailed information on the actual price level charged to low-income households does not exist. However, by dividing the overall expenditure on electricity by the maximum and minimum prices, we can estimate a range of consumption for each household category. From these results, we can then deduce the price which would be typically charged for this range of consumption. For electricity, the calculation showed that **on average, electricity consumption was somewhat higher for higher-income households than for lower-income households**. In general,

though, the difference was not so great as to lead to much different price levels. In fact, the estimates showed that for **almost all household groups in all Member States the electricity price for median consumption is the most appropriate** (consumption category Dc). But if most households are faced with the price for this consumption category, the fact that prices for this category actually converged across Member States is therefore of particular relevance: We can thus conclude that, for most households, electricity prices converged across countries between 1994 and 2004.

Changes in prices influence consumers in two ways. Firstly, the direct price effect describes the effect of price changes on total expenditure, all other things being equal. However, consumers adjust to price changes. For example, consumers may react to increases in energy prices with energy-saving behaviour. Conversely, price reductions, as observed for instance in Portugal or Spain, may well have been one reason for increased electricity consumption.

In the report on the economic effects of market opening in network industries, Eurostrategies calculated the overall change in expenditure for different household categories. The direct price effect gives an estimate of how the overall household expenditure would change if the households continued to consume the same volume of electricity as before the price change. But as described above, households react to price changes. Therefore, in the analysis, the direct price effect was contrasted with the observed change in electricity volumes consumed during the same time period. In this context, the change in volume reflects not only the consumer's reaction to the observed price changes but also other changes in volumes, e.g. due to changes in preferences.

Table 7: Effect of Changes in Electricity Markets 1994-2004 on Total Household Spending, in %

	Household Quintile with Low Income			Household Quintile with High Income		
	Direct Price Effect	+ Volume Change	= Overall Change in Expenditure	Direct Price Effect	+ Volume Change	= Overall Change in Expenditure
AT	0,75	-1,30	-0,55	0,74	-1,35	-0,61
BE	0,06	-0,03	0,03	0,04	0,25	0,29
DE	0,60	-1,25	-0,65	0,52	-0,69	-0,17
DK	1,45	-0,24	1,21	1,05	0,20	1,25
EL	-0,28	2,89	2,61	-0,15	1,64	1,49
ES	-0,47	0,86	0,39	-0,45	0,65	0,20
FI	0,80	-0,53	0,27	1,27	-1,13	0,14
FR	-0,29	0,39	0,10	-0,20	0,17	-0,03
IE	0,53	0,25	0,78	0,27	-0,13	0,14
IT	2,08	-0,96	1,12	-0,24	0,19	-0,05
LU	0,51	-1,35	-0,84	0,32	-0,51	-0,19
NL	1,53	-0,53	1,00	0,91	-0,48	0,43
PT	-0,46	0,38	-0,08	-0,21	-0,12	-0,33
SW	0,88	0,07	0,95	0,85	0,04	0,89
UK	-0,69	-0,47	-1,16	-0,23	-0,27	-0,50

Source: Eurostrategies, based on Eurostat

Table 7 shows the changes in overall household expenditure. The left side of the table refers to the 20% (quintile) of households with lowest income, while the right side refers to the quintile of households with highest income. Negative values in the column "overall change in expenditure" indicate that in 2004 households spent a smaller share of their total household outgoings on electricity than in 1994.

For example: In the case of Germany, the direct effect of price increases was countered by an even larger reduction in electricity consumption. Thus, consumers in Germany spend a lower share of their overall outgoings on electricity. In Spain, electricity prices fell between 1994 and 2004, but this price reduction was offset by an increase in volumes consumed. As a result, in 2004 Spanish households spent a larger share of their overall outgoings on electricity, despite the price reduction.

For Belgium, Denmark, Germany, Luxembourg and the UK, the share of expenditure on electricity increased less (or decreased more) for low-income households than for high income households. In the case of Germany, Luxembourg and the UK, low-income households not only reduced their expenditure share for electricity, but did so to a greater extent than high-income households.

However, in all the other Member States, electricity's share of expenditure increased more for low-income households than for high-income households. In Italy, low-income households had to face price increases that were not offset by a reduction in electricity consumption. At the same time, high-income households in Italy benefited from reduced electricity prices. Despite an increase in consumption, high-income households still spend approximately the same share of their outgoings on electricity.

5.1.2. Telecommunication services

Following the transposition of a number of EU Directives into Member States' legislation, the national markets for telecommunication services are largely open to competition. This market opening is accompanied by market analyses and the imposition of appropriate remedies by national regulatory authorities across the EU. Member States have however not reached the same level of completeness or consistency in this regard, which means that consumers have not yet reaped the full benefits of competition across the EU.

On average in the EU15, prices for telecommunications decreased by 22% between 1996 and 2004, as did the overall prices of telecommunications equipment and services. In a number of Member States, including Germany and Luxembourg, published telecoms prices declined by even more than 30%. Other Member States experienced much smaller price reductions, though still in the order of 10%, as in Belgium, Finland, the Netherlands and Spain. The price differential between overall CPI inflation and the index of telecommunications equipment and services prices is therefore very large in all countries, which has induced important behavioural changes on the part of consumers.

Table 8: Effect of Telecommunications Price Changes 1994-2004 on Total Household Spending, in %

	Household Quintile with Low Income			Household Quintile with High Income		
	Direct Price Effect	+ Volume Change	= Overall Change in Expenditure Share	Direct Price Effect	+ Volume Change	= Overall Change in Expenditure Share
AT	-0,19	2,12	1,93	-0,17	2,11	1,94
BE	-0,05	1,83	1,78	-0,03	2,58	2,55
DE	-0,66	2,16	1,50	-0,41	1,12	0,71
DK	-0,46	2,46	2,00	-0,27	1,42	1,15
EL	-0,38	2,55	2,17	-0,28	3,16	2,88
ES	-0,13	3,52	3,39	-0,13	3,49	3,36
FR	-0,35	3,39	3,04	-0,26	2,21	1,86
IE	-0,47	7,12	6,65	-0,50	2,69	2,19
IT	-0,23	4,68	4,45	-0,14	1,46	1,32
LU	-0,44	2,58	2,14	-0,29	1,68	1,39
NL	-0,05	4,90	4,85	-0,03	2,68	2,65
PT	-0,17	4,28	4,11	-0,13	3,09	2,96
SW	0,00	4,56	4,56	0,00	2,61	2,61
UK	-0,39	2,75	2,36	-0,30	1,89	1,59

Note: Data for Finland not available

Source: Eurostrategies based on Eurostat

Over the same time period we **observe substantial increases in the volume of telecommunication services consumed** (volume change in Table 8). These **results emphasise the strong elasticity of consumption to prices, as well as the effect of technological progress and changes in habits** across user categories and across Member States over the past decade.

Comparing the direct price effect between lower-income and higher-income households, we can see that the expenditure of the former was affected more by the direct price effect.

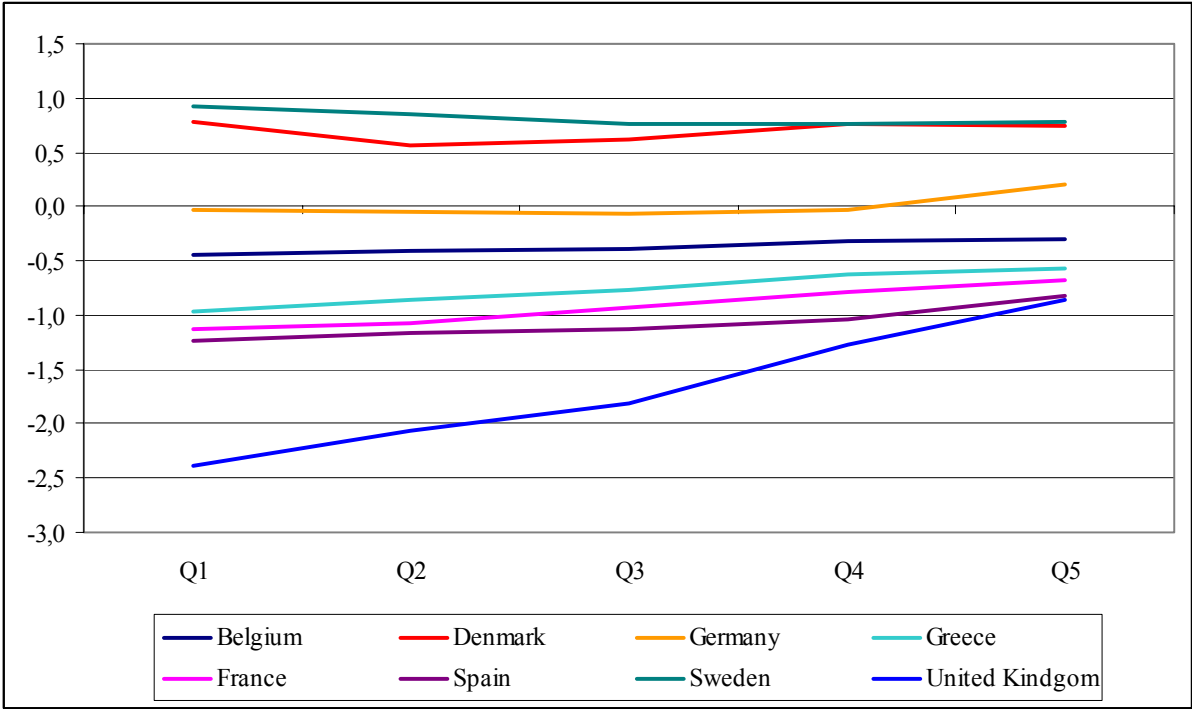
The remarkable increase in usage of telecommunication services – and mobile telephony in particular – may also be explained by the presence of club externalities: Each new subscriber benefits from accessing a group of pre-existent users, while also offering a new possibility for communication (actual or potential) to that group of connected customers. These club externalities furthermore amplify the reaction of consumers to price reduction. From Table 8 we can conclude that **households with lower income increased their consumption of telecommunication services to a much greater extent than households with high income. Thus, low-income households now spend a considerably higher share of their outgoings on telecommunication services.** The most prominent example is Ireland with an increase in the expenditure share for low-income households of 6½%, while high-income households increased their share by only 2%. In Italy, changes are similar with a plus of 4½% for low-income households and an increase of only 1½% for high-income households.

These results emphasize the strong elasticity of consumption to prices, but also the effect of technological progress and changes in habits across user categories and across Member States over the past decade.

5.1.3. Synthesis across Member States

Concluding this section, we aggregate effects over all network industries under consideration, to get an overall impression of how price changes affected different household categories. Thus, the results refer to price changes in the electricity, gas, postal, telecommunication and transport sectors. In Figure 12 and Figure 13, we display the direct price effect. The direct price effect should be interpreted as the way in which overall expenditure would have changed if consumers continued to purchase the same amount of services at the new prices. In reality, consumers of course react to price changes by adjusting their consumption patterns, i.e. they generally buy less if prices increase, or more if they experience lower prices.

Figure 12: Direct Effect of Price Changes in Network Industries for Income Quintiles – 1994-2004, in % (1)

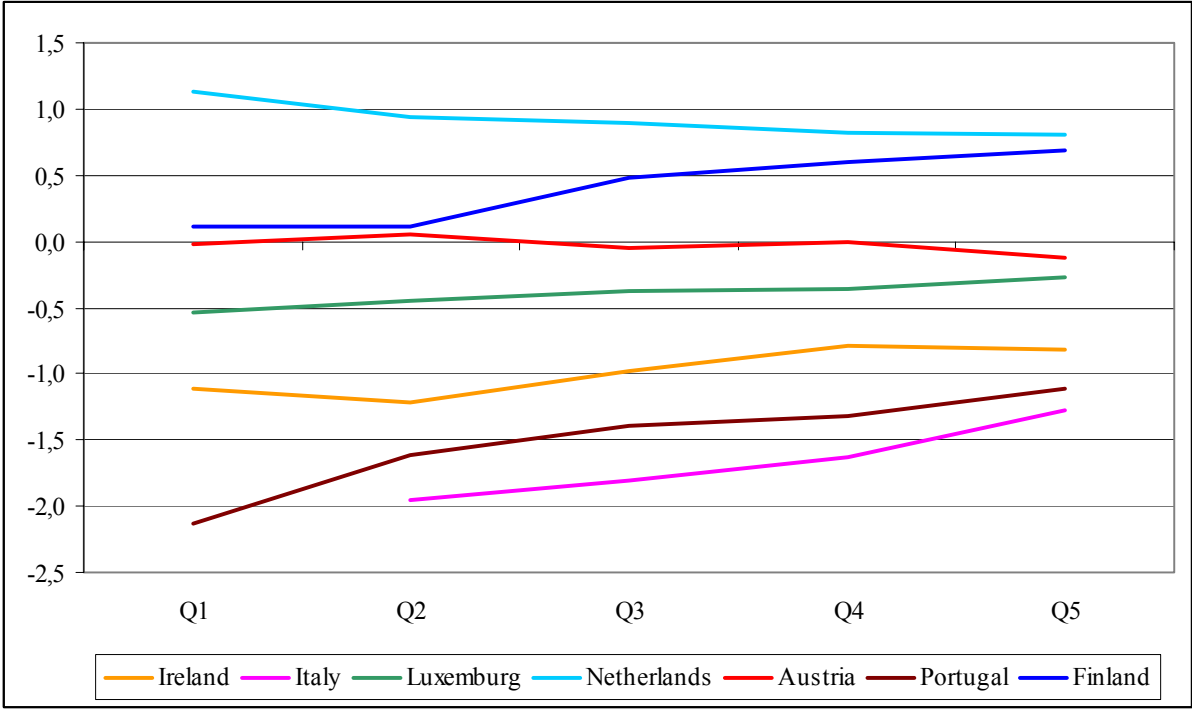


Source: Eurostrategies based on Eurostat

Values below zero indicate that households reduced the share of their expenditure on network industry services. In contrast, values above zero show an increase in the share of expenditure intended for network industry services. Furthermore, the graphs allow comparison of overall effects between different household income groups. Accordingly, the first quintile of households Q1 refers to the 20% of households with the lowest income, quintile Q5 to the 20% of households with the highest income.

The overall impression of the direct price effect is encouraging. Low-income households tend to benefit more from price cuts, as their expenditure share for services of network industries decreases to a greater extent than in high-income households. This was the case for instance in the UK, Portugal and Ireland. This result can be explained by the fact that, in general, in households with lower income, expenditure on services of general economic interest accounts for a larger share of total expenditure than in households with higher income. Low-income households therefore also benefit more from price reductions.

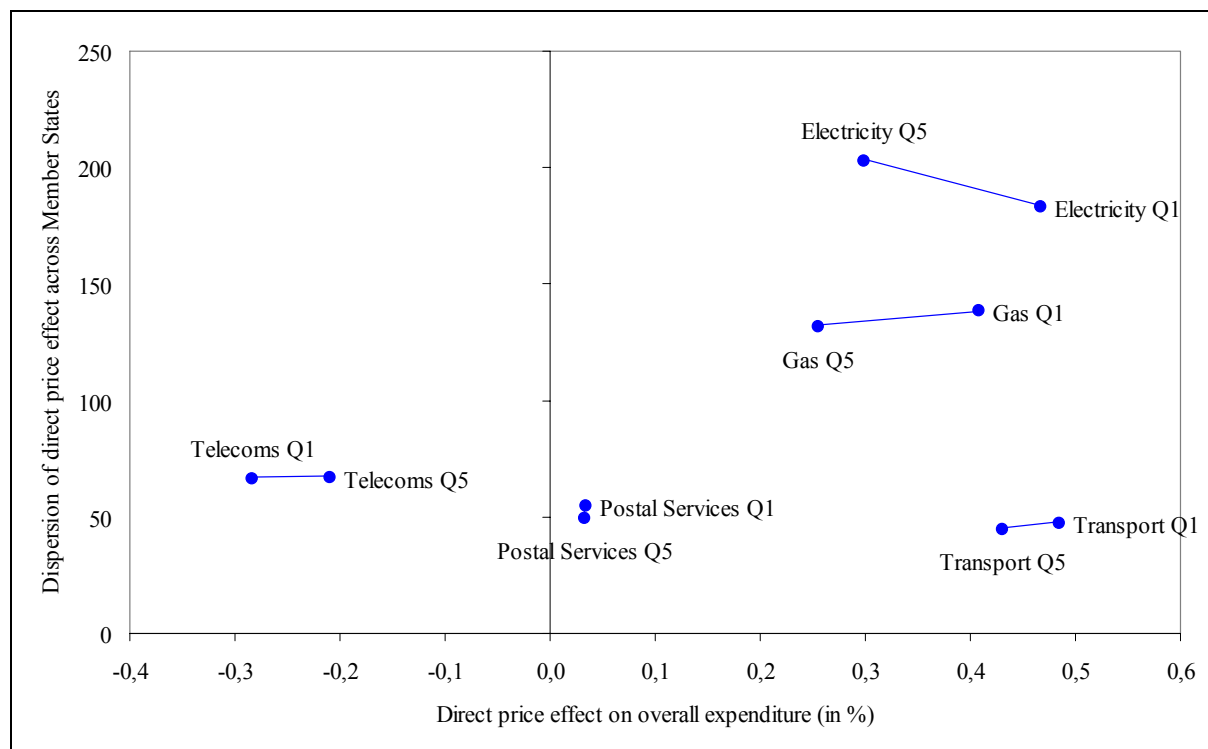
Figure 13: Direct Effect of Price Changes in Network Industries for Income Quintiles – 1994-2004, in % (2)



Source: Eurostrategies based on Eurostat

In the case of **Sweden and the Netherlands**, the same line of argument holds, but in these two Member States, all types of household faced price increases. **Low-income households were more affected by these price increases than high-income households.**

Figure 14: Direct Price Effect 1994-2004 on Expenditure, across Member States, by Service Sector and Income Quintile



Source: Eurostrategies based on Eurostat

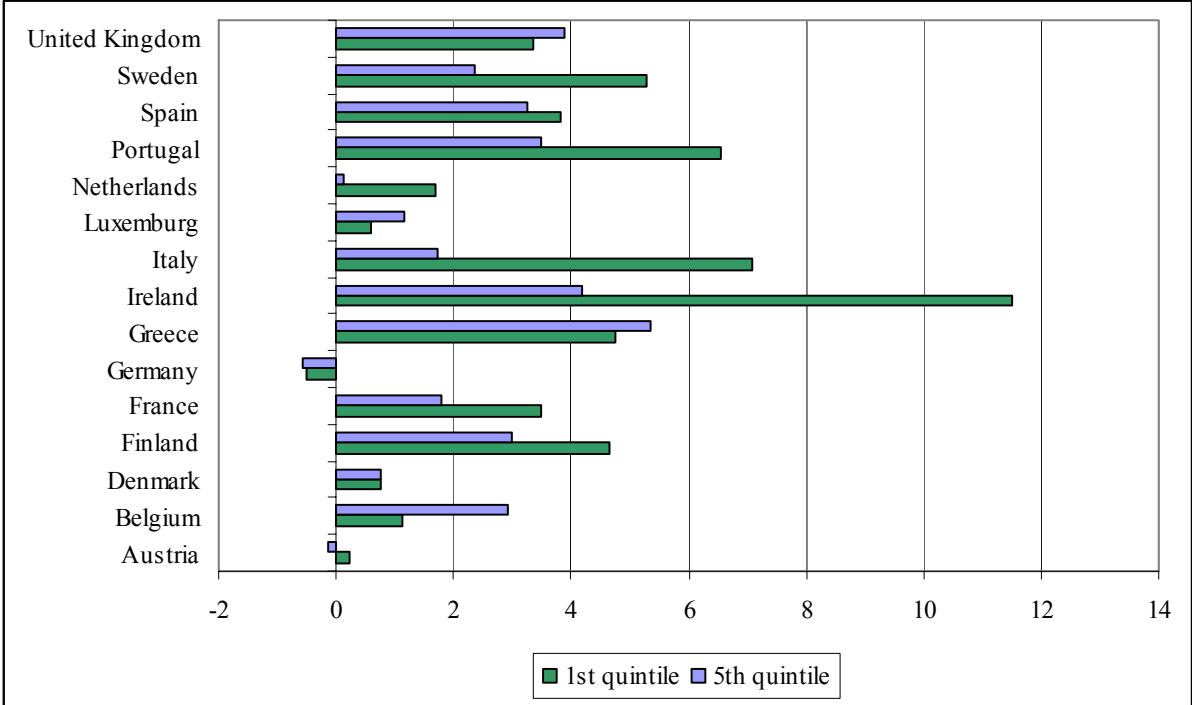
Aggregating the information across Member States for each individual sector, we get confirmation of these results (see Figure 14). **Aggregated across countries, the direct price effect is greater in all network industries for low-income households.** In the telecommunication sector, this is to the advantage of low-income households, which benefited more from the overall price reduction between 1994 and 2004. We also observe that the dispersion across Member States of these direct price effects differs between the sectors. In particular, the price effect in the gas and electricity sectors varies considerably across Member States: for instance, considerable price increases in the Netherlands contrast with slight price reductions in Italy and Spain. In these sectors, the effects also differ considerably between low-income and high-income households, as can be seen from the vertical distance between the two marks for electricity and for gas, respectively in the graph. In the telecommunication sector or in transport, price changes are rather similar across countries (less dispersion), and the difference between the income quintiles is not that big either. However, while households benefited from price cuts in the telecom sector, prices for transport services increased.

Households react to price changes by adjusting their expenditure patterns. This means that the direct price effect discussed above has to be complemented by changes in volumes purchased. The overall change in expenditure share for services of network industries takes into account these changes in volumes, which also reflect changes in technologies that had an effect on consumer preferences. As depicted in Figure 15, the overall change **implies for most of the countries an increase in the share of expenditure for services of general economic interest.** This means that while households may have reduced their consumption of electricity and gas because of price increases, this could not offset the price increase. However, **in most Member States the overall result is dominated by the radical changes in the telecommunication sector. Here, the increase in volume is not only a reaction of households to the substantial price cuts for telecommunication services, but can of course also be attributed to technological advances, new services offered, etc.**

In all the Member States, with the exception of Germany, the share of expenditure for services of general economic interest increased between 1994 and 2004. Furthermore, in a number of countries,

low-income households spent a substantially higher share of their outgoings on services of general economic interest in 2004.

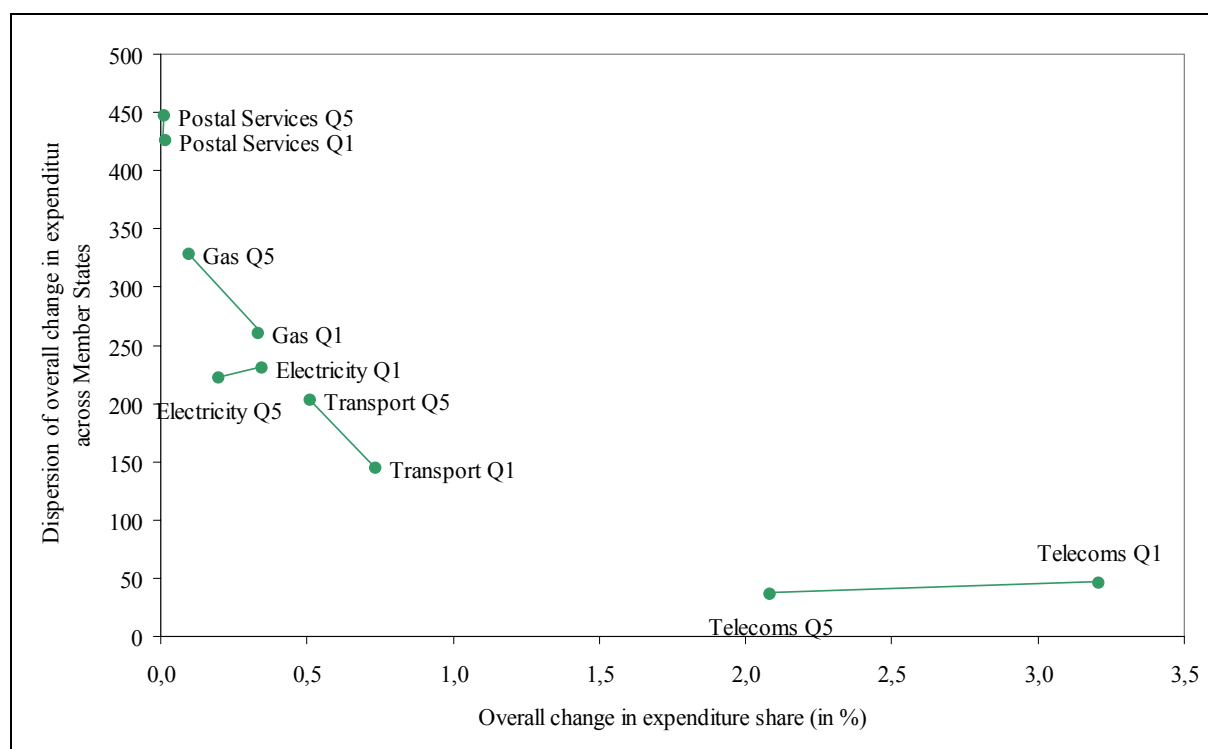
Figure 15: Overall Change in Expenditure Share for Services of Network Industries, Low and High Income Households - 1994-2004, in %



Source: Eurostrategies based on Eurostat

Figure 16 complements the analysis. As we can see, the overall change in expenditure share for telecommunication services was quite similar across Member States (low dispersion), but with considerable differences between low-income and high-income households (large distance between first and fifth quintile). The chart also reveals again that most of the increase in the share of expenditure for network industries can be traced back to the rise in expenditure for telecommunication sectors. By contrast, the overall effect in the postal sector varies a lot between countries, as indicated by the high level of dispersion. However, the overall effect on expenditure is very low, as postal services account for less than 0.3% of all consumption items (with an average of just 0.2% across Member States).

Figure 16: Overall Change in Expenditure Share 1994-2004 across Member States, by Services Sector and Income Quintile



Source: Eurostrategies, based on Eurostat

5.2. Territorial cohesion

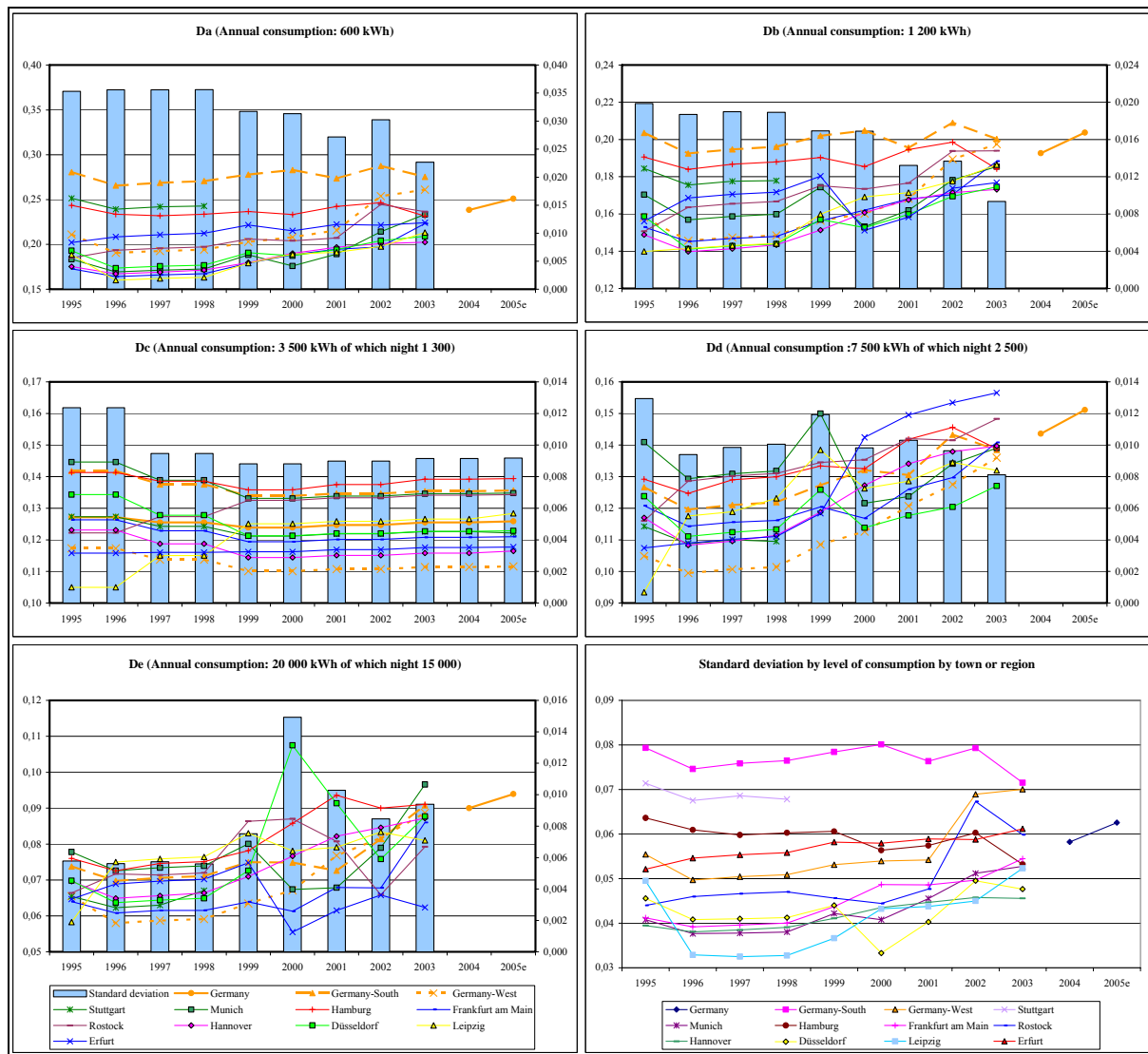
A further aspect of interest is the impact of changes in the regulatory environment on territorial cohesion. One of the objectives of government intervention in network industries has always been to contribute to territorial cohesion within the country. This could be achieved, for instance, by linking local economies through the infrastructure of network industries, but also by imposing universal service obligations, as in the telecommunication sector or for postal services.⁷⁰

5.2.1. Electricity sector

One way of analysing the territorial cohesion is to look at how prices at regional level develop over time. Did market opening in network industries contribute to price convergence within Member States? And if so, did prices converge to a higher or a lower level?

⁷⁰ This section draws on an external report (Eurostrategies). The telecommunications and postal services sectors have not been included in this part due to inconclusive results.

Figure 17: Electricity Prices by Household Categories - Germany



	Price trends across towns/regions		Price trends across level of consumption	
	AAGR % 1995-2003	AACR % 1995-2003	AAGR % 1995-2003	AACR % 1995-2003
Da	1,3%	7%	Germany	na
Db	1,5%	10%	Germany-South	0,2%
Dc	-0,2%	4%	Germany-North	2,4%
Dd	2,2%	8%	Stuttgart	na
De	2,8%	-3%	Munich	1,2%
			Hamburg	10,0%
			Frankfurt am Main	2,2%
			Rostock	2,7%
			Hannover	1,6%
			Düsseldorf	70,0%
			Leipzig	3,0%
			Erfurt	1,7%

Notes: AAGR: Average Annual Growth Rate/ AACR: Average Annual Convergence Rate. Electricity prices for households per kWh in PPS, all taxes included

Source: Eurostrategies based on Eurostat

A serious problem for this kind of analysis is the general lack of data at regional level. Furthermore, the analysis limits itself to sectors where prices differ between regions. The results presented can therefore only provide anecdotal evidence. A comprehensive overview across all Member States would be desirable, but is unfortunately not possible due to data constraints. We present below results for Germany and the United Kingdom, for which electricity prices at regional level are available. While we cannot draw general conclusions from these examples, the results are nevertheless of interest. With the UK, we have a country in which the market opening of the electricity sector has progressed the most within the EU. Germany, on the other hand, belongs to the group of Member States with a medium to high level of market opening in the electricity sector.

Figure 17 provides detailed information on electricity prices between 1995 and 2003 in Germany. Prices are again collected for five household types, with different levels of annual electricity consumption. The charts start on the top left with a household with only low annual consumption (category Da) and end with a household with high annual consumption (category De). For each of these typical households, the charts show the price levels in a selection of cities across Germany.

The lines in the graphs present the price development (left axis), while the bars illustrate price dispersion across cities for the given year (right axis). Smaller bars over time indicate converging prices, while larger bars would show diverging prices between cities.

According to the collected prices, the **opening of the electricity market in Germany was accompanied by converging prices for households across regions for three out of five consumption levels** (Da, Db and Dd). In the mid-1990s, prices per kWh were much more dispersed than in 2003. That means, for example, that for a given annual level of electricity consumption, the difference between the price charged to a family living in the south of Germany and the price charged to a family living in, say Leipzig, was higher in 1995 than in 2003. For households with low annual consumption, this resulted in a price difference of around 13 cents per kWh, while in 2003 the difference was reduced to only about 8 cents. Thus, in general, prices appear to be much more comparable across cities in Germany in 2003. The picture is different for the median and highest consumption levels: Price dispersion for median consumption levels has remained essentially unchanged since 1997; for households with the highest consumption, we observe increased divergence of prices between cities.

As for the direction of convergence, prices in less expensive regions of Germany have tended to increase faster than in more expensive regions. However, we can see that up to 2003, the **average annual increase in domestic electricity prices was rather modest**. The largest price increase was recorded for the household category with high annual consumption (average annual increase of around 3%), while price increases for lower consumption levels varied between 0 and about 2%.

Prices can also be arranged in a different way. As a first step, we have looked at specific households and compared their electricity prices across Germany. As a second step, we can also look at specific cities and compare the prices across consumption levels. In this way we can analyse price convergence between consumption levels within given cities. This provides answers to questions like whether the difference in prices per kWh for various levels of consumption decreased, stayed the same or increased. The sixth chart in Figure 17 displays the development of price convergence for German cities. The results are mixed. From the data collected, we cannot determine overall price convergence within specific cities. This means that in 2003, household electricity prices continued to depend on the level of consumption, and that within a given city price differences are more or less the same as they were in 1995.

Table 9: Electricity Prices by Industry Categories - Germany

	Price trends across towns/regions		Price trends across level of consumption		
	AAGR % 1995-2003	AACR % 1995-2003		AAGR % 1995-2003	AACR % 1995-2003
Ia	-2,0%	-2%	Germany	na	na
Ib	-1,9%	-6%	Germany-South	-0,2%	-1%
Ic	-1,2%	-12%	Germany-West	0,8%	-4%
Id	-0,9%	-12%	Stuttgart	na	na
Ie	-0,5%	-11%	Munich	-1,7%	0%
If	-0,9%	-10%	Hamburg	-3,4%	1%
Ig	-0,1%	-10%	Frankfurt am Main	-3,9%	6%
Ih	-0,3%	-10%	Rostock	1,5%	4%
Ii	0,4%	-8%	Hannover	-2,7%	1%
			Düsseldorf	-3,9%	8%
			Leipzig	1,2%	11%
			Erfurt	2,0%	-1%

Note: AAGR: Average Annual Growth Rate/ AACR: Average Annual Convergence Rate. Electricity prices for industrial consumers per kWh in PPS without VAT

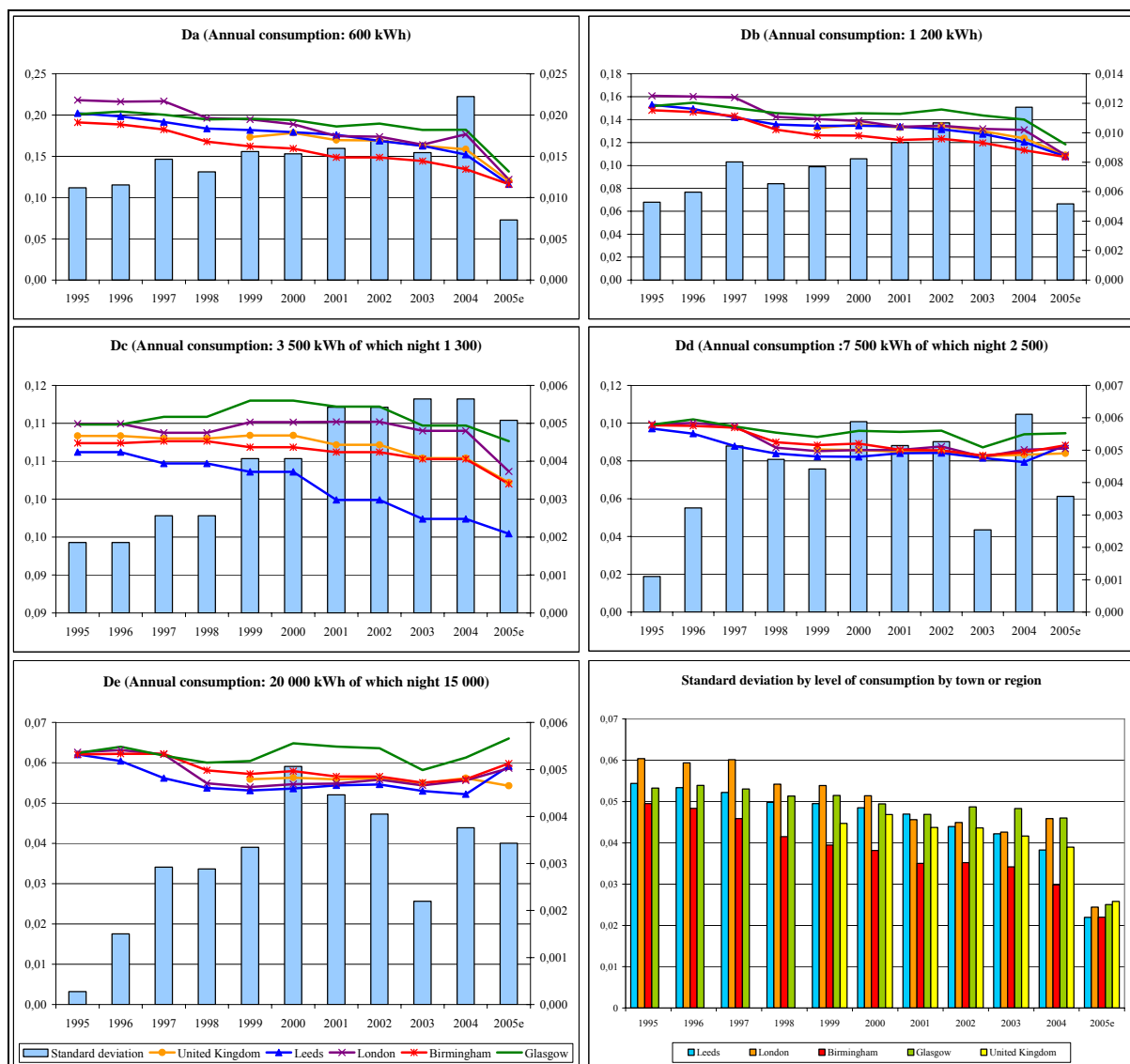
Source: Eurostrategies based on Eurostat

For **industry prices**, we can see a different picture. Table 9 summarises the development of electricity prices for industry. Again, prices are collected for different levels of consumption, from low (category Ia) to high (category Ii). The negative values for the average annual convergence rate (AACR) show that **for a given level of consumption, price differences between cities were actually increasing considerably**⁷¹. This could be an indicator that electricity companies offer tailor-made packages for certain regions and cities. At the same time, prices per kWh for industrial consumers decreased in general (except for the highest consumption category). In 2003, prices were between 0.1% and 2% lower than in 1995 (column showing the average annual growth rate (AAGR) in Table 9).

The results for Germany can be compared with statistics for the United Kingdom (cf. Figure 18). The most remarkable fact is that **in the UK, household prices for electricity fell significantly between 1995 and 2004 by up to 5% per year, in particular for households with low to medium consumption**. Furthermore, we observe that the **price difference between cities is much smaller compared to Germany**. For instance, for households with low annual consumption (category Da), in the UK the price difference in 1995 amounted to only 3 cents (Germany: around 13 cents). It is therefore important to note: **While we observe a significant increase in the level of price dispersion across UK cities, this has to be seen in the light of only minor absolute price differences**. Although at first sight the increase in price dispersion for households with medium consumption (cf. chart for category Dc in Figure 18) seems enormous, the price difference of less than 2 cents recorded in 2005 is still negligible.

⁷¹ The negative sign for the average annual convergence rate has to be interpreted as negative convergence over the years, i.e. we observe diverging prices.

Figure 18: Electricity Prices by Household Categories - United Kingdom



	Price trends across towns/regions		Price trends across level of consumption	
	AAGR % 1995-2003	AACR % 1995-2003	AAGR % 1995-2003	AACR % 1995-2003
Da	-5,0%	-1%	United Kingdom	na
Db	-3,2%	-3%	Leeds	-2,8%
Dc	-0,6%	-11%	London	-3,0%
Dd	-1,0%	-14%	Birmingham	-2,5%
De	-0,2%	-29%	Glasgow	-1,8%

Notes: AAGR: Average Annual Growth Rate/ AACR: Average Annual Convergence Rate. Electricity prices for households per kWh in PPS, all taxes included

Source: Eurostrategies based on Eurostat

The data show that for a given level of consumption, prices per kWh are similar across cities in the UK. Of course, within a given city the price per kWh depends on the volume of electricity consumed, with, as usual, lower prices for higher consumption (in 1995: 20 cents/kWh for households with low annual consumption compared to 11 cents/kWh for medium annual consumption and 6 cents/kWh for high annual consumption). The lower right-hand chart in Figure 18 shows that **prices within cities converged considerably between 1995 and 2004. In other words, the price difference per kWh between low and high consumption was reduced.**

From these statistics for Germany and the UK we are able to observe during the period of market opening in the electricity sector.

- For given consumption levels, substantial price convergence between cities in Germany, where price differences between cities were considerable in the mid-1990s. In the UK, prices did not differ between cities for given household categories, and the absolute spread did not change much;
- For households, we can observe slow price increases in Germany and a considerable price decrease in the UK;
- For industry, electricity prices in Germany were reduced over time. For given consumption levels, prices are now more dispersed between cities.

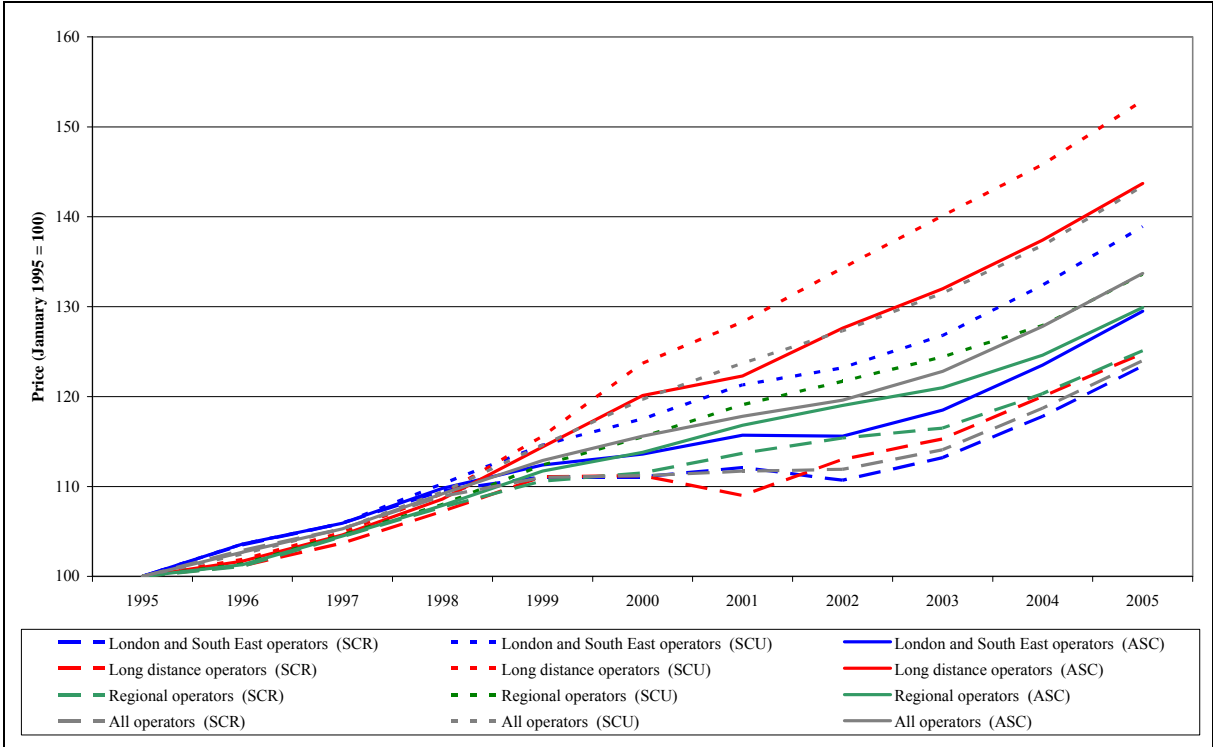
5.2.2. Rail transport

From the point of view of territorial cohesion, an important aspect of the market opening process in the rail transport sector is the transfer of rights to define and fund services from central to regional and local governments. This has recently occurred in Germany, Sweden, France and Italy, and has taken place to a more limited extent also in other Member States. This means that for short-distance travel there is now more tariff autonomy at regional and local level, since tendering processes are organised at those levels. However, the question remains whether the increased responsibilities allocated to regions and sub-regional decisional levels have been accompanied by the financial transfers necessary to ensure that regions can undertake the required investment in the infrastructure.

Unfortunately, there are almost no data available at regional level to undertake a comprehensive analysis. As a case study, data for the UK are presented, where market opening in rail transport has advanced the furthest in the EU.

Figure 19 illustrates how rail fares developed over the period 1995 to 2005, following market opening. The chart presents the trend in prices charged by railway companies for a standard-class ticket, depending on the distance and the type of operator. In the UK, the Railways Act 1993 and Transport Act 2000 gave the strategic rail authority (SRA) the power to regulate fares through its franchise agreements with the train operators. The SRA uses these powers to regulate most fares used by commuters, where rail travel has a degree of market power and it is necessary to protect the interests of rail users.

Figure 19: Development of Rail Fares – United Kingdom



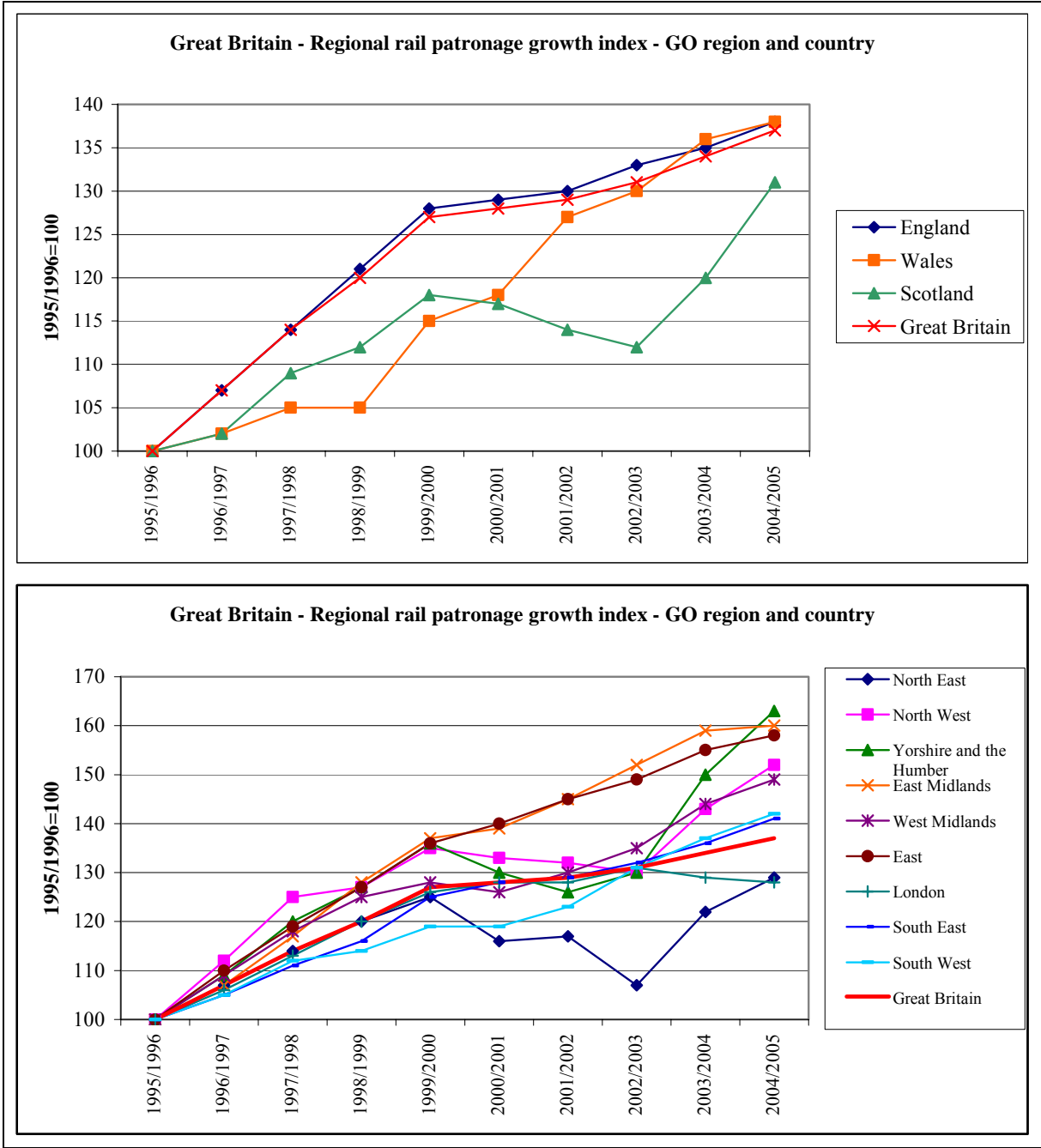
Note: SCR: Standard Class – regulated; SCU: Standard Class – unregulated; ASC: Average for Standard Class for respective operator

Source: Eurostrategies, based on "National Rail Trends Yearbook 2004-2005", UK Strategic Rail Authority, June 2005

Operators have a degree of flexibility to adjust individual fares within their fares basket by more or less than the average increase for the basket. Just over 40% of the annual £3.6 billion fares revenue comes from fares which are regulated by the SRA. The remaining 60% of fares are unregulated, and train companies are free to set these according to normal commercial considerations, but within certain boundaries. Fares which are unregulated include all first-class fares, off-peak cheap day return fares, long-distance open and advance-purchase fares, and promotional fares.

All standard-class rail fares increased annually on average by 2.9% between 1995 and 2005. As is to be expected, regulated fares developed very similarly, so that there is practically no price difference between operators. For unregulated fares, we can observe a growing disparity over the years, with long-distance operators accounting for the highest price increases.

Figure 20: Railway Usage – United Kingdom



Source: UK National Statistics, Dft 2005, Office of Rail Regulation

To provide a picture of the impact of market opening on rail passenger transport across regions, the figures below show the trend in use of railways in selected regions in the UK (see Figure 20). In this liberalised market, overall, **rail traffic has in general risen at a steady pace throughout the 10-year period** with few exceptions: In Scotland, Yorkshire and the Humber, North West and North East, railway usage declined considerably between 2000 and 2003. However, in the following two years, the same regions again registered a sharp increase in passenger numbers. All in all, **between 1995 and 2005 the overall increase ranges between 30% and 60%.**

Another illustration of the **impact of regulatory changes in the passenger railway sector** can be provided for **Sweden**. In Sweden, as in many other EU Member States, the opening of the railway sector to competition was initially concentrated on regional and inter-regional passenger services, and was only subsequently extended to long-distance travel.

Up to 2002, the state-owned incumbent SJ remained the dominant operator. SJ accounted for 73% of all railway services in terms of passenger kilometres, and for 87% of long-distance travel (more than 100 kilometres). For short-distance travel, the state-owned operator's share has fallen to 51%.

A recent report on market opening in railways by CER⁷² draws two main conclusions on market opening in the Swedish railway sector:

- “The decentralisation of responsibility for the unprofitable regional lines placed responsibility among the actors most committed to continuing and developing these lines. **The result has commonly been a revival of the services and better co-ordination with local and regional bus services.** In some cases though, it is likely that some rail services have been saved that – from a socio-economic and even environmental point of view – should rather have been replaced by bus services.”
- “For local and regional services, ticket prices have generally been reduced (at least for travellers using travel cards) when these services have become integrated in the authorities' public transportation network. In recent years, though, many local and regional authorities have been forced to increase ticket prices to improve their finance. The price increases in some inter-regional lines have been interpreted as a case for continued deregulation and the breaking-up of SJ's last monopoly rights.”

These assessments have to be complemented by the perceptions of end-users. For instance, **Swedish customers have stated** that the opening of the rail passenger sector to competition has led to **increased complexity for end-users**. This is the case in **particular for trips which involve interconnections and changes in service operators**.

5.2.3. Air transport

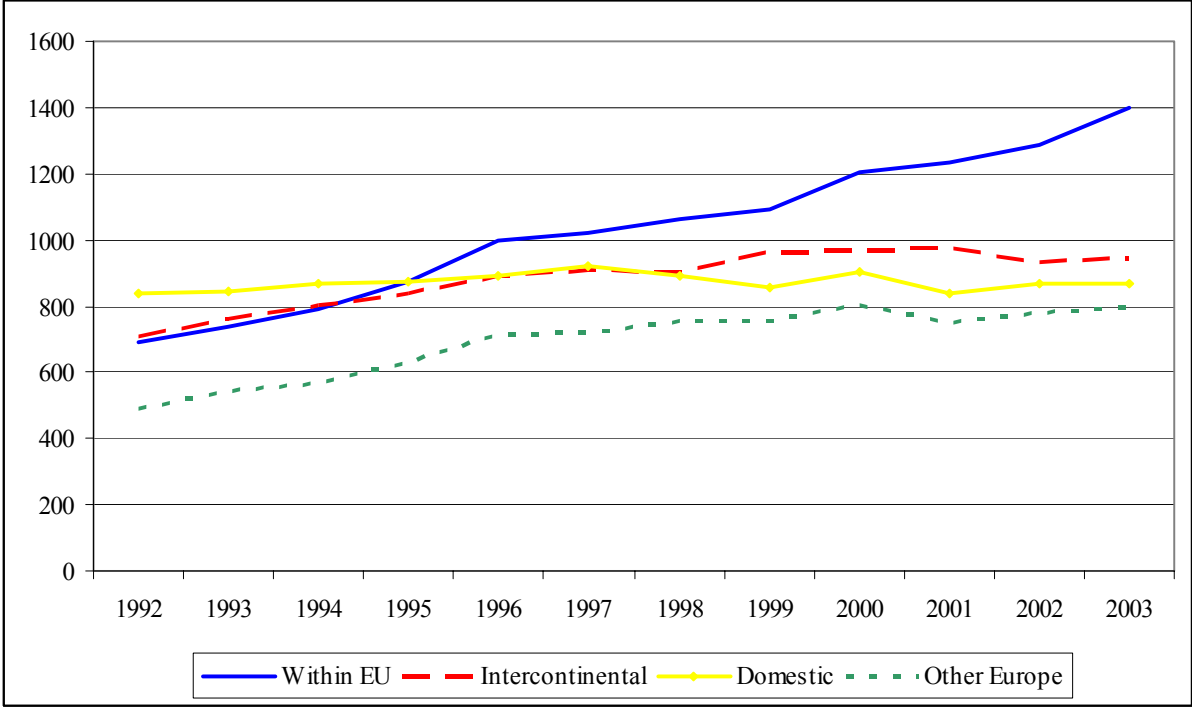
Since 1992, the **number of international non-stop city pairs operated within the European Union has increased from 692 to 1 398**. This corresponds to a **6.6% average annual increase**.

A number of European airports have grown particularly rapidly over the last three years, despite the downturn following the events of September 11, which impacted on air transport in general. Among these, Brussels Charleroi airport has grown by a factor of seven since 2000 (albeit from a small base). Frankfurt Hahn has also experienced rapid growth, while Milan Bergamo, Gerona, Rome Ciampino and Glasgow Prestwick have all doubled traffic throughput in less than three years.⁷³ Naturally, larger airports have not registered similar rapid growth in percentage terms. Nevertheless, the actual number of passengers increased substantially, too. For instance, London Stansted has added almost seven million passengers since 2000. **The common link between fast-growing airports is the presence of low-cost carriers.**

⁷² “Reforming Europe's Railways – An assessment of progress”, Community of European Railway and Infrastructure Companies CER (2005)

⁷³ "Analysis of the European Air Transport Industry 2003", European Commission DG TREN (2005)

Figure 21: Number of Non-Stop City Pairs by Destination, July 1992-2003



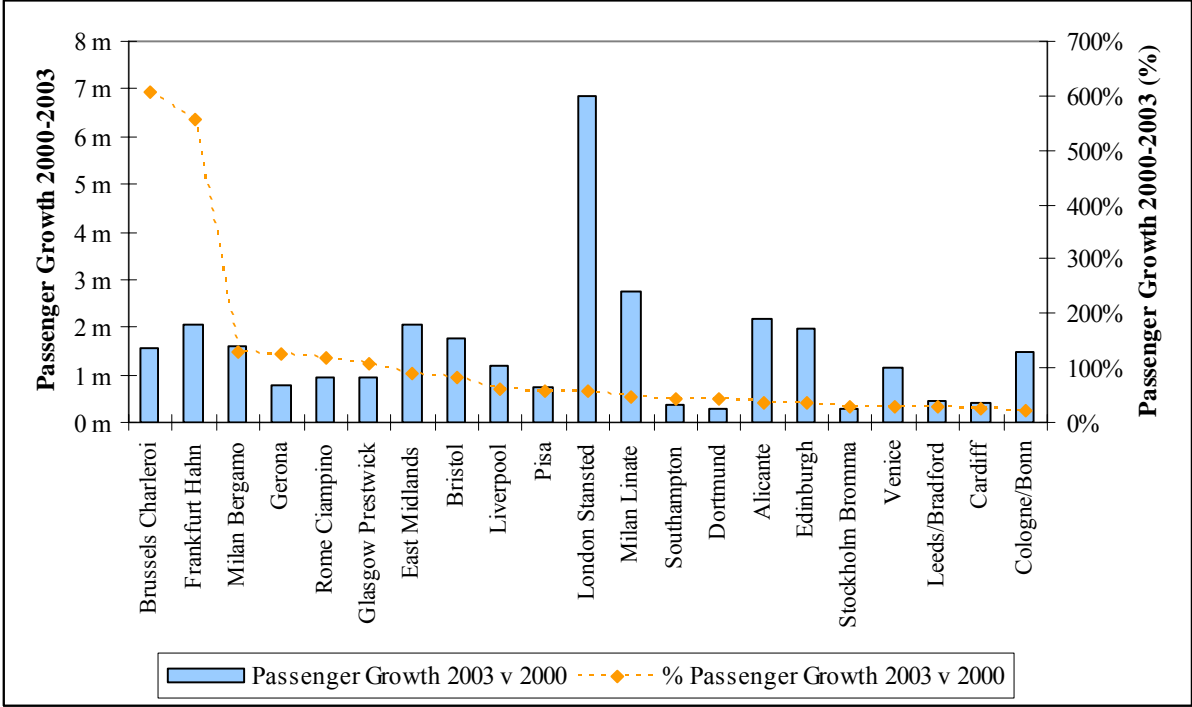
Note: OAG Schedules Data

Source: "Analysis of the European Air Transport Industry 2003", European Commission DG TREN (2005)

Low-cost airlines have, in fact, become major players in European aviation in a relatively short time span. Whereas in 1996 they accounted for only 1.4% of intra-European Union capacity, this share was more than 20% in 2003. In fact, 187 European destinations were served by at least one low-cost carrier by January 2004, and almost 650 city pairs were served by a low-cost carrier.

In fact, several of the small airports have witnessed large increases in the number of passengers arriving or departing – the rate of growth being in some cases much faster (though from clearly lower levels) than that registered in the London area.

Figure 22: Growth of major EU Airports and Passenger Growth, 2000-2003



Source: "Analysis of the European Air Transport Industry 2003", European Commission DG TREN (2005)

In summary, **territorial accessibility has been considerably enhanced** across the EU following the market opening process in the air transport sector, through the development of regional airports and rapid growth in passenger traffic from and to more varied origins and destinations.

6. Evolution of Public Service Obligation

The term public service obligation has been defined in the relevant Community legislation as the permanent and obligatory provision of a range of services easily accessible to users. Such services must also meet specified quality targets and be available at affordable prices. This obligation applies to the majority of services of general economic interest. However, the Community legislation differs from sector to sector. Public Service Obligations (PSOs) are mandatory in electronic communications, the postal sector⁷⁴ and electricity, where the possibilities for a Member State to go beyond the defined scope of PSOs are quite limited. On the other hand, the Gas Directive does not impose any mandatory PSOs (except for the protection of "vulnerable customers" (Art. 3.3)), and there are type EU-level obligations of this type in air, rail or local public transport.

In this chapter we report on how the different sectors in the EU25 comply with public service obligations in terms of accessibility (from geographical, time and social points of view), affordability and quality. As far as quality is concerned, we also present some characteristics of the services provided which are not defined as quality in the Community legislation but may well be considered as such by consumers (e.g. share of renewable energy in electricity consumption).

It must be stressed that the EU legislation lays down only the general requirements with regard to public service obligations. According to the principle of subsidiarity, Member States have wide discretion in defining the detailed specifications relating to accessibility and quality of services. This makes comparisons more difficult.

Due to a lack of reliable data, not all SGEI sectors are covered in each section. Only the latest analysis (2000-2005 whenever possible) has been done in this part, as the longer-term past results (from the early 1990s until 2000) were reported in the 2004 Horizontal Evaluation Report.⁷⁵

6.1. Accessibility of services

6.1.1. Postal services

The Postal Directive 97/67/EC has established minimum accessibility requirements for postal services:

- the permanent provision of a universal postal service at all points in the territory,
- the density of points of contact and of the access points must take into account the needs of users (postal network density),
- minimum of one clearance and one door-to-door delivery every working day have to be provided and no less than five days per week (delivery requirements).

Overall accessibility of postal services has not changed significantly. The number of postal outlets has been slightly reduced⁷⁶. However, compared to developments prior to 2002, the reduction has slowed down. Regarding the delivery requirements, the situation in most Member States has been stable within the last few years. From the available evidence, there is no clear relation between the degree of liberalisation of the postal sector and the accessibility of postal services.

According to the principle of subsidiarity, the Member States are allowed to impose more specific requirements in order to take their national context into account. As shown in Table 10, access requirements vary a lot in the EU, as 15 Member States have specified their criteria for measuring the

⁷⁴ For the postal sector, Member States are free to impose universal service obligations that exceed those agreed at the EU level.

⁷⁵ 2004 Horizontal Evaluation Report is available at the following website:
http://ec.europa.eu/internal_market/economic-reports/docs/sec-2004-866_en.pdf.

⁷⁶ Postal outlets include **post offices** operated by a Universal Service Provider and **postal agencies** operated by third parties (e.g. supermarkets, gas stations, stationery shops).

access to postal outlets, while the rest have no specifications. All these requirements are consistent with the Postal Directive obligations.

Table 10: Specific additional requirements on access to postal outlets

Requirements	Member State
No specific requirement	AT, CY, CZ, ES, FR, GR, IT, LU, MT, SE
Minimum number of postal outlets	DE, DK, LV, NL, PL, SI
Minimum distance	DE, DK, EE, HU (in towns), IE, LT, NL, SK, UK
One postal outlet per municipality	BE, DE, FI, HU, LT, LV, NL, SK

Source: WIK 2006 report

In general, independently of the geographical areas, 100% of the EU population has access to postal services.⁷⁷

When analysing the number of postal outlets in the Community as a whole, it can be seen that it decreased by 1.9% on average between 2002 and 2004 (see Table 11). The number of postal agencies has decreased more than the number of post offices (3.1% and 0.8% respectively), mainly driven by closures of postal agencies in Germany and the UK. Between 2000 and 2004, the average number of postal outlets per 10 000 inhabitants fell from 2.33 to 2.16.

Table 11 : Development of the postal network in the EU25 (2002-2004)

	2000	2002	2004	Change 2002-2004
Postal outlets	104 844	102 944	99 073	-1.9 %
of which:				
Post offices	63 226	60 536	59 566	-0.8 %
<i>Share of total</i>	<i>60.3 %</i>	<i>58.8 %</i>	<i>60.1 %</i>	
Postal agencies	41 723	42 144	39 600	-3.1 %
<i>Share of total</i>	<i>39.7 %</i>	<i>41.2%</i>	<i>39.1%</i>	
Postal outlets per 10,000 inhabitants	2.33	2.27	2.16	

Source: WIK 2006 report

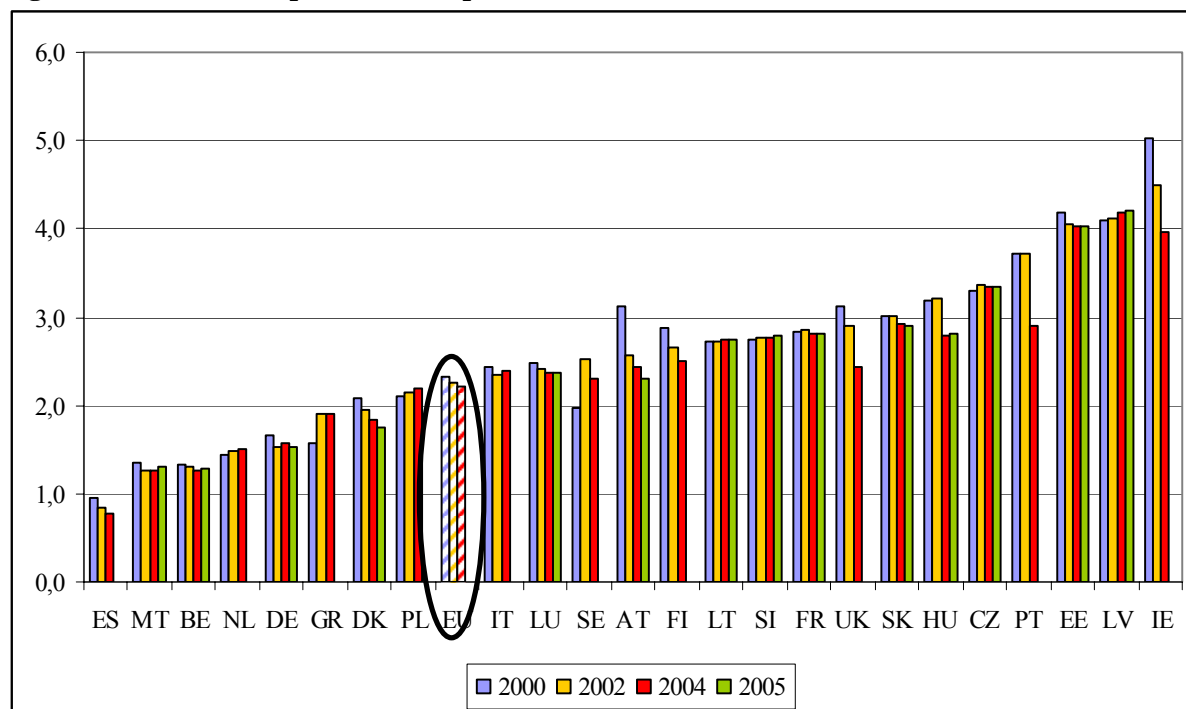
With regard to the density of the postal network per Member State, there are eight countries (ES, MT, BE, NL, DE, GR, DK and PL) that have fewer postal outlets per 10 000 inhabitants than the EU average (= 2.16), Spain being the Member State with the least dense network of postal outlets (Figure 23). However, the Spanish Universal Service Provider makes use of mobile post offices. This means that the postman offers postal services at the premises of the customer to improve the coverage.

The number of postal outlets per 10 000 inhabitants increased in GR, LT, PL and SE between 2000 and 2005, while the biggest reduction can be observed in ES, DE, DK, AT, FI, UK, HU, PT and IE. In general, the reduction of postal outlets is stronger in those countries whose supply of postal outlets per inhabitant is relatively high (e.g. IE, PT, HU, UK, FI, AT).

In a majority of the ten new Member States, the number of postal outlets per 10 000 inhabitants has remained the same or even increased (CZ, LT, LV, MT, PL and SI), although a decrease can be observed in EE, HU and SK.

⁷⁷ Based on the Universal Postal Union statistics, 2004 data.

Figure 23 : Number of postal outlets per 10 000 inhabitants



Note: CY – is not included owing to its extremely high number of postal outlets per 10 000 inhabitants⁷⁸
 Source: WIK 2006 report

As regards the delivery requirements, the situation in most Member States has not changed significantly over the last few years. This is also the case for those countries with more or completely opened postal markets (notably DE, ES, NL, SE and UK).

As shown in Table 12, there are in some Member States more deliveries per week than required by postal legislation. Four countries (ES, LT, LV and SI) deliver postal items 6 days per week in urban areas and 5 days per week in rural areas. In ten Member States (BE, CY, DE, FR, LT, LU, LV, MT, PL, PT) there are no exceptions from the delivery requirements. In most of the remaining Member States, less than 1% of the population is subject to exceptions from the legally required frequency and the delivery at their premises. ES, GR and HU are the countries where more than 1% of the population is subject to exceptions. The reasons for introducing these exceptions are particular geographic circumstances combined with very low mail volumes to be delivered in rural areas.

Table 12: Delivery requirements for delivery of postal items (2006)

MS	Deliveries per week required	Deliveries per week in practice	Exceptions from required delivery frequency (% of population)	Exceptions from delivery at the premises of the addressee (% of population)
AT	5	5	No	Yes (1 %)
BE	5	5	No	No
CY	5	5	No	No
CZ	5	5	No	Yes (0.12 %)
DE	6	6	No	No
DK	6	6	Yes (0.008 %)	Yes (0.008 %)

⁷⁸ Cyprus is a special case as around 95% of the postal outlets are so-called agents owning small businesses. Besides providing basic postal services these agents are also responsible for delivery and collection of mail in the respective villages. This is the reason why Cyprus has by far the highest number of postal outlets per 10 000 inhabitants (15.5 in 2004).

MS	Deliveries per week required	Deliveries per week in practice	Exceptions from required delivery frequency (% of population)	Exceptions from delivery at the premises of the addressee (% of population)
EE	5	6	Yes (0.01 %)	Yes (0.005 %)
ES	5	5 in rural areas 6 in urban areas (80 % of pop.)	No	Yes (5 %)
FI	5	5	Yes (0.005 %)	No
FR	6	6	No	No
GR	5	5	Yes (USP: 3 %; NRA: 7 %)	Yes (NA)
HU	5	5	No	Yes (1.79 %)
IE	5	5	Yes (0.02 %)	No
IT	5	6	No	NA
LT	5	5 in rural areas 6 in urban areas	No	No
LU	5	5	No	No
LV	5	5 in rural areas 6 in urban areas (90 % of pop.)	No	No
MT	5	6	No	No
NL	6	6	No	NA
PL	5	5	No	No
PT	5	5	No	No
SE	5	5	Yes (0.026 %)	No
SI	5	5 in rural areas 6 in urban areas (70 % of pop.)	No	Yes (0.85 %)
SK	5	5	Yes (0.01 %)	Yes (0.2 %)
UK	6	6	Yes (0.02 %)	Yes (NA)

Source: WIK 2006 report

6.1.2. Telecommunications

Member States must ensure that a minimum set of services, defined by Directive 2002/22/EC at EU level, are made available to all end-users in their territory, irrespective of geographical location and at an affordable price, the level of which is left to the Member States to decide.

The following services are treated as a minimum requirement:

- provision of access at a fixed location upon reasonable request, to enable users to make and receive local, national and long-distance call and fax communications, and to enable them to have functional internet access;
- the provision of at least one comprehensive directory which is updated at least once a year and one directory enquiry service comprising the numbers of all fixed and mobile subscribers who so wish;
- the availability of public payphones over the whole territory;
- users with disabilities must have access to the same services at an affordable price.

Overall telephone access in the EU has been stable at the historical maximum level of 97%. A slight decreasing trend has been observed for fixed telephones, mainly due to their substitution by mobile phones. The mobile sector has shown an increasing trend in all EU Member States, with particularly strong growth in the new Member States. There have been positive developments in facilitating access to telephone services for users with disabilities but there is scope for improvement.

In terms of "social accessibility" in telecommunications, there are two indicators used and specified by some Member States: access to these services for people with disabilities (who constitute about 15% of the European working population), and the special tariff for people on low incomes or with special social needs. Public payphones have wheel chair access in most Member States. However, payphones

in some Member States are not equipped for blind and deaf users. A number of Member States (CY, UK, ES, AT, HU and BE) also provide special tariff options for these target groups.⁷⁹

Regarding overall accessibility to telephone services, as presented in Table 13, almost all EU households (97%)⁸⁰ had access in 2005, 61% have both fixed and mobile phones and 36% have only mobiles or only fixed. 80% of households have at least one mobile phone subscription, while 78% have at least one fixed line. Only 15% of households use public payphones, the main reason being when the mobile phone is out of credit, out of battery or out of range.

Table 13 : Penetration rates for key electronic communication services (survey results)

	Average proportion of EU households		
	2006 (EU 25)	2004 (EU 15)	2002 (EU 15)
Overall telephone access (fixed and/or mobile)	97%	97%	97%
Mobile telephone access	80%	81%	77%
Fixed telephone access	78%	82%	85%
Both fixed and mobile telephone access	61%	66%	
Mobile but no fixed telephone access	18%	15%	12%
Fixed but no mobile telephone access	18%	16%	20%
Usage of payphones	15%	19%	23%

Source: E-Communications household survey, July 2006 (fieldwork: December 2005); Telecoms Services Indicators 2004 (fieldwork: end 2003, beginning 2004), Telecoms Services Indicators 2002 (fieldwork: second half 2002), all three surveys were conducted for the European Commission, DG Information Society

The table also shows the results for 2004 and 2002. Overall telephone access throughout the EU has been constant since 2002.

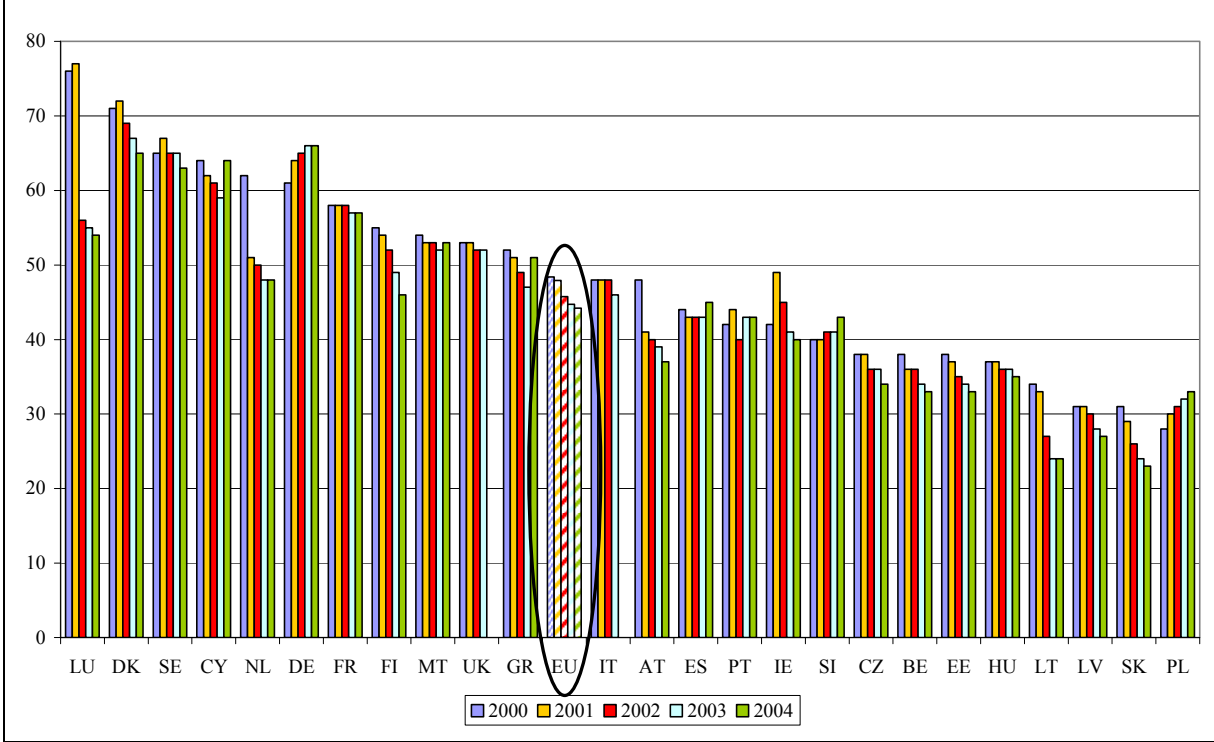
Figure 24 presents the evolution of the number of fixed telephone lines per 100 inhabitants in the EU since 2000. In five Member States (CY, GR, ES, SI and PL), we can observe increases in the number of lines in 2004 in comparison to 2003, although the number has been fairly stable when compared to 2000 data, except in Poland where the number of telephone lines has been constantly growing.

For the rest of the Member States, the fixed lines trend is quite stable or slowly decreasing, mainly due to substitution by mobile phones.

⁷⁹ There is no information on the remaining Member States.

⁸⁰ Based on the "E-Communications household survey" - a special Eurobarometer survey conducted by TNS Opinion & Social between 7 December 2005 and 11 January 2006 to measure the attitude of European households and individuals towards fixed and mobile telephony, Internet access, TV broadcast services, bundled offers, 112 emergency call number, spam and viruses. About 1000 face-to-face interviews took place per country. The respondents, aged 15 years and over, are representative of the total population, based on the sampling methodology defined as part of the standard Eurobarometer survey. The results are available at: http://ec.europa.eu/information_society/policy/ecomm/info_centre/documentation/studies_ext_consult/index_en.htm

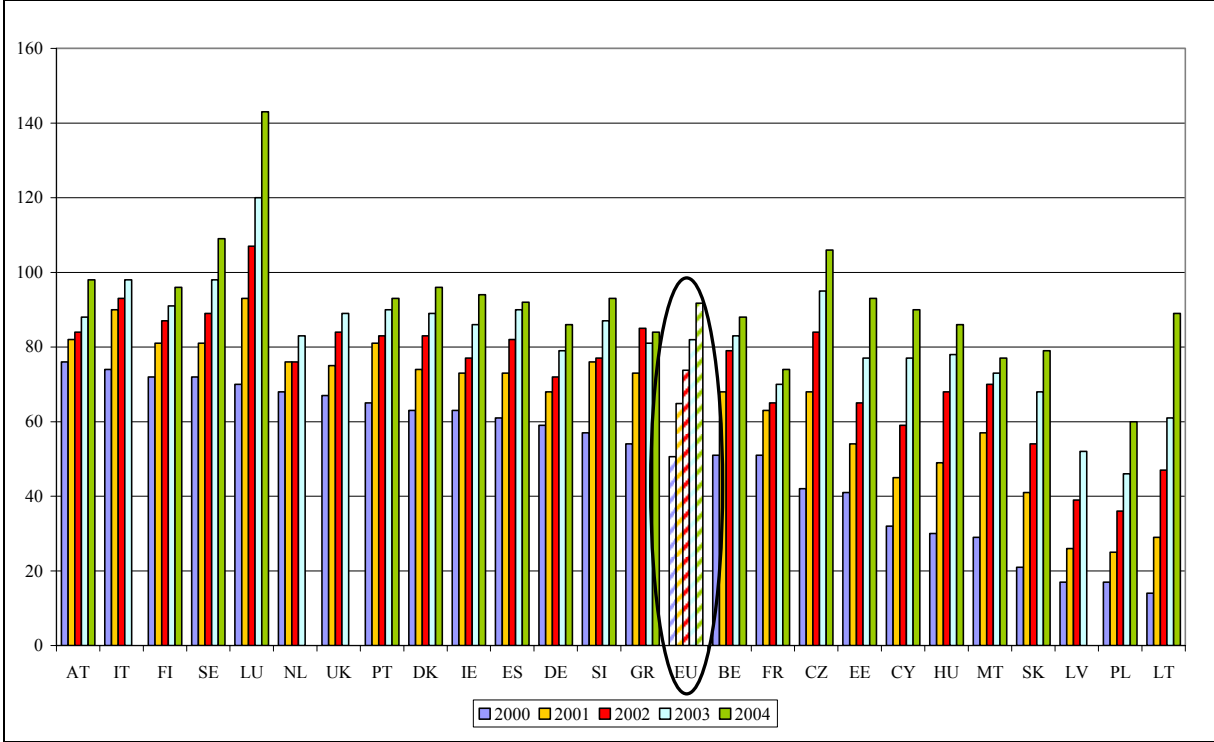
Figure 24 : Number of main telephone lines per 100 inhabitants



Source: Eurostat

The number of mobile phone subscriptions grew constantly in all EU Member States between 2000 and 2004 (Figure 25). The EU average increased from 51% in 2000 to 92% in 2004.

Figure 25 : Subscriptions to mobile phones per 100 inhabitants



Source: Eurostat

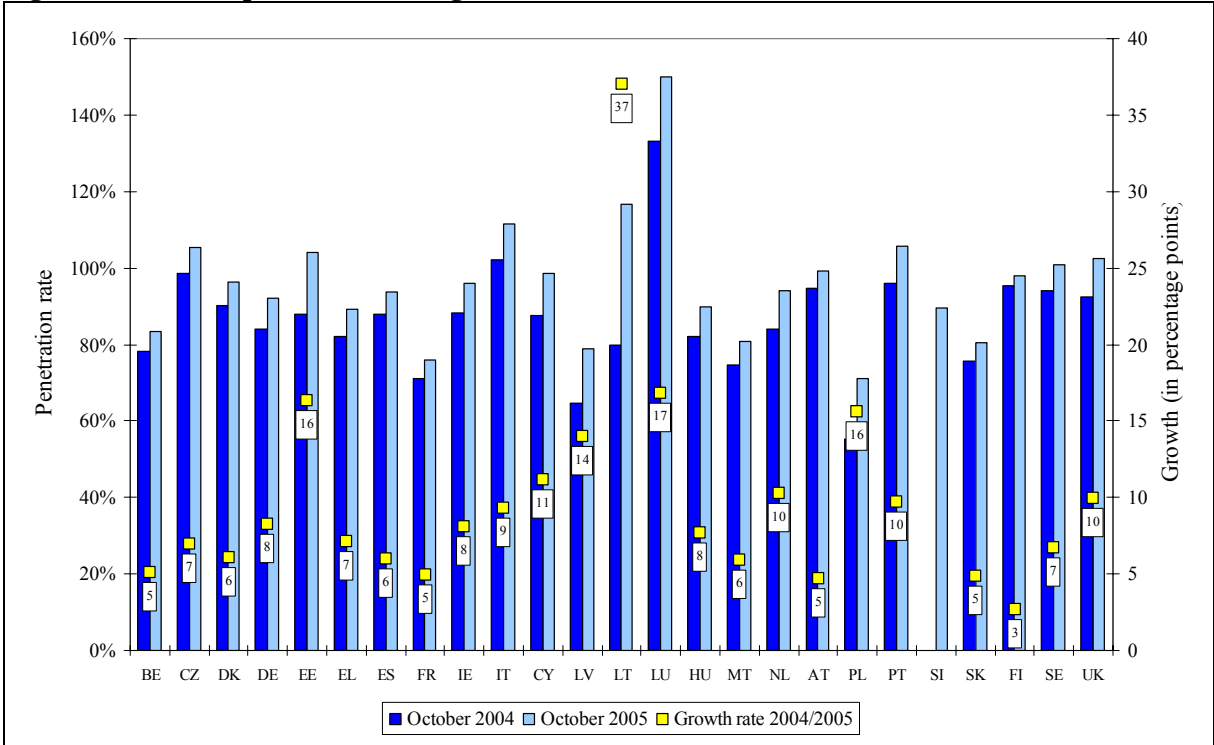
The average EU25 penetration rate of mobile phones continued to grow in 2005 and reached 92.8% of the EU population, which represents 426 million subscriptions. Growth for 2005 was higher than for

the previous year, mainly due to faster growth in the new Member States. For the EU15 the growth in penetration was relatively slower, which is to be expected in a mature market.

A number of Member States have surpassed the 100% penetration mark for the first time. Figure 26 shows that there are eight Member States (IT, LU, PT, SE, UK, CZ, EE and LT) that have penetration levels higher than 100%.

A penetration rate in excess of 100% is purely theoretical: some customers have both a business and a private mobile number, some have extra SIM cards for data, or acquire cards while travelling in other Member States, while some buy additional SIM cards in order to benefit from more advantageous new tariffs. However, the penetration rate is still a very strong indicator of the importance of mobile telephony in Europe’s economy.

Figure 26 : Mobile penetration and growth 2004-2005



Note: 3G subscribers are included
BE, CZ, DK, EL, ES, NL, UK: July 2004-July 2005; Luxembourg: The penetration rate has been calculated on the basis of the national population only, without including transnational commuters; Sweden: The figure for 2004 has been adjusted to allow comparison with 2005.
Source: 11th implementation report

Among the 10 new Member States, Lithuania had the highest growth in usage of mobile phones between 2004 and 2005 - 37%. Poland also registered very strong growth at 16%, together with Estonia, Latvia and Cyprus. In the EU15 Member States, Luxembourg had growth of 17%, followed by the Netherlands, Portugal and the UK with growth of 10 percentage points in penetration.

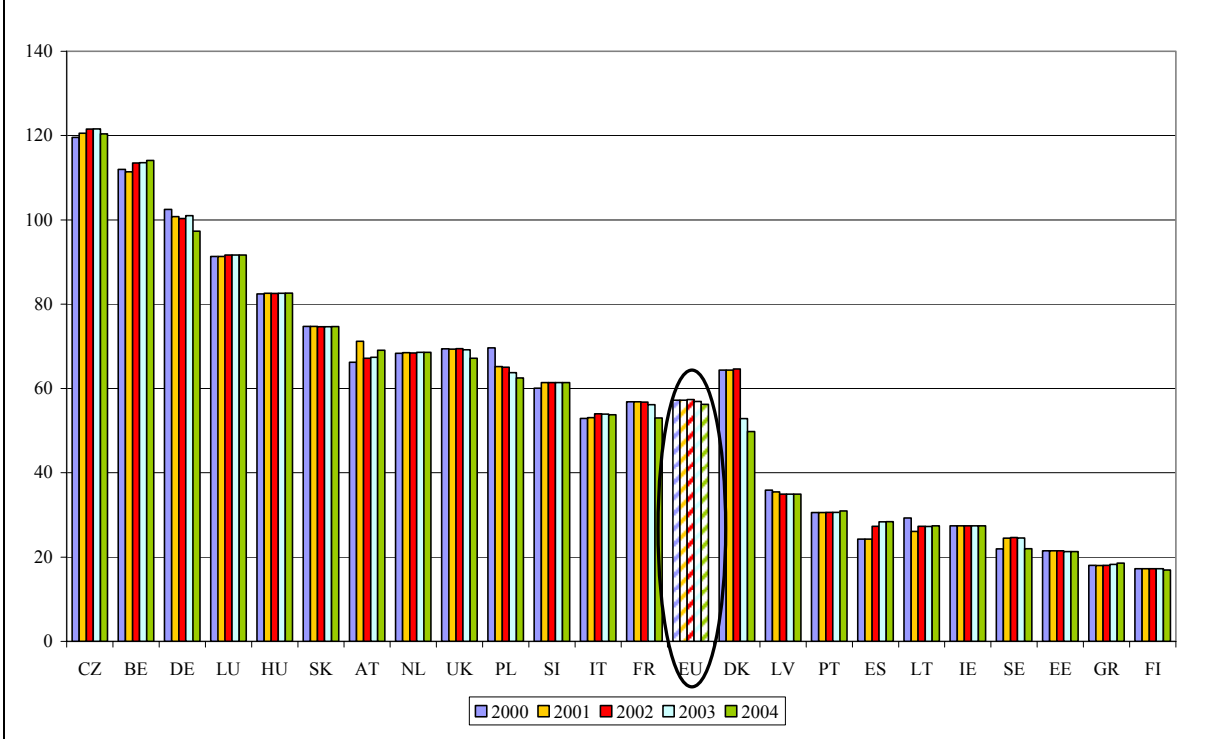
6.1.3. Rail transport

The accessibility of rail transport can be measured using the following indicators: density of railway lines and stock of passenger transport vehicles. There are no agreed reference or target values for these indicators.

Rail density at the EU level has not changed greatly since 2000, while the stock of rail vehicles decreased by 14% between 2002 and 2005. In connection with constant capacity of rail transport, it can thus be a sign of technological change rather than worsening accessibility.

As shown in Figure 27, railway density has been fairly stable in most Member States since 2000. It decreased the most in Denmark, Poland and France between 2000 and 2004, respectively by 23%, 10% and 7%. The highest increases were observed in Spain (17%) and Austria (4%).⁸¹

Figure 27 : Railway lines density (2000-2004)



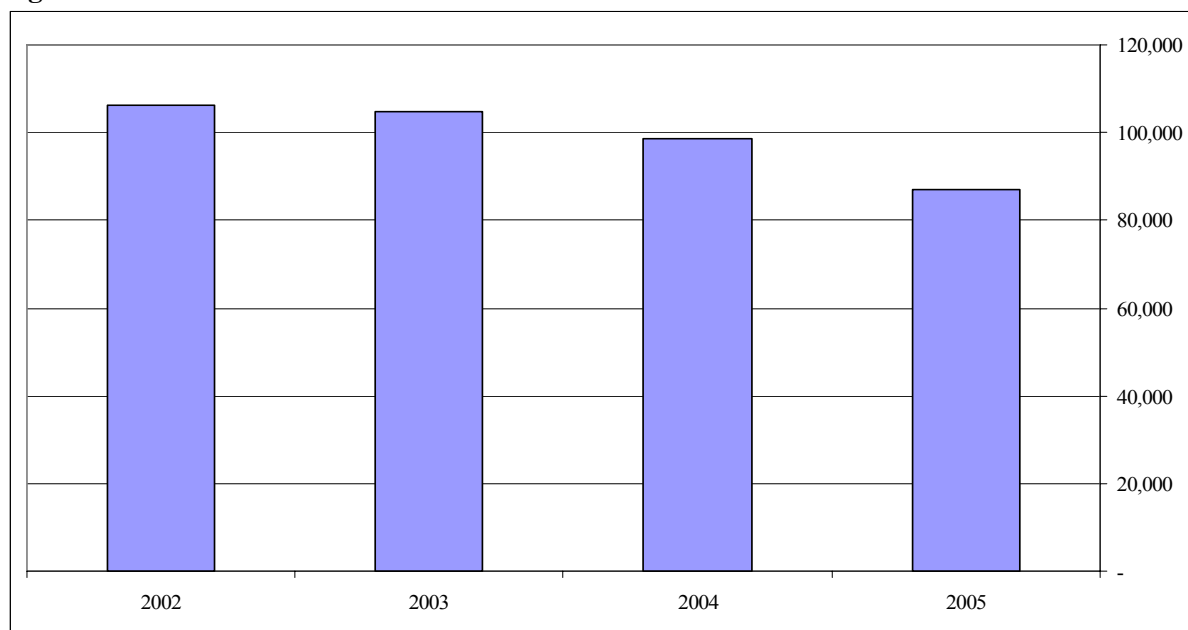
Source: own calculations based on Eurostat and UIC (length of lines/area – km/km²)

The total stock of rail passenger transport vehicles has been slowly decreasing - by 18% between 2002 and 2005 (Figure 28). This has not, however, been followed by a decrease in the capacity of passenger vehicles measured by the number of seats or a decrease in the number of passengers using rail transport⁸². The falling stock numbers can therefore be explained in part by technological improvements, e.g. introduction of double-decker trains.

⁸¹ It is worth mentioning that accessibility can often be ensured by other modes of transport, especially where the local train connections are replaced by bus connections; however, no detailed analysis of this has been done in the report.

⁸² Based on the Eurostat data.

Figure 28 : Stock of rail vehicles – EU total



Source: Statistical pocketbook 2005: EU Energy and transport in figures, and UIC

As shown in Table 14, rail stock decreased the most in Germany, the Netherlands and the UK, while the highest increases were seen in Hungary and Ireland.

Table 14 : Rail: stock of passenger transport vehicles (coaches, railcars, trailers)

Country	2002	2003	2004	2005
Austria	3 294	3 195	3 468	3 160
Belgium	3 413	3 358	3 292	3 251
Czech Rep.	5 103	5 085	4 985	4 425
Denmark	1 697	1 538	1 525	1 473
Estonia	203	251	243	
Finland	1 030	1 060	1 029	1 084
France	15 685	15 553	15 627	15 879
Germany	21 556	20 992	15 288	
Greece	660	457	514	
Hungary	3 376	3 015	3 396	5 359
Ireland	419	405	405	581
Italy	11 007	10 813	10 277	10 212
Latvia	597	579	535	
Lithuania	509	480	475	467
Luxembourg	151	150	211	188
Netherlands	2 832	2 758	2 802	852
Poland	8.965	8 818	8.658	7 725
Portugal	1 253	1 233	1 150	
Spain	4 345	4 408	4 473	
Slovak Rep.	2 189	1 984	1 797	1 759
Slovenia	482	432	403	423
Sweden	634	1 251	1 251	
UK	16 981	16 982		10 746

6.1.4. Energy

In all Member States, the electricity distributors have an obligation to connect consumers (and SMEs in some Member States) to their distribution networks. Since accessibility defined as connection to the electricity grid is not a major issue, this part deals with the issue of “social accessibility”. This includes, for example, safeguards to protect vulnerable consumers, together with appropriate measures to help them avoid disconnection (e.g. if they are unable to pay). There are no data on vulnerable gas consumers.⁸³

Some Member States have established indicators for certain universal service standards and vulnerable customers. It is, however, difficult to draw general conclusions owing to data incompleteness.

The applicable EU directives offer no definition of vulnerable consumers. As can be seen from Table 15, approximately half of the Member States have prepared a definition of vulnerable consumers.

Table 15 : Definition of vulnerable consumers

Country	Definition
Belgium	Consumers with an income below a pre-defined minimum threshold (eligible for social benefits) and consumers with demonstrated inability to pay
Greece	Families with more than three children
France	Consumers with annual wages below €5 520 (eligible for social benefits)
Hungary	“Poor/indigent” consumers (eligible for social benefits)
Ireland	Consumers vulnerable to supply interruption (e.g. life support) and those who have special communication requirements
Italy	Consumers vulnerable to supply interruption (e.g. life support)
Malta	Households eligible for social benefits
Poland	Consumers vulnerable to supply interruption (blinds, deaf and other disabled persons)
Slovakia	Decision on vulnerability at the discretion of social services
United Kingdom	Consumers who have special communication requirements and consumers in difficulty with paying their bills.

Source: ECORYS, "General policy towards Services of General Economic Interest and Consumer Protection in the Energy Sector ", Interim report for DG Energy and Transport, February 2006

Half of these countries identify vulnerable customers on the basis of income levels. Ireland and Italy put special emphasis on the protection of consumers who rely on energy for life support. Irish and British regulations additionally include provisions for consumers with special communication requirements.

With regard to income support and social tariffs, five of the eleven countries that identify vulnerable consumers provide for social tariffs. In addition, Spain (where vulnerable consumers are not defined as such) provides a very cheap low-usage rate which can be considered a social rate. Portugal provides a subsidised tariff for consumers with low consumption levels as well.

The remaining countries determine eligibility for social tariffs by means of income indicators. Interestingly, in Hungary, instead of a social tariff consumers are entitled to a social welfare allowance for electricity consumption.

⁸³ However, there are no general obligations regarding the usage of gas as an energy source for private households.

6.2. Affordability

Affordability indicators give an idea of the budgetary effort that households have to make to pay for some services of general economic interest. Similarly to the analysis carried out in the 2005 Horizontal Evaluation Report, this year's analysis will compare the affordability of services of general economic interest in the EU15 and in the ten new Member States. The reason for such grouping is a similar pattern in affordability within each group of countries. Due to data constraints, the analysis will be limited to affordability levels for low-income households in the electricity and gas sectors.

Box 2 : Calculation of affordability indices

Affordability is estimated using an index which gives the percentage of annual income a consumer has to pay to enjoy a year's fixed provision of a certain service (electricity and gas provision are analysed in this year's report).

For income data, the risk-of-poverty thresholds for one-person households were used (different from last year when the mean total net income per capita for low and average income customers was used). The risk-of-poverty rate is defined as the share of persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers). Therefore, the indices correspond to the 'low-income consumer'. As for household size, the Eurostat data from 1999 on the average household size for each Member State are used. Further details are provided in the respective sub-sections.⁸⁴

Note that a decline in the index represents an improvement in affordability. As the availability of reliable data is very poor, the index is a rough estimation of a trend rather than a reflection of reality, and does not take into account changes in consumption.

Even though the methodology is the same as in last year's report, the indexes for 2003 and 2004 can differ slightly from the data presented in the 2005 Report as a result of regular revision of the income and prices data.

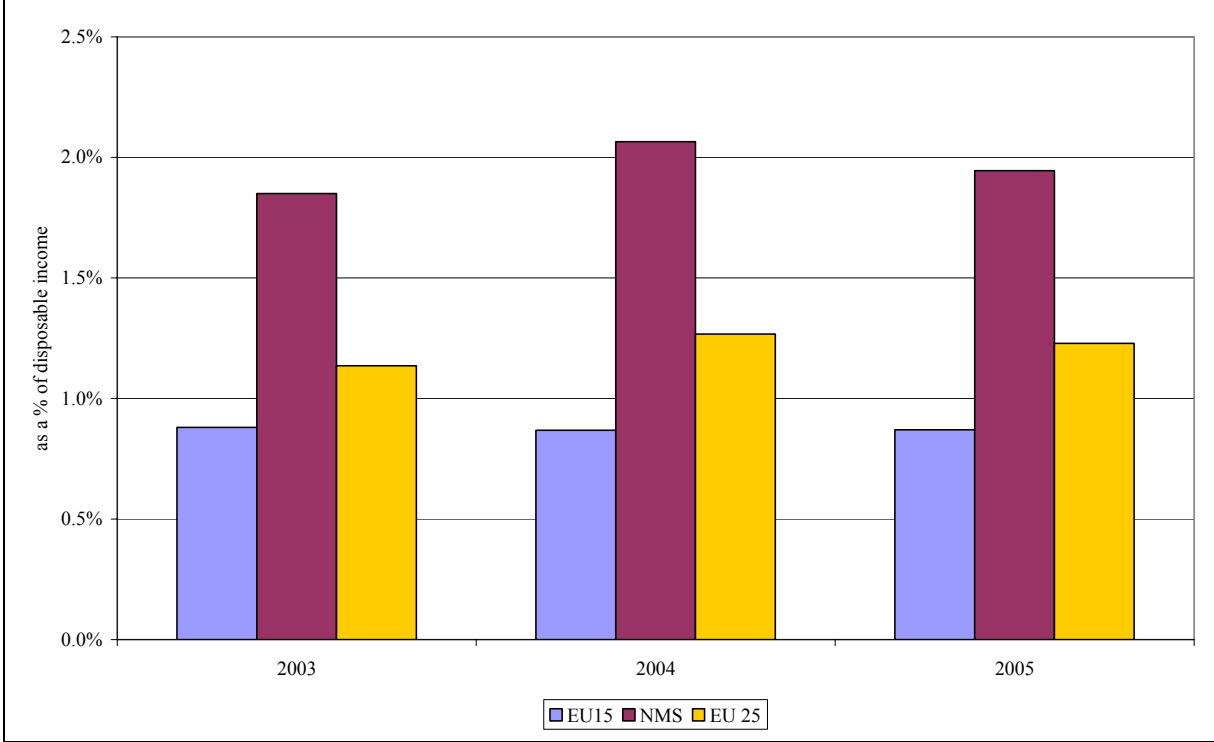
6.2.1. Electricity

On average, low-income EU consumers had to spend about 1.23% of their income on electricity.⁸⁵ There is, however, a big discrepancy between the old EU15 and the new Member States. In the old EU15 Member States, the affordability index oscillated around 0.90% between 2003-2005; it was twice as high in the new Member States, at around 1.9% (up to 2.06% in 2004) (Figure 29).

⁸⁴ It should be noted that expenditure data (price survey average for a specified annual consumption quantity) and income data (sample survey) are established independently, which may place limitations on the conclusions drawn.

⁸⁵ This is calculated as the percentage of per capita income necessary to pay for annual electricity consumption of 1 200 kWh.

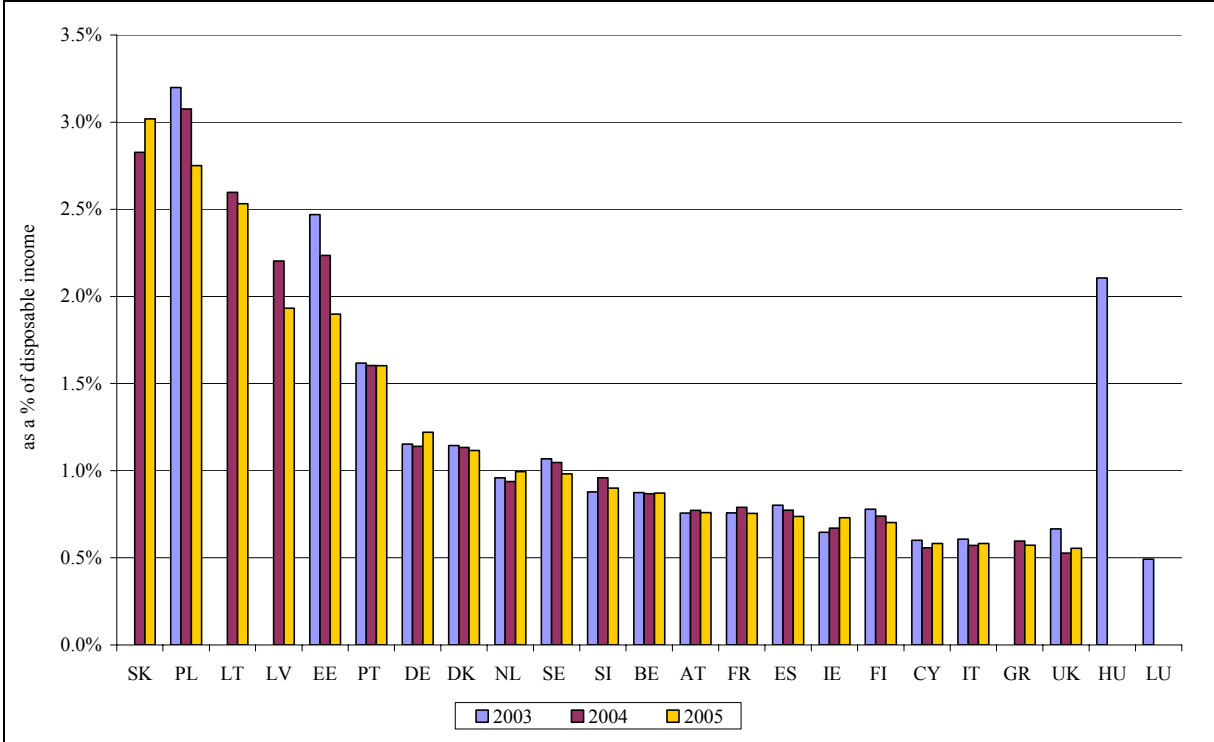
Figure 29 : Average spending on electricity by low-income consumers



Source: European Commission with Eurostat data

Figure 30 clearly shows that electricity is generally less affordable in the new Member States. In five of them, a higher share of household income is needed to buy electricity, with Slovakia (3.02%) at the top of that list. The exceptions are Slovenia (where electricity is relatively more affordable than in Portugal, Denmark, Germany, the Netherlands and Sweden) and Cyprus (where citizens enjoy the most affordable electricity service among the EU25).

Figure 30 : Percentage of income spent on electricity by low-income consumers



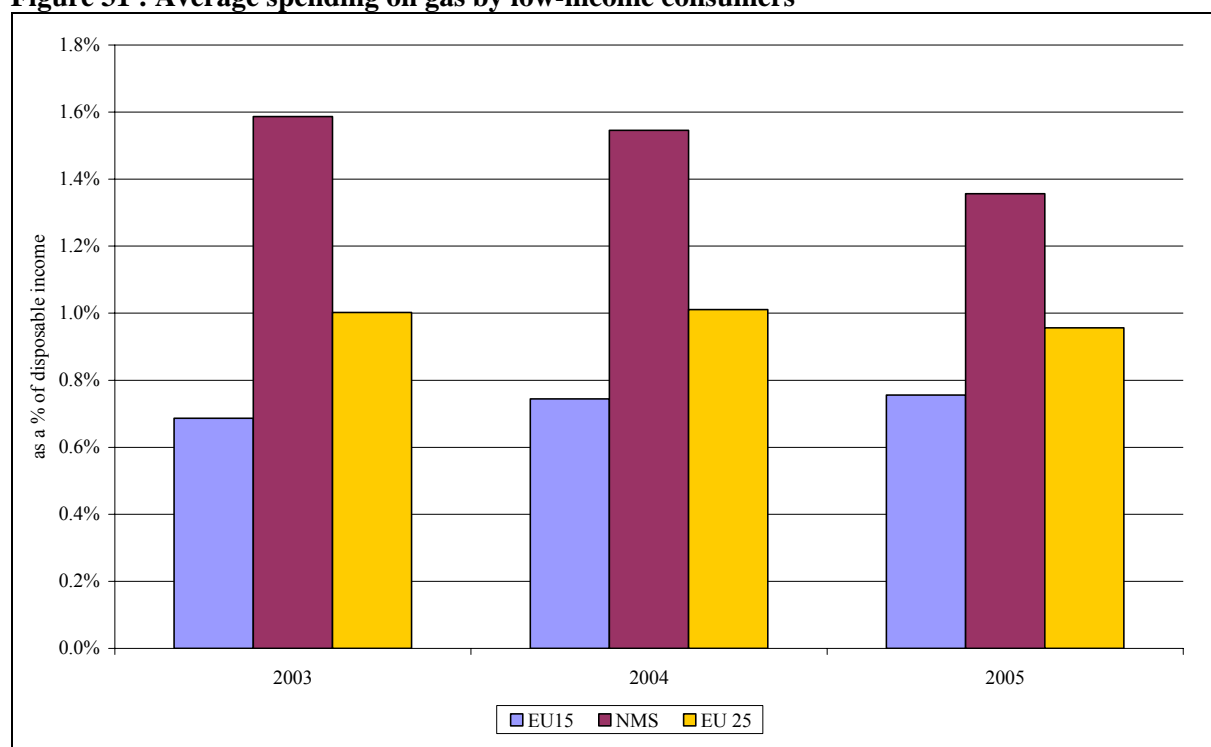
Source: European Commission with Eurostat data. No data available for Czech Republic and Malta; for Luxemburg and Hungary, the income data are available only for 2003; incomplete data sets for electricity consumption for Greece, Lithuania, Slovakia and Latvia.

When analysing the 2003-2005 trend, it can be seen that, on average, the indices for old Member States change very little (either upwards or downwards), while for the new Member States there is a clear trend of increased affordability (affordability improved most dramatically in Estonia – over 23%).

6.2.2. Gas

The average affordability index for low-income EU consumers was 0.96% in 2005,⁸⁶ but there are significant differences between new and old Member States. For the EU15, affordability deteriorated slightly over time – the index increased from 0.69% in 2003 to 0.76% in 2005, while the new Member States had an index of 1.59%, which improved by 0.23 percentage points in 2005 (Figure 31).

Figure 31 : Average spending on gas by low-income consumers



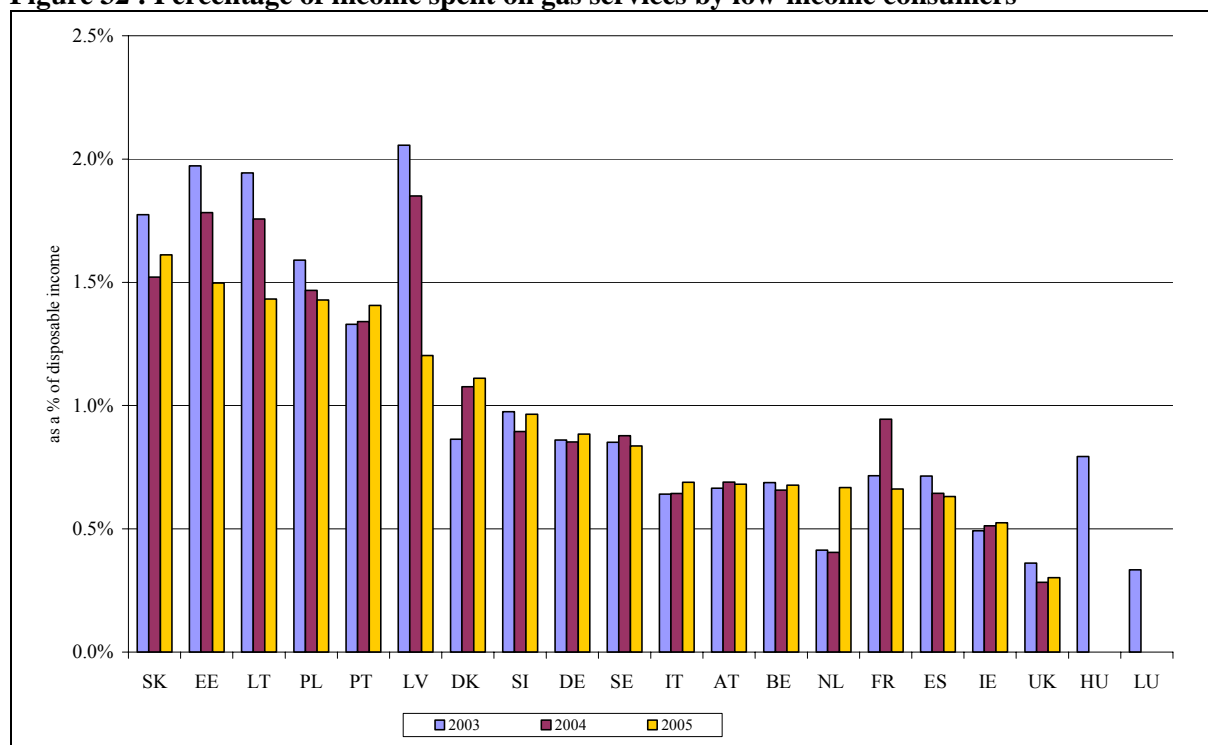
Source: European Commission with Eurostat data

The analysis of affordability of gas services by Member State shows similar trends to electricity (see Figure 32). The majority of new Member States have higher indices. Slovakia had the worst (i.e. highest) affordability index for gas in 2005, closely followed by Estonia and Lithuania. However, these three countries show a dramatic improvement in affordability over time – between 10% and 25% from 2003 to 2005. The biggest improvement was observed in Latvia – by 40%.

One of the old Member States, Portugal, where the natural gas supply system is still relatively new, has an affordability index similar to those found in Poland and Latvia. Slovenia shows levels comparable to those found in Denmark, Sweden and Germany, and its citizens enjoy the most affordable gas provision among the new Member States.

⁸⁶ This is calculated as the percentage of per capita income necessary to pay for annual gas consumption of 8.37 GJ.

Figure 32 : Percentage of income spent on gas services by low-income consumers



Source: European Commission with Eurostat data. No data available for Cyprus, Czech Republic, Greece, Finland and Malta; for Hungary and Luxemburg, income data are available only for 2003.

This analysis of prices and affordability suggests important policy conclusions for this evaluation. Similarly to the results of the 2005 Horizontal Evaluation Report, even though relative prices for services of general economic interest are similar in the new and old Member States, these services are relatively less affordable in the new Member States. It can be noted that affordability in the EU15 has been fairly stable for electricity and has shown a slight increase for gas, while in the new Member States, despite initial higher levels, affordability has continued to improve more rapidly for both sectors. Given the relatively low per capita income in most new Member States and the special nature of these services as basic services for households, their affordability is of the utmost importance.

6.3. Quality

6.3.1. Postal services

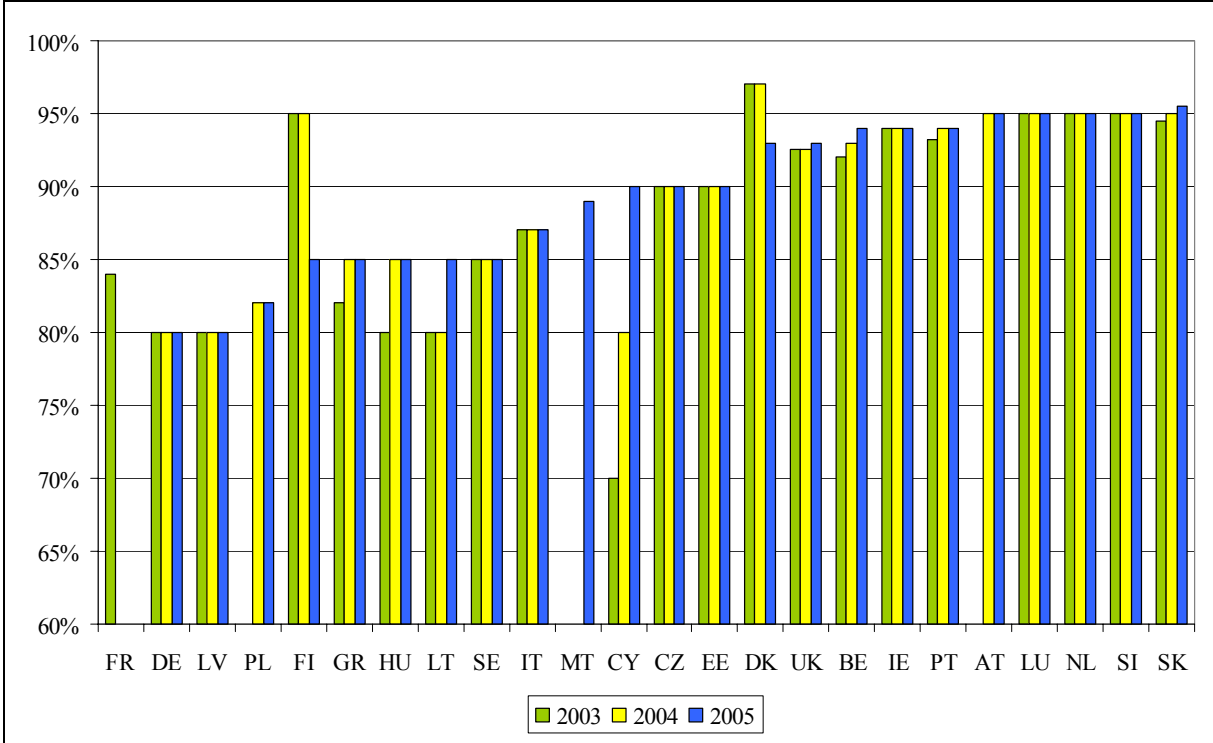
The Postal Directive 97/67/EC aims to improve the quality of Community postal services. In Article 16, it requires Member States to “ensure that quality-of-service standards are set and published in relation to universal service in order to guarantee a postal service of good quality”. The indicators of quality include the percentage of mail delivered the next day (transit time target D+1), while for international mail it is the percentage of mail delivered within 3 days (speed indicator D+3) and within 5 days (reliability indicator – D+5).

The quality of postal services has been constantly improving and reached a high level in 2005, although there are differences between Member States. The transit time targets (D+1) have been made more demanding, particularly in the NMS. Progress has also been made in respect of cross-border mail.

In general, transit time targets were raised to a higher level in 2005 than in previous years. All Member States have set targets higher than 80% (Figure 33) and 12 Member States have targets of 90% or more. Spain is an exception as it has no target indicated for D+1 at all. Denmark and Finland

lowered their targets for 2005 compared to 2003. As no Member State except for Slovakia has a target above 95 %, this seems to be a level regarded as satisfactory.

Figure 33 : D+1 transit time targets 2003, 2004 and 2005

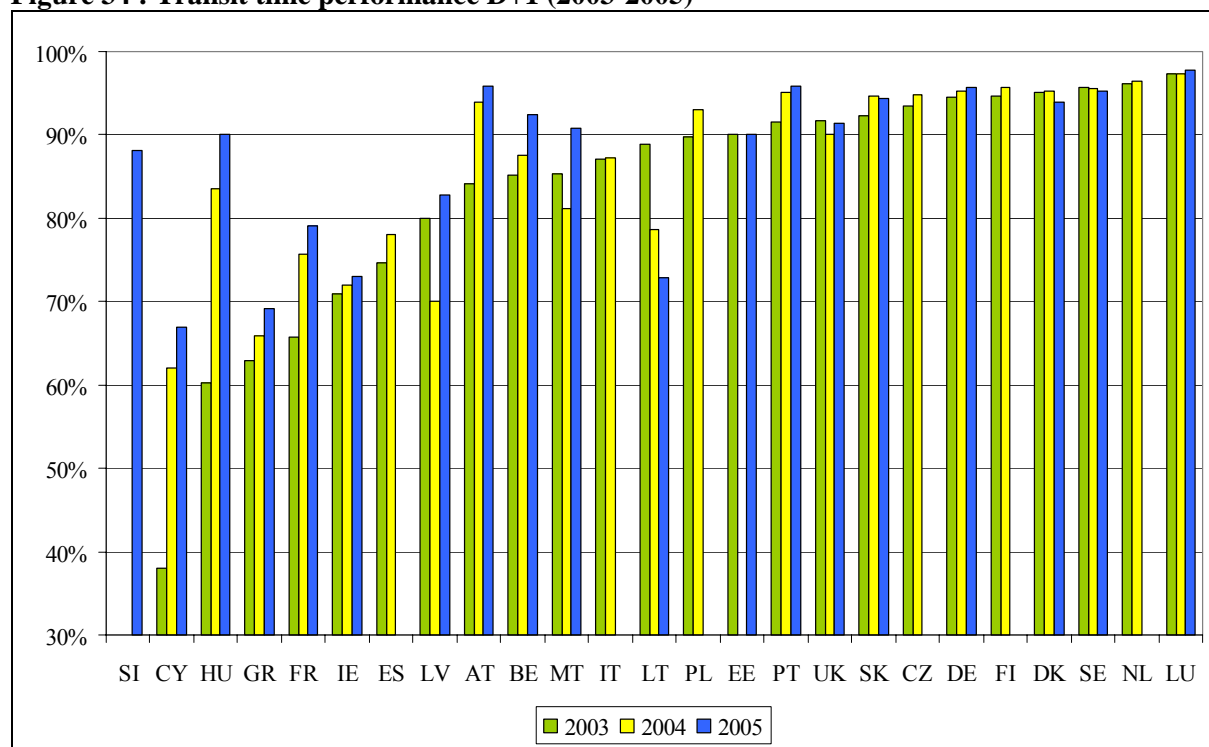


Notes: ES: no D+1 target; FR: target for 2006

Source: Study on the main developments in the postal sector, WIK-Consult, 2006 report

As far as performance is concerned (Figure 34), over half of the Member States reported delivery of at least 90% of letter mail one day after posting, which is a better result than in 2003. However, a quarter of the Member States had delivery of less than 80% of letter mail one day after posting. Comparing the performance to the targets, we find that 10 Member States (AT, BE, CY, FR, GR, IE, LT, SI, SK and UK) have not been able to achieve the targets set for 2005. Nevertheless, regardless of whether these targets have been met, all the Member States (except Denmark and Lithuania) maintained or improved their performance in comparison to the previous year.

Figure 34 : Transit time performance D+1 (2003-2005)



Source: Study on the main developments in the postal sector, WIK-Consult, 2006 report

With regard to international mail, the transit target times have continuously improved over recent years (see Table 16). On average, the performance exceeds both objectives of the Postal Directive. In 2005, 93.1% of single piece intra-Community cross-border mail was delivered within three days, compared with only 69.1% in 1994. However, the average performance was less good than in 2004, mainly due to integration of the new MS in the monitoring system for international mail. 98.7% was delivered within five days, compared with 92.4% in 1994, and this performance improved slightly in comparison to 2004. Average delivery times have gone down from 2.6 days in 1998 to 2.2 days in 2005.

Table 16 : Mail delivery: international mail within Europe

Year	Performance D+3 (speed indicator)	Performance D+5 (reliability indicator)	Average delivery days
1994	69.1%	92.4%	
1998	85.6%		2.6
1999	90.7%		2.3
2000	92.5%		2.3
2001	92.0%	98.4%	2.3
2002	93.5%	98.8%	2.2
2003	93.7%	98.7%	2.2
2004	93.7%	98.4%	2.2
2005 (18 countries)	93.9%	98.9%	2.2
2005 (29 countries)	93.1%	98.7%	2.2
EU objective	85%	97%	

Source: International Post Corporation, UNEX Monitoring System, 2005 Year Results

Note: as of 2005, the UNEX measurement has expanded from 18 countries (EU15, Switzerland, Iceland and Norway) to 29 countries to include 10 new MS and Romania.

6.3.2. Air transport

Only air transport provides appropriate quality information for transport services. The Association of European Airlines (AEA) publishes annual data on a particular quality aspect, namely the arrival and departure punctuality⁸⁷ of their members.⁸⁸

Overall EU arrival and departure punctuality has improved slightly, by 1.2 and 0.6 percentage points respectively, but the proportion of delayed flights varies a lot between the best and the worst performers across Member States. This indicates that there is significant room for improvement in the under-performing companies.

Arrival punctuality is defined as the percentage of flights operated that arrive within 15 minutes of their scheduled arrival time. Arrival punctuality improved by 1.2 percentage points in 2004 compared with the previous year (Table 17), in spite of a significant deterioration for some of the larger companies such as British Airways and SAS. Alitalia, Czech Airlines and Air France on the other hand made good progress. As in previous years, the top performers kept their positions, while the worst performers were again the Portuguese, Greek and Maltese air carriers. All of them worsened their performance. Punctuality rankings should, however, also take into account the degree of congestion and availability of landing slots at airports. Those airlines using very busy airports as their main hub may therefore end up with a bad performance in terms of punctuality.

Table 17 : Arrival punctuality <15 minutes by AEA airline

	2003	2004	percentage point change
Finnair	91.3	89.8	-1.5
Luxair	91.1	86.9	-4.2
SAS	89.1	86.0	-3.1
Spanair	85.1	84.9	-0.2
SN Brussels	88.7	84.2	-4.5
Lufthansa	84.1	83.1	-1.0
Malev	85.3	83.1	-2.2
KLM	85.7	82.4	-3.3
Air France	78.7	82.3	3.6
LOT	86.5	81.8	-4.7
Alitalia	68.0	81.5	13.5
Cyprus Airways	78.4	81.5	3.1
Iberia	81.1	79.9	-1.3
Adria	83.2	78.9	-4.3
Austrian	81.6	77.1	-4.5
British Airways	79.8	76.7	-3.1
British Midland	80.4	76.6	-3.8
Czech	69.8	76.0	6.2
Olympic	75.6	74.6	-1.1
Air Malta	81.2	73.9	-7.2
TAP	67.3	64.3	-3.0
TOTAL	82.0	83.2	1.2

Source: AEA, and DG TREN – analysis of the air transport industry in 2004

⁸⁷ Besides punctuality there are other important indicators of air transport quality, but no comparable data are available.

⁸⁸ The following airlines are included in the analysis : Czech Airlines, Cyprus Airways, Malev Hungarian Airlines, Air Malta, LOT Polish Airlines, Slovenian Adria Airways, KLM, Air France, Lufthansa, Alitalia, Luxair, Austrian Airlines, BMI, Olympic Airlines, British Airways, SAS, SN Brussels, Spanair, TAP Portugal, Finnair and Iberia. No low-cost carriers are included in the analysis.

Departure punctuality is defined as the percentage of flights that take off within 15 minutes of their scheduled departure time. Departure punctuality for the AEA airlines as a whole was only marginally up in 2004 compared to 2003 – by 0.6 percentage points (Table 18). Trends similar to arrivals were evident, especially in terms of the best and worst performers. Alitalia and Czech Airlines improved their performance by 8.8 and 6.2 percentage points respectively. Finnair and Luxair slipped somewhat but remained close to the top.

Table 18 : Departure punctuality <15 minutes by AEA airline

	2003	2004	percentage point change
Luxair	93.1	89.6	-3.5
Finnair	91.0	89.0	-2.0
SN Brussels	91.8	88.2	-3.5
SAS	90.3	87.1	-3.1
Czech	78.4	84.7	6.2
Cyprus Airways	82.9	84.2	1.2
Alitalia	75.1	83.9	8.8
Spanair	84.0	83.9	-0.1
LOT	89.0	83.8	-5.2
Lufthansa	82.9	83.6	0.7
Air France	81.5	83.1	1.6
Malev	86.0	83.1	-2.9
Adria	85.8	82.2	-3.6
Iberia	83.8	82.2	-1.6
British Midland	81.6	79.2	-2.4
Austrian	83.8	78.3	-5.4
KLM	81.2	78.0	-3.3
British Airways	80.5	77.4	-3.1
Olympic	76.6	75.4	-1.2
Air Malta	77.4	74.4	-3.0
TAP	71.8	69.4	-2.4
TOTAL	83.1	83.7	0.6

Source: AEA, and DG TREN – analysis of the air transport industry in 2004

6.3.3. Energy

Directives 2003/54/EC and 2003/55/EC on common rules for the internal market in electricity and natural gas, respectively, allow Member States to impose at national level public service obligations that may relate to security, regularity, quality and price of supplies and environmental protection. Such public service obligations should be “clearly defined, transparent, non-discriminatory, verifiable and should guarantee equality of access”. Additionally, Member States should protect their consumers, in particular the vulnerable groups and consumers in remote areas.

Two important features of the quality of the electricity service are the reliability of supply and the way in which it is produced. For the first aspect, the number and duration of unplanned interruptions showed a downward trend for most countries where the data are available. Even the countries with interruptions which have previously been of short duration and few in number have been able to make further improvements. For the second aspect, share of renewable energy in electricity consumption, there is still much room for improvement in order to reach the required targets.

The availability of data on interruptions has not improved significantly since the previous reports. Relevant information is still not available for all the Member States, and the data which are available do not give a comparable picture across countries. The data have, however, been updated to 2004.⁸⁹

The duration of interruptions (in minutes) during the year is a key indicator of the quality of service that electricity customers receive. The length of an interruption can be influenced by a variety of factors such as the level of interconnectivity on the network, the voltage at which the interruption occurred, the distance to the fault, the accessibility of the fault, etc. Minutes of unplanned interruption per customer per year varied between 8.5 in Latvia and 217 in Portugal in 2004 (Table 19). Between 2003 and 2004, the duration of interruption fell in all Member States for which complete data are available. However, for a small number of countries, the data are too volatile to identify any clear trends. One potential reason for the significant volatility is the impact of uncontrollable events on performance (heatwaves, storms, natural disasters, etc.).

Table 19 : Unplanned interruptions: minutes lost and number of interruptions per customer per year (1999-2004)

Country	Minutes lost per customer						Number of interruptions per customer					
	1999	2000	2001	2002	2003	2004	1999	2000	2001	2002	2003	2004
Finland	198.00	129.60	468.00	284.40	212.40	103.00	3.32	2.89	6.61	3.34	3.97	4.00
France	459.00	176.00	59.00	52.00	69.30	57.10	1.22	1.20	1.20	1.20	1.43	1.30
United Kingdom			75.84	101.33	72.68	87.33			0.84	0.82	0.79	0.75
Hungary	411.00	241.20	250.20	198.80	155.40	137.40	3.09	2.29	2.13	2.03	2.05	1.90
Italy	191.77	187.40	149.09	114.74	546.08	90.53	3.81	3.59	3.29	2.76	3.96	2.48
Ireland	273.60	257.90	199.30	230.20	171.90	162.80	1.15	1.49	1.31	1.37	1.50	1.70
Netherlands	26.00	27.00	34.00	28.00	30.00	24.00	0.40	0.40	0.40	0.30	0.40	0.30
Portugal			530.74	467.98	406.18	217.79			7.51	7.35	5.96	3.66
Spain	156.37	145.41	179.69	142.56	141.91	123.60			3.30	2.65	2.60	2.06
Sweden	165.77	89.17	162.90	101.84	148.05	59.73	1.38	1.23	1.34	1.32	1.64	1.05
Latvia					14.00	8.50					0.04	0.04
Lithuania						190.00						1.58

Note: France 1999, 2000 and 2001 are medium (MV) and low (LV) voltage, 2002 onwards is only LV

Source: Council of European Energy Regulators, Working Group on Quality of Electricity Supply, Third benchmarking report on quality of electricity supply, December 2005

The number of interruptions is a key indicator of the robustness of electricity networks and it is generally the case that the higher the voltage the more robust the network. However, when interruptions do occur at higher voltages they tend to affect greater numbers of customers. In most countries (except Finland and Ireland) there has been a slight downward trend in the average number of interruptions (Table 19). In particular, a number of countries have made significant efforts to reduce the number of interruptions, with performance in Hungary and Italy achieving a drop of over 1 interruption per customer in six years. Even some of the countries which have previously recorded quite low levels of interruption have been able to further reduce them.

There is also some evidence to support the view that denser networks (having a higher customer/km ratio) have fewer interruptions and fewer minutes lost per customer per year than less dense networks. Urban, suburban and rural data support this view, with performance in urban areas being far better than in rural areas.

Table 20 and Table 21 report on the specific rules for compensation and refund that exist in some Member States. They show that for the Member States where the data are available, there are significant differences in respect of refund or compensation for damages due to service interruptions. However, because of data constraints no overall conclusion is possible.

⁸⁹ Council of European Energy Regulators, Working Group on Quality of Electricity Supply, Third benchmarking report on quality of electricity supply, December 2005

From Table 20 we can see that the necessity of compensating for interruptions generally applies to supply of electricity rather than gas. Also, the compensation becomes due only if fault or negligence on the part of the Distribution System Operator (DSO) can be established.

Table 20 : Reported energy-specific rules for compensation of damage due to service interruption

Belgium	DSO must repair or fully compensate for damage, except in case of force majeure
Czech Republic	DSO has to pay a “reasonable” one-time compensation (if consumers were not warned)
Cyprus	DSO has to pay if it is responsible for damage incurred.
Finland (e)	DSO has to pay if interruption was due to negligence
Germany	Compensation for damage resulting from gross negligence or intent
Greece (e)	Compensation for damage caused by negligence
Lithuania (e)	Decision at the discretion of a Commission that investigates the reasons for interruption and decides on the amount of damages to be paid.

Note: (e) electricity only;

AT, DK, HU, IT, LU, MT and SK – have no specific rules for compensation

Source: ECORYS, "General policy towards Services of General Economic Interest and Consumer Protection in the Energy Sector ", Interim report for DG Energy and Transport, February 2006

As regards countries that have further specified the existing rules on refunds, there are significant differences between them (Table 21). In particular, the time for giving advance warnings ranges from 24 hours in Italy to 15 days in the Czech Republic. Moreover, Austria, Germany, Greece and Sweden do not prescribe a minimum time for sending advance notices but more generally stipulate that consumers need to be informed in sufficient time.

Additionally, in the Czech Republic, Belgium and Germany a distinction is made between lengthy and short interruptions. In the first two countries, consumers do not have to be informed about short interruptions, whereas in Germany notice has to be given only if the consumer relies on uninterrupted supply.

Three countries also specify the means by which consumers have to be informed. In Sweden this has to occur by means of notice or personally, whereas in the Czech Republic information has to be given in a manner “commonly used” in the area of concern. In Malta, the supplier has to provide information via media sources and its own website.

Table 21 : Reported energy-specific rules for refunds in case of service interruption

Czech Republic	If no advance warning was sent
Finland (e)	If the interruption time is at least 12 hours the fixed compensation is 10 % of the consumer’s annual network access charges. The compensation increases stepwise with the interruption time. The maximum compensation is 100 % of the annual network charges when the interruption time has exceeded 5 days.
France (e)	Fixed-rate compensation for interruptions
Ireland (e)	If no advance warning was sent consumers are entitled to a fixed-rate compensation (€35 for households and €130 for businesses); rules for gas are being developed
Italy (e)	Rules in preparation for consumers suffering from long interruptions
Netherlands (e)	Fixed-rate compensation for interruptions (€35 for interruptions longer than 4 hours); rules for gas are being drawn up.
Portugal (e)	If interruption constitutes a violation of predefined quality targets.
Sweden (e)	For interruptions longer than 12 hours
UK:	DSOs are penalised/ rewarded annually, if they fail to meet/ over-accomplish targets for the number and duration of interruptions.

Note: (e) electricity only;

DK, FI and LU – have no specific rules regarding obligations of network operators to inform consumers in advance of scheduled interruptions.

Source: ECORYS, "General policy towards Services of General Economic Interest and Consumer Protection in the Energy Sector ", Interim report for DG Energy and Transport, February 2006

Furthermore, the duty to compensate for interruptions in general only applies if consumers were not warned about scheduled interruptions or if the duration of interruption exceeds a specified time (Table 22).

Table 22 : Conditions for supply interruption in energy sector

Country	Specification
AT	According to suppliers' general terms & conditions, consumers need to be informed "in reasonable time".
BE	<u>Scheduled interruption</u> of the low voltage network: DSO must inform the consumer or the supplier 2 working days in advance (5 for gas) for interruptions longer than 15 minutes. <u>Non-scheduled interruption</u> : on request, information regarding the cause of interruption has to be given within 10 working days.
CZ	Electricity: at least 15 days in advance the DSO has to announce the start and end of the interruption "in a manner commonly used", if the interruption takes less than 20 minutes. Gas: advance notice 15 days before interruption
DE	Consumers need to be informed "in time and in an appropriate manner". In case of short interruptions only consumers relying on uninterrupted supply need to be informed.
GR	Electricity: If feasible, consumers have to be informed in time Gas: Answer unclear
IE	Electricity: Rules in preparation Gas: Notice at least 2 days in advance
IT	Consumers have to be informed 24 hours in advance
LT	Electricity: The DSO or TSO has to inform consumers about planned interruptions (for electricity at least 10 days before interruption) Gas: Consumers have to be informed in advance
NL	Rules are under preparation for gas Consumers have to be informed at least 3 days in advance (Electricity Network Code)
MT	Electricity: Consumers have to be informed at least 3 days before planned interruptions via media sources and the supplier's website
PT	Information 36 hours before interruption for service reasons
SW	Electricity: consumer is to be informed in "plenty of time" personally or by means of notice.

Source: ECORYS, "General policy towards Services of General Economic Interest and Consumer Protection in the Energy Sector ", Interim report for DG Energy and Transport, February 2006

To many consumers, the way energy is produced is an indication of quality. Table 23 shows the share of electricity produced from renewable resources together with targets for 2010 set by Directive 2001/77/EC. A few Member States have increased the share of electricity produced from renewable sources to get closer to their targets (LV, DK and FI) and some have improved their performance dramatically but still have much to do to reach the value required by the Directive (LU, HU and CZ). In the group of Member States whose performance has worsened are PT, ES, FR and GR. Overall, much still needs to be done to reach the targets in 2010.

Table 23 : Share of renewable energy in total electricity consumption: actual and 2010 target (in %)

	Share 1995	Share 2001	Share 2002	Share 2003	Share 2004	Target 2010*
AT	70.6	67.3	66.0	53.4	58.8	78.1
SE	48.2	54.1	46.9	39.9	46.1	60
LV	47.1	46.1	39.3	35.4	47.1	49.3
PT	27.5	34.2	20.8	36.4	24.4	39
SI	29.5	30.4	25.9	22.0	29.1	33.6
FI	27.6	25.7	23.7	21.8	28.3	31.5
ES	14.3	20.7	13.8	21.7	18.2	29.4
SK	17.9	17.4	18.6	12.0	14.3	31
DK	5.8	17.4	19.9	23.2	27.0	29
IT	14.9	16.8	14.3	13.7	15.9	25
FR	17.7	16.3	13.7	13.0	12.9	21
GR	8.4	5.2	6.2	9.7	9.5	20.1
DE	4.7	6.5	8.1	8.2	9.7	12.5
IE	4.1	4.2	5.4	4.3	5.1	13.2
LU	2.2	1.6	2.8	2.3	3.2	5.7
PL	1.6	2.0	2.0	1.6	2.1	7.5
UK	2	2.5	2.9	2.8	3.7	10
HU	0.7	0.5	0.5	0.4	2.3	3.6
NL	2.1	4.0	3.6	4.7	5.7	9
CZ	3.9	3.2	3.8	2.1	4.0	8
LT	3.3	3.0	3.2	2.8	3.5	7
BE	1.2	1.6	1.8	1.8	2.1	6
CY	0	0.0	0.0	0.0	0.0	6
EE	0	0.2	0.5	0.5	0.6	5.1
MT	0	0.0	0.0	0.0	0.0	5
EU15	13.7	13.5	13.7	13.7	14.7	22
NMS	5.4	5.4	5.4	4.0	5.7	11
EU25	12.7	14.2	12.7	12.7	13.7	21

Source: Eurostat

7. Consumers' views

The European Commission has carried out three separate studies in order to examine consumers' views and problems related to different services of general economic interest. The first study concerns the measurement of consumer satisfaction based on a methodology which uses elaborate consumer satisfaction indicators.⁹⁰ The second study is an opinion poll that was conducted to survey consumers' opinions on various services of general economic interest⁹¹. This poll is complemented by a qualitative study based on focus group discussions, concentrating inter alia on telecommunications and postal services⁹². The methodologies of the three studies are presented in the box below.

Box 3 Studies on consumers' views on services of general economic interest

Consumer satisfaction study – This study was carried out between 2005 and 2006 with the purpose of developing indicators of consumer satisfaction in various sectors providing services of general economic interest. The study was based on a survey that was designed in such a way as to guarantee a sufficient sample size per sector to run the constructed satisfaction model. Consumer satisfaction was measured both directly ("observed satisfaction") and through the statistical processing of responses to specific questions ("calculated satisfaction"). The survey used a robust and homogeneous methodology across Member States and sectors, carrying out around 29 000 interviews in the 25 Member States. The interviews were conducted face-to-face in people's homes and covered 4-5 different services per respondent. The study used uniform sampling methods across all countries, thus ensuring maximum comparability. The analysis of the survey results is built in a way that allows comparisons on how consumers feel across sectors in one Member State and in a particular sector across Member States. Key satisfaction indicators are reported in the following way:

- Level of satisfaction vs. dissatisfaction – expressed in % of consumers rating 8-10 (on the 10-point scale) vs. % of those rating 1-4. This method of grouping satisfied and dissatisfied users is the most commonly used in customer satisfaction surveys. In such surveys, the pattern of responses does not follow a "normal distribution", with distribution being pushed towards higher scores.

Eurobarometer on services of general interest - This study was undertaken in 2006 in all EU Member States, and was based on a questionnaire survey focussing on consumers' use of and satisfaction with services of general economic interest. Interviews were conducted face-to-face in people's homes, in their national language. The methodology used is that of the Standard Eurobarometer polls which are managed by the Directorate-General Communication, European Commission. This report looks at EU consumer attitudes and beliefs relating to a number of services ranging from communications (telephony, post and internet) to the provision of energy (gas and electricity), water, public transport and banking. Three sectors (internet, postal services and banking) are analysed in more detail in the Eurobarometer report.

Focus group on services of general interest – This study, covering telecommunications, postal services, banking and the internet, was undertaken in 2006 and was based on focus group discussions, which were co-ordinated by moderators who followed a set discussion guide. In each Member State, the study involved discussions with:

- **A group of around 8 average consumers in each Member State:** men and women aged between 25 and 60 years, from various socio-professional categories covering business owners, liberal professions and high-level managers, middle-level managers, (non managerial) office employees and manual workers.
- **A more "fragile" social group of around 8 consumers in each Member State, including mainly people with socio-economic difficulties:** men and women between 25 and 60 years, living in households whose members rely partially or totally on public/social benefits, and/or have precarious or

⁹⁰ For more information on the methodology on consumer satisfaction indicators and the full study please visit the following website: http://ec.europa.eu/consumers/topics/facts_en.htm

⁹¹ For more information on this Eurobarometer opinion poll please visit the following website: http://ec.europa.eu/consumers/cons_int/serv_gen/cons_satisf/index_en.htm

⁹² The study also covers internet and banking which are outside the scope of this evaluation. For more information on this qualitative study please visit the following website: http://ec.europa.eu/consumers/cons_int/serv_gen/cons_satisf/index_en.htm

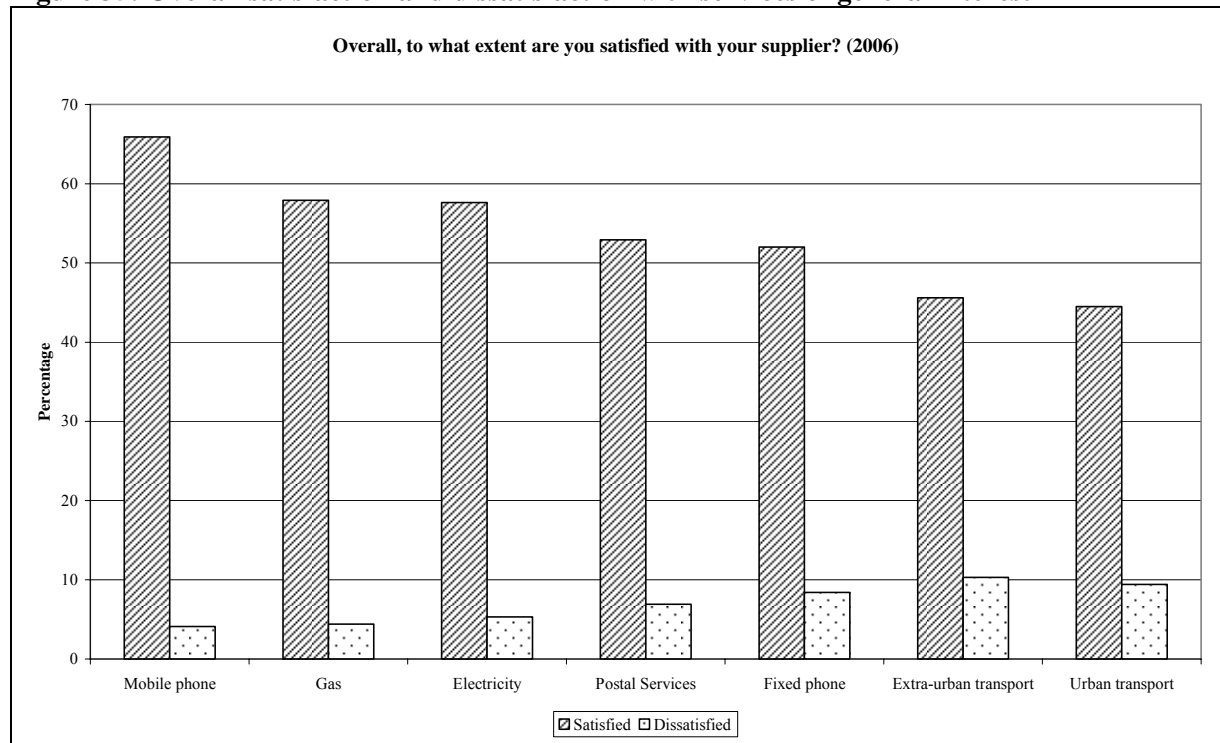
very badly paid jobs; **also including a few older participants** (61 to 70 years), retired, from the same social level as in the first group.

- **5 interviews with Internet users**, having the same socio-demographic characteristics as the participants of the first group.
- **10 interviews in each Member State with consumers living in remote areas, away from large cities** (communities with less than 10 000 inhabitants, at least 20 km away from a larger community, with limited transport services): respondents having the same socio-demographic characteristics as those in the first group.

Overall satisfaction in the EU25

The consumer satisfaction study measures the percentages of "satisfied" and "dissatisfied" consumers. "Satisfied consumers" are those who rated the service between 8-10 while "dissatisfied consumers" are those who gave a score of 4 or less. The proportions of "satisfied" and "dissatisfied" consumers are presented in Figure 35 below.

Figure 35: Overall satisfaction and dissatisfaction with services of general interest



Source: Study on consumer satisfaction

A statistical analysis of results reveals that the three main **drivers of consumer satisfaction** are quality, price and image⁹³. The main driver of consumer satisfaction for all surveyed services is quality, followed by image and then price.

⁹³ The statistical model explored a range of factors influencing consumer satisfaction such as market expectations, personal expectations, confirmation (or not) of expectations, complaints, commitment to the providers, alternatives to the providers and others. The model, using a scale of 1-10, concluded that the three main drivers of consumer satisfaction are quality, price and image.

Table 24: Drivers of consumer satisfaction

Service	Quality	Price	Image
Mobile Telephony	8.1	7.5	8
Gas Supply	7.8	6.4	7.3
Postal Services	7.3	6.8	7.2
Fixed Telephony	7.5	6.7	7.2
Electricity Supply	7.7	6.6	7.4
Extra-urban Transport	7	6.5	6.8
Urban Transport	7	6.6	6.9

Source: Study on consumer satisfaction

A **socio-economic analysis** of results indicates that consumers in the higher age group tend to be more satisfied, while retired consumers are the most satisfied of all groups. The least satisfied consumers are the self-employed and students, who are systematically more critical in their views.

Table 25: Consumer satisfaction levels in the EU25

	Mobile phone	Fixed phone	Electricity	Gas	Postal services	Extra-urban transport	Urban transport
AT	76	70	80	76	58	49	61
BE	74	62	65	65	44	52	57
CY	84	69	70	n.a.	77	n.a.	23
CZ	74	41	58	65	52	44	43
DE	84	71	73	70	59	42	52
DK	71	61	79	78	53	38	42
EE	78	71	72	68	72	58	50
ES	42	36	43	48	48	44	35
EL	71	45	48	87	70	63	54
FI	73	61	63	77	66	67	64
FR	55	49	60	58	46	53	49
HU	83	65	73	65	71	50	38
IE	73	78	73	82	82	72	66
IT	50	27	35	36	29	24	34
LV	80	65	73	68	68	66	62
LT	79	72	82	85	80	67	57
LU	69	69	72	69	68	54	58
MT	80	73	47	n.a.	62	n.a.	29
NL	51	40	41	48	48	24	25
PL	67	45	60	59	61	46	39
PT	69	30	36	50	65	56	40
SK	73	53	53	43	59	29	22
SI	77	69	74	77	74	52	46
SE	72	63	53	74	45	54	40
UK	68	60	58	58	56	55	43
EU25	66	52	58	58	53	46	45

Note: Consumers' satisfaction, %, rating services 8-10, on a scale 1-10

Source: Study on consumer satisfaction

A country analysis of results and a **comparison between the old (EU15) and the new Member States** reveals a mixed picture with no clear pattern, since consumers' views differ according to the service in question. Consumers in the EU10 are less satisfied with fixed telephony and urban transport, while they are more satisfied with mobile telephony, gas, electricity, postal services and extra-urban transport.

Table 26: Comparison of consumer satisfaction between the EU15 and the NMS

Service		% Satisfied	% Dissatisfied
Mobile Phone	EU15	64.4	4.2
	NMS	72.8	3.9
Gas	EU15	57.2	4
	NMS	60.9	6.6
Electricity	EU15	56.5	4.9
	NMS	62.3	6.7
Postal services	EU15	50.5	6.8
	NMS	62.7	7.5
Fixed phone	EU15	52.1	7.6
	NMS	51.4	12.6
Extra-urban transport	EU15	45.3	9.9
	NMS	47.1	12
Urban transport	EU15	45.2	8.4
	NMS	40.3	14.7

Source: Study on consumer satisfaction

According to the Eurobarometer survey, as regards consumers' **access** to services of general economic interest, the situation has improved since 2004 for nearly all services, with consumers indicating that they have fewer access-related difficulties. Difficult or no access varies from 24% for rail services between towns/cities to 5% for electricity. The results of the focus group support the results of the Eurobarometer opinion poll. Difficulties in accessing mobile telephony relate mainly to coverage problems. The Eurobarometer shows that in Italy, the Czech Republic, Lithuania, the Netherlands and France, more than 10% of consumers have difficulties in accessing mobile phone services. For postal services, there is an improvement in access in the EU15, except in Sweden and Italy. In 2002 (EU15), 11% of consumers said that they had difficult or no access, in 2004 (EU25) this percentage stood at 10%, while in 2006 (EU25) it dropped to 8%. In Sweden, where full liberalisation took place in 1993, 23% of consumers find access difficult when sending items by post. The focus group reveals that Swedish consumers are dissatisfied with the replacement of post offices by alternative post points that do not offer all-inclusive postal services.

An examination of **usage** reveals that services of general economic interest are becoming more and more important in consumers' lives. Since 2004 usage has increased for all surveyed services, ranging from 97% for electricity to 54% for rail services between towns/cities. The only services showing a decrease in usage are fixed telephony, explained by the fact that many consumers are switching to mobile telephony, and gas. Usage for both services has decreased by 3%, putting fixed telephony usage at 83% and gas at 74%.⁹⁴

A closer examination of the **importance** of some of these services (fixed telephony, mobile telephony and post) in **consumers' daily lives** shows that they are all perceived as "very" or "fairly" important, with percentages ranging from 69% for mobile telephony to 82% for receiving mail. In the EU10, mobile telephony is 8 percentage points more important to consumers when compared with the EU15, whereas in the EU15 fixed telephony and sending mail are relatively more important for consumers.

⁹⁴ On international mobile roaming, a different survey carried out by the Commission (Special Eurobarometer 269, November 2006) found that 78% of those who have a mobile phone either use it less when abroad or do not use it at all.

The **affordability** of these services is an issue of great importance in consumers' daily lives since, in general, they comprise a considerable part of consumers' household budget. A positive aspect is that, according to **users'** views, most services have become more affordable. Most improvement is observed in urban and extra-urban transport and mobile telephony. Consumers indicate that energy has become less affordable for both electricity and gas. Electricity users are especially dissatisfied with prices in Malta, Finland, Sweden and Poland. Gas users are most dissatisfied in Poland, France, Germany and Hungary.

When examining the views of citizens who are **non-users**⁹⁵ of these services on the question of **affordability**, we can get a picture of the scale of **exclusion** from using these services due to **affordability**. The results⁹⁶ are not very encouraging since, in this group of citizens, we observe percentages ranging from 21% for urban transport to 39% for electricity.

The pricing used by different service providers makes the **comparison of different offers** by different providers very difficult for consumers. This results in consumers taking sub-optimal decisions in their choice of service providers or tariffs. Consumers are often unaware of behavioural biases that lead them to take wrong decisions. Indicatively, as reported by the Portuguese Competition Authority, a survey of the mobile telephony sector, carried out in 2005, showed that 90% of consumers made the "wrong" tariff choice and that each consumer could save more than €100 yearly even without changing supplier. According to the OECD⁹⁷, manufactured confusion on pricing, "**confusopoly**", is a deliberate tactic used by some providers to avoid price competition.

A closer examination of the mobile telephony market, which is very competitive and offers consumers many choices, highlights the difficulty in comparing offers. Evidence from the Eurobarometer shows that a rather high percentage of consumers (38%) admit that they have difficulty in **comparing offers** between different providers.

Consumers can take advantage of competition by **switching** providers or changing tariffs. However, it has been empirically shown that there is great stickiness in these markets, with consumers not taking advantage of beneficial offers and in some cases even switching to higher-cost providers. In mobile telephony, 20% of consumers have switched and had an easy experience, whereas in fixed telephony 16% switched and had an easy experience. For both services, 8% of consumers had problems when they tried to switch. A socio-economic analysis of results shows that better educated and informed consumers are more likely to switch service providers.

Terms and conditions for mobile and fixed telephony are generally seen by consumers as "fair", with the EU25 average standing at 63%. However, there is a considerable percentage of consumers, almost one in three, who think that these are "unfair". For mobile telephony, national figures for "unfair contract terms" reach 51% in the case of France and for fixed telephony they reach 56% in the case of Italy and Poland.

On an EU scale, relatively few consumers launch **complaints** and when they do so they choose to first address them to their service provider. Complaint levels are rather higher for telecommunications, at 12% for mobile telephony and 11% for fixed telephony, and fall to 4% for urban transport. These figures must be viewed with caution, since some of the focus group findings indicate that when consumers are dissatisfied with their service provider, they often do not launch a formal complaint since they think this will require too much time and cause considerable distress to them.

⁹⁵ Percentage of non-users varies from 3% for electricity to 46% for rail services between towns and cities.

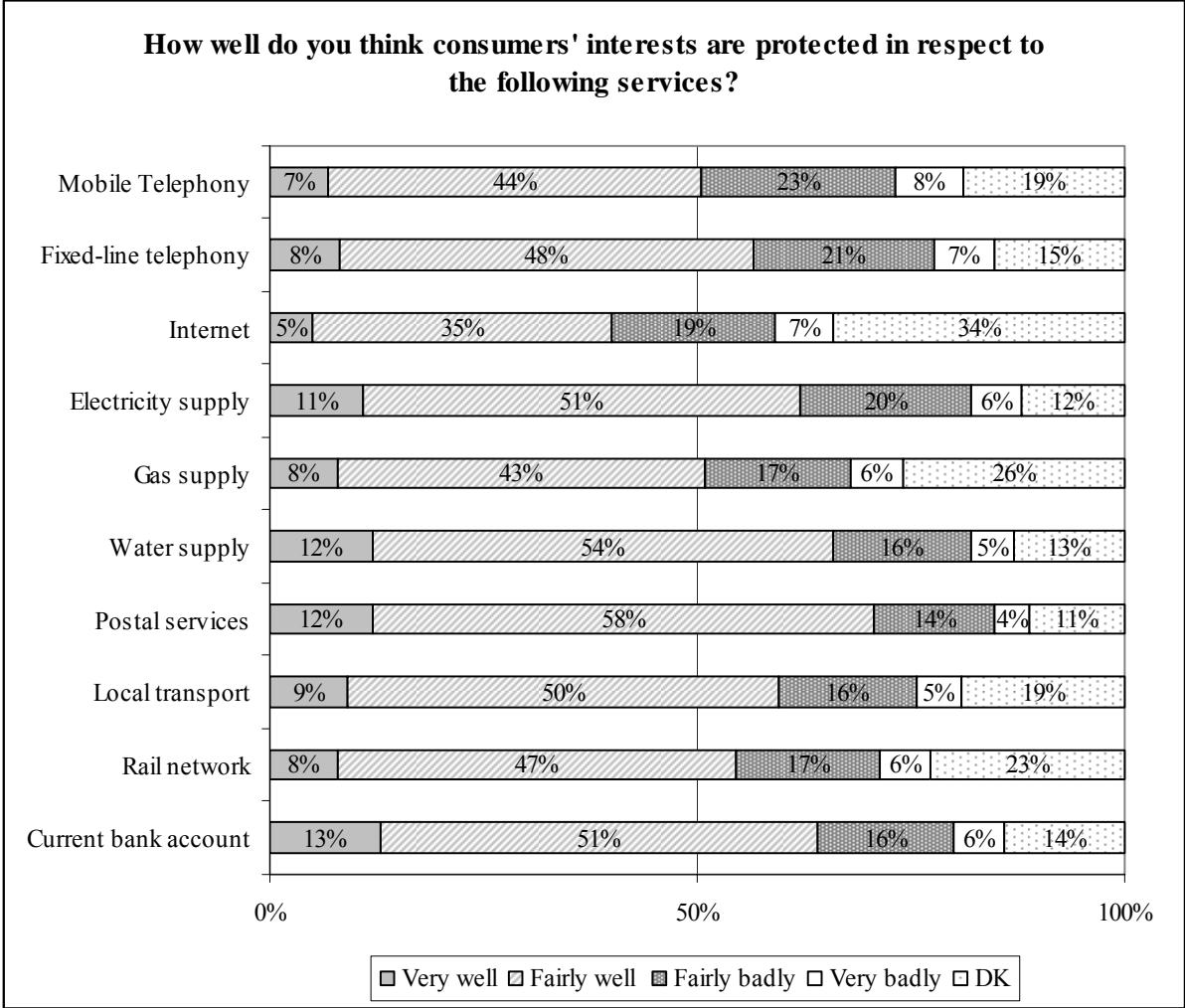
⁹⁶ Percentage of citizens who are non-users of these services saying that "prices are either excessive or not affordable".

⁹⁷ For more information see the OECD summary report of the "Roundtable on demand-side economics for consumer policy" at: <http://www.oecd.org/dataoecd/31/46/36581073.pdf>

The opinion poll results partly vindicate consumers' expectations since, very often, **complaints are not handled well**, according to consumers. Bad handling of complaints ranges from 42% for mobile telephony to 52% for gas supply.

Looking generally at **protection of consumers' interests**, depending on the service in question, only 50%-70% of consumers consider their interests to be "well protected". Results differ significantly between different Member States.

Figure 36: Protection of consumers' interests



Source: Eurobarometer on "Consumers' opinions on services of general interest"

8. Statistical Annex

Table 27: Market opening in electricity and gas, 2005

	Electricity							Gas						
	Market opening (2001)	Market opening (2005)	Size of open market in TWh	Eligibility threshold	Unbundling of TSO (2001)	Unbundling (2005)		Market opening (2001)	Market opening (2005)	Size of open market in bcm	Eligibility threshold	Unbundling of TSO (2001)	Unbundling (2005)	
						TSO	DSOs						TSO	DSOs
Austria	100%	100%	55	Full	leg.	leg.	no	49%	100%	7	Full	acc.	leg.	leg.
Belgium	35%	90%	60	Full (1)	leg.	leg.	leg.	59%	90%	11	Full (1)	leg.	leg.	leg.
Denmark	90%	100%	33	Full	own.	own.	leg.	30%	100%	5	Full	leg.	own.	leg.
Finland	100%	100%	80	Full	own.	own.	leg.							
France	30%	70%	275	non HH	man.	leg.	no	20%	70%	28	non HH	acc.	leg.	no
Germany	100%	100%	500	Full	man.	leg.	no	100%	100%	82	Full	acc.	partly leg.	no
Greece	30%	62%	29	non HH (2)	man.	leg.	no							
Ireland	30%	100%	22	Full	leg.	leg.	no	75%	86%	3	non HH	man.	not implemented	no
Italy	45%	79%	225	non HH	leg.	own.	*	96%	100%	62	Full	leg.	leg.	leg.
Luxembourg		84%	3	non HH	-	leg.	no	51%	80%	1	non HH	acc.	not implemented	no
Netherlands	33%	100%	100	Full	leg.	own.	leg.	45%	100%	38	Full	acc.	own.	leg.
Portugal	30%	100%	42	Full	leg.	own.	*							
Spain	54%	100%	210	Full	leg.	own.	*	72%	100%	20	Full	leg.	leg.	*
Sweden	100%	100%	135	Full	own.	own.	leg.	47%	95%	1	non HH	acc.	own	no
UK	100%	100%	335	Full (3)	own.	own.	leg.	100%	100%	95	Full	own.	own.	own.
Estonia	-	12%	1	40 GWh	-	leg.	leg.	-	95%	1	non HH	-	not implemented	no
Latvia	-	76%	4	non HH	-	leg.	no	-	0%	0	n.a.	-	not implemented	no
Lithuania	-	74%	6	non HH	-	own.	leg.	-	90%	3	non HH	-	not implemented	no
Poland	-	80%	120	non HH	-	leg.	no	-	72%	5	non HH	-	leg.	no
Czech R	-	74%	44	non HH	-	own.	no	-	25%	3	n.a.	-	not implemented	no
Slovakia	-	79%	24	non HH	-	leg.	no	-	72%	4	non HH	-	not implemented	no
Hungary	-	67%	22	non HH	-	own.	*	-	66%	8	non HH	-	leg.	no
Slovenia	-	77%	10	non HH	-	own.	no	-	91%	1	non HH	-	leg.	no
Cyprus	-	35%	1	350 MWh	-		no	-						
Malta	-	0%	0	n.a.	-		no	-						

Notes: A * denotes Member States in which the distribution company is also the default supplier. However suppliers to non-regulated customers must be legally unbundled.

(1) Full market opening in the Flanders region only.

(2) All customers in non-connected islands are non-eligible.

(3) In Northern Ireland the electricity market is open to the non-household sector only.

Source: European Commission (DG TREN), 2005, Report on progress in creating the internal gas and electricity market, COM (2005) 568 final.

Table 28: Market structure in electricity and gas markets, 2004

	Electricity				Gas			
	Companies with market share > 5%	Number of fully independant suppliers (no network affiliates)	Market share of largest 3 companies (2001)	Market share of largest 3 companies (2004)	Companies with market share > 5%	Number of fully independant suppliers (no network affiliates)	Market share of largest 3 companies (2001)	Market share of largest 3 companies (2004)
Austria	5	4	68%	60%	4	6	-	n.k.
Belgium	3 / 2	14 / 6	97% (2)	100% / 99%	3 / 5	12 / 8	-	100% / 99%
Denmark	n.k.	3	75% (2)	n.k.	3	2	-	100%
Finland	5	5	54%	35-40%	-	-	-	-
France	1	20	98%	97%	3	6	-	n.k.
Germany	4	13	63%	n.k.	1	9	-	n.k.
Greece	1	10	100% (1)	97%			-	
Ireland	3	7	97% (1)	99%	3	8	-	100%
Italy	6	119	79%(2)	12%	5	110	-	33%
Luxembourg	4	4	-	94%	4	1	-	93%
Netherlands	3	18	64%	83%	3	5	-	83%
Portugal	2	4	85%	98%			-	
Spain	5	20	79%	86%	5	4	-	77%
Sweden	3	n.k.	77%	50%	n.k.	n.k.	-	n.k.
UK	6	3	44%	66%	6	8	-	61%
Estonia	1	0	-	95%	1	1	-	100%
Latvia	1	0	-	n.k.	1	0	-	100%
Lithuania	3	5	-	100%	2	0	-	100%
Poland	6	20	-	48%	7	0	-	n.k.
Czech R	3	0	-	95%	7	0	-	51%
Slovakia	1	1	-	100%	1	0	-	100%
Hungary	7	0	-	43%	7	0	-	76%
Slovenia	6	6	-	75%	6	0	-	n.k.
Cyprus	1	0	-	100%			-	
Malta	1	0	-	100%			-	

Notes: The combined market shares in 2004 concern the market for supplying small/medium businesses. The market shares are generally equivalent for large industrial users and for very small commercial/household customers. An exception is Italy, where the shares for large industrial users and very small commercial/household customers as regards electricity were 33% and 93% respectively. Figures for Belgium refer to Flanders and Wallonia.

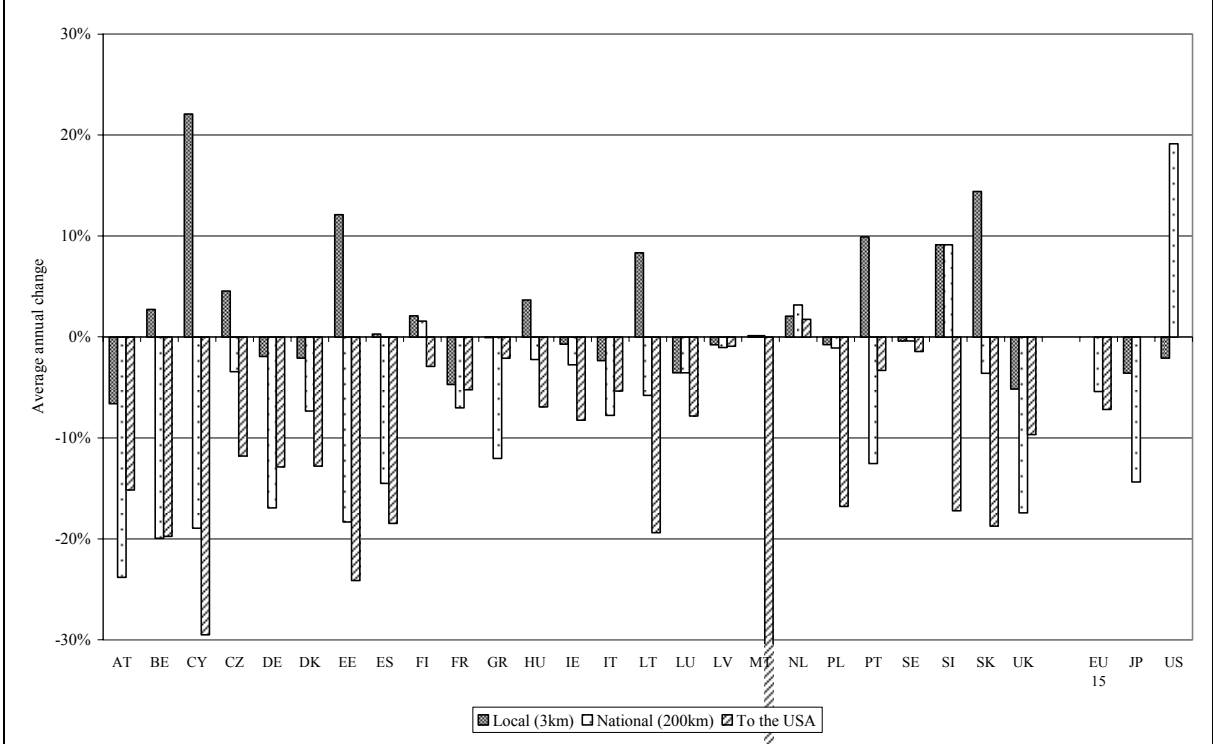
Source: European Commission (DG TREN), 2005, Report on progress in creating the internal gas and electricity market, COM(2005) 568 final and European Commission (DG TREN), 2001, First benchmarking report on the implementation of the internal electricity and gas market, SEC(2001) 1957.

Table 29: Perceived degree of competition in domestic letter post (2005)

MS	Letter post (2000)	Letter post (2005)	Items of correspondence	Direct mail (addr.)	Newspapers, magazines, periodicals	Daily newspapers	Un-addressed items
AT	○	●	NA	●	●●	●●●	●●
BE	◐	●	◐	●	●●	●●	●●●
CY	○	○	○	○	●	●●●	●●
CZ	●	●	●	●●	●●●	●●●	●●●
DE	●	●	●	●	NA	NA	●●
DK	◐	●●	NA	NA	NA	NA	●●●
EE	○	○	○	●	●	●	●●
ES	●●	●●●	●●	●●	●●●	●●●	●●●
FI	●◐	●●●	●●●	NA	NA	●●●	●●●
FR	●●	●●●	●	●	●●	●●	●●
GR	○	●	●	●	●	●	●
HU	○	◐	◐	◐	●◐	●◐	●●◐
IE	○	○	○	○	●●	NA	●●●
IT	●	●◐	●●	●●●	●●	NA	●●●
LT	●◐	●●●	●●●	NA	●●●	●●●	NA
LU	●◐	●	●	●	●	◐	●●●
LV	●	○	○	○	●	●	●●
MT	○	●●	●	●	◐	◐	●●◐
NL	◐	●◐	●	●●◐	●●●	NA	●●●
PL	○	●	●	●	●●●	●●●	●●●
PT	●	●	●	●	●	●	●●●
SE	●	●	●	●	●	●	●●●
SI	●	●	●	●	●●	●●◐	●●●
SK	●	●●	●●	●●	●●●	●●	●●●
UK	○	●	NA	NA	NA	NA	NA
EU-25	● (0.7)	● (1.3)	●	●	●●	●●	●●●
○ None ● Emerging ●● Substantial ●●● Intense							

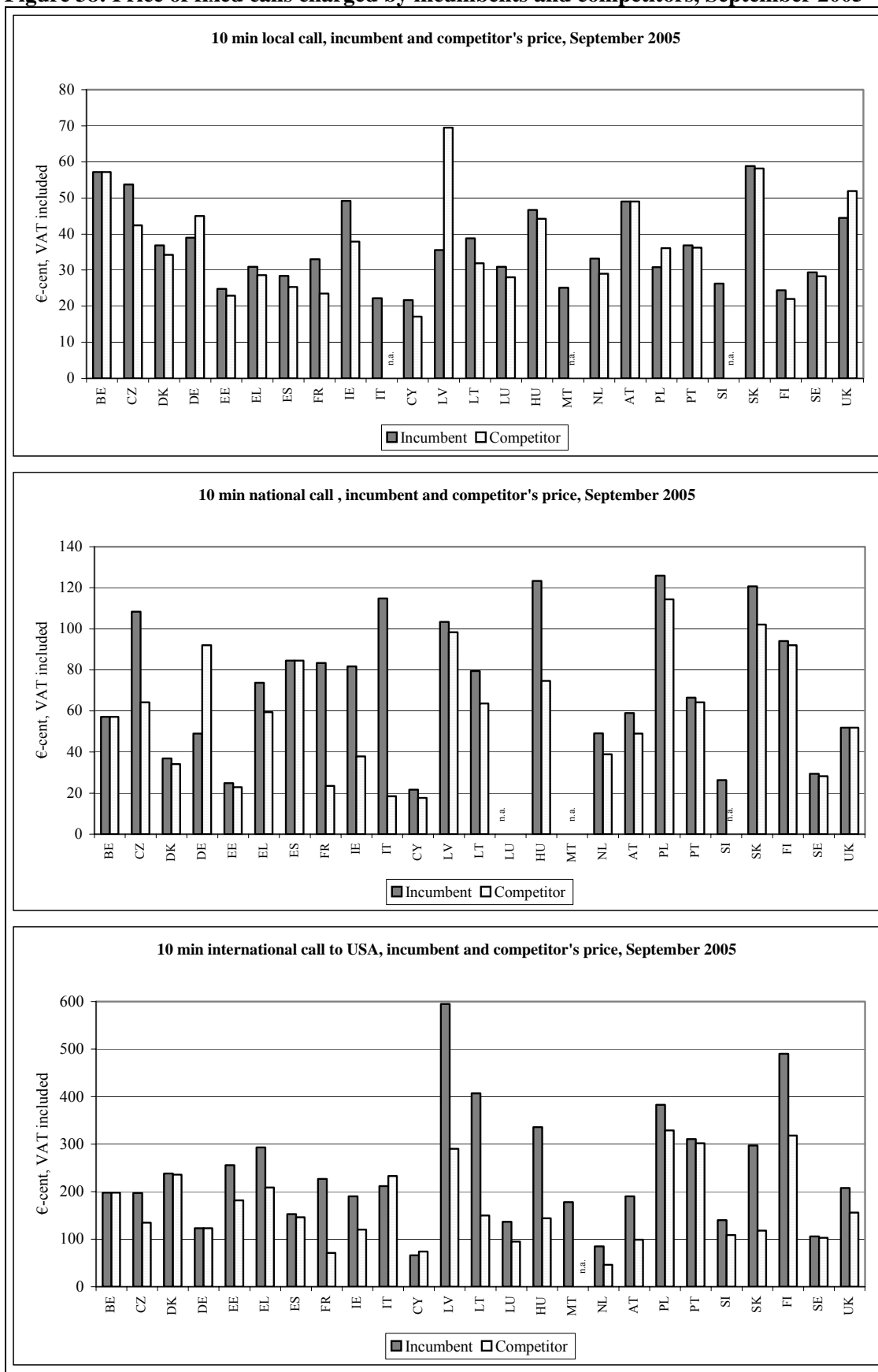
Source: wik-Consult (2006), based on an internet survey of NRAs and USPs

Figure 37: Evolution of telecommunication tariffs for a 10-minute call, 2000-2005



Note: The period for MT and the CZ (calls to the USA) is 2002-2005, for the EU-15 it is 2000-2003. The calculations are based on incumbents' tariffs.
Source: Eurostat, DG INFSO

Figure 38: Price of fixed calls charged by incumbents and competitors, September 2005



Source: European Commission (DG INFOS), 2006, *European Electronic Communications Regulation and Markets 2005*, COM(2006) 68 final.

Table 30: Employment in Telecommunications

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average annual change (%) 1995-2004	Change (%) 2003-2004
Belgium	26012	26193	21000	23886	25074	28495	28927	24408	23089	23775	-1.0%	3.0%
Czech Republic	28796	29524	29276	26910	26102	28542	24529	24610	23260	20334	-3.3%	-12.6%
Denmark	16081	16126	17170	17336	19750	21298	22405	21873	20471	19739	2.5%	-3.6%
Germany	229700	222000	219200	221900	221000	240700	241000	231500	230600	225000	-0.2%	-2.4%
Estonia	4730	4438	4419	4698	4353	4124	3525	3112	2845	2759	-4.6%	-3.0%
Greece	24581	23808	23841	25044	25966	25732	26163	24700	25000	25700	0.5%	2.8%
Spain	70885	72386	96266	96200	87743	91075	94394	89605	85169	87923	2.7%	3.2%
France	151448	164720	165042	169099	169770	173094	151191	145487	138716	135326	-1.2%	-2.4%
Ireland	11707	11560	10995	12055	14753	17450	17000	15600	14700	14500	2.7%	-1.4%
Italy	101900	100005	94101	99379	103246	111702	111794	104550	:	:	0.4% (1) :	:
Cyprus	2353	2341	2379	2395	2392	2403	2426	2417	2409	2772	2.0%	15.1%
Latvia	8139	8026	7994	7375	7390	6981	6602	6410	5421	5418	-3.7%	-0.1%
Lithuania	9855	9890	10528	12002	10427	9147	8517	7223	6482	5031	-5.4%	-22.4%
Luxembourg	800	:	:	:	1356	1451	1487	1515	1660	1680	12.2%	1.2%
Hungary	21314	20083	20846	22462	21534	20847	20618	20784	19548	19131	-1.1%	-2.1%
Malta	1826	1833	1812	1764	2315	2028	1942	1867	1613	1619	-1.3%	0.4%
Netherlands	30548	29690	33753	46000	47000	58500	:	:	:	:	:	:
Austria	17375	17878	17600	20047	24140	23488	32152	26900	:	19900	1.6%	-13.0% (2)
Poland	73267	73695	72875	73018	:	:	183082	175385	:	:	19.9% (1) :	:
Portugal	19845	18617	18786	19177	16671	16270	18627	17354	15221	14548	-3.0%	-4.4%
Slovenia	3235	3298	3363	3411	3546	4159	4470	4826	4712	4182	3.3%	-11.2%
Slovakia	15910	15969	16470	16557	16454	15874	14678	12621	11552	10878	-3.5%	-5.8%
Finland	16405	16856	17976	19448	21601	24190	25015	19426	17433	17786	0.9%	2.0%
Sweden	29913	25001	33930	31492	30276	31411	29443	21620	20087	18914	-4.1%	-5.8%
United Kingdom	186000	182900	184500	182400	206500	230300	231500	239500	:	:	4.1% (1) :	:
EU15	933200	928590	955516	984819	1014846	1095156	1089598	1042538	1014696	1007341	0.9%	-0.7%
EU25	1102625	1097687	1125478	1155411	1182377	1262279	1359987	1301793	1267923	1254850	1.5%	-1.0%

(1) Average annual change (%) 1995-2002

(2) Average annual change (%) 2002-2004

Source: Eurostat

Table 31: Universal Service Provider employment (thousands, headcount), Postal services, EU25

	UPU	WIK Survey
2000	1,473	1,675
2001	1,434	1,661
2002	1,437	1,734
2003	1,385	1,740
2004	1,542	1,710
Average annual change 2000-2004	1.2 %	0.5%
Average annual change 2002-2004	3.6 %	-0.7%

Source: wik-Consult (2006), based on survey results and a review of annual reports.

Table 32: Congestion in electricity interconnections: Hours with congestion as a percentage of all hours (selection of borders)

Border	2004 Jan-May	2005 Jan-May
SK-->HU	100,0	100,0
FR-->CH	100,0	100,0
DE-->DK	99,3	100,0
NL-->BE	96,4	100,0
FR-->UK	94,6	95,6
DE-->NL (1)	87,9	90,1
FR-->ES	34,6	81,1
CZ-->DE	69,2	68,0
NL-->DE (1)	62,9	63,9
BE-->NL	63,3	63,1
DE-->FR (1)	0,0	41,3
CZ-->AT	0,0	37,0
DE-->CZ (1)	30,0	35,7
UK-->FR	31,5	35,0
FR-->DE	48,4	33,3
ES-->FR (1)	30,0	32,8
PL-->SK	0,0	19,1
ES-->PR	7,8	17,5
PL-->CZ	15,8	16,1
PR-->ES	26,7	11,7
FR-->BE	30,4	11,0
CZ-->PL	0,2	10,1
SK-->CZ	1,4	6,6
CZ-->SK	2,1	1,1
DE-->CH (1)	0,0	1,0
FR-->IT	0,7	0,8
AT-->CZ	0,0	0,3
CH-->FR	0,0	0,0
IT-->FR	0,0	0,0

Note: Hours when requested capacity exceeded available cross-border capacity as a percentage of all hours. The arrows indicate the direction per border, in some cases reported by different TSOs.

(1) Refers to an average of more than one interconnector between two adjacent countries.

Source: Energy Sector Inquiry.

Table 33: Congestion on gas transit pipelines in the EU

Pipeline	Technical capacity mcm/day	Route	Historical uncontracted capacity	Historical physical utilisation	Historical interruptible capacity	Future contracted capacity
SPP	315.9	E-W				
Transgas	180.5	E-W				
TAG	95.3	E-W				
JAGAL	80.1	E-W				
Ex Hilvarenbeek	67.7	N-S				
JAMAL-Europa	67.2	E-W				
MEGAL Nord	57.1	E-W				
IUK FF	54.8	N-S				
En Taisniere	50.4	N-S				
En Dunkerque	49.1	N-S				
NETG	44.5	N-S				
Ex Bocholtz	43.9	N-S				
TENP	40.5	N-S				
TROLL	40.5	N-S				
METG	40.1	N-S				
STEGAL West	36.0	E-W				
VTN/RTR FF	30.2	N-S				
Slochteren	27.5	N-S				
Ex 's Gravenvoeren	27.1	N-S				
BEB OTR 1	20.0	N-S				
STEGAL East FF	20.0	E-W				
Ex Oltingue	19.7	N-S				
BEB OTR 8	19.3	N-S				
En OSZ RG	18.6	N-S				
WAG	18.5	E-W				
En Emden EPT	18.2	N-S				
SEGEO	17.9	N-S				
En Emden NPT	13.1	N-S				
MEGAL Sud FF	11.1	E-W				
RWE OTR 3	10.9	N-S				
BEB OTR 3	9.6	N-S				
BEB OTR 5	6.9	N-S				
BEB OTR 10	6.7	N-S				
DEUDAN	6.6	N-S				
RWE OTR 2	3.7	N-S				
BEB OTR 7	2.6	N-S				
RWE OTR 1	1.6	N-S				

Notes: 'Historical uncontracted capacity' refers to the potentially available capacity (defined as the average of the monthly amount of uncontracted capacity over the period January 2003-June 2005). A cell is white if the monthly amount of uncontracted capacity is greater than 5% of the technical capacity, and dark grey otherwise; 'Historical physical utilisation' refers to the actual physical use of the transit pipeline. The cell colour is given according to three measures of physical utilisation. The darker a cell, the higher the physical use of the pipeline; 'Historical interruptible capacity' compares interruptible and unused capacity. A cell is white if the monthly amount of interruptible capacity is greater than 10% of the average unused capacity, and dark grey otherwise; 'Future uncontracted capacity' shows the expected level of future contractual congestion. The level of contractual congestion is based on the amount of primary capacity reserved over four time periods: 1 June 2005 to two years ahead; two to five years ahead; five to ten years ahead; ten to twenty years ahead. A pipeline is deemed to be congested if: for the first time period, over 90% of the maximum technical capacity has been reserved; for the second time period, over 90% has been reserved; for the third time period, over 70% has been reserved; and for

the fourth time period, over 50% has been reserved. Where a particular pipeline is deemed to be congested for three or more of these time periods, the cell is represented as dark grey. Cells represented as grey or white relate to lower levels of congestion.
Source: Energy Sector Inquiry.

Table 34: Final decisions under the Merger Regulation involving firms of network industries (detail), 1995-2006

Industry	Type of decision	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
Telecommunications	Full referral to Member State										1	1		2
	Outside scope of regulation		2				1							3
	Phase I clearance with remedies				1	2	5						1	9
	Phase I clearance without remedies	5	8	10	13	19	26	28	9	3	11	22	11	165
	Phase II clearance with remedies			1	1	1				1			1	5
	Prohibition						1							1
Telecommunications Total		7	8	11	15	22	33	28	9	4	12	23	13	185
Electricity and Gas	Full referral to Member State			1										1
	Outside scope of regulation					1								1
	Phase I clearance with remedies										1			1
	Phase I clearance without remedies			1	1	1		1	5	1	1	2	3	16
	Phase II clearance with remedies												1	1
	Prohibition										1			1
Electricity and Gas Total			1	1	2	1		1	5	1	3	3	4	22
Electricity	Full referral to Member State		1	1					1	7				10
	Outside scope of regulation								1					1
	Phase I clearance with remedies				1	1			1					3
	Phase I clearance without remedies			1	4	3	8	19	10	5	6	4	7	67
	Phase II clearance with remedies						1	2		1				4
Electricity Total			1	2	5	4	9	21	13	13	6	4	7	85
Gas	Phase I clearance with remedies												1	1
	Phase I clearance without remedies		1	1	1		1	4	5	6	2	2	3	26
	Phase II clearance with remedies						2		1					3
Gas Total			1	1	1		3	4	6	6	2	2	4	30
Air transport	Full referral to Member State												1	1
	Outside scope of regulation			1										1
	Phase I clearance with remedies	1						1			1	2		5
	Phase I clearance without remedies		1	4	2	4	4	1	3		2	1	1	23
Air transport Total		1	2	4	2	4	4	2	3		3	4	1	30
Railway	Full referral to Member State							1						1
	Phase I clearance without remedies	1	1	3	1			2	2	1	2			13
Railway Total		1	1	3	1			3	2	1	2			14
Water transport	Outside scope of regulation			1										1
	Phase I clearance with remedies											2		2
	Phase I clearance without remedies			1	2	1		1		2	1	3	3	14
Water transport Total				2	2	1		1		2	1	5	3	17
Land transport (other)	Full referral to Member State								1					1
	Outside scope of regulation			1										1
	Phase I clearance with remedies										1			1
	Phase I clearance without remedies			2	3	7	1	2	2	1	1	2	2	23
Land transport (other) Total				3	3	7	1	2	3	1	2	2	2	26
Post	Phase I clearance without remedies		2		1	6	2	6	7	1	1	2	1	29
	Phase II clearance with remedies							1						1
Post Total			2		1	6	2	7	7	1	1	2	1	30
Grand Total		9	16	27	32	45	52	69	48	29	32	45	35	439

Note: Network industries are defined according the NACE classification in the following way: Electricity and Gas (40.0), Electricity (40.1), Gas (40.2), Postal Services (64.1), Telecommunications (64.2), Air transport (62), Rail transport (60.1), Water transport (61), Land transport (other) (60.0, 60.2 and 60.3).

Source: European Commission (DG Competition website), 20/09/2006