

R

f R

D B

VI European Conference



Contrasting Europe's Decline: do Product Market Reforms Help?

Giorgio Barba Navaretti, Riccardo Faini,
Jonathan Haskel, Carlo Scarpa and
Christian Wey

D

B

**Contrasting Europe's decline:
do product market reforms help?**

by

Riccardo Faini, Jonathan Haskel, Giorgio Barba Navaretti ,Carlo Scarpa, and Christian Wey

June 2004

Preliminary draft.

We are grateful to Laura Anselmi, Chiara Criscuolo and Alessandra Tucci for their invaluable help in preparing this report.

TABLE OF CONTENTS

1. Introduction	3
2. Competition and economic performance a brief review of the literature.....	6
3. The maze of services regulation.....	8
3.1. Energy.....	9
3.2. Telecommunications	11
3.3. Railways	13
3.4. Professional Services	14
3.5. Retailing	16
3.6. Postal Services	19
3.7. Water	21
4. The changing role of the tertiary sector.....	22
5. The impact of service regulation.....	30
5.1. Productivity in manufacturing.....	30
5.2. Inward FDI	34
6. Main conclusions and future prospects: will liberalization policies succeed?.....	38
References	42
Appendices	46
Appendix 1. Competition, privatisation and performance	46
Appendix 2 . OECD Input – Output Tables sectors classification.....	54
Annexes: Sectoral regulations in service markets	56
Annex 1 - Energy Markets	56
Annex 2 - Telecommunications	83
Annex 3 - Railways	89
Annex 4 - Professional Services	99
Annex 5 - Retailing	106
Annex 6 - Postal Services	122
Annex 7 - Water	136

1. Introduction

In 2001, faced with the US economic slowdown, European policy makers were quite confident that Europe could become the leading engine of growth for the international economy. Strong macroeconomic fundamentals, including low inflation, the lack of current account imbalances, and an increasingly healthy public finance situation, all boded well for the future prospects of the continent's economy. Most of these expectations were much too optimistic. The economic slowdown since 2001 has been substantially more pronounced in Europe than in the US. By and large, Europe has yet to find the recipe for endogenous self sustained growth.

The mediocre growth performance has prompted new concerns about Europe's long term economic prospects. Particularly worrying is the fact that, contrary to the US, productivity growth has been stagnant. In the absence of sustained growth in total productivity, many of the objectives of the Lisbon agenda will be difficult if not impossible to attain. Inadequate productivity growth may also be at the heart of Europe's competitiveness problem, as epitomized in particular by the steady erosion of world exports market shares and the increasingly limited ability to attract foreign direct investment.

Do product market reforms have some bearing on Europe's poor growth and productivity record? This is the central question addressed by this report. There is considerable agreement that widespread rigidities in European markets are among the main culprits of Europe's growth record. So far, much of policy makers and public opinion attention has been devoted to the reform of labour markets and the pension system. Yet, pervasive inefficiencies and distortions are not limited to labour markets but are significant features of product markets as well. The tertiary sector accounts for most of the unfinished reform agenda.

The call for further liberalisation in services is however not always unanimous. There are often concerns that this process might entice job losses, lower investments in infrastructure and that the benefits of increased competition do not trickle down to final users through price reductions. Indeed, liberalisation is a difficult process, that many European countries have been able to implement only as a consequence of Directives of the European Commission. Sectoral specificities matter in determining the effects of liberalisation policies. These policies, besides their difficult path and implementation, do not have automatically positive effects on variables such as employment, investment and prices. These concerns are often raised by interests groups, but may

also find support in the theoretical literature that shows that increased competition may sometimes have perverse effects on efficiency, particularly for what concerns innovation (Aghion, 2002, Etro, 2004).

Notwithstanding these concerns, the overall consensus in the academic community and among policy makers is that the benefits of competition outweigh any eventual costs. Namely, the consensus rests on two key arguments. The first one is that well designed product markets reforms can play a key role in boosting productivity, as shown by recent OECD research (Nicoletti and Scarpetta, 2003). The second one is that many labour market rigidities are intrinsically linked to product market distortions (Blanchard and Giavazzi, 2003; Jean and Nicoletti, 2003; Bertola and Boeri, 2002). In particular, inefficient regulations typically generate economic rents that in turn foster additional labour market rigidities. Hence, reforming product markets may facilitate structural changes in labour markets as well.

Of comfort to these positions, the empirical evidence, while not fully unanimous, generally suggests that more competition raises productivity (see for example Nicoletti and Scarpetta, 2003). This evidence, however, often fails to take into account the comprehensive sets of factors that may affect the relationship between deregulation and productivity.

In this report we therefore provide a further assessment on this issue. We proceed in two main directions. The first one is to take stock of reform efforts in key services in a number of European countries, by focussing on three case studies: Germany, Italy, and the UK. The choice of the sample is dictated by the need to consider a set of representative countries in the European arena as well as by the desire to focus on a sufficiently wide range of country experiences. The features and the effects of reforms will be examined for individual sectors, as regulatory issues and their effects are industry specific: the problems faced by network industries like energy or communications are completely different from those concerning business services, like accountants or lawyers. So far, most of the attention at the European level has focussed on the reform of the regulatory framework in the network industries. Other sectors, including the wholesale and the retail sectors as well as professional services, while quite crucial in terms of competitiveness and efficiency, have been somewhat less emphasized.

The second feature of this report is that it examines also the indirect effects of the tertiary sector as a supplier of key inputs for manufacturing. Generally, the debate on services is focussed on their

effects on final consumption and input output linkages are seldom considered (see however Grillo, 2004, and Nicoletti and Scarpetta, 2003, for two noticeable exceptions). However, services account for an important share of total output value of other economic activities like manufacturing or agriculture. In this respect, the efficiency of the tertiary sector has important implication on the efficiency of overall economic activities.

Our key finding is that, although reforms are difficult to implement and they do not always deliver the expected gains, particularly in the short term, deregulation of services in all the three countries analysed is found to be associated with faster productivity growth and competitiveness both in the service sector and in the rest of the economy. This latter result is largely due to the fact that services play a much more pervasive role in the overall economy than generally acknowledged, as they are fundamental inputs to most non-service activities like manufacturing and agriculture. Consequently, changes in efficiency, quality and costs of the services delivered trickle down in large competitive gains in the overall economy. The bottom line is that liberalization in services has the potential to bring large welfare gains and governments need to persevere in their effort to reform the service sector.

The structure of this report is as follows. First, it briefly reviews the literature on the relationship between deregulation and productivity and growth. Second, it examines reform efforts in key services in Germany, Italy, and the UK. Third, it uses input-output analysis to document how the tertiary sector plays a large and growing role as a supplier of key inputs for manufacturing, in affecting the competitiveness of European industry. Fourth, it examines the impact of deregulation of services on the manufacturing sector. It will focus on two key indicators, productivity growth and the ability to attract foreign direct investment. It finally concludes discussing the prospects for further liberalisation in product markets. The report has also two appendices, one summarising the literature on competitiveness, privatisation and efficiency and the other one summarising the sectoral classification of input-output tables. Finally, the annexes report the extensive evidence on reforms and their effects in individual service industries.

2. Competition and economic performance: a brief review of the literature

Theory does not provide an unambiguous answer as to the impact of competition on economic performance¹. Empirical evidence, however, while not fully unanimous, suggests that more competition raises productivity. Both policy makers and the academic community agree that the benefits of competition outweigh any eventual costs.

First, imperfectly competitive markets are typically inefficient. By equating marginal costs to marginal revenues rather than to prices they produce at inefficiently low levels. However, such static costs are not very significant. Empirical evidence shows that they amount to just a few decimal points of a percentage point of GDP.

A stronger case in favour of a competitive environment comes from considering the incentives for cost efficiency. It is often argued that competition may strengthen such incentive and prompt firms' owners to better monitor their managers. While the owner of a monopolistic firm should be equally keen in monitoring his managers, his task however may be greatly complicated by the lack of an obvious benchmark.

An even stronger case in favour of competition is that it boosts the incentives for innovation. The standard argument is that a reduction in production costs brought by a technological advance would be fully captured by a competitive firm rather than being eroded by a decreasing marginal revenue schedule. However, if barriers to entry are not too high, a monopolistic firm may have a strong incentive to keep innovating simply to keep its potential competitors at bay and preserve its hefty monopolistic rents (Etro, 2004). Aghion et al. (2002) argue that the relationship between market structure and innovation is hump shaped with either highly competitive or a highly concentrated environment fostering innovation. Again, empirical evidence is somewhat inconclusive. The typical finding is that large firms innovate more. Yet, this may simply be due to the fact that such firms are better innovators and, as such, have comparatively larger market shares.

Finally, in addition to raising the productivity of existing firms competition can also raise productivity growth via the process of entry and exit. Empirical evidence shows that entry and exit of firms account for a large and increasing share of aggregate productivity growth.

¹ See appendix for a more thorough discussion of the link between competition and economic performance.

A different but related issue is whether privatised firms are more efficient than public enterprises. There are a number of reasons to believe that this may be the case, namely the closer alignment of shareholders and managers objectives and the more limited scope for rent seeking behaviour².

The typical way to examine the link between competition and performance is to relate some indicators of market structure (say price cost margins, concentration indices) to performance indicators such as productivity and innovative activity. Nicoletti and Scarpetta (2003) take a different route and assess the link between productivity growth and the OECD indicator of regulatory restrictions. They focus therefore on the policy determinants of product market competition. One key advantage of their indicator is its exogeneity, provided political economy factors are neglected. Their main finding is that privatisation has a systematically strong effect on productivity growth. The effect of regulation is more mixed, but works mainly by slowing down convergence toward the best productivity performers.

Most of existing empirical research, however, is based on reduced form models which may fail to capture the comprehensive set of factors affecting the relationship between competition and performance, such as market conduct and technological conditions. Moreover, the features of the reform experiences and their effects vary considerably and are industry specific. Consequently they are often not fully assessed by analyses based on cross country and cross industry regressions. For this reason, in the following section we develop a set of industry specific case studies that examine the reform experiences of three sample countries, Germany, Italy and the United Kingdom and take stock of their main effects in terms of efficiency, employment trends and prices.

Also, available works are generally focussed on the direct link between a competitive environment and economic performance. In doing so, they largely overlook the possibility that costs and productivity inefficiencies in a given sector may spill over to other sectors through input output linkages. This kind of pecuniary externalities is likely to be particularly relevant for the tertiary sector. First, this is a highly regulated and imperfectly competitive sector. Second, it is relatively less exposed to international competition. Third, its role as a supplier of inputs to manufacturing is very significant and has been growing quite markedly over the last decades. In section four and five we rely on input output analysis to document these trends and their effects on competitiveness.

² See appendix 2 for a detailed analysis

3. The maze of services regulation

The analysis of the service sectors highlights that where an incumbent exists, all countries exhibit difficulties in dismantling existing dominant positions. Even in Britain, the initial arrangements in sectors such as gas, electricity and telecommunications were characterised by little restructuring of incumbents and substantial limitations to competition. Liberalisation is a difficult process, that many European countries have been able to implement only as a consequence of Directives of the European Commission. This seems to suggest that institutions which are farther away from local specific interests tend to be more market oriented than national governments.

A key aspect, which emerges quite clearly from this analysis, is that sectoral specificities matter in determining the effects of liberalisation policies. These policies, besides their difficult path and implementation, do not have automatically positive effects on variables such as employment and prices.

The single aspect on which liberalisation seems to have positive effects is *productivity*, which – very often because of a reduction in employment relative to excessively high levels – increases in all cases where its measurement is possible and reliable. It is interesting to see that in some cases productivity may increase even well before privatisation and liberalisation; the Italian experience in electricity shows that anticipating that in the future the service will be provided within a more market oriented set-up may be sufficient to produce substantial results.

As for *prices* and *employment*, the situation is more complex. In some cases (retailing, professional services, telecommunications) liberalisation has actually allowed the development of competition, either because of a naturally competitive industry, where regulation was simply a way to protect producers, or because technological progress allows entrants to by-pass the incumbent's network and to offer innovative products. Product differentiation (in particular, product improvements) seems to have been a key factor in developing competition in telecommunications. In these cases, prices have decreased and employment has increased, following output expansion.

Other network industries are characterised by limited product and process innovations, and here the natural monopoly elements do not allow competitors to easily by-pass a strong incumbent. In sectors such as energy, water, railways and postal services the main effect of reforms has been the reduction in the initial overmanning. In these cases, productivity has increased mainly because of

the decrease in employment, while output in these sectors is most unlikely to boom just because of liberalisation.

It is important to stress that in these sectors, efficiency gains did not easily translate into lower prices. Several explanations are possible. In energy sectors expectations on the power of reforms were probably excessive, neglecting the high proportion of final prices which were due to fuel costs, or to the cost of long term wholesale supply of gas. More in general, prices did not decrease as much partly because of the limited competition that countries were able/willing to introduce. Finally, the reform has involved some sectors which were run with prices below cost, were heavily subsidised but not sufficiently to fund the needed investments. Especially in sectors such as railways or water, market oriented reforms which bring prices in line with costs are bound to increase prices to fund investments.

Given the extreme relevance of the differences across countries and across sectors, both because of starting conditions and technological features, an analysis of the impact of market reforms should make justice of such heterogeneity. Let us illustrate the different cases separately.

3.1. Energy

The common European framework for gas and electricity has been designed through two Directives approved in the second half of the Nineties, and the national plans have been further developed in the member Countries with relevant differences and a more or less advanced approach. At the beginning of 2003 two new Directives have been approved, with relatively minor innovations. The first steps in the liberalization process have so far concentrated on the removal of public restraints to upstream activities, on the definition of non discriminatory access conditions to the network infrastructures, but have only introduced minor requirements on vertical separation, where nothing more than a legal separation between the subjects operating different stages of the activity is required.

Countries which have operated a more aggressive separation have allowed the regulator to operate in a clearer situation, reducing cross subsidies and granting new entrants a level playing field. In countries (Germany being a prominent example) where vertical integration remains widespread and

where unclear rules are in place, competition is extremely slow to develop and consumers do not benefit from an opening of the market, which remains mostly formal.

The United Kingdom is by now a textbook example on how energy markets could be created, with some vertical separation and regulation of the network, and creation of competitive markets upstream and in the final segment (sales to final customers). However, even in that experience we have seen that the competition introduced initially was insufficient, both in the wholesale electricity market (where the initial duopoly has lasted for many years) and in the gas market (where the vertical separation of the transportation network from British Gas took place much later).

So far, Italy has been even more reluctant to dismantle the initial monopolies, particularly so in gas, where no vertical separation has been introduced. Despite the formal opening of final demand, the limited availability of gas and electricity wholesale still represent considerable bottlenecks.

Germany has been so far a unique case in Europe, as access to the network is not regulated, and no sector authority exists. Vertical integration is still the normal way of organising the activity while the market remains extremely segmented among local monopolists.

Despite these differences in the implementation of liberalisation plans and the severe limitations to competition, the result on *productivity* are encouraging in the countries examined. Both UK and Italian figures show drastic decreases in *employment* and increases in output per employee. This happened in Italy well before privatisation (which even now is only partial), and this seems to suggest that the emphasis on ownership might be overstated. Given a fairly subdued demand growth, the main driving force for productivity increases is the decrease in employment; the initial overmanning in traditional monopolies implies that restructuring goes hand in hand with decreases in the number of jobs.

The *quality* of the service also shows an encouraging trend both in Italy and in England; notice that often the restructuring of the sector and the creation of regulatory bodies has entailed that quality has been monitored for the first time. The results are particularly positive in electricity, where quality can be measured (as continuity of service) while in gas the definition itself of quality appears more complex.

Prices do not react as quickly as one would expect. In electricity, this is partially because a large component of prices depends on fuel prices and hence on technological choices (the types of plants)

whose relationship with the competitive environment is weak, especially in the short run. In gas, wholesale purchases take place through long-term contracts, whose conditions are set for decades, and again competition may only affect a limited portion of final prices. However, even considering these aspects, the effect of the new competitive and regulatory framework is less than expected, often for the responsibility of Member states, which tend to defend the interests of the incumbents.

Moreover, it is important to stress that between the two sectors under observation there are two important asymmetries:

- Wholesale competition in electricity is relatively easy, while take-or-pay contracts limit the access to gas wholesale. Although the Directives only protect take-or-pay contracts signed before 1999, the duration (20-30 years) of these contracts makes the distinction between old and new contracts significant only beyond a reasonable time horizon.
- Vertical integration remains very strong, especially in the gas sector, where the co-ordination problems are less cogent than in electricity.
- Access to international infrastructures is limited, as they seem to be outside the scope of both regulatory and antitrust norms in the EU. Given the relevance of imports in most EU countries, this means that the owner of international networks may effectively foreclose a market.

Much remains to be done. The apparent opening of most markets, where most customers are formally free to choose their supplier, does not translate into lower prices. Competition remains limited because countries have been lenient towards incumbents (even the UK story in the early years confirms that) and greater effort must be exerted in this direction, especially in the gas sector.

3.2. Telecommunications

Telecommunications are probably the most dynamic sector among those considered, especially for technological reasons. Competition seems to develop quite quickly in all sectors (fixed line, mobile, internet), with a substantial and positive impact on the sector's economic performance. . This happens despite the fact that in all countries examined the incumbent firm has been granted a position of advantage for a substantial period. Unlike other sectors, here the quick development of the technology, the continuous expansion in the range of possible services and possible quality increases give entrants a much better chance of effectively competing.

The range of services in this sector is expanding continuously, so that *employment* has increased substantially. Productivity – which is not easy to measure, given the changes in the range of services – also seems to increase quite rapidly. This sector thus provides an example where liberalisation boosts output and does not conflict with job creation.

Entry is substantial, although it varies quite a bit from segment to segment. In newer markets such as mobile telephony and internet services, entry has produced relatively balanced situations, where the existence of a large firm does not prevent competitors from getting important market shares. In fixed telephony, the incumbent still maintains a substantial advantage. However, in the three countries considered, for both local and long-distance calls consumers have substantial freedom of choice. Although the market shares of the incumbent are still well above the level which traditionally indicates most likely market dominance (50%), *prices* have fallen substantially, especially in the long-distance segment, where competition is more intense.

What is sometimes considered the ultimate step in creating the conditions for competition, namely local loop unbundling, is still in the making. However, some regulators fear that such extent of vertical separation would represent a risky exercise; the fear being that price mistakes in this area could have relevant consequences on firm's decisions in a highly innovative sector, where regulation runs the risk of being unable to cope with the pace of change of technology and market conditions.

The *quality* of service, measured by availability and reliability of services and by availability of the latest technologies for network connection is on the rise; in particular, investments in new technology seem to be directly due to the entrant's competitors.

Therefore in this sector, despite the persistence in certain segments of dominant position, consumers seem to benefit from substantial price cuts and investments in new technologies. Productivity and employment also increase. It is however difficult to determine to what extent this is due to liberalisation, restructuring and competition, rather than to the considerable technical progress we observe in this sector.

3.3. Railways

The railway industry in Europe has been liberalised over the last 13 years. The EU directive 91/440 was a landmark in the process of liberalization of the sector. As for other network industries, the directive envisaged a separation between the infrastructure and those activities that could be opened up to competition. Countries however could choose between a simple accounting separation or a more ambitious and effective proprietary separation of the track infrastructure.

Compared to other industrial countries, Europe is clearly ahead in the liberalization of railways. Infrastructure and train operations are fully integrated in the US, New Zealand, and Japan, to name just a few. Within Europe, the *United Kingdom* has forged ahead of most other countries by fully unbundling infrastructures from other activities and designing a scheme that should have facilitated the entry of new firms in train operations and foster competition. All the rolling stock of British Rail were divided into three companies whose mission was to lease locomotives and carriages to private sector train operating companies. Finally, all operations, including the network, have been fully privatised. In *Italy*, railways are still fully in public hands. In 2000, two new companies were created, one (Rete Ferroviaria Italiana) owning and managing the tracks and the other (Trenitalia) owning and managing all carriages. Potential competitors are thus at a disadvantage with respect to the public sector incumbent. Finally, *Germany* lags behind in the process of liberalization. Tracks and train operations are both run by the public sector quasi monopolist (Deutsche Bahn) with separate accounting. The set-up goes little beyond the minimum required by the EU Directive.

Assessing the impact of this new state of affairs is a complex task. First, the post liberalization period is in most cases very short. Second, countries have liberalized at a very different pace. Third, adequate statistics on the sector are scarce. Nonetheless, it would seem that *productivity* increased substantially in the post liberalization period, sometimes as a reflection of lower employment and higher output (the UK) and in other cases simply because of a fall in employment (Italy). These data must be treated with caution as they do not allow for work that has been contracted out and may therefore give a false impression of productivity gains. The evolution of *prices* is even more difficult to assess. First, train prices were initially unprofitably low (Italy) and will have to be raised in the aftermath of liberalization. Second, continuing high prices were justified by the need to pay for major infrastructural investments (Germany). Third, with the exception of the UK, train prices are still regulated by the executive who has not hesitated to change his own rules for electoral gains (Italy). Finally, *quality* has been controversial particularly in the UK. The verdict on safety

and quality is at worst “not proven”. What can be said however is that the rapid expansion of demand in the UK was not met by a corresponding increase in network capacity. The lack of a substantive impact on *investment*, particularly in the infrastructure, has by and large been the weak spot of the liberalization process.

Summing up, the review of the three case studies highlight the following problem areas:

- A proactive approach to competition is required. As for other network industries, third party access is insufficient to generate effective competition. The incumbent should be asked to divest part of its fixed assets, i.e. locomotives and carriages, to be leased by potential competitors willing to enter the market.
- The employment impact of liberalization is largely negative, explaining the widespread resistance to liberalization. More data however are needed to assess whether the loss on railways jobs were offset by the employment growth in subcontracting firms.
- Last but not least, the liberalization schemes do not seem to provide adequate incentives for investment, particularly in infrastructures. It is not clear that privatized infrastructures fare better on this score than public owned ones. However, even if infrastructures stay in public hands, a clear regulatory framework will be required to guide investment decisions. Excessive discretion by public officials, in setting prices or in modifying existing price setting rules, would increase regulatory risk and discourage investment.

3.4. Professional Services

Self regulation seems to be the norm for professions across Europe, but the extent and content of regulation may vary substantially from country to country. In Germany and Italy, professional organisations have been given the responsibility non only for quality control and the protection of consumers, but also on price determination, and severe restrictions to advertising are often introduced. These restrictions on competition are typically considered by these professional organisations as necessary ways to avoid the risk that “excessive” competition may negatively affect quality.

The continuous worry for the quality of the service is to some extent understandable, but whether these restrictions to competition are necessary (or even useful) to protect consumers from services of insufficient quality is still to be proven.

In the UK, the reliance on general competition law is much wider and more common. This is a general trend across Europe, where the action of the Commission is trying more and more to remove the existing protection of professionals.

The optimal extent of this protection and its compatibility with a reasonable development of competition is at the core of the debate on professional services in the whole European Union, but economic theory does not suggest that in general minimum prices have a positive effect on quality. Several instruments could be used to increase quality.

One could be certification, which simply implies a public declaration that certain training has been carried out by the professional; in this case everybody would be allowed to enter the business and the consumers, made aware of the “productive process” that remains behind the provision of the service, should be free to choose which level of training they consider adequate for their needs. A further step may be the requirement of a license, i.e. not allowing those who do not have a given background to exert a profession.

In Europe licensing has been preferred to simple certification, and the list of pre-requisites to enter a certain profession may vary from country to country, but may represent a considerable entry barrier. However, it is hard to see why given (or minimum) prices, which in general do not positively affect incentives – at the margin – to provide quality, should be introduced. Although it is certainly correct that the economic theory regarding quality gives us little certainty on many things, it is also true that defending what appears to be a clear restriction on competition, and one that “per se” clearly harms consumers on the ground that this “might” help to protect quality is hardly acceptable. Unless one could prove that where price competition and advertising are allowed the quality for professional services has decreased (and that this decrease is not compensated by sufficiently lower prices).

Restrictions on advertising also have dubious effects. They can be hardly justified on economic grounds, and in fact they are defended on the basis of the idea that advertising conflicts with the “dignity” of the professional status. This however entails greater difficulties for new entrants to get established, and therefore adds another entry barrier to a system, where access to the profession is already full of obstacles (entry tests and sometimes long periods of compulsory training are typical in these fields). When looking at the differences in these restrictions across profession, it becomes even more difficult to defend the rationality of the system; for instance, why does the Italian system require three years of compulsory training for qualified accountants and not for doctors?

The recurring appeals by the EC for the modernisation of the professions is certainly well founded, and the relevance of professional services in firms' costs confirms their relevance. Although the trend in many countries is in the right direction, the resistance against the removal of anti-competitive restrictions is still strong.

Given the difficulty in getting data on prices, we can only point out that some structural elements seem to be evolving in the right direction, albeit very slowly. Restrictions to advertising remain quite widespread, sometimes following legal requirements, sometimes as a result of self-regulation. The entry of large multinational organisations in traditional professions (such as engineers or lawyers) is an encouraging sign, but there is no available evidence that prices decrease. However, the removal of some entry barriers as regards young professionals is very slow and not univocal; it is quite clear that stronger moves in that direction would help employment in this sector.

3.5. Retailing

Europe's retailing sectors have been liberalized in the last decades. While deregulation efforts in the United Kingdom can be traced back to the Eighties, liberalization of Germany's and Italy's retail markets has started in 1996 and 1998, respectively. Deregulating this sector however touches on many issues. While many regulations have been relaxed, many remain in force, and some regulations have even become more restrictive. As there is no EU-wide approach that governs liberalization in this sector, the overall picture remains mixed and a comparison of national policies becomes a complex task.

In general, it should be stressed that traditional regulatory restrictions typically aims at protecting traditional small shops from the competition of large supermarkets or commercial centres. Therefore, the likely effect of liberalisation, instead of being an increase in the number of firms, will rather be a decrease in that number, with an increase in the average size of retailing outlets.

While retail markets are typically heavily regulated all over the world, it appears that European liberalization policy has not reached the degree of market liberalization which prevails in the United States. It is fair to say that the *United Kingdom* has taken the lead within Europe both in terms of time and scope. Most prominently, the United Kingdom enjoys the most liberal approach towards

opening hours, such that only licensed premises (premises selling alcohol) remain regulated in this regard. Planning and construction restrictions have been deregulated already in the eighties. After a long period of *laisser-faire* policy regarding planning permissions in the United Kingdom, recent policies, however, show a more restrictive pattern.

In *Germany* the liberalization process started in 1996 when the Federal Government decreed that shopping hours during the week and on Sunday were to be expanded. Another important step towards deregulation was the annulment of the Rebate Law in 2001 which restricted discounts and several promotional activities. In 2004 the biennial sales regulation came to a final close which has coordinated retail pricing behaviour since the 1950s. Large scale retailing however, still has a hard stand in Germany. Despite the strong position of discounters, large scale supermarkets are confronted with planning and construction restrictions as well as restrictions on promotional activities (like loss leader pricing) which put them at a disadvantage.

Finally, *Italy* appears to lag behind in the process of retail deregulation as liberalization took off not before 1998, when a new law governing the regulations for new retail businesses come into force. Many restrictions have been lifted. However regional authorities still retain considerable power to use zoning laws to restrict large shops opening. While the liberalization period is very short, the current practise indicates the principles on liberalization are never taken to an extreme. Small businesses are still favoured by local authorities and opening hours remain restricted with Sunday being the usual closing day.

Assessing the impact of this new state of affairs is not an easy task, as the post liberalization period is rather short in Germany and Italy, and deregulation performs in many dimensions. Moreover, regulation is often delegated to local authorities which reduces transparency and opens the window for discretion. The retail industry is also often badly defined and blurred in both horizontal (traditional product boundaries have dissolved) and vertical dimensions (vertical integration of producers, distributors and retailers). Not surprisingly, adequate and comparable statistics for this sector are hard to obtain. Nonetheless, *market structures* have become less fragmented in the post liberalization phase, which can be explained by the liberalization of planning permission policies. Most notable, the emergence of large retail chains has become a distinguishing feature of the UK retail market, while Germany and Italy still behind in this regard. The German retail market is, however, characterized by a very strong position of discounter chains. Italy clearly lags behind as

its retail market is still one of the most fragmented one in Europe. Economies of scale and purchasing efficiency of large retailers therefore remain mostly unexploited in Italy.

Both *employment* and *labour productivity* per person have increased in all three countries over the last twenty years. Interestingly enough, the total employment share of retail is lowest in the most regulated country (Italy) suggesting that the protection of employment in small shops goes to the detriment of labour demand expansion in large outlets. Regarding productivity, the patterns are markedly different. While Italy and Germany exhibit similar patterns of labour productivity growth, the UK experienced a tremendous growth period from the early nineties onward resulting in a large productivity gap between the UK and the other two countries. Labour productivity per hour worked, which controls for the reductions in working time per employee, is of particular importance for Germany because the increase in employees has been largely due to the reduction in working hours per person. Taking this into account our calculations show that Germany's labour productivity increased quite substantially, particularly in the nineties. Overall, we can rank the countries in terms of labour productivity (with respect to 1980 as the base year) such that the UK exceeds both Germany and Italy in that order.

Overall, the case studies highlight the following issues:

- A more coherent and proactive approach to competition is needed. Retail markets are strongly influenced by culture and history while cross-border competition in the form of supply of retail service originated in one country to consumers in another is absent. Path dependency is a feature of European retail markets, which has given rise to different retail models. Convergence towards more competitive retail structures, therefore, crucially hinges access to local markets, and relatedly, on cross-border foreign direct investment. A more liberal application of zoning laws is needed; i.e. a less restrictive attitude towards the issuance of retail permits, which also entails a reduction of planning and construction regulation for large scale outlets.
- The application and interpretation of planning and construction rules are mostly delegated to local authorities which opens the window for discretion and by that may frustrate retail chains to enter local markets. A more coherent approach towards market access regulation is essential to create competitive structure which explore scale and scope economies.
- Opening hours still restrict business in Germany and Italy. A complete liberalization (perhaps with Sunday restrictions remaining) appears to be a timely step.

- The employment effects of deregulation appear to non-negative. As restrictions on working hours typically increase labour productivity, one should expect that lifting of those restrictions will have a large and positive employment effect. However, as capital productivity should be positively affected, the overall effect on employment can only be evaluated with better data.
- Promotional activities that explore the economies typically associated with large retail stores are still restricted. While we cannot deliver a complete case-by-case analysis of the antitrust allegations, one can argue that those restrictions tend to protect (small) competitors and not primarily consumers; which should be the main objective of competition authorities. A more liberal approach to those practices seems warranted.

3.6. Postal Services

Regulatory frameworks differ from state to state due to the implementation measures of the EU postal directive. This lack of coordinated regulatory measures across the member states, slows down the process of a more competitive market.

The UK shows the greatest amount of de-regulation. Germany is advancing rather quickly in this direction with Italy lagging behind. Germany and Italy still regulate activities outside the universal service i.e. the free market access area, thus indicating room for further market competition.

Postal services throughout the member states were earlier dominated by one market player who had the monopoly. These services were varied across the states in terms of *quality* and efficiency but often administered by loss-making and possibly inefficient monopolies. In general the Postal Directive has been beneficial for the market of postal services in Europe. It has created momentum for further market opening. There is a decrease in *employment* in the USPs (Universal Service Providers) but a definite increase in the employment in the competing private sectors. *Pricing behaviour* and evolution is hard to pinpoint because the member states are so varied in their initial settings. It is believed that the uniform movement with regard to postal services in the EU will allow for better comparisons in time to come. Germany though, exhibits rather high prices for postal services in the market. The Postal Directive has improved the overall *quality* of domestic mail services and cross border mail due to independent monitoring and national quality standards. Italy for example has been thus far characterised by inferior quality mail services. However the

implementation of the EU Postal Directive has improved the quality of Italian post. USPs are currently facing competition from emails, text messaging, faxes. It is not yet clear how this would affect the traditional mail sectors in years to come.

In summary:

- This is a market that exhibits continuous growth and further growth potential. It is still largely protected in the mail market segment though parcel delivery and express services are not. Therefore dominance of the incumbent in the market is due to the existence of reserved areas in local norms as well as EU Directives. The rationale behind this continuing protection is that there should be no reduction in the quality of universal services, and that protecting that market (allowing substantial cross-subsidisation) is essential to this aim.
- Most incumbents are now more competitive in general and focus on greater efficiency and on cost reducing strategies — though this is subject to varying levels of productivity between the member states. Access to the market for licence holders still remains regulated and most of the market is only accessible through the incumbent.
- Selling behaviour of the incumbents has changed somewhat in the shift from being commodity providers to delivery service providers. They have also reduced their dependence on the direct mail market segment. This process is also affected by some market expansion, outsourcing and innovation.
- Incumbents are becoming profitable, and this raises a concern that the existence of a reserved market may have become less necessary, and that worries about fair competition should have a greater weight. This reserved market also forces competitors to operate only in selected market sections.
- The Commission calls on member states to “ensure effective independence, adequate capacity and effectiveness of the (competition and) regulatory authorities.” The separation of the regulatory from the operational functions occurred in the 1990s. Though all these measures have been conformed to (with varying intensity and some exemptions, such as Italy) and the Postal Directive has moved the market for postal services in the direction of greater competition, the exclusive licence for the incumbents combined with some natural monopoly elements still make them the dominant market players. The fact that the statutory licences give the incumbents a significant advantage over other licence holders, calls for measures which create a equal playing field.
- The statutory licence is to come to an end for all three countries in 2007, when the entire market should become completely open to competition. The effects of this move still

remain to be seen. A complete privatisation in the postal market seems quite unlikely. A more effective access policy is still required to create some competition in postal services.

3.7. Water

Water is one the last public sectors to be brought under the realm of reform and further enhancement for consumers. The main goals of the EU regarding water policy are the protection and improvement of aquatic environment and contribution to sustainable, balanced and equitable water use.

Privatisations of water and sewage services took place in the *United Kingdom* in 1989. Each company has a licence to operate a monopoly in either water or sewerage or water supply only within their licensed area. It was envisaged that product market competition might develop but this did not happen. The regulator has therefore concentrated on introducing yardstick regulation of water companies in the absence of competitive pressure. Price regulation is based on a standard RPI-X method, using yardstick regulation to help estimate X. *Italy's* reform in this field began in the mid-nineties and aimed mainly at restructuring a very fragmented sector, with more than 8000 operators. Consolidation into larger firms has proceeded rapidly and water service should be managed by just 91 entities. Prices are regulated based on a mixture of standard costs and RPI-X, thereby preserving the incentive for cost reduction. Attempts to privatise the sector have however floundered in the face of local opposition. *Germany's* system is in many respects quite similar to *Italy's*: it is highly fragmented, with local municipalities controlling the supply of water services, and privatisation has made little headway, with the exception of private-public partnerships which have expanded quite markedly.

Assessing the impact of the reform process is a difficult task. First, the post liberalization period is very short, with the exception of the UK. Second, countries efforts to liberalize differ markedly. Rationalization more than liberalization seems to have been the driving motive of reform in Italy and Germany. Third, adequate statistics on the sector are relatively scarce. Nonetheless, it would seem that *productivity* increased substantially in the post liberalization period. The evolution of *prices* is even more difficult to assess. First, water prices were initially unsustainably low (Italy) and will have to be raised both on economic and environmental grounds. Second, price increases

were justified by the need to pay for major infrastructural investments (United Kingdom). Third, there is no indication that *quality* has been deteriorating following reform. A more worrying note comes from the behaviour of *investment*, which has collapsed in Italy and was sustained in the UK only thanks to high prices.

Summing up, the review of the three case studies highlight the following problem areas:

- First, competition, when it was introduced was mostly competition for the market rather than in the market. Attempts to foster competition in the UK did not succeed.
- Second, the impact on prices has not been favourable either because prices were initially too low and needed to be raised or because high prices were used to pay for a large infrastructural investment program. Whether there are better ways to fund those programs is an open issue.

Third, there is no indication that restructuring and liberalization had a negative impact on quality.

4. The changing role of the tertiary sector

In this section we examine the increasing role the tertiary sector has in general and in the activities of other sectors like manufacturing. This analysis allows for an initial assessment of how far the effects of reforms discussed in the previous section trickle down to the overall economy. The tertiary sector is playing an increasingly larger role, particularly in advanced countries. The GDP weight of this sector has increased from 62 % in 1970 to around 74% in 2000 in the US and from 52.2% to 70% in the EU-15 during the same period.

Typically, this trend is supposed to reflect the shifting pattern of consumers' demand, away from goods and toward services. This is only part of the story, however. The growth in the tertiary sector is also a function of its increasing role as a supplier of inputs. The sector therefore is likely to be a key determinant of competitiveness, however defined. This is even more so given that, as we shall see later in this section, the sector has been highly regulated – and still is, despite the best efforts of the European Commission – and, even more crucially, is much less exposed to international competition. The combination of uncompetitive domestic regulations and protection against imports are bound to strengthen the monopoly power of service firms and weaken the competitive position of those domestic firms that rely more intensively on service inputs.

In what follows, we rely mainly on input output analysis to uncover the links between the tertiary sector and the rest of the economy. We define the tertiary sector in a fairly broad manner by excluding only manufacturing, mining, agriculture and construction. Defined this way, the tertiary sector includes a number of “industrial” activities such as energy production and distribution. Our choice is motivated by the desire to consider those activities that are highly regulated –and energy still is - and are relatively less open to international competition.

We begin by asking three main questions. First, is it true that the service sector, as previously defined, is less open to trade? Second, is it relatively more regulated and more protected against competitive pressures? Third, how large is its role as a supplier of inputs?

Concerning the first question, the answer is unquestionably positive. While services are increasingly tradable, they remain substantially less open than manufacturing. We look at import penetration coefficients defined as the ratio of imports to domestic gross output. We also consider a broader measure of trade openness, defined as the sum of exports and imports over gross output. We focus on our three country samples, Germany, Italy, and the UK. For manufacturing in Germany, the

average value of import penetration is 31%, that of trade openness is 63%. The contrast with services is quite sharp. Import penetration ratios stands at 2%, total trade openness at 5.4%. Turning to the UK, while its economy is substantially more open than Germany's, the contrast between manufacturing and services is equally sharp. For manufacturing, import penetration is at 43%, total trade openness at 77%; for services, 3.8% and 10.9% respectively. At the other side of the openness spectrum we find Italy. Once again however we find that both import penetration and openness ratios are substantially larger in manufacturing. We conclude that services are much less open to international competition. (Table 3.1)

Table 3.1
Openness in manufacturing and services

	Germany		Italy		United Kingdom	
	Import Penetration	Trade Openness	Import Penetration	Trade Openness	Import Penetration	Trade Openness
Manufacturing	0.3082	0.6337	0.2303	0.4224	0.4332	0.7715
Services	0.0221	0.0543	0.0227	0.0592	0.0383	0.1090

Source: OECD Input – Output Tables: Germany 1995, Italy 1992 and United Kingdom 1998.

Turning to the second question, available evidence indicates that while manufacturing has increasingly been exposed to the forces of competition such a trend is much less pronounced for services. Indeed, in the past, the main source of protection for manufacturing were impediments to international trade. However, the Uruguay Round of trade negotiations has led to a major dismantling of non tariff barriers to trade and a further reduction in custom duties. Merchandise trade is therefore increasingly unrestricted and manufacturing firms must compete globally. Manufacturing protection has therefore declined and so has its cross country variance. For services, the picture is much less reassuring. First, the GATS – i.e. the attempt to open services to international trade - has had a difficult life since its inception. Moreover, the drive toward domestic deregulation of services has been quite uneven, with some countries decisively forging ahead toward a more liberal regulatory regime with others instead lagging behind (Nicoletti and Scarpetta, 2003, OECD 2003). The cross country variance in services regulation has if anything increased.

The third question concerns the role of the service sector as a supplier of inputs to manufacturing. We look at both direct and total input coefficients. The former measures the direct weight of a given service in the cost structure of manufacturing. The latter allows also for the fact that such a service

was also an input to other sectors that supply inputs to manufacturing. The total coefficients are clearly preferable as they more fully capture general equilibrium effects.

The first and most remarkable finding is that services as a whole are indeed a key supplier of inputs to other sectors of the economy. Excluding mining and petroleum products, their share in the value of production ranges between 37% and 56% in the UK, between 35% and 51% in Germany, and between 32% and 46% in Italy. These are extremely large values. Moreover, they have been growing over time (table 3.2). While much caution is needed in comparing input output matrices at different points of time, we see from table 2 that for all three countries the average, either weighted or unweighted, share of services in the total value of production has been steadily increasing.

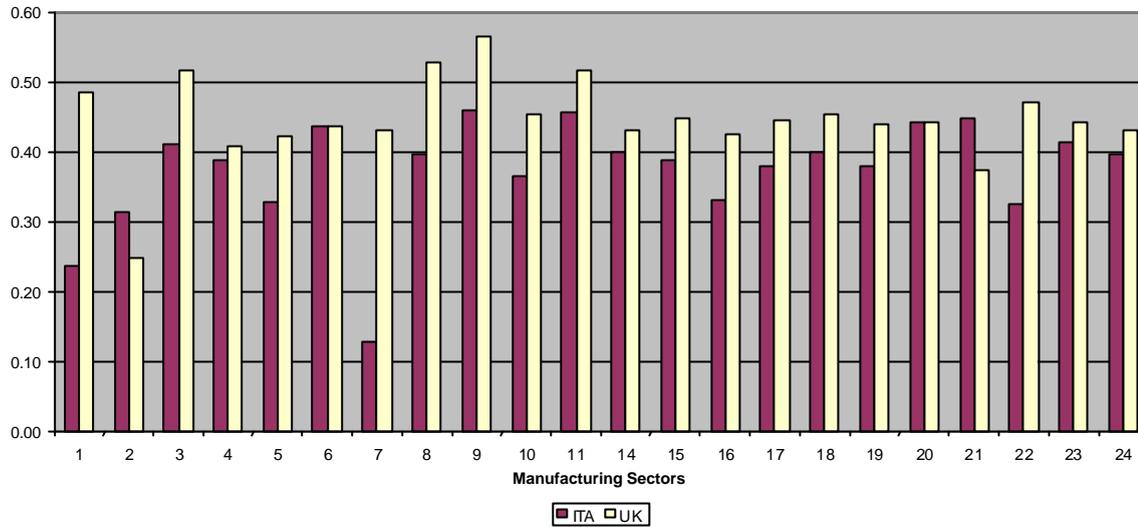
Table 3.2
The weight of services in gross ‘manufacturing’ output

	Germany			United Kingdom			Italy	
	1986	1990	1995	1984	1990	1998	1985	1992
Unweighted average	0.3024	0.3089	0.3408	0.2376	0.3865	0.4501	0.2905	0.3633
Weighted average (1)	0.3528	0.3590	0.4102	0.2585	0.4072	0.4454	0.3091	0.3761

Note: (1) With sectoral value added weights; Source: OECD Input – Output Tables.

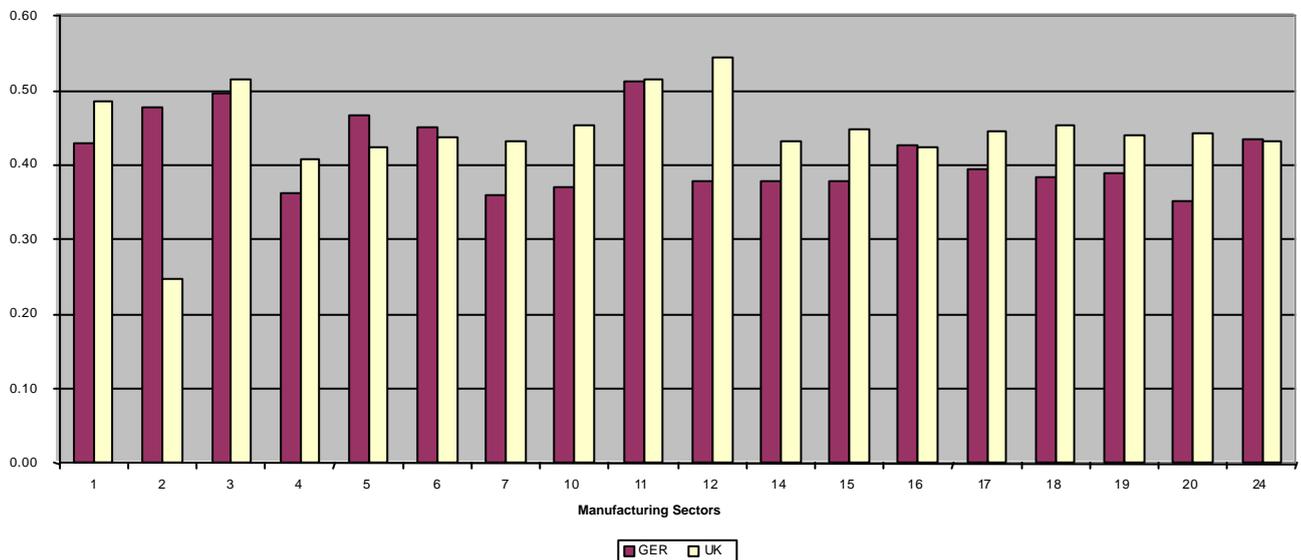
Figures 3.1 and 3.2 focus on the latest available input output matrices and show the sectoral weights of the service sectors for our three sample countries. Visual inspection seems to suggest that, by and large, services account for a larger share of manufacturing output in the UK compared to either Italy or Germany. Less casual tests confirm this impression. A pairwise sectoral comparison (Figure 3.1) between Italy and the UK indicates that the weight of services is significantly (i.e. the gap is greater than 5%) larger in the UK for 18 sectors out of 24. The hypothesis that on average UK manufacturing sectors make a larger use of services inputs is also confirmed by a simple one-sided test of equality of means. The hypothesis of equal means is strongly rejected at a 99,9% significance levels. Similar findings apply to Germany, where the hypothesis of equal means is rejected at a 99,5%.

Figure 3.1
The weight of services in total output
Italy versus the UK



Source: OECD Input – Output Tables: Italy 1992 and United Kingdom 1998.

Figure 3.2
The weight of services in total production
Germany versus the UK

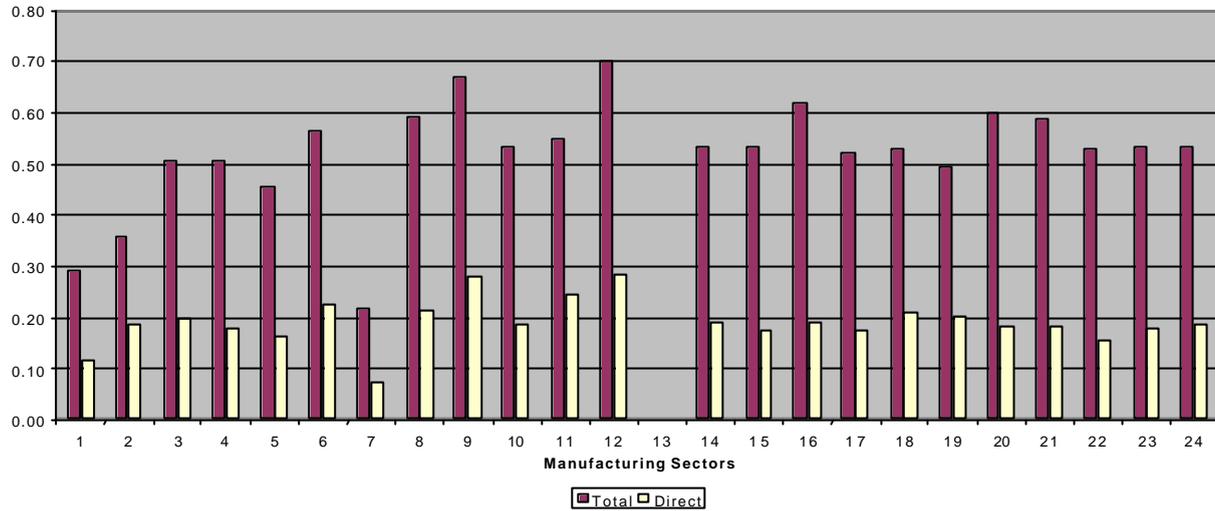


Source: OECD Input – Output Tables: Germany 1995 and United Kingdom 1998.

We should also note that the importance of the tertiary sector as factor of production to other industries is often underestimated because only direct effects are generally taken into accounts. The difference between direct and indirect effects is large, as documented by figures 3.3 to 3.5. The total weight of services in the value of manufacturing production is substantially larger than its direct

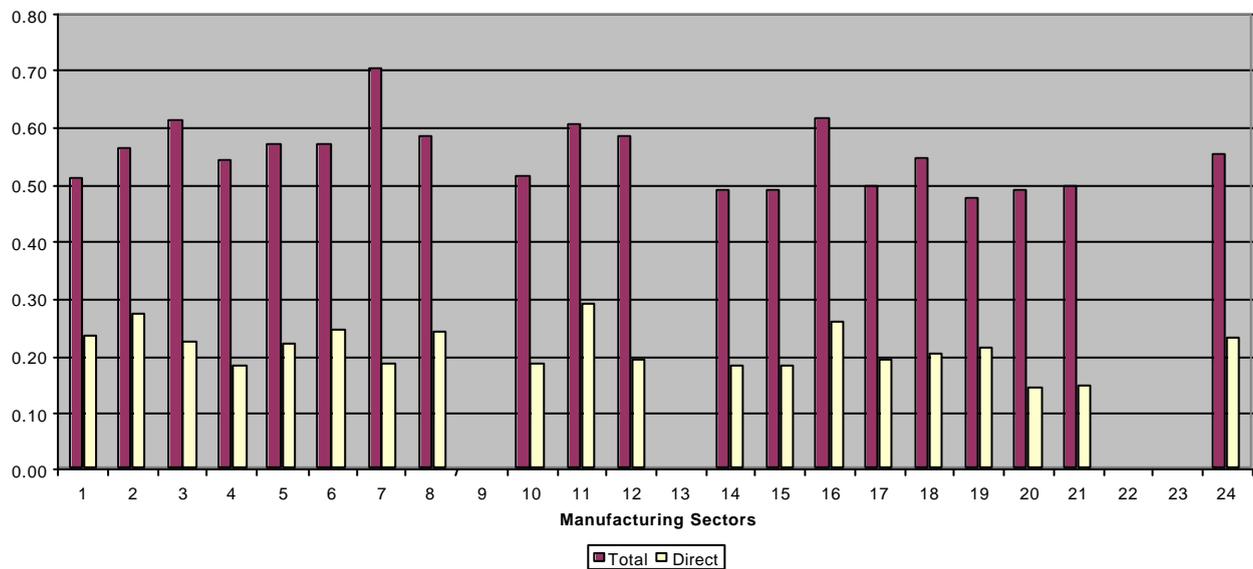
weight. Hence, a large share of services inputs bought by manufacturers is embedded in other inputs and will not be immediately visible to buyers.

Figure 3.3
Italy
Weight of Services Sectors on Manufacturing Total Output



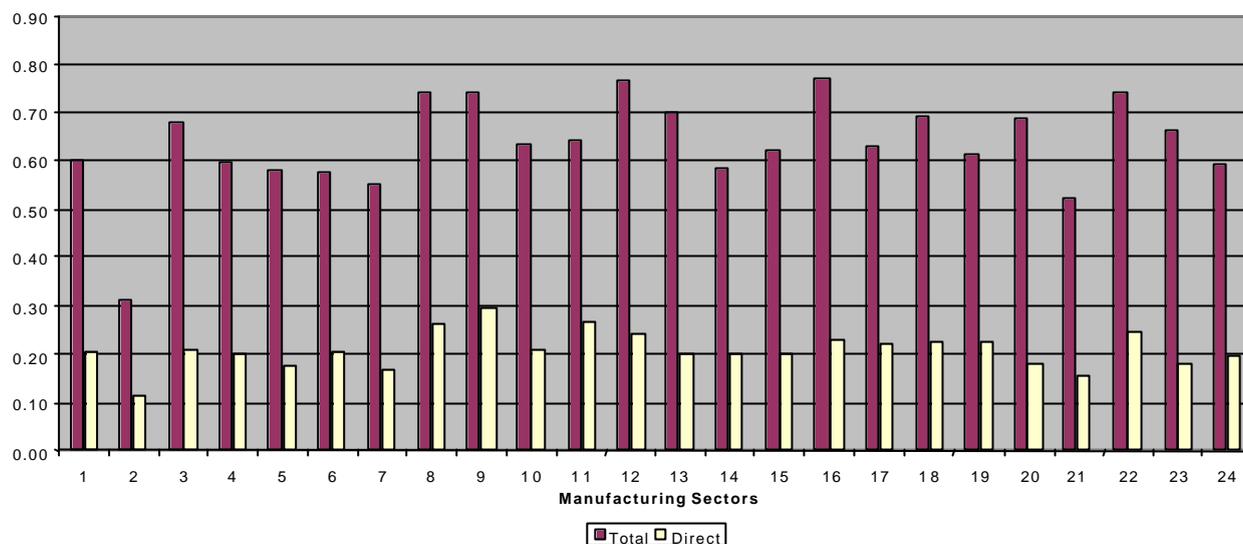
Source: OECD Input – Output Tables: Italy 1992.

Figure 3.4
Germany
Weight of Services Sectors on Manufacturing Total Output



Source: OECD Input – Output Tables: Germany 1995.

Figure 3.5
United Kingdom
Weight of Services Sectors in Manufacturing Total Output



Source: OECD Input – Output Tables: United Kingdom 1998.

We can probe somewhat deeper into the contribution of services by disaggregating them. We distinguish four sectors: network industries, trade, finance, and other business services. We find that the contribution of each subsector is broadly balanced (table 3.3).

Table 3.3
The share¹ of selected services in gross ‘manufacturing’ output

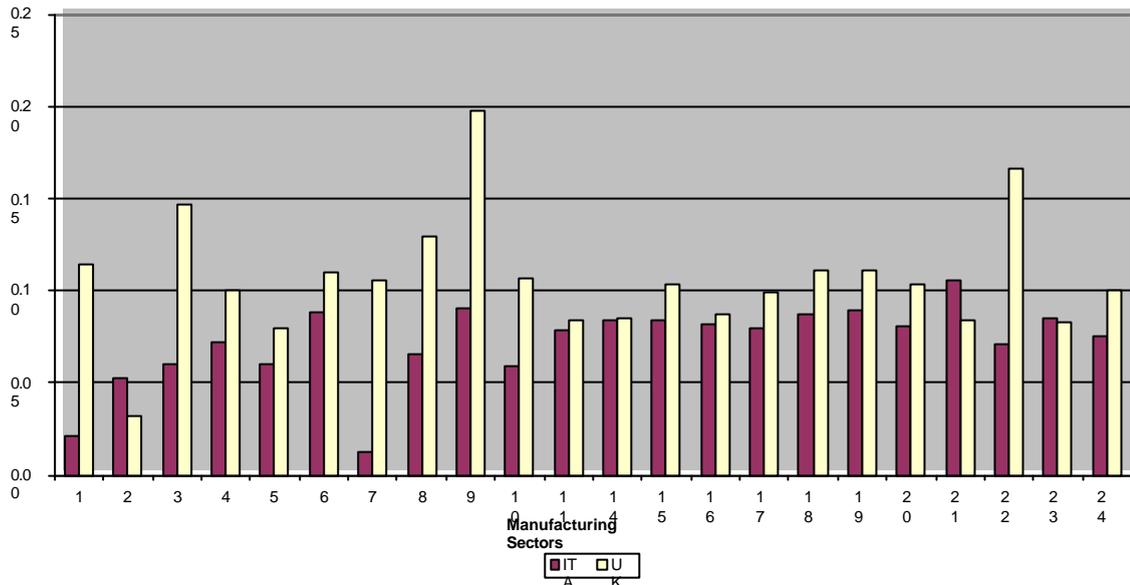
Services	Germany	United Kingdom	Italy
Network services	0,0797	0,1167	0,1089
Financial services	0,0866	0,0910	0,0915
Wholesale and retail trade	0,0697	0,0667	0,0735
Other business activities	0,1057	0,1055	0,0679
Total	0,3417	0,3799	0,3418

Note: Weighted average of total input output coefficients, with sectoral value added weights
Sources of data: OECD Input - Output Tables: Germany 1995, Italy 1992 and United Kingdom 1998.

The weight of services therefore does not simply reflect the growing role of finance. Interestingly enough, business services – professional and other services – account for a substantial share (around 10% on average) of gross output in all three countries. Accordingly, weak competition in this sector is likely to have a substantial impact on the competitiveness of manufacturing. Again, there are

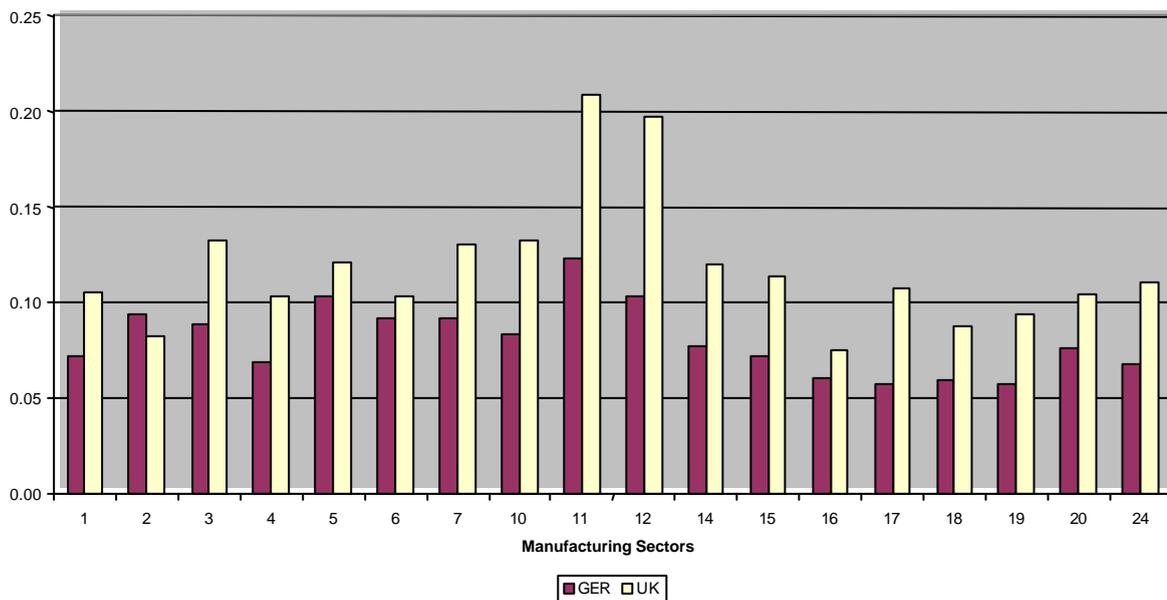
major differences among countries. For instance, business activities account on average for a much larger share of gross output in the UK than in Italy (figure 3.3). Similarly, network industries play a much more significant role in the UK compared to Germany (figure 3.4).

Figure 3.6
The share of business activities in total output
Italy versus the UK



Source: OECD Input – Output Tables: Italy 1992 and United Kingdom 1998.

Figure 3.7
The weight of network services in total output
Germany versus the UK



Source: OECD Input – Output Tables: Germany 1995 and United Kingdom 1998.

One final word of caution is in order. The evidence so far only documents the substantial role of service inputs. It does not allow any inference as to the costs at which those services are provided. Suppose for instance that uncompetitive regulations lead to higher service prices. Recall that input output matrices are generally computed at current prices. Hence, the impact of a change in prices on the input-output coefficients cannot be signed unambiguously but will depend on the price elasticity of the demand for such input. What can be safely said however is that services play a crucial role as a supplier of inputs for other sectors in the economy. The costs and the quality of service inputs are bound therefore to be a key determinant of the performance of the whole economy.

5. The impact of service regulation

5.1. Productivity in manufacturing

In this section we illustrate how regulation in services affected the performance of other sectors in the economy through input output linkages.

We have seen how final consumers have benefited from the process of deregulation and liberalisation in the service sectors. In the aftermath of liberalization, quality and productivity in the service industries appear to have improved for our sample countries. Similarly, prices have generally declined, if though to often by a very limited amount. In what follows, we assess whether intermediate users of services have also gained from liberalization. As shown in section 3, services account for a large and growing share of total output for other sectors in the economy. Better quality and lower costs of key inputs should help boost the performance of intermediate users. Accordingly, we check whether gains in competitiveness and efficiency in services have trickled down to intermediate users.

Our analysis compares the performance of 24 non service (mostly manufacturing) industries in Germany, Italy and the UK. For lack of a better terms we shall refer to these sectors as manufacturing, even they though they also include mining and agriculture. Labour productivity (real value added per employee) is our first performance indicator. We take labour productivity rather than total factor productivity as our measure of performance since it is most easily computed and is less amenable to measurement errors. Differences between labour and total factor productivity are a function of the changes in the capital intensity of production which in our regression will be mostly picked up by sectoral dummies.

The impact of regulation on sectoral manufacturing performance is a function of both the intensity of service regulation and the intensity of service usage. The latter however is itself a function of prices, and hence of regulatory conditions. However, given that input output matrices are generally computed at current prices, the impact of a change in prices on the input-output coefficient cannot be signed unambiguously but will depend on the price elasticity of the demand for such input. To cope, at least partly, with the endogeneity of service usage, we rely on the average value of such indicator across our sample countries.

We focus on the impact of regulation of two key services: network industries (transport, telecommunications and energy) and business related activities (mostly professional services). Either sector accounts for a substantial share of the value of manufacturing output. We do not include in our analysis financial services, as they raise a set of altogether different issues and the trade sector, on the ground that wholesale trade – a major supplier of inputs to manufacturing - has been fully liberalized and any rate cannot be distinguished from retail trade in input output tables.

Despite the best efforts by the OECD, data on regulation are still sparse. The main exception are network industries for which fairly reliable and broadly comparable cross country data on the regulatory framework exist for a relatively long period. We seek to measure how each manufacturing sector (k) is affected by existing regulations in the markets for its inputs from network industries (j). As noticed earlier, this will depend both on the extent of regulation in sector j and the weight of sector j as an input to k . Therefore, our measure of exposure of manufacturing industry k to regulation in network services is:

$$R^{\text{NET}}_{kc} = \frac{\sum_j^n (R_{jc} \bar{d}_{jk})}{\sum_j \bar{d}_{jk}} \quad (5.1)$$

where, R_{jc} is the OECD index of regulation for individual network services j (e.g. telecommunications) in country c and \bar{d}_{jk} is the country average of the direct and indirect contribution of service j to manufacturing industry k .

As for business activities, we have no measure of regulation available. However, our earlier discussion indicates that regulation of professional services vary considerably across countries and that, by and large, the UK is the least regulated country. Therefore, we proxy differences in regulation by country dummies. Our measure of exposure to regulation of business services in country c is simply:

$$R^{\text{BA}}_{kc} = D_c \sum_i^a \bar{d}_{bik} \quad (5.2)$$

where D_c is a country dummy equal to one when the country is c and zero otherwise and \bar{d}_{bik}

is the average across the three sample countries of the direct and indirect contribution of business service i (e.g. accountants) to manufacturing industry k . Alternatively, we simply assume that the level of regulation of business services is the same as the strictest for network industries. We then define a new indicator (R^{NET+BA}) along the lines of eq. (5.1).

We investigate the link between manufacturing performance and regulation in services by relating the average growth in labour productivity in 24 manufacturing sectors to a set of country dummies, sectoral dummies, and at least one of our indicators of regulation in services inputs, R^{NET}_{kc} , R^{BA}_{kc} and R^{NET+BA}_{kc} . We also allow for a lagged adjustment of labour productivity growth. Our base equation is:

$$\Delta glp_{kc} = \mathbf{a}_0 glp_{kc} + \mathbf{a}_1 R^J_{kc} + \mathbf{a}_2 D_c + \mathbf{a}_3 D_k + \mathbf{e}_{kc} \quad (5.3)$$

The change in labour productivity growth (Δglp_{kc}) is measured as the difference between average productivity growth in 1997-99 and 1994-97. D_c and D_k are country and sectoral dummies respectively.

Econometric estimates are reported in table 5.1. Country dummies were never jointly significant and have been excluded from all the reported equations. In column 1 we present the results with $R^J = R^{BA}$, in column 2 with $R^J = R^{NET}$. Attempts to include both R^{NET} and R^{BA} in the equation were not successful. In column 3 we rely on the composite indicator R^{NET+BA} .

Our results suggest that a market friendly regulatory environment has a definite impact on productivity growth. The impact of our regulatory indicator, however defined, is consistently negative and statistically significant.

Our dynamics is too simple and our sample too short to say much about the adjustment path. What can be said however is that our estimates capture a number of stylized facts. We know that the UK is by far the least regulated country. However, at the beginning of the period, productivity growth in most manufacturing sectors was lower there than in either Germany or Italy. In the following few years, the UK productivity gap fell markedly (reversing sign in several cases), a fact that our estimates attribute to a favourable regulatory environment rather than more trivially to a simple country effect. In the end, therefore, it was a better regulatory framework that allowed UK firms to

more fully capture new technological opportunities or, more modestly, to escape the fate of declining productivity growth that has characterized many industries in Germany and in Italy.

By and large, these results are only illustrative as they rely on a small sample and fairly imperfect indicators of regulation. They suggest nonetheless that the regulatory framework may have a role in boosting the productivity performance of UK manufacturing and bringing it into line with, and often above, that of Germany and Italy. Our results also indicate that a better regulatory environment in any given sector may trickle down to other downstream sectors in the economy. These input output linkages are seldom considered (see however Grillo, 2004, and Nicoletti and Scarpetta, 2003, for two noticeable exceptions). Aggregate productivity analyses exclude them by definition, while sectoral or firm level analysis typically focus exclusively on variables that are related to the sector of interest.

Table 5.1
Productivity growth in manufacturing and regulation of services

Dependent variable:	Δglp		
	OLS estimation		
	(1)	(2)	(3)
Sectoral Dummies	YES	YES	YES
R^{BA}_{ITA}	-0.2503 (0.1858)	-	-
R^{BA}_{GER}	-	-	-
R^{BA}_{UK}	0.3469 ** (0.1780)	-	-
glp	-0.3580** (0.2306)	-0.3465 (0.2318)	-0.3428 (0.2225)
R^{NET}	-	-0.0767* (0.0268)	-
R^{NET+BA}	-	-	-0.0097 * (0.0031)
Number of observations	56	56	56
R - squared	0.6931	0.6564	0.4916

Notes:

Single asterisk (*) stands for significance at 5% level;
Double asterisk (**) stands for significance at 10% level;
Robust standard errors in brackets.

5.2. Inward FDI

One important channel through which regulation in services may have negative effects on the efficiency of manufacturing is that it discourages inflows of foreign direct investment (FDI). In this section, therefore, we analyse how regulation in services affects FDI inflows in manufacturing in the three sample countries.

Why is it important to look at FDI? FDI has important effects on productivity and growth. The basic reason is that FDI is a component of gross capital formation, partly additional to domestic investments. Moreover, the activities of MNEs in a host country are generally more efficient than national firms. Consequently average productivity would be higher the higher the inflows of FDI, also if they were to fully crowd out domestic investments (see Barba Navaretti and Venables, chapter 7 for a review).

The evidence on this point is overwhelming and not controversial. Several studies have compared the performance of national firms and multinationals in the UK (Griffith, 1999, Griffith and Simpson, 2001, Conyon et al. 2002, Girma et al 2001, Gorg and Strobl, 2002, Criscuolo and Martin, 2003, Harris, 2002, Harris and Robinson, 2003), Italy (Benfratello and Sembenelli, 2002), and the US (Howenstine and Zeile, 1994, Doms and Jensen, 1998). They all find that MNEs have higher productivity, whether measured as labour productivity or total factor productivity. For example, Griffith and Simpson (2001) find for the UK that labour productivity is higher in MNEs than in national firms by 42 to 77 percent. When they use total factor productivity (taking into account the effect of all factors of production) the MNE premium is still at around 5 percent.

This gap in productivity is partly explained by the fact that MNEs are inherently different from national firms: they are larger, they invest more, they are more capital intensive, they spend more in R&D, they have more skilled personnel. When all these factors are controlled for, the gap in productivity becomes much smaller, although it rarely disappears. However, from the point of view of the host country this is irrelevant. What matters is that MNEs are more efficient than national firms. Why this is the case (because they are large or because their headquarters are in a foreign country) is not important. Namely, MNEs are unique bundles of inputs and activities which are not provided by domestic firms.

MNEs have also effects on the efficiency of national firms in the host country. *First*, they raise competition in the host market. The consequences here are double hedged. National firms either become more efficient or they go bust. *Second*, MNEs, by enlarging the size of overall economic activities in a given country, generate pecuniary externalities (e.g. cheaper supply of inputs). *Third*, their activities may give rise to technological spillovers especially when they use better technologies, they train local employees, they work with local suppliers and customers. The evidence on this point is controversial, in that it is not always possible to identify positive effects on national firms. Gorg and Greenaway (2001) survey all the available econometric studies on this issue. They find that results depend heavily on the methodology used. However, the effects are either positive or not significant and there is virtually no evidence supporting the view that MNEs have negative effects on the efficiency of national firms. Moreover, recent studies on the UK, based on large panels of data, find that MNEs have large and positive effects on national firms (Haskel Pereira and Slaughter, 2002 and Griffith, Redding and Simpson, 2003).

Consequently, if regulation in services hinders FDI flows, this is an important channel through which it has negative effects on productivity. Now, why should we expect regulation in services to hinder FDI? Other things equal, multinationals (MNEs) decide where to locate their plants by taking into account costs of production in alternative locations. As non tradable services, like energy or lawyers, account for a large share of these costs, their price, their efficiency and their quality is an important factor affecting a country's attractiveness to FDI. This effect is important, independently of the basic underlying motives for which a firm invests in a given country. Whether MNEs are looking for promising markets (these are conventionally dubbed as horizontal FDI) or cheap factors of production (vertical FDI), they have anyway to rely partly on products and services which cannot be imported. We have shown earlier (Table 3.1) that import penetration in services is very limited in the three sample countries.

Consistently with this prediction, we find that FDI play a much larger role in the UK, where services are least regulated, than in Germany and in Italy. The average share of inward FDI in gross capital formation between 1997 and 2002 was 28.2 percent in the UK, 15.5 percent in Germany and 4.2 percent in Italy (Unctad, 2003).

Although individual countries compete fiercely to attract FDI, policy makers rarely consider that the lack of liberalisation of services can have detrimental effects on FDI flows. Unctad compiles a ranking of countries as *potential* attractors of inward FDI. It then compares it to a *real* ranking

based on the amount of FDI inflows that actually took place. Regulation in services is not used to compile the *potential* index. Therefore it can be tentatively considered as one of the determinants of the gap between effective and potential rankings. Italy's effective position is 108th, but its potential rank is 26th. These indices, while highly imperfect, suggest that the gains in FDI inflows for countries like Italy could be very large, if hindering factors like regulation of services were to be lifted.

Up to this point we have looked at the link between regulation and FDI in fairly general terms. If our conjecture that a misguided regulatory framework discourage FDI holds true, then such effect should be particularly pronounced in those sectors that are heavy users of services inputs. To capture both the weight of services input and the degree of regulatory intervention we rely again on our set of indicators, R^{NET}_{kc} , R^{BA}_{kc} , and R^{NET+BA}_{kc} . We also need to compute a measure of the relative size of FDI in a given manufacturing industry. Data on FDI flows are not available with a sufficient level of disaggregation. Therefore, we rely on data on the activities of MNEs, and specifically employment data, which are compiled by the Oecd (OECD 2003). Our measure is $mner_{jc}$, the share of employment working in foreign affiliates of multinationals in c on total employment of j in c .

We can now investigate the link between manufacturing performance and regulation in services by relating our measure of FDI to a set of country dummies, sectoral dummies, and our indicators of regulation in service inputs, R^{NET}_{kc} , R^{BA}_{kc} , and R^{NET+BA}_{kc} . As for labour productivity, we estimate a very simple dynamic equation where the change in the share of employment working in foreign affiliates of multinationals ($\Delta mner_{kc}$, the difference between $mner_{kc}$ in 1999 and 1997) is related to its initial level as well as to the set of explanatory variables that we have just described. Specifically, we estimate the following regressions:

$$\Delta mner_{kc} = \mathbf{a}_0 mner_{kc} + \mathbf{a}_1 R^j_{kc} + \mathbf{a}_2 D_c + \mathbf{a}_3 D_k + \mathbf{e}_{kc} \quad (5.4)$$

Econometric results are reported in table 5.2.

Table 5.2
The impact of regulation on FDI

Dependent variable	$\Delta Mner$		
	OLS estimation		
	(1)	(2)	(3)
Sectoral Dummies	YES	YES	YES
MNER	-0.1668 * (0.0473)	-0.0858 (0.0525)	-0.0791 (0.0518)
R^{BA}_{ITA}	0.1116 (0.0787)		
R^{BA}_{GER}	-0.0508 (0.0850)		
R^{BA}_{UK}	0.5042 * (0.0911)		
R^{NET}		-0.0653 * (0.0224)	
R^{NET+BA}			-0.0079 * (0.0028)
Constant		0.0423 * (0.0119)	0.0433 * (0.0122)
Number of observations	41	41	41
R - squared	0.5933	0.3794	0.3907

Notes:

Single asterisk (*) stands for significance at 5% level;

Double asterisk (**) stands for significance at 10% level;

Robust standard errors in brackets.

The main finding is that regulation, however measured, has a negative impact of FDI. The adjustment coefficient is not generally significant, except in column 1. Had we used a simple static version of eq. 5.4 with the level of *mner* as dependent variable the results would not have changed in any significant way. As for productivity, country dummies are not jointly significant and are dropped from the reported equation.

Note that these estimations are carried out for a cross section of a limited number of industries. This evidence while suggestive should not be taken as conclusive. However it supports the presumption that the lack of liberalisation of the service industries affects productivity and growth through a variety of channels. Its effects on FDI flows is certainly important in this respect.

6. Main conclusions and future prospects: will liberalization policies succeed?

According to the case studies of Germany, Italy and the UK, liberalisation has positive direct effects on productivity in services, but does not always result in declining prices and employment gains. Liberalisation seems to have positive effects on productivity, which – almost invariably because of a reduction in employment relative to excessively high levels – increases in all cases where its measurement is possible and reliable. Productivity may increase even well before privatisation and liberalisation, in anticipation of tightening market conditions.

As for prices and employment, the evidence is more controversial. Prices decline and employment increases when liberalisation is actually successful in fostering competition. This happens either in naturally competitive industries, where regulation is simply a way to protect producers, or when technological progress allows entrants to offer new products or force the incumbent to be more innovative himself. Telecommunications are the key example of this virtuous pattern.

Effects are less on the positive side in other industries characterised by limited product and process innovations, where natural monopoly elements do not allow competitors to easily by-pass a strong incumbent. In general terms, prices did not decrease as much partly because of the limited competition that countries were able/willing to introduce. Also, liberalisation has taken place in sectors where prices were initially well below cost. Notwithstanding the continuation of subsidies, in sectors such as railways or water, market oriented reforms are bound to raise prices so as to fund investments. Finally, in energy sectors expectations on the effectiveness of reforms were probably excessive. Users' prices are still largely determined by fuel costs and taxation and massive investments are required to raise efficiency.

The tertiary sector is found to play a large and increasing role as provider of inputs in manufacturing and agriculture. The benefits of product market reforms therefore go well beyond their direct sectoral impact. In particular, the tertiary sector provides a substantial share of intermediate inputs to manufacturing and plays therefore a key role in affecting industrial and more broadly economic competitiveness. Input-output analysis is used to show that the increasing weight of services in employment and GDP reflects not only the shift in consumers demand toward services but also the greater weight of services as providers of inputs to other sectors of the economy. Services indeed increasingly cater to business. This is true for trade, energy, finance, and professional services.

Accordingly, we find that service inputs account on average for more than 40 percent of the value of production in other sectors. Moreover, this share has been steadily increasing since the mid Eighties for the three sample countries. For example in the UK it rose from 25 percent in 1984 to 45 percent by the end of the Nineties. This rise was faster and larger than the increase in the overall GDP weight of services. This increased from 62 % in 1970 to around 74% in 2000 in the US and from 52.2% to 70% in the EU-15 during the same period.

When we decompose the total share of the tertiary sector in the contribution of individual industries - network industries (transport, energy and telecommunications), trade (retail and wholesale), finance and other business activities (e.g. lawyers, accountants etc.) - we find that the contribution of each industry is broadly balanced. Interestingly professional services, which are often considered less important than network industries or finance, account for a substantial share (around 10 percent on average) in all three countries.

We also notice that while business oriented services are increasingly tradeables, they remain substantially less open than manufacturing. Whereas import penetration, defined as the ratio of imports to domestic gross output, ranges between 23 percent and 43 percent in manufacturing it varies between 2 and 3 percent in services . This implies both that services are not exposed to international competition and thus national regulations are the only effective channel to raise competition and also that activities using them as inputs cannot resort to cheaper imported alternatives.

Widespread rigidities in the supply of key largely non tradeable inputs from the service sector discourage foreign direct investment - and deprive therefore the host country from a number of beneficial externalities, like further gains in wages and productivity. The effectiveness of business services is a key factor in the location of multinational enterprises. FDI, whatever the reason for carrying them out (to enter new markets or to save on costs) need an efficient network of suppliers and producers' services. While traded inputs can be imported, non tradeable inputs – and we have seen that services are much less tradeable compared to goods - must be purchased locally. Their availability and their costs are therefore instrumental in affecting the investment decision of multinational corporations. Inefficient regulations that hamper the quality and the variety of business services are found to discourages foreign direct investment in all the sample countries.

Services therefore are a key determinant of economic competitiveness. High quality, efficient and competitively priced services carry strong cost savings for other sectors. Even when gains of reforms in the tertiary sector itself are small, they get magnified when indirect effects on the rest of the economy are also taken into account. Pervasive rigidities in much of the tertiary sector are likely to penalize manufacturing production, particularly in those sectors that are more exposed to international competition and to discourage foreign direct investment..

Overall, our results help to understand a number of stylized facts. We know that the UK is by far the least regulated country. However, at the beginning of the period, productivity growth in most manufacturing sectors was lower there than in either Germany or Italy. In the following few years, the UK productivity gap fell markedly, a fact that our estimates attribute to a favourable regulatory environment rather than more trivially to a simple country effect. In the end, therefore, it was most likely a better regulatory framework that allowed UK firms to more fully capture new technological opportunities or, more modestly, to escape the fate of declining productivity growth that has characterized many industries in Germany and in Italy.

Service liberalization has however met with strong resistance. There have been repeated calls for treating services differently. The need to provide universal service, in energy and telecoms, is often mentioned as a reason for such special and differential treatment. Other sectors – professional services in particular – have claimed that they should be granted an exception given the pervasiveness of informational asymmetries and the need to ensure quality for unprotected users. We are wholly unconvinced by these arguments. First, there is no evidence whatsoever that universal service obligation has been undermined by liberalization. Second, there is no reason why restrictions to competition will necessarily ensure higher quality. Actually, the opposite is likely to be true as suggested by both theory and empirical analysis. Similarly, informational asymmetries are not a unique feature of professional services. We see therefore no reasons why services, including professional services, should not be fully subject to competition laws.

In light of the many benefits associated with the liberalization of producers services, it is somewhat puzzling why national governments have not pushed the reform agenda in this sector more decisively. This political economy puzzle is addressed in the companion paper of Galasso et al. (2004). We offer nonetheless some simple speculations.

The evidence collected in this paper suggests that the short-run employment impact of liberalization may be unfavourable. For many sectors, the combination of pervasive overmanning, large productivity gains and inelastic demand meant that employment had to fall in the aftermath of liberalization. Moreover, sectoral employment losses are not always easily absorbed. If labour is at least to some extent sector specific, then some aggregate employment losses are virtually unavoidable. It is not too surprising therefore to find that liberalization is typically opposed by labour. Moreover, the support for liberalization may be further undermined by the fact that prices fell only moderately in the post liberalization period.

It is also surprising that support for liberalization has not been boosted by sectors using services as inputs. A standard result in the political economy of trade literature is that sectors that cater mainly to other producers have a harder time in getting protection. This argument may not fully apply to the case of services because users of services are more dispersed, and therefore less keen to mobilize in favour of liberalization, than users of intermediate goods. Also, our evidence shows how the total weight of services in the value of manufacturing production is substantially larger than its direct weight. Hence, a large share of services inputs bought by manufacturers is embedded in other inputs and will not be immediately visible to buyers. To the extent that buyers are not fully aware of these general equilibrium effects they will lobby less hard for liberalization.

Political economy consideration only partly account for the limited success of liberalization policies. The design of such policies needs also to be improved. Half hearted liberalization that fail to deliver lower prices may be self defeating to the extent they will not be able to garner the public support necessary to proceed further. Regulatory authorities need to be truly independent from the executive and be given a clear mandate. Equally crucially, the regulatory framework must be stable and predictable. Otherwise, investment will suffer most creating widespread bottlenecks and further undermining the support for liberalization.

Yet, the fact remains that liberalization in services has the potential to bring large welfare gains in terms of higher productivity and higher FDI throughout the economy. So far, liberalization of services has proceeded mainly at the urging of the European Commission. It is to be hoped that national governments throughout Europe will recognize the large economic dividends that a better regulatory framework for services can elicit. Far reaching reforms in this area should represent a top priority for economic policy. Unfortunately, the waning commitment toward the Lisbon agenda does not leave much room for optimism in this respect.

References

- Aghion, P., N. Bloom, R. Blundell, R. Griffith, and P. Howitt (2002), "Competition and Innovation: An Inverted U Relationship", NBER Working Paper No. 9269.
- Baily, M.N., Hulten, C. and Campbell, D. (1992) "Productivity Dynamics in Manufacturing Plants", *Brookings Papers on Economic Activity, Microeconomics*, 187-249.
- Baldwin et al. (eds.), *Geography and Ownership as Bases for Economic Accounting, Studies in Income and Wealth*, Chicago: University of Chicago Press, 59, 235-258.
- Barba Navaretti G. and A.J. Venables with al., (2004), '*Multinational Firms in the World Economy*', Princeton University Press
- Bartelsman, E., and Doms, M., (2000), "Understanding Productivity: Lessons from Longitudinal Microdata", *Journal of Economic Literature*, XXXVIII, September, pp.569-594.
- Bartelsman, E.J. , Dhrymes, P.J., (1998) 'Productivity dynamics: U.S. manufacturing plants 1972-1986', *Journal of productivity analysis*, vol. 1, nr. 9, pp. 5-33.
- Benfratello, L. and A. Sembenelli (2002), "Foreign Ownership and Productivity: is the Direction of Causality so Obvious?", Centro Studi d'Agliano Working Papers No.166.
- Bertola, G. and Boeri, T. (2002), "EMU Labour Markets Two Years on: Microeconomics Tensions and Institutional Evolution", in Buti, M. and Sapir, A. (eds.), *EMU and Economic Policy in Europe*, Edward Elgar, 2002
- Bishop, M and Kay, J, (1989), *Does Privatisation Work?*, Centre for Business Strategy, London Business School.
- Bishop, M. and M.Green (1995) *Privatisation and Recession – the miracle tested* Centre for the Study of Regulated Industries, discussion paper 10, London
- Bishop, M., and Thompson. D., (1992), "Regulatory Reform and Productivity Growth in the UKs Public Utilities", *Applied Economics*, 24, 11, pp. 1181-1190.
- Bishop, M., and Thompson. D., (1994), "Privatisation, Internal Organisation and Productive Efficiency", in Bishop, M., Kay, J. and Mayer, C., (1994), eds, *Privatisation and Economic Performance*, OUP.
- Blanchard O. and F. Giavazzi, (2001) "Macroeconomic effects of regulation and deregulation in goods and labor markets", NBER Working Paper No. 8120.
- Button, K.J. and Weyman-Jones, T.G., (1992), "Ownership Structure, Institutional Organization and Measured X-Inefficiency", *AEA Papers and Proceedings*, 82, 2, pp.439-445.
- Button, K.J. and Weyman-Jones, T.G., (1994), "X-Efficiency and Technical Efficiency", *Public Choice*, 80, 83-104.
- Carter, C., and Williams, B., (1959), *Investment in Innovation*, OUP, Oxford.

Castanheira M., V. Galasso, S. Carcillo, E. Perotti, G. Nicoletti and L. Tsyganock (2004), “How to gain popular support for reforms?”, Report prepared for “Structural Reforms without prejudices”, Sixth European Meeting of the Fondazione DeBenedetti.

Caves, R., et al (1992), *Industrial Efficiency in Six Nations*, Cambridge, MIT Press.

Caves, R., and Barton, D., (1990), *Efficiency in US Manufacturing Industries*”, Cambridge, MIT Press.

Canyon, M., S. Girma, S. Thompson and P.W. Wright (2002), “The productivity and wage effects of foreign acquisition in the United Kingdom”, *Journal of Industrial Economics*, 50 (1), 83-102

Criscuolo, C. and R. Martin (2002), “Multinationals, foreign ownership and productivity in UK businesses”, mimeo.

Criscuolo, C., Haskel, J., and Martin, R., (2004), “Productivity, Restructuring and Globalisation”, draft paper.

Doms, M.E. and J.B. Jensen (1998), “Comparing Wages, Skills, and Productivity between Domestically and Foreign-Owned Manufacturing Establishments in the United States”, in R.E.

Etro F. (2004), “Innovation by Leaders”, *Economic Journal*, 114, 281-303.

Geroski, P., (1990), "Innovation, Technical Opportunity and Market Structure", *Oxford Economic Papers*, 42, pp. 586-602.

Girma, S., D. Greenaway, and K. Wakelin (2001), “Who Benefits from Foreign Direct Investment in the UK?”, *Scottish Journal of Political Economy*, 48(2), 119-33.

Görg, H., and D. Greenaway (2001), “Foreign Direct Investment and Intra-Industry Spillovers: A Review of the Literature,” GEP Research Paper 2001/37, Globalisation and Labour Markets Programme, Nottingham, Leverhulme Centre for Research on Globalisation and Economic Policy.

Görg, H., and E. Strobl (2001), “Multinational Companies and Productivity Spillovers: a Meta-Analysis,” *The Economic Journal*, 111(475), F723-F739.

Green, A., and Mayes, D., (1991), "Technical Efficiency in Manufacturing Industries", *The Economic Journal*, 101, pp. 523-538.

Griffith R., and H. Simpson (2001), “Characteristics of foreign-owned firms in British manufacturing”, The Institute for Fiscal Studies Working Paper 01/10.

Griffith, R., S. J. Redding and H. Simpson (2003), “Productivity convergence and foreign ownership at the establishment level”, CEPR Discussion Paper 3765.

Griliches, Z. and Regev, H., (1992), “Productivity and Firm Turnover in Israeli Industry 1979-88”, National Bureau of Economic Research, Working Paper No. 4059.

Grillo, M. (2004), “Alle radici di una ‘Economia che non gira’ “, *Il Mulino*, forthcoming.

Harris R. and C. Robinson (2002), "The effect of foreign acquisitions on total factor productivity: plant-level evidence from U.K. manufacturing, 1987-1992", *Review of Economics and Statistics*, 84(3), 562-568.

Harris, R., (2002), 'Foreign Ownership and Productivity in the United Kingdom - Some issues When Using the ARD Establishment level Data', *Scottish Journal of Political Economy*, 47 pp. 318-355

Hart, O.D., (1983), "The Market Mechanism as an Incentive Scheme", *Bell Journal of Economics*, 14, 366-382.

Haskel, J. and Sanchis, A., (1995), "Privatisation and X-Inefficiency: A Bargaining Approach", *Journal of Industrial Economics*, 43, 3, pp. 301-321.

Haskel, J. and Szymanski, S., (1992), "The Effects of Privatisation, Competition and Restructuring on Productivity Growth in UK Manufacturing", Queen Mary and Westfield College, Department of Economics, Discussion Paper 286, January.

Haskel, J., (1991), "Imperfect Competition, Work Practices and Productivity Growth", *Oxford Bulletin of Economics and Statistics*, 53, 3, pp. 265-280.

Haskel, J., S. Pereira, and M. Slaughter (2002), "Does Inward Foreign Direct Investment Boost The Productivity Of Domestic Firms?", NBER Working Paper 8724.

Hermalin, B.E.,(1992), "The Effects of Competition on Executive Behaviour", *Rand Journal of Economics*, 32, pp. 350-365.

Howenstine, N. and W. Zeile (1994), "Characteristics of foreign-owned U.S. manufacturing establishments", *Survey of Current Business*, 74, 34-59.

Jean, S. and G. Nicoletti (2002), "Product Market Regulation and Sectoral Wage Premia in Europe and North America: An Empirical Investigation", OECD Economics Department Working Paper No. 318.

Johnson, G., (1990), "Work Rules, Featherbedding and Pareto-Optimal Union-Management Bargaining", *Journal of Labour Economics*, 8, pp. S237-S259.

Mankiw, N.G. and Whinston, M.D., "Free Entry and Social Efficiency", *Rand Journal of Economics*, 17, pp. 48-58.

Martin, S., and Parker, (1997), *Privatisation*, Edward Elgar.

Nickell, S, (1996), "Competition and Corporate Performance", *Journal of Political Economy*, 104, pp.724-746.

Nicoletti, G. and S. Scarpetta (2003), "Regulation, Productivity and Growth: OECD Evidence", OECD Economics Department Working Papers No. 347.

O'Mahony, M. (1999) "Britain's Productivity Performance 1950-1996: an international perspective" National Institute for Economic and Social Research, London

- Olley, S., and Pakes, A., (1992), "The Dynamics of Productivity in the Telecommunications Industry", NBER Working paper 3977, Cambridge, Ma.
- Pollitt, M (1999) "A survey of the liberalisation of public enterprises in the UK since 1979" in (ed) M.Kagami and M.Tsuji *'Privatization, Deregulation and Institutional Framework'*, Institute of Developing Economies, Japan External Trade Organization, Tokyo.
- Rosen, A., (1989), "Bargaining over Effort", Centre for Labour Economics, London School of Economics, Discussion Paper N° 351, Revised July 1990.
- Scharfstein, D., (1988), "Product Market Competition and Managerial Slack", *Rand Journal of Economics*, 19, 1, 147-155.
- Schumpeter, J.A., (1943), *"Capitalism, Socialism and Democracy"*, Harper and Row, New York.
- Unctad, 2003, *'World Investment Report 2003'*, Unctad, Geneva
- Varian, H.R.,(1995), "Entry and Cost Reduction", mimeo, University of Michigan.
- Vickers, J.S., (1995), "Concepts of Competition", *Oxford Economic Papers*, 47, pp. 1-23.
- Waddams Price, C. (1999), *'Efficiency and Productivity Studies in Incentive Regulation of UK Utilities'*, address to the Sixth European Workshop on Efficiency and Productivity Analysis, mimeo, Warwick Business School
- Wragg, R., and Robertson, J., (1978), "Post War Trends in Employment, Productivity, Output, Labour Costs and Prices by Industry in the UK", Department of Employment research paper 3, HMSO, London.

Appendices

Appendix 1. Competition, privatisation and performance

A1. Introduction

Competition can raise productivity growth in two ways. First, competition can raise the productivity of existing enterprises. Studies that emphasise this contribution are, for example, Nickell (1996), on the impact of competition on existing firms. Second, competition, can raise productivity growth via the process of market selection. In turn this potentially composed of two effects. First, low productivity establishments might exit and be replaced by higher productivity entrants and second, higher productivity incumbents might gain market share. There are a number of theoretical papers on the issue, and recently there has been growing evidence for its importance (see e.g. Bartelsman and Doms, 2000, for references).

A2. Competition and productivity within firms

Let us think of the firm as consisting of owners, managers and workers. Within the firm, there are a set of contracts between these groups. Outside the firm, competitive pressure comes from competition in the product market and/or the capital market. Competitive pressure presumably alters behaviour of one or more of these groups. We might then think of two distinct effects.

- a. with a given contractual/bargaining relation within the firm, competition might affect effort incentives.
- b. competition might affect the type of contracts that can be written between agents in the firm,

A2.1 Competition and within-firm contracts

Consider first competition and within-firm contracts. Much recent work on X-inefficiency has modelled X-inefficiency as caused by inefficient effort levels exerted by managers see e.g. Vickers (1995). Why might such effort be inefficient? Consider an owner trying to devise a suitable wage contract for a manager. If owners link managerial compensation to output this would reward high effort and so induce efficiency. A potential problem arises if owners cannot observe managerial effort

and managers are risk averse. Hence owners cannot observe whether high output is due to high managerial effort or good fortune (e.g. good weather on a farm). Tying rewards to output exposes managers to a lot of risk.

What are the effects of competition in this setting? Suppose there was another similar firm in the market. The basic idea is that such competition increases the information available to the principal when they write the contract with their agent. Suppose for example that the only source of random shocks to measured output is from the weather, and suppose that the two firms are in the same weather area. Then the manager would be happy to accept a contract that rewards her based not only on her output but the relative output of the other firm. If the weather shocks are correlated the output of the other firm will fall in response to a bad shock, thus showing the principal that the agent did indeed work hard, but suffered an adverse shock. So basing reward on relative output introduces an insurance element into the contract which improves welfare.

Unfortunately the picture is a little more complicated when one considers the correlation of measured output between the firms in a little more detail. Suppose the unobservable component of measured output has two components, unobservable ability of managers and random weather. Then the output correlation between the firms depends on the between-firm correlation of managerial effort, managerial ability and weather. Suppose first that there is very high correlation of managerial ability levels and low correlation of weather effects. Then conditioning an agent's contract on rival managers' output might have a poor incentive effect. For if the agent knows that her rival's output is mostly due to their ability, rather than bad luck, she might reduce her effort in the expectation of receiving part of her reward based on her rival's ability. Since both managers behave in this way there is a free-rider effect, and so conditioning rewards on rivals may lead to poor effort outcomes.

These complications also affect the desirability of competition in dynamic models, in particular the ratchet effect (a manager perceived as high ability in period 1 might get a tighter contract in period 2). Suppose information from the market improves the estimate of underlying managerial ability. Although this might be good for insurance it worsens the ratchet effect.

A2.2 Competition and outside firm forces

The above section dealt with how competition affects the structure of contracts within a firm and therefore X inefficiency. How does competition influence effort for a given set of contracts or bargaining relation?

The most obvious form of competition is from the product market. Models here have looked at the influence of competition on the X-inefficiency of managers and of workers.

A2.2.1 Agency models

An influential early paper was Hart (1983). Here firms are either managerial or entrepreneurial. Managerial firms are run by managers who wish to minimise effort. Owners observe the firm's performance, but cannot observe firm's costs which are a mix of managerial effort and random shocks. Such firms are therefore X-inefficient due to this agency problem and the manager's assumed utility functions mean that owners set managers a fixed profit target. Entrepreneurial firms by contrast are profit maximisers and have no X-inefficiency.

Hart was concerned to show how the presence of entrepreneurial firms (this is the sense in which he examines competition) affected X-inefficiency in managerial firms. With no entrepreneurial firms in the market, consider a shock that lowers all costs. Such a shock provides the opportunity for managers to shirk whilst still fulfilling their profit targets and so X-inefficiency will increase. Suppose now that there are also entrepreneurial firms in the market and assume cost shocks are correlated between both sets of firms. With low costs the entrepreneurial firms will expand. Product prices will fall. Managers in managerial firms will find it more difficult to fulfil profit targets and so will have to raise effort. So competition reduces X-inefficiency in the sense that managers find it harder to "take" favourable shocks in the form of reduced effort.

Scharfstein (1988) however showed the result depends critically on his assumed managerial utility function. In Hart's model managerial utility functions were such that owners simply issued managers with a fixed profit target.³ With more general utility functions contracts can be more complicated and competition might not necessarily raise productivity. See Hermalin (1992) who sets out the various effects and shows there are no clear conditions under which any one effect dominates.

A2.2.2 Bargaining models

A number of models have examined effort (typically worker effort) as the outcome of a bargain between firms and workers, rather than an agency relation (Rosen, 1989, Johnson, 1990, Haskel, 1991, Nickell

³ Hart assumed that managers were infinitely risk-averse with respect to incomes above some certain level. So contracts were limited to those specifying a single profit target, since managers did not care about incomes above this level and would not accept contracts below this level. Hence managers are X-efficient when cost shocks mean that costs are high, but X-inefficient when costs are low.

et al, 1992). The bargaining approach is appealing, for many economies since detailed survey data suggests that bargaining over effort (crew sizes, manning levels etc.) is widespread. Note that there is no need for unions in this model; Johnson (1990) reports widespread bargaining over crew sizes in the US which is predominantly non-unionised.

These models generally proceed as follows. Output depends on employment, capital and "effort". So increased effort raises productivity. Firms and workers bargain over the level of effort (and perhaps other variables such as wages) and the firm then sets employment. In the bargain, firms desire high effort and low wages to raise profits. By contrast, workers desire low effort and high wages to raise utility. The effect of bargaining is to transfer some of the profits of the firm to the workers, depending on bargaining power. In the simplest models workers simply take reduced effort as part of profits (and perhaps increased wages). Competition lowers the surplus available to bargain over and raises the marginal employment loss for workers in raising their wages. Workers are therefore forced to take at least part of the reduced surplus in the form of reduced slack or X-inefficiency.

One problem with these models is that like the agency models they too depend quite a lot on preferences. Consider a union with a much stronger preference for low effort relative to high wages. Increased competition shrinks the cake and the union knows that it must give something away to the firm in the bargain. It is perfectly possible that such a union might agree to work for a much lower wage but only in return for lower effort. The firm is happy to accede to this demand if the effect on profits of lowered effort is outweighed by the effect of lowered wages.

A3. Competition and the selection of organisations

The above models are where competition affects the efficiency of an organisation. In the context of these models welfare implications relate to a given organisation. However, competition might very well affect the mix of organisations. It is worth noting first that there is a classic result concerning the *welfare* effects of competition and entry namely that in free market equilibrium there is too much entry (Mankiw and Winston, 1988). In this model competition does not alter the cost structure of firms, as in the models above, but simply increases the number of firms in the market. Consider a Cournot market of *ex ante* identical firms, where entry requires a fixed cost F , after which firms produce at exogenous costs MC . Suppose a regulator allows free entry into the market. This improves allocative efficiency as prices fall towards MC . But since each firms' output falls, productivity is worsened as firms produce further up the AC curve (the business stealing effect, since it occurs as new firms enter the market). This negative externality turns out the outweigh the positive externality that extra production confers on consumers.

As Vickers (1995) and Varian (1995) have pointed out all firms are identical in this model. What if an entrant were more productive? Then welfare might be increased, even with reduced economies of scale, if the output were shifted to the more efficient new entrant (a positive externality that Vickers (1995) christens the "business shifting" effect, see also Varian (1995)). This again turns out to depend on the set up of the model.⁴

A4. Empirical evidence

Since theory is ambiguous, what of empirical work? There are a number of currents in the work.

A4.1 Frontier studies

First, frontier production studies. As Button and Weymark-Jones (1994) remark, although many studies estimate inefficiency few explore its relation to competition. One such is the findings of the multi-industry study for the UK reported in Green and Mayes (1991) and for the US reported in Caves and Barton (1993) (see Caves et al, 1995, for further information and other countries). These studies use a similar methodology across countries and so have the advantage of being comparable, and are specifically designed to look at the issue of competition and efficiency. Their findings are rather inconclusive. For example, Caves and Barton (1983) and Green and Mayes calculated a range of frontier-based inefficiency indices for industries in 1977 and regressed them on a number of industry-level variables of interest. As for concentration, neither study found any significant linear relation between industry concentration and any of the inefficiency measures. Both studies found a significant non-linear, U shaped relation between concentration and inefficiency, such that both unconcentrated and concentrated industries were associated with inefficiency. In the UK the minimum inefficiency occurred at five firm concentration ratio of 40% whilst in the US maximum efficiency at a four firm concentration ratio of 34.8% (sample mean 39.7%), after which efficiency falls with concentration. Results were similarly mixed for other variables such as import penetration.

Turning to DEA analysis, Button and Weyman-Jones (1994) survey 23 DEA studies of X-inefficiency, and for 9 of them, construct a 1/0 dummy variable which decreases with the degree to which competition, private ownership or a lack of regulation characterise the industry under question. They find a negative rank correlation between this measure and efficiency. So this is consistent with the

⁴ All these effects are of competition on the level of productivity. Competition might affect productivity growth if it affected innovation. Theoretical results are mainly divided as to whether more competition encourages innovation. Schumpeter (1943) argued that monopolies were more likely to innovate since they had the profits out of which to finance innovations. Subsequent theoretical work has looked rather at situations where firms have equal access to capital markets so that these "deep pockets" considerations do not arise. Results here are typically ambiguous.

idea that more competitive industries are more efficient, although, as the authors stress, the results can be regarded as suggestive at best.

A4.2 Non-frontier studies

As for non-frontier methods, a number of recent studies have taken industry or plant level panel data and regressed productivity levels on competition levels and growth, using the panel structure to control for unobservable industry firm fixed effects. As for industry work, Carter and Williams (1959) found a positive correlation between productivity and concentration for 12 British industries 1907-1948, whilst Wragg and Robinson (1978) found a negative correlation for 82 industries 1963-73 (although they included output as a regressor making interpretation difficult). Hart and Clarke (1980) report no significant effects of concentration on labour productivity (measured relative to the US) for a number of industries and countries, although they have no other controls such as capital beyond concentration, plant size and country and industry dummies. Caves and Davies (1988) also examine productivity and productivity growth for 100 UK industries relative to the US but find no effects of concentration in explaining the inter-country difference. Haskel (1991) finds that falls in concentration are associated with increases in productivity, suggesting that more competition raises productivity.

Finally, Geroski (1990) has studied the impact of competition on innovation (and in turn innovation on productivity growth, see Geroski, 1991). The key correlation established is that increased concentration lowers innovations. The data is for 73 MLH industries where two cross-sections have been created using averaged data for 1970-4 and 1975-9. To the extent that innovation feeds into productivity growth then this supports the notion that the level of competition raises productivity growth.

Turning to firm level work Nickell (1996) uses data on 148 firms, 1975-86 to explore the influence of competition on both the level and growth of productivity. Competition is measured by the market share of firms in the relevant 3 digit industry (a measure that varies over time and firms) and by a questionnaire response to the inquiry " have you more than five competitors in the market for your products" (a 1/0 variable, that varies over firms). The two most significant effects are that the (two period lagged) level of market share lowers the level of productivity and that the competitors effect raises productivity growth. Thus these effects suggest that competition both raises productivity (as found in the industry studies) and raises productivity growth.

The final current of empirical work is the work that looks at the role of reallocation in explaining productivity growth. Many of these recent studies are surveyed in Bartelsman and Doms (2000). An

significant early contribution was Bartelsman and Drymes (1998). They used US data to document, that aggregate US TFP 1970-80 rose very substantially, but, unweighted average plant level TFP declined or was flat. Since aggregate TFP is weighted average of the individual, this suggests that much of productivity growth is due to changes in the weights. Changes in the weights are themselves due to reallocation, suggesting that reallocation is important in explaining productivity growth. For US telecommunications, Olley and Pakes (1996) found a similar importance of reallocation, particularly after the deregulation of the industry.

Baily, Hulten and Campbell (1992), Foster, Haltiwanger and Krizan (2001) and Griliches and Regev (1992) presented explicit accounting decompositions of productivity growth into the contributions of continuers, entrants and exitors. Foster et al, (2001) found, for example, that entry and exit accounted for 26% of US manufacturing productivity growth in 1977-87. Crisculo, Haskel and Martin (2004) find entry and exit accounted for 25% of productivity growth over a five-year period in the UK in the 1980s and 50% in the 1990s. Finally, in one of the few studies for services Foster, Haltiwanger and Krizan (2003) find that 100% of US retailing productivity growth was due to entry and exit of new stores.

A5. Privatisations and performance

Precise evidence on productivity, privatisation and competition needs the study of particular firms. A number of studies exist for the UK see e.g. Bishop and Kay (1988), Bishop and Thompson (1992), Bishop and Green (1995), Haskel and Szymanski (1992) Parker and Martin (1995) and Pollitt (1999). Much of these results are summarised in Haskel and Green (2001) who have a number of findings. First, public sector firms were typically very inefficient before privatisation. Second, privatisation itself is not strongly associated with rises in TFP pre-privatisation restructuring and increased market competition was associated with a rise in TFP. Third, most of the rise in labour productivity was due to fast labour shedding. The finding that privatisation itself does not seem to be correlated with productivity growth is intriguing, but whether the commitment to privatise, which can only be obtained by privatising, is essential to getting the gains from pre-privatisation restructuring remains an open question that is unlikely to be econometrically testable.

Turning to international evidence, O'Mahony (1999) calculates labour productivity in the gas, electricity and water sectors in the G5 countries. These data are of interest since they provide an international productivity comparison. The UK had the lowest level of productivity throughout the 1970s and 1980s, and it is hard to identify any change in trend between 1973 and 1990. From 1990

onwards, however, labour productivity growth more than doubles, to 9% a year, so that the UK overtakes France, and closes the gap with the other countries in the sample. Productivity growth in the other countries only rose slightly, on average, from 2.4% in the 1980s to 3.1% between 1990 and 1996, and so an exogenous technical change is unlikely to be responsible for the acceleration in the UK. This would appear to provide evidence of an effect from privatisation and tightened regulation but since the dates of privatisation of gas, electricity and water vary one cannot conclude for sure whether it is privatisation, pre-privatisation restructuring or regulation.

Appendix 2 . OECD Input – Output Tables sectors classification

SECTOR	OECD IO Industry	ISIC Rev. 3 Class.
Agriculture, Hunting, Forestry and Fishing	1	01 – 05
Mining and Quarrying	2	10 – 14
Food Products, Beverages and Tobacco	3	15 – 16
Textiles, Textile Products, Leather and Footwear	4	17 – 19
Wood And Products of Wood and Cork	5	20
Pulp, Paper, Paper Products, Printing and Publishing	6	21 – 22
Coke, Refined Petroleum Products and Nuclear Fuel	7	23
Chemicals Excluding Pharmaceuticals	8	24 ex. 2423
Pharmaceuticals	9	2423
Rubber and Plastics Products	10	25
Other Non-Metallic Mineral Products	11	26
Iron & Steel	12	271 2731
Non-Ferrous Metals	13	272, 2732
Fabricated Metal Products, Except Machinery and Equipment	14	28
Machinery and Equipment, N.E.C.	15	29
Office, Accounting and Computing Machinery	16	30
Electrical Machinery and Apparatus, Nec	17	31
Radio, Television and Communication Equipment	18	32
Medical, Precision and Optical Instruments	19	33
Motor Vehicles, Trailers and Semi-Trailers	20	34
Building and Repairing of Ships and Boats	21	351
Aircraft and Spacecraft	22	353
Railroad Equipment and Transport Equipment N.E.C.	23	352, 359
Manufacturing N.E.C.; Recycling	24	36 – 37
Electricity Gas and Water	25	40 – 41
Construction	26	45
Wholesale and Retail Trade; Repairs	27	50 – 52
Hotels and Restaurants	28	55
Transport and Storage	29	60 – 63
Post and Telecommunications	30	64
Finance, Insurance	31	65 – 67
Real Estate Activities	32	70
Renting of Machinery and Equipment	33	71
Computer and Related Activities	34	72
Research and Development	35	73
Other Business Activities	36	74
Public Admin. and Defence; Compulsory Social Security	37	75
Education	38	80
Health and Social Work	39	85
Other Community, Social and Personal Services	40	90 – 93
Private Households with Employed Persons and Extra Territorial Organisation and Bodies	41	95 – 99
SBFD + j		

Note:

Germany 1995, Italy 1992 and United Kingdom 1998 OECD Input – Output Tables follow the classification. Sectors 8 and 9, 20, 21 and 22 are not separately available for Germany and they are included respectively in sectors 8 and 20. Sector 13 is not available. Sectors 12 and 13 are not separately available for Italy and they are included in sector 12.

SECTOR	OECD IO Industry	ISIC Rev. 2 Class.
Agriculture, Forestry and Fishing	1	1
Mining and Quarrying	2	2
Food, Beverages and Tobacco	3	31
Textiles, Apparel and Leather	4	32
Wood Products and Furniture	5	33
Paper, Paper Products and Printing	6	34
Industrial Chemicals	7	351, 352 ex. 3522
Drugs and Medicines	8	3522
Petroleum and Coal Products	9	353, 354
Rubber and Plastic Products	10	355, 356
Non-Metallic Mineral Products	11	36
Iron & Steel	12	371
Non-Ferrous Metals	13	372
Metal Products	14	381
Non-Electrical Machinery	15	382 ex. 3852
Office and Computing Machinery	16	3852
Electrical Apparatus, Nec	17	383 ex. 3832
Radio, TV and Communication Equipment	18	3832
Shipbuilding and Repairing	19	3841
Other Transport	20	3842, 3844, 3849
Motor Vehicles	21	3843
Aircraft	22	3845
Professional Goods	23	385
Other Manufacturing	24	39
Electricity Gas and Water	25	4
Construction	26	5
Wholesale and Retail Trade	27	61, 62
Restaurants and Hotels	28	63
Transport and Storage	29	71
Communications	30	72
Finance and Insurance	31	81, 82
Real Estate and Business Services	32	83
Community, Social and Personal Services	33	9
Producers of Government Services	34	
Other Producers	35	
SBFD + j	36	

Note:

Germany 1986 and 1990, Italy 1985 and United Kingdom 1984 and 1990 OECD Input Output Tables follow the classification.

Sector 8 and sector 18 are not separately available for Germany, they are included in sector 7 and sector 17 respectively.

Sector 20 is not separately available for Germany. Railways engines and wagons are included in sector 14; Tractors, excavators, etc are included in sector 15, Bicycles are included in sector 21

Annexes:
Sectoral regulations
in service markets

Annex 1 - Energy Markets

The common European framework has been designed through two Directives approved in the second half of the Nineties, and the national plans have been further developed in the member Countries with relevant differences and a more or less advanced approach. At the beginning of 2003 two new Directives have been approved, with relatively minor innovations. The first steps in the liberalization process have so far concentrated on the removal of public restraints to upstream activities, on the definition of non discriminatory access conditions to the network infrastructures, but have only introduced minor requirements on vertical separation, where nothing more than a legal separation between the subjects operating different stages of the activity is required.

Countries which have operated a more aggressive separation have allowed the regulator to operate in a clearer situation, reducing cross subsidies and granting new entrants a level playing field. In countries (Germany being a prominent example) where vertical integration remains widespread and where unclear rules are in place, competition is extremely slow to develop and consumers do not benefit from an opening of the market, which remains mostly formal.

Between the two sectors under observation (gas and electricity) there are two important asymmetries:

- Wholesale competition in electricity is relatively easy, while take-or-pay contracts limit the access to gas wholesale. Although the Directives only protect take-or-pay contracts signed before 1999, the duration (20-30 years) of these contracts makes the distinction between old and new contracts significant only beyond a reasonable time horizon.
- Vertical integration remains very strong, especially in the gas sector, where the co-ordination problems are less cogent than in electricity.
- Access to international infrastructures is limited, as they seem to be outside the scope of both regulatory and antitrust norms in the EU. Given the relevance of import in most EU countries, this means that the owner of international networks may effectively foreclose a market.

The liberalization process in the energy markets is under way in all the European countries, pushed by the Directives in the second half of the Nineties and implemented through national plans that share a common approach but that show also a significant heterogeneity. Much remains to be done.

The apparent opening of most markets, where most customers are formally free to choose their supplier, does not translate into lower prices. Competition remains limited because countries have been lenient towards incumbents (even the UK story in the early years confirms that) and greater effort must be exerted in this direction.

1.A ELECTRICITY

The relevant documents for the energy markets were the Directive 96/92/CE on electricity, that set a deadline on February 1999 for the design of the national plans.

United Kingdom

The electricity supply industry (ESI) in the United Kingdom – which consists of generation, transmission, distribution and supply – had been in public ownership since 1948. In England and Wales (E&W), the Central Electricity Generating Board (CEGB) was responsible for generation and transmission; it sold electricity to twelve Area Boards (ABs) based upon marginal costs. The ABs were responsible for distribution and selling electricity to consumers. In Scotland there were two vertically integrated Boards, while in Northern Ireland the NIE was responsible for the small vertically integrated system.

The restructuring took place well before the European Directive, in 1990.

Implementation of the liberalisation plan

The privatisation of the ABs took place in stages. At privatization, 31 March 1990, the 12 Regional Electricity Companies (RECs) replaced the 12 ABs. Transmission became the responsibility of the National Grid Company (NGC), a company fully owned by the RECs. Distribution and supply were liberalized to some extent, as a REC can supply electricity outside its franchise area on a payment of a charge for distribution over another REC's network. The RECs (with their share of NGC) were sold to the public in December 1990. Thus it is helpful to consider generation and transmission separately.

Regarding vertical integration, several RECs have supply businesses and Eastern is one of the largest generators in England and Wales. Most RECs are now active in the supply of gas as well as electricity. Major changes have occurred through the sale of some RECs' (Midlands Electricity,

SWALEC, and Western Power Distribution supply businesses. Further sale of the other RECs' supply businesses are expected following restrictions to ensure that each regional monopoly electricity distribution business is held in a separate corporate entity, ringfenced from all other activities carried on within the licensee's group.

Since privatization, suppliers have had to keep separate accounts for distribution and supply and indeed the utilities Act 2000 required them to be placed in separate companies. Distribution and transmission remain regional and national monopolies and are price controlled. OFGEM have tried to introduce competition in services ancillary to transmission, distribution and supply such as metering, installation of connections to the distribution network.

Generation

The Central Electricity Generating Board was split into a transmission company and three generating companies National Power and PowerGen and Nuclear. Two of these generators were privatised in 1991, National Power and PowerGen, while nuclear power remained in state ownership until 1996, when the newer stations were privatised. The generators competed to sell power to electricity suppliers (and thence to consumers) in a wholesale market called the Electricity Pool, which took daily price bids from every power station and selected the cheapest ones. National Power and PowerGen were privatised with a near duopoly (they controlled 70% of the industry's 1990 capacity) over the price-setting plant in the pool.

Subsequent entry by new generators and the change in the rules of the game (the pool system ended in 2001 and the New Electricity Trading Agreements – NETA – have started operating, ending the system based on a one price for all in favour of a pay-as-bid system). Now the market is considerably fragmented, and the initial joint dominance of National Power and PowerGen has come to an end.

Transmission

The transmission network was given to the National Grid Company (NGC), which was an independent firm and was privatized in 1991, with limitations to the participation of generators and other electricity firms to the shareholding of NGC. Since then, it has operated as a neutral TSO under a price cap.

Distribution and supply

Each REC owns and operates the electricity distribution network in its authorised area. The distribution systems consist of overhead lines, cables, switchgear, transformers, control systems and meters to enable the transfer of electricity from the transmission system to customers' premises. Supply businesses are engaged in the bulk purchase of electricity and its sale to customers. Supply business is then basically, metering and billing; distribution is thus highly capital-intensive.

In 1998 distribution and supply charges accounted for approximately 32% and 13%, respectively, of a domestic customer's bill, and distribution has a significant influence on the overall quality of supply to customers.

The 12 ABs who between them served 22.2 million customers in 1989, ranged in size from South Wales (Customers: 0.91m; Sales: 11.5 TWh; Maximum Demand: 2,111 MW) to Eastern Board (Customers: 2.86m; Sales: 27.2 TWh; Maximum Demand: 5665 MW) (Henney, 1994). The size of the turnover of the RECs (distribution and supply activities) was about £3.8bn by 1997-8 (at 1995 prices), representing about 30% of total turnover of the ESI in the UK.

Each REC's distribution business constitutes an effective regional monopoly. In order to protect customers from the potential abuse of monopoly power, each distribution business is subject to controls on the prices it can charge and the quality of service it must provide. At privatisation, the Government placed initial price controls on the distribution businesses for a period of five years (1990-1 to 1994-5) permitted price increases ranging up to 2.5% above inflation rate. Table 4 sets out the X factors in these and subsequent years.

In response to a substantial increase in REC profits over the period of these initial controls RECs increased their profits significantly, there was a perception that the initial price caps (set by the Department of Energy) were 'too' generous to the companies. They were substantially tightened in August 1994 when OFFER (the Office of Electricity Regulation) announced cuts in real terms of 11 to 17 per cent in distribution charges in 1995/96 and further reductions in real terms of between 10 and 13 per cent in 1996/97. Thereafter, distribution charges were required to fall by 3 per cent per year in real terms for the duration of the price control (until March 2000). These price controls were then modified in 1998 to allow RECs to make certain additional charges for services to facilitate competition in supply. These distribution price controls have been revised from 1 April 2000. Based on Ofgem's predictions of costs and revenues, the RECs will be faced with price controls on distribution businesses averaging 3% for the next five years, with an initial cut in PESs' distribution

revenue by about 23.4% (see Ofgem, 1999b). Controllable costs for the RECs are projected to fall by 2.3% per annum over the period 1998 to 2005.

After the demerger of the NGC from the RECs in 1995 many changes occurred. Mergers and acquisitions were allowed could take place after 1995. By March 1996, four RECs had been taken over and three others were bid for, including by PowerGen and National Power (Green, 1996). Of the twelve RECs in England and Wales, eight were taken over by US electricity companies; two by UK-based water companies; and one by Scottish Power; and Southern Electric merged with Scottish Hydro. Some have changed ownership a second time (e.g. London Electricity and East Midlands Electricity).

Competition and productivity

Competition in the UK market is very substantial both wholesale and in the supply segment.

Effects on prices

As regards the wholesale market, National Power and PowerGen were able to raise prices above marginal costs. There were three major responses to high prices. One response to this was entry by new stations, mostly gas-fired. A second was pressure from the regulator to keep prices down. Initially, it was assumed that the power pool within which bulk generated power is traded would not require regulation. However in 1994/5 and 1995/6 the electricity regulator did impose a price cap on the bids that the incumbent generators could offer in power pool following accusations that they were colluding to raise prices. Third, there was pressure for the major generators to divest some of their plant, which happened.

Privatisation did introduce rules for separating the distribution of electricity from its retail sale (supply), which allowed customers to choose their supplier. Entry in generation was encouraged by the initial high prices and by policies aimed at limiting the expansion of market leaders. The incumbents rapidly lost market share amongst larger customers, bringing the margins on serving them down to competitive levels. Whether the change in the rules from the Pool system to NETA has represented an important contribution in this direction is still debated.

Coming to final prices, price controls on supply businesses have been progressively lifted, also given an increasing degree of competition. Large customers were given the freedom to switch suppliers in 1990, medium customers from 1994 and all domestic customers from 1998.

In detail, price controls on the REC's supply business limited average revenue to rise by no more than inflation, 1990-1 to 1994-5 and then RPI-2 for the supply business of all the RECs until March 1998. In April 1998 further revised controls set real reductions in prices between around 3 and 12 per cent followed by a real reduction of 3% in 1999. Price controls to apply in 2000-2002 have been set on certain tariffs (standard domestic and Economy-7 customers) with price reductions of 5.7% p.a. and 2.1% respectively, on the final prices. It is expected that controls will no longer be necessary after this period following the expected degree of competition.

By 1994 only the medium-sized 1-5MW (megawatt) customers had benefited because they avoided having to subsidize British Coal. Domestic prices of electricity initially increased, relative to industrial prices, by about 5% more than expected, with the increase being concentrated in the early years of privatisation and restructuring.

The price caps for the National Grid Company (NGC) implied constant prices, while most of the Regional Electricity Companies (RECs) were allowed small real increases for several years. NGC's cap was first reset roughly two years after privatisation, and was only tightened to a small extent, but by the time the RECs' price caps were reset, in 1994, the companies had reduced their costs significantly and were very profitable. The electricity regulator, in contrast, believed that the RECs' profits were so exceptional that a one-off price cut could be justified, without affecting their incentives for future price reductions. The regulator proposed a one-off price reduction averaging 14%, but had to follow it with a further 11% the next year, amid widespread criticism of his leniency. The most recent REC price control review has imposed a further one-off cut, on average of 24% in real terms (since distribution is about a quarter of a final customer's bill this lowers customer bills by about 5%). The cuts to each customer vary by individual company. Transmission charges are only about 5% of final customers bill's so have little impact: the latest review has them falling by 1.5% each year from 2002/3 in real terms.

Therefore, final prices benefit both from competition in generation and from a by now established regulation of the network segments. Competition in the final segment probably also contributes to lower prices for small customers as well, although probably with a second order effect.

Quality

In transmission quality is not generally seen as a considerable problem, although OFGEM has incentives to meeting demand. OFGEM believes NGC to have had a generally high service level.

The data show that the percentage of unavailability of transmission circuits has fallen from 9% in 1991 to 4% in 2000.

OFGEM also measures a range of aspects such as supply minutes lost per customer, interruptions per 100 customers. Over the 1990s both these measures have improved, particularly in the early years of privatisation; while in 1991 the minutes lost per connected customer were more than 200 per year, in 2000 this figure has dropped to about 70.

Italy

The implementation of the EC Directive on electricity was given by the Bersani Decree (Law 79/99) in February 1999. The starting point – which persisted until 1999 – was the presence of a vertically integrated dominant firm, Enel, owner of most generating plants, of the transmission network, of most of distribution (about 93% of the final market was served under regulated prices by Enel).

In generation, Enel used to have about 80% of capacity and to generate about 75% of energy generated in Italy, against 21% generated by private firms and 4,5% by local public utilities; given that Italy used to import about 14% of its energy (almost exclusively from the French firm EdF) – Enel used to produce about 2/3 of total energy required by the country.

In the downstream segment some small, local public utilities were present, especially in large cities in the Centre – North of the country (e.g., Milan, Turin, Rome, Verona, Brescia). All customers before 1999 were forced to buy energy from their local distributor.

In 1992 Enel, which was part of the public administration, became a limited company (S.p.A.) with a plan to eventually privatise it. Privatisation started in November 1999, when one third of Enel was put in the market. The government still controls about 60% of Enel.

In this period, Enel has rapidly decreased the number of its employees and improved productivity, as emerges from the Table 1⁵.

⁵ Notice that the data are biased against Enel, as they also comprehend some employees which were destined to Wind, the tlc company of the group, and as in the 1999 figure come part of the distribution network (Trieste) had been sold to a local utility.

Table 1

Employees and productivity of Enel before its privatisation

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Employees	109.860	107.431	105.835	101.849	96.287	93.879	88.957	84.938	79.974
MWh sold per employee	1.766	1.839	1.875	2.016	2.198	2.277	2.465	2.663	2.870
Customers per employee	250	258	264	277	296	306	326	347	371

Source: Enel annual budgets, various years.

Until 1995 the sector was regulated directly by the Ministry, while in that year an independent regulatory authority was created, with the power to determine prices on the basis of a RPI-x scheme.

Implementation of the liberalisation plan

The Directive 96/92/CE was implemented in 1999. The implementation decree envisaged a strong vertical separation between the transmission network and the rest of the system, and

Prices are free in wholesale segment and in the sale to “eligible” customers. As already stressed, prices of transmission and distribution and prices to small “non eligible” customers are decided by the regulator.

Generation

The wholesale market was supposed to be organised as a Pool market, along the initial British example, run by the Gestore del mercato elettrico, Gme (owned by Grtn). Bilateral physical contracts were supposed to be exceptions, requiring a permission by the Authority. The market was supposed to start operating at the beginning of 2001; three years later, the transition is still under way, and the Pool has started its operations only in April 2004.

A major reform of the initial framework for wholesale transactions has been introduced in 2003, whereby bilateral contracts have become the normal way of exchanging electricity in Italy, so that the electricity exchange will remain totally marginal (not more than 10% of transactions are expected to take place through this market).

No other Western country has taken this long to actually implement a system of this type. Two main reasons may probably justify this delay. The first one is that the reform has left Enel with about 50% of production, a dominant position which was bound to undermine the ability of competition to be effective. The second reason is probably that Italy depends largely (16% of total consumption) on imported energy, coming from France, which is substantially cheaper. The initial project envisaged that this energy should have been exchanged in the wholesale market, so that all customers would have ended up paying the same price. This possibility was seen with hostility by large industrial customers, which historically have privileged access to imported energy. The current system confirms this privilege, and the opposition of large industries has thus achieved its goal

As anticipated, in order to reduce Enel's market power upstream, no firm is allowed to have more than 50% of total installed power or to sell more than 50% of total energy, including imports. To this end, Enel has formed three companies which have been sold in public auctions. The buyers are consortia of smaller Italian independent producers or public utilities, with the participation of some large foreign producers such as Endesa (Spain), Edf (France), Tractebel (Belgium).

Transmission

The *management and full control* of the transmission network is in the hands of an independent system operator (the Gestore della rete di trasmissione nazionale, Grtn) which remains State owned. However, the *ownership* of the network initially remained with Enel (a company called Terna). The unification of the network owner and the system operator is under way, and should be completed in October 2005. A privatisation of the unified TSO is envisaged, but the details of the operation are still undecided. In order to preserve the neutrality of the TSO, some limit (5%) to the participation of electricity firms to the control of the TSO will be introduced.

Access to the transmission network is open to third parties on the basis of conditions set by the regulatory Authority.

Distribution and supply

The thresholds for eligibility were established in order to accelerate the process of market opening relative to the dates set in the Directive. Since May 2003, all clients consuming at least 0.1 GWh per year are eligible. Eligible clients represent at the moment more than 60% of total energy sold in the country.

Distributors selling energy to franchise (non eligible) customers must buy the energy for these customers through a Single Buyer, which is also part of the State owned Grtn group.

Competition and productivity

Until April 2004, the wholesale price was determined by the Authority. Competition wholesale has begun only in April 2004 and it is impossible to assess any result. In the meantime, however, the entry process upstream has been extremely slow. Enel is still the largest generator, with a market share of about 40%, while the second largest is Edison with a share of about 15%.

The average age of Italian plants is considered quite high. Moreover, the electricity shortages in summer 2003 have stressed the need that Italy rethinks its energy policy to restore an appropriate reserve margin. The development of investments in electricity generation in Italy is thus needed both to foster competition and to guarantee security of supply. In this situation, as already pointed out the Government has intervened in March 2002 with a decree named “sblocca centrali”, aimed at speeding up the authorisation process for new generators.

However, in the same period, the following decision have been made (proposals have been put forward):

- decision to introduce a price cap (500 €/MW) to wholesale prices;
- proposal to reform independent the regulatory authority, in order to curb its power and to increase the weight of political decisions in the energy sector;
- proposal to require that generators may shut down their plants only if some public authorization is given;
- decision to temporarily freeze energy prices and to decide possible later increases within a global anti-inflationary effort.

The general tendency to return energy policy within the political decisional sphere inevitably makes future regulatory interventions less predictable and credible and therefore increases regulatory risk. Given these current uncertainties potential entrants are unable to make reasonable forecasts about their future returns, and this raises immense problems with the financing of these projects. Therefore, Italy faces a very awkward situation, being in desperate need of investments in generation, while policies aimed at encouraging investment lack consistency. The remedy which the Government is considering at the moment is the introduction of a system of capacity payments, whose provisional structure has been introduced at the beginning of 2004 for the current year, and whose definite structure should be determined by the end of 2004.

This leads us to the theme of competition for eligible customers. At the moment, the data indicate that the market increases quite rapidly, that competition is substantial among incumbents, with Enel losing quite rapidly its traditional dominant position and that substantial entry is taking place. Although no other large operator is actually emerging, one can see that market fragmentation seems to be increasing. Provisional data for 2003 confirm a strengthening of this trend.

Table 2
Sales (in %) of electricity in the free market, Italy.

	2000	2001	2002
Enel	47.8%	37.0%	31.1%
Edison	18.6%	15.0%	16.4%
EGL		6.0%	6.7%
Energia Italia	3.2%	4.0%	5.4%
NET			2.7%
Eni Power		3.0%	4.1%
Endesa			2.1%
ATEL			2.9%
Dalmine Energia	3.4%	4.0%	2.9%
Electra Italia	4.6%	2.0%	1.5%
EDF			1.0%
Asso / Lumenergia	9.2%	7.0%	7.8%
Others	13.2%	22.0%	15.5%
Total	100.0%	100.0%	100.0%

Source: Grtn and Aeeg

Enel now supplies about 30% of the final market for eligible customers. Among the main rivals, we have some large foreign firms (among others, Elektra, Endesa, Atel) and some Italian firms (e.g., Edison) with substantial cross-participations of foreign firms in Italian consortia (e.g., Verbund in Energia). However, several suppliers complain that demand is rationed and that they encounter difficulties in finding the wholesale energy that the market demands. At present, Enel is still the main generator and final sellers of electricity might need to buy from a part of Enel (Enel Produzione) to compete against another part of the same firm (Enel Trade). Once the wholesale market will be operating, final suppliers should be able to buy energy in the market, and the current apparent shortage of energy “for the free market” should cease.

Can we say that liberalisation had a positive effect on productivity? As already indicated, the productivity of Enel increased dramatically already before any form of competition was introduced; probably the *threat* of privatisation and market opening were sufficient to induce the largest firm in the sector to change its situation. As indicated in the following table, the process continues after 1999 and involves the whole sector.

Table 3
Productivity in the electricity sector, Italy, 1995=100

	1995	1996	1997	1998	1999	2000	2001	2002
Output	100	101.5	104.4	107.9	110.8	114.8	116.1	118.6
Employment	100	99.5	93.3	89.4	84.1	77.5	71.4	65.4
Productivity	100	102	111.9	120.7	131.7	148.1	162.6	181.3

Source: ISTAT

However, as we will stress also in the gas sector, employment data after 1999 have to be handled with care, in that the break up of the dominant firm and a greater complexity of the sector may make intertemporal comparisons difficult. In any case, even discounting this problem, the increase in productivity appears quite clear and confirms that the restructuring of the sector (competition, partial privatisation, unbundling, ...) has produced very positive results.

Effects on prices

Italy has always maintained the idea that the regulated price should be the same throughout the country (single tariff). Final prices are now regulated only for small customers, free for eligible customers (above 0.1 GWh per year). The new regulation started in 2000.

Prices to non eligible customers are regulated through a RPI-x system. The x factor has been set equal to 4% in the first regulatory period (2000-2003)⁶. In the second period (2004-2007) the x factor is no longer referred directly to final prices. Its value is set at 3,5% for the price of distribution and 2,5% for transmission (and it only refers to the part of the price which is related to

⁶ In September 2002 the Government decreed to block for 6 months the price dynamics decided by the Authority, also deciding that from that moment onwards – against what was decided in 1995 – the Government had the right to set principles that the Authority had to follow in deciding future price adjustments.

operational costs, and not to the total price); the dynamics of final prices will vary accordingly, depending on how wholesale prices and other costs evolve.

Although building averages is extremely difficult (data for eligible customers are not publicly available, and a joint survey by the regulator and the antitrust authority has been due for long time without success), the following table provides the data – estimated by a non independent source – which can help understand what has happened.

Table 4
Average final prices for electricity in Italy

	1996	1998	2000	2001	2002	2003
Net price	6.39	6.19	5.52	4.8	4.77	4.25
Fuel charge	2.36	2.96	3.16	5.36	3.85	4.44
Taxes and system costs	2.96	2.39	2.66	2.1	2.75	2.67
Total	11.71	11.54	11.34	12.26	11.37	11.36

Source: Enel

The data provided by the regulator go in the same direction. In particular, the regulator stresses how regulation has protected consumers from the dynamics of fuel prices in this period.

To sum up, liberalisation has been carried out in a consistent way, in that the previously dominant firm (Enel) is left without the control of the transmission network and has been forced to divest part of its generating capacity. This has left substantial room for new entrants. The effect of regulation on final prices is certainly positive, and the same holds for the free market (large customers) where apparently a saving of about 10% relative to regulated prices for smaller customers. However, competition is still largely imbalanced, and wholesale prices are unlikely to decrease by much. The need for further investment is strong, and is being tackled via a specific system of incentives, whose structure is still undecided, but which most likely increase final prices.

Quality

The quality of the service for the final customer is now – unlike in the period before 1998 – monitored by the regulator, who checks several quantitative and qualitative parameters and sets – in agreement with the firms and considering the characteristics of each area – explicit standards. Achieving the set quality standards is rewarded through a special fund. The following parameters, referring to the continuity of service for final domestic customers, appear particularly significant.

Table 5
Quality of the electricity service in Italy for final customers

	1998	1999	2000	2001	2002
Minutes of service interruption	187,71	175,44	157,17	118,23	97,75
Number of service interruptions	3,99	3,70	3,02	2,59	2,42

Source: Aeeg.

As one can easily see, quality is steadily improving since the beginning of the monitoring system. This is true throughout the country, particularly so in the South, where however the initial quality levels were very low, and particularly for Enel, which still serves the largest number of domestic customers.

Germany

Germany has Europe's largest energy market (with annual power consumption about 550 TWh and generation capacity of 125 GW). After unification, Germany had the challenging task of combining the significantly different energy sectors of East and West Germany. In the former West, the electricity market was largely under private ownership whereas in the East it was state-owned.

Before restructuring, the sector was extremely complex, with three kinds of firms

- the nine *Verbund* companies, such as PreussenElektra and Bayernwerk, operating on a supra-regional scale and vertically integrated; in 1995 they covered about 79% of generating capacity;
- about 80 regional utilities, active especially in transport and distribution; in 1995 they produced about 10% of total national production;
- municipal firms (*Stadtwerke*), specialised in final sales, with some integration in generation (producing about 11% of total electricity).

The main source of energy generation was coal (58%); in 1996 76% of total available coal was bought by electricity generation. While generation was dominated by supra-regional companies, the final market was split quite evenly among *Verbund* companies (33%), regional ones 36% and *Stadtwerke* (31%).

Several network operators were present, each linked to a large regional utility. Cross participations were very common. In the German tradition, participation of financial groups to the group of shareholders was also very common.

The previous institutional design was due to private agreements among the associations of electricity firms, such as DVG, which groups the *Verbund*, ARE (regional utilities), VKU (*Stadtwerke*) and VIK for private producers. This referred to network access and tariffs. Despatching of plants was decided by each utility, and no attempt to organise it in an efficient way was made. Production was basically free, and wholesale prices were determined by bilateral long-term contracts. Final prices for domestic customers were determined by the Länder governments. Larger clients had a separate treatment.

Implementation of the liberalisation plan

The Directive was implemented in Germany in 1998. Not much has changed in the institutional set-up. No regulatory authority has been introduced – an absolute exception in the European situation – and self-regulation (bordering on collusion) is the common way of tackling the issues of network access and so on. Disputes are settled through the national and regional antitrust authorities *Bundeskartellamt* and *Landeskartellbehörden*).

Germany is basically the only country affected by the provision, included in the 2003 Directive, to create an independent authority for energy sectors. The implementation of the law is envisaged by July 2004.

Only legal unbundling is supposed to take place, so that most firms remain vertically integrated.

Generation

Germany produces more electricity than it consumes. Generation remains a free activity, apart from the normal authorisations for the use of territory, safety and environmental standards.

Transmission

After the implementation, a general restructuring of the network has taken place, halving the number of large network operators. Only four national network operators remain (RWE, EnBW, E.On, Vattenfall Europe), with 35 regional distributors and about 800 municipal distributors; most of these firms are vertically integrated.

Germany is the only European country to choose negotiated TPA, one feature that will have to change soon, as the implementation of the 2003 Directive takes place. Access was thus regulated implicitly by agreements among network operators (*Verbandsvereinbarung*) which also define

criteria for setting access prices and forbid exchanging sensitive information with distributors. Under the Associations' Agreements, grid access can only be denied if the use of lignite coal is endangered. Effective until 2002, this law protects the East German lignite (brown coal) industry which is considered stranded asset - akin to nuclear power in the UK.

However, numerous allegations of abuse of dominant position have been raised against German network operators.

Distribution and supply

The distribution network is owned and operated by regional and municipal firms. Only a separation of accounts is envisaged for these firms. Negotiated TPA with self-regulation holds here as well.

As a consequence of both lack of regulation and overlapping of national, regional and local charges, German customers pay extremely high network charges (a EU record between 26 and 36% of total electricity cost, according to the Third Benchmarking report of the EC).

Competition and productivity

Two electricity exchanges have been formed in the year 200: LPX (*Leipzig Power Exchange*) in Leipzig and EEX (*European Energy Exchange*). The two exchanges merged in 2002, keeping the location of the first one, but with the name of the second (EEX). Both physical and financial contracts (including derivatives) are exchanged on the EEX.

The final market is not extremely concentrated and there is at least one relevant foreign entrant (Vattenfall, from Sweden, which anyway had to make an agreement with a German firm to help enter the market).

The 1998 implementation forced an immediate market opening (100% of customers are eligible). Thus, in principle clients have the right to choose who will be their supplier. Switching costs however are substantial and since market liberalisation, according to the Third EC Benchmarking report only 20% of the industrial customers and 5% of residential customers are estimated to have actually changed electricity suppliers. These figures, although not exciting, are in line with the European average for industrial customers and above average for domestic customers, given the early start of total demand opening in Germany.

Effects on prices

Before liberalisation, Germany's prices were extremely high, but between 1999 and 2003 the price of electricity has dropped by about 4% for large industrial consumers and about 2% for household

consumers. Given the dynamics of fuel prices in this period, this should be considered a reasonable performance, that however leaves Germany as one of the most expensive countries in Europe for electricity.

1.B NATURAL GAS

In natural gas, the key document is the Directive 98/30/CE, dating on August 2000 the definition of national policies. In 2003 we have had a second Directive, which has added little to the previous situation, in that most countries were already compliant with its new provisions (with the notable exception of Germany).

United Kingdom

The Gas industry was nationalised in 1947. British Gas controlled distribution and supply under a monopolistic regime.

The privatisation of British Gas took place in 1986. British Gas could have been broken up before privatisation into regional distribution companies and a separate supply company. Instead it was privatised with the same management, maintaining the same structure and introducing very light price controls. The continuous presence of this element has characterised the British gas industry since the beginning of the restructuring phase.

Vertical structure

As specified, the vertically integrated structure of British Gas remained unchanged at the moment of its privatisation.

Some liberalisation upstream was introduced, in that rival gas suppliers were given permission to enter the market. However, they would need to buy gas from North Sea operators who sold most of their output to British Gas (and were presumably reluctant to upset their major customer), and then ship it through British Gas' pipes, at charges set by British Gas, to gas consumers with individual, confidential, contracts. Practically no entry occurred, presumably because rival suppliers feared that while they were negotiating transportation charges with British Gas, that company would make selective price reductions to their chosen customers.

This situation entailed numerous complaints by competitors and external observers. British Gas was then required to lose 60% of the contract gas market by 1995 but negotiations on this became deadlocked and the company was again referred to the MMC which reported in 1993. The MMC (1993b) recommended the separation of the company into a supply business and a transportation and storage business. The government rejected these proposals but did announce the rapid introduction of full supply competition by 1998.

In February 1997 the company voluntarily demerged into Centrica (the supply business) and BG Transco (the transportation business). This vertical separation of the transportation network is now recognised as a key aspect of the development of competition in this sector.

Competition and productivity

Competition has resulted in a rapid loss of market share for British Gas from 91% to 29% of the industrial market (1991-1996). Full supply competition has resulted in significant price reductions for residential customers who do switch but relatively little switching of suppliers.

Effects on prices

A price regulation scheme in the form of PRI-X was imposed upon British Gas at privatisation, both referring to final prices for small users and as for transport and storage of gas (from 1994). Supply to larger users was left, at privatisation, unregulated. In 1991 price regulation was tightened and some requirements to achieve efficiency gains in gas purchase were introduced.

The post privatisation period has been mostly regulatory battles between BG and the regulator. British Gas was accused in 1986 of practicing price discrimination between industrial gas customers who had access to alternative energy supplies (e.g. electricity for equipment) and those who did not. The MMC (1988) found that British Gas had been practicing such price discrimination in violation of the Competition Act. They ordered British Gas to provide more information on transportation charges, to sell to all its consumers on published tariffs, and to buy no more than 90% of any new gas field, thus allowing rivals access to gas, and to the information they would need to compete with the company.

Even these measures, however, only allowed a very gradual development of competition. It was not until the early 1990s, when British Gas negotiated specific (and rapidly declining) targets for its market share, and took several steps to help rival suppliers, that competition really took off. Eventually, following a second reference to the Monopolies and Mergers Commission, the government decided to allow all gas consumers to choose their supplier. Roughly a quarter of domestic gas consumers now

buy from a company different from the local distributor (very often their local electricity company), in part because the regulator allowed British Gas to set prices which recover most of the costs of past gas purchases at what had become above-market prices, while new suppliers based their prices on the lower prices then ruling.

Italy

The starting point in Italy was the presence of a strong dominant firm (Eni). Despite being in the stock market since 1995, Eni is still controlled by the Treasury with more than 30% of the shares.

National production – controlled for 90% by Agip, of the Eni group – covers about 33% of total demand, while the rest is imported from Russia, Algeria or the Netherlands; most of these import contracts are long term take or pay contracts in the hands of Snam (of the Eni group). Most of the high pressure transport network (97%) was controlled by Snam and analogous conclusions apply to storage. Most of the distribution to final industrial customers was in the hands of Snam, while only one third of sales to small domestic customers was controlled by Italgas, a firm of the Eni group.

This quasi-monopolistic situation was only partially due to legislative decisions, and in principle – at least since 1996 – some competition was allowed even upstream. As for transport, the law (Decreto Legislativo) n. 625/96 defined as open to all firms, but pipelines built by Eni were automatically declared public utility works, enjoying a much more favourable regime of authorisation.

Prices were determined by a governmental body (CIPE), until the independent regulator in charge of both electricity and gas (Aeeg) was created in 1995.

The Italian liberalisation plan was presented in February 2000. At that moment, the gas market was still dominated by Eni: 90% of national production and of imports; almost 100% of long distance transport capacity and storage facilities, 73% of primary distribution to large industrial clients and 67% of that to generators, 33% of secondary distribution.

We briefly summarise the main elements, that closely remind the European framework, but that presented also some innovative solutions.

- a) The unbundling principle has been implemented only through legal separation of the different activities within the Eni group. Transport and storage are run within a separate company, with accounting and managerial unbundling of the two activities; local distribution and sales

activities cannot be provided by the same company; finally, production and import of gas are run by a separate company.

- b) Third Party Access is introduced with regulated tariffs defined by the regulator; transport capacity requests by operators burdened with take-or-pay obligations must be given precedence in defining the access order.
- c) Antitrust ceilings are introduced in the interim period of liberalisation: no operator can enter more than 75% of gas into the national transport network; this threshold will be reduced by 2% each year until 2010, with a final market share of 61%. Moreover, from January 2003 to December 2010 no firm will be permitted to sell more than 50% of gas to final customers.
- d) Since January 2003 all customers are eligible, with complete demand opening.
- e) The tariffs for franchise customers and for the transport, distribution and storage activities are set by the regulatory authority (Aeeg) according to a non discriminatory and cost reflective standard. The Authority implements its intervention within the general lines of the energy policy designed each year by the government.

Vertical structure

In gas, Italy has chosen a purely legal (not proprietary) unbundling of the transport network, which is in charge of Snam Rete Gas, which is listed in the stock market, but still controlled by Eni. This lack of separation seems particularly problematic if we take into account that exceptions to the TPA involve a reference to take-or-pay obligations, and that Eni has the largest portfolio of t.o.p long term contracts. This is even more problematic, as the Eni group holds control shares in the companies which manage the international pipelines which connect the Italian market to foreign gas fields. Importing gas without the agreement of Eni is proving extremely difficult, and the fact that this company is controlled by the State does not seem to make a substantial difference relative to the behaviour of a purely profit oriented firm.

Competition and productivity

The Italian plan introduces some measures to reduce the role of the incumbent firm in the liberalised segments, through antitrust ceilings in the import and sale activities. However, the Italian law did not consider the possibility of forcing Eni to divest part of its t.o.p. long term contracts, a measure reminding the divestiture of capacity in the electricity liberalisation plan. The timetable of demand opening is much quicker than the electricity one. Since January 2003 all customers are free

to choose their supplier. However, not one case of domestic customer switching to a new supplier has ever been reported. The implementation of the principle of liberalisation at the local level, however, requires to solve complex interactions with the reform of local public services that is still not completed. Therefore, the Authority still maintains the control of prices for small customers.

The evolution of competition in the liberalised gas industry will be strongly influenced in the next years by the effects of antitrust ceilings both on final sales and entry of gas into the national network. However, at present Eni is free to choose which of its competitors it wants to sell gas to, and this is unlikely to foster substantial competition: the double relationship with the incumbent firm, as clients and competitors at the same time, that gives the dominant firms an opportunity to impose lax competitive conditions.

Moreover, the annual supply is burdened by t.o.p. obligations and it is sufficient to cover up to 2006 the Italian demand for gas. These contracts were endowed with full priority transmission rights on the international pipelines⁷ that ensured the delivery of gas in any circumstance. Taken together, these elements make the entry of additional competitors in the final market very unlikely in the next years.

In gas, the transition towards a competitive environment is extremely slow. This is due to the existence of long term contracts which allow the dominant incumbent firm to still control the market. The partial unbundling of the Eni group, that will operate with different companies in all the segments of the industry, maintaining an extremely high market share all over the market, represents the more pervasive problem in the liberalisation process. Moreover, given the almost total dependence of Italy on imported gas, the linkage between energy policy and foreign policy makes the introduction of competition very slow.

The gas distribution system is expanding slowly, but here we observe an opposite phenomenon to the one we observe upstream. While upstream we have a gradual introduction of competition, and hence a slow trend towards fragmentation of supply, in distribution we have an increased consolidation, carried out through acquisitions of small distributors and the gradual disappearance of cases where the local authority is the direct provider of the service.

In 1997, Italy was served by 732 different distributors, 80.6% of them present only in one province (Italy is divided in 120 provinces), while only 4 of them were serving more than 10 provinces; in

⁷ In case of capacity constraints, the allocation is realised giving priority to gas purchased through t.o.p. contracts signed before August 1998, then other t.o.p. contracts, annual contracts and finally shorter contracts.

2003, “only” 453 distributors operate, 74% of them operating only in one province. Given the expansion of the service in this period, total population in locations where gas is available has increased from 48,2 million to 52 million. Therefore, while in 1997 the average gas distributor served a population of 65.900 people, in 2003 it serves 114.800 people.

It is also interesting to notice, however, that while the average size increases significantly, significant niches where the service is provided directly by the municipality still remain (about 60 cases around Italy, for a total population of about 450.000 units). While the service is becoming more and more

As for the public-private balance, it is estimated that entities in public hands serve an increasing area of the country. While in 1997 private firms were serving about 64% of the population, in 2003 this percentage has decreased to about 58%; notice that this remains true, despite that in the “private” sector we consider Italgas, which is part of the Eni group, and EnelGas, both controlled by the Treasury. The apparent expansion of the public sector is a combination of two phenomena; on the one hand, the expansion and the new investments have been carried out mainly by local public utilities, and on the other one local public utilities have acquired some very small local private firms (Ref, 2004).

Coming to the issue of productivity, output is increasing substantially because of an explicit public policy to encourage gas penetration, and because burning gas is considered the most competitive way to produce electricity. Employment has decreased substantially – possibly also for “purely statistical” reasons linked to the break up of Eni, whose non-gas activities are now correctly considered – and thus productivity has increased (a result which would certainly resist even the most reliable count of employees).

Table 6
Productivity in the gas sector, Italy, 1995=100

	1995	1996	1997	1998	1999	2000	2001	2002
Output	100	100.8	100.3	105.3	113.3	129.3	133	133.1
Employment	100	99.6	98.8	95.5	93.7	89.3	79.9	65.3
Productivity	100	101.2	101.5	110.3	120.9	144.8	166.5	203.8

Source: ISTAT

Effects on prices

Prices are regulated with a price cap (RPI-x) since 2001, and the x factor for the first regulatory period has been set equal to 3%. The price formula contains elements of price increase which aim to compensate firms for “unpredictable” events, to reward them for their activities of demand control and for quality improvements. There is no unique national tariff (unlike in electricity).

Since January 2003, all clients are free to choose their supplier, but small clients may still choose to opt for a regulated regime. There are no official data about prices in the free market. However, the following table provides the official Istat data on retail prices. These show how prices show no clear trend, and in particular they clearly increase since 1999.

Table7
Retail gas prices in Italy (index numbers)

Year	Prices
1990	100,0
1991	104,2
1992	107,4
1993	112,2
1994	121,1
1995	128,7
1996	99,6
1997	111,0
1998	108,6
1999	104,3
2000	127,2
2001	147,4
2002	134,5
2003	147,1

Source: Istat

As for the quality of the service, it is interesting to stress that monitoring of service quality began only since the establishment of an independent regulator. Notice that in gas, unlike electricity, Italy does not have a single national tariff, and the price cap itself may thus incorporate an element which envisages automatic price increases in case quality standards are met (or punishes the inability to meet these standards). Moreover, certain violations of the standards trigger

Unlike in electricity, where probably a more concentrated market favours the enforcement of quality control policies, in gas we do not observe a clear trend.

Table 8
Quality of the gas service in Italy:
number of cases where main quality standards have not been met

	Requests by clients	Verified violations of the standards	Automatic reimbursements	Amount of reimbursements (€)
1997		14.265		
1998		12.366		
1999		11.212		
2000		14.635		
2001	1.557.150	16.424	12.086	1,054,657
2002	1.594.456	14.651	13.368	745,791

Source: Aeeg.

Germany

Germany is the largest consumer of natural gas in the EU after the UK. Total consumption is about 90 bn m³, and less than 20% of it comes from internal production (most of which from the West). Natural gas consumption is growing substantially over time, so that dependence on imports is actually growing.

Before the EU Directive, Germany was characterised by a small number of large firms and massive cross participation among these firms and between gas firms and other energy firms (in particular, oil). The main market operator was Ruhrgas, owned by a consortium of coal and steel industries, utilities and national and foreign oil companies.

Eleven gas producers were active, all private; BEB Erdgas und Erdoel and Mobil jointly covered 93,8% of national production. Imports were mainly controlled by Ruhrgas and VNG, though long term (20-25 years) supply contracts. In transport, 18 supra-regional companies were active (Ruhrgas with 65% of the market and BEB being the main ones), mainly private firms, with some participations by Länder and municipalities. Most storage facilities were owned and controlled by supra-regional companies. Distribution was very fragmented (711 regional or local firms, often horizontally integrated with other utility services).

Little regulation was present in the sector before 1998. Agreements among firms may define exclusive territories which ruled out competition. Final prices were checked ex-post to control possible abuses of dominant positions

The implementation of the Directive took place with the Energy Bill of April 29th 1998. Like in electricity, no regulator for the natural gas market in Germany is envisaged, and antitrust authorities (until the implementation of the 2003 Directive, expected by July 2003) supervise market operations.

Vertical structure

Vertical integration between the different segments of the activity still remains the most common way of organising the sector. Only the unbundling of accounts (the weakest form) was envisaged with the implementation of the Directive.

The definition of access conditions is left to an agreement among the firms of the gas sector (the *Verbändevereinbarung* of 2000, amended in 2001). Tariffs are negotiated (as in electricity, and here again we have a unique case in Europe). The existence of supraregional, regional and local networks provokes a “pancaking” effect, whereby fragmentation leads to very high final access charges. The structure of tariffs (which are distance related, penalising imported gas) and other conditions for balancing are considered as relevant obstacle to competition and new entry.

Competition and productivity

Wholesale, no specific intervention on the largest firms was envisaged by the Energy Bill. This was justified given a relatively fragmented market structure. However, recognising that imports are a crucial source of gas when the Government approved the merger between E.On and Ruhrgas in September 2002 it imposed conditions on the release of gas import contracts through competitive auctions.

Concentration is especially limited in the final segment of the market, where hundreds of local firms operate. All final customers are eligible since 1998.

Apart from the aforementioned intervention on E.On and Ruhrgas, despite the moderate concentration (due to historical reasons and the federal structure of the German republic), the limited network access and the absence of clear regulations seem to favour total market segmentation, whereby suppliers, whether upstream or downstream, share the market with little or no effective competition.

Effects on prices

The Third Benchmarking report indicates that gas prices in Germany are stable for all categories of final customers, while they are falling in almost all other EU countries.

Switching rates in Germany are also extremely low (5% for industrial customers, less than 2% for domestic customers), confirming the impression that competition is extremely weak throughout the country. As a result, German gas prices for large customers are the highest in Europe.

Annex 2 - Telecommunications

Until the mid Eighties, most European countries were characterised by legally protected monopolies, characterised by a good degree of capitalisation, but also by operational inefficiencies and high prices (especially for long distance calls), which made the need of liberalisation evident. This notwithstanding, notice that unlike energy sectors telecommunications were not excluded from the application of general competition principles. The first document on liberalisation is the Green Paper of 1987, followed by Directives in 1988 and 1990, but the formal start of the current European liberalisation process is the Full Competition Directive of 1996 (1996/19/EC).

While the initial approach was certainly favourable to entrants, the approach of the latest Directives of 2002 is to create a level playing field, recognising how technical progress and convergence between parallel technologies also created substantial opportunities for new entrants. Five Directives were issued, the most relevant one being the Framework Directive 2002/21/EC. The general approach is to eliminate whenever possible restrictions to entry, to allow TPA on the basis of regulated tariffs linked to long run incremental costs, to favour the local loop unbundling. Regulation should be replaced as soon as possible by a mere antitrust control, and the traditional discretionary power of regulatory authorities should be limited (and subject to a veto power of the European Commission).

United Kingdom

The telephone services were initially fragmented, but the Post Office became a near-national monopoly from 1912 onwards. At that time, the Post Office was a government department headed by a Minister, but it eventually became a conventional nationalised industry, a “public corporation”, in 1969.

Structural issues

British Telecom (BT) was privatised without major structural interventions in 1982. However, in 1982, before privatisation the government licensed another network competitor, Mercury, and began a ‘duopoly policy’ to develop an alternative national network. Initially, competition from Mercury was ineffective as the interconnection agreement between BT and Mercury was unfavourable to Mercury; badly designed tariffs in the network have for considerable time prevented the

development of competition. After 1987 Mercury did begin to emerge as a serious competitor to BT in some areas but BT's market share was eroded only slowly. The years 1990-91 saw a review of the duopoly policy and alternative licenses were offered, breaking the initial situation. Cable and mobile phone companies can now offer fixed link telecommunications services in direct competition to BT, so that effectively now only BT's inland phone charges are now regulated.

Regulation

Since BT was the first major UK privatisation, it is worth setting out the regulatory pattern in some detail since it set the style for other regulation types. The government established in 1984 an independent regulator, the Director General of Telecommunications, with statutory duties that required the regulator to ensure that the company could finance its activities. The details of the company's regulation were enshrined in its licence, a contract that could only be revoked with 25 years' notice. The regulator would be allowed to impose a change against the wishes of the company, however, if the matter was referred to the then Monopolies and Mergers Commission (the UK's competition authority, now the Competition Commission), and the MMC supported the change. The regulator was also subject to judicial review of his decision-making. If the company felt that the regulator had not followed the proper procedures, or that the decision taken was manifestly unreasonable, it could ask a court to review the matter. This system of checks and balances was designed to protect the company's interests, while ensuring that the regulator could still control its behaviour.

The regulation method chosen was RPI-X of a particular tariff basket, with price caps also on line rental and the bill for the median user. Supply, VANS and mobile services were initially unregulated, while mobile termination rates have been regulated since 1998.

Competition and productivity

BTs productivity has risen accompanied by labour shedding. However it is impossible to say to what extent this is the result of restructuring and competition or of the very rapid technical progress which takes place in this sector.

Prices

The decline in prices is quite evident, in line a with the well known international experience. In the most recent price review (from 2000) prices for some services will fall by more than 13%, serves in prospectively competitive markets cannot rise by more than RPI+0%.

Quality

Initially this was seen as a problem with the number of publicly serviceable phone boxes seen as particularly a problem. Thus regulatory targets were set to deal with this. This is not seen as a problem any more in fixed line telecoms, with BT and OFTEL agreeing measures and OFTEL monitoring performance. Measures such as the percentage of successfully connected calls have performed well, 2000Q4 at 97.5% for example.

Italy

In Italy, at the beginning of the Nineties the Italian telephone service consisted of one State owned operator (Telecom Italia), which during the Nineties has been completely sold to private investors. Tariffs for final customers used to be decided by a governmental body. The implementation of the European Directive in Italy (starting in 1997) led to the end of the legal monopoly of Telecom Italia in January 1998.

New entry took place, and in few years the market has changed substantially, at least in certain respects. Tariffs, and are now free, subject to the supervision of Agcom (the national Authority for communications, an independent administrative body created in 1997). Competition is however subject to the scrutiny of the antitrust authority.

Structural issues

Telecom Italia remains a vertically integrated operator in fixed telephony, owning most of the fixed line network and extremely strong in the final segment. There is TPA in the network of Telecom Italia, and tariffs are regulated. Only very recently Italy has experienced the unbundling of the local loop. Other companies are free to develop their own network, and some network competition is actually taking place.

Telecom Italia also controls the main mobile operator (TIM), whose market position is however not as strong.

Regulation

Regulation is managed by an independent regulator, which also regulates the media business, in the perspective of a possible “convergence” between these sectors. This, together with the strong link between Italian politics and the media business, has a major drawback, namely the high

politicisation of this Authority, whose “technical” profile and independence are not considered as high as those of the energy regulator or the antitrust commission.

Competition and productivity

In fixed telephony some universal service obligations are still present, whose cost should be borne by all firms serving the final market. However, the estimates of the cost of u.s.o. are permanently at the centre of debates, and are typically considered to be zero, when the benefits from the advertising linked to being a “provider of last resort” are properly accounted for.

One of the most significant aspects of the Italian market is the tremendous development of mobile telephony: total industry turnover was 3.500 bn € in 1996, and are now almost 20.000 bn € (2002). Mobile telephony represents about 50% of the market. There are 3 main operators, but entry in 3G telephony has only begun and is expected to provide new opportunities for competition. Competition in the mobile sector is apparently strong, but prices are not going down as quickly as could be expected. The need to invest large sums of money seems to make firms wary of competition, and this does not help consumers.

As for fixed telephony, the market is much more mature. More than 200 firms have a licence to operate various services (vocal services, installing networks, running private networks) both at national and local level, and about one half of them already operate in the sector. Most operators are resellers, i.e. use the existing network to offer services at competitive prices, but an increasing number of operators – very often linked to public utilities active in other regulated sectors, such as energy or water – are now working in the cable business.

As for market concentration, the following table summarises the outcome.

Table 9
Market shares in fixed telephony, Italy

	1996	1997	1998	1999	2000	2001
Revenues from final customers						
Telecom Italia	99,8%	99,2%	98,3%	89,0%	83,8%	76,8%
Main competitors*	0,0%	0,5%	1,3%	10,3%	15,2%	21,3%
Others	0,2%	0,3%	0,4%	0,7%	1,0%	1,9%
Revenues including interconnections revenues						
Telecom Italia	99,9%	99,8%	99,7%	97,0%	92,4%	90,3%
New Wind	0,0%	0,0%	0,1%	2,6%	6,1%	7,6%
Others	0,1%	0,2%	0,2%	0,4%	1,6%	2,1%

Source: Cambini *et al.* (2003).

It appears that the incumbent (Telecom Italia) is still a dominant operator, and competition in fixed telephony is of limited effectiveness; the dominant operator is also the owner of most of the fixed network, which means that even allowing other operators to reach the final customers does not prevent it from obtaining high rents, given that competing firms have very underdeveloped network infrastructures. Notice that the main competitor (New Wind) is owned by Enel, the largest firm in the electricity sector.

Most commentators agree that the time for relinquishing regulation, leaving antitrust controls as the only protection of consumers, has not yet come.

Prices

Prices are free, and the plethora of offers that each customer faces, all characterised by two-part tariffs and numerous complex clauses, makes it difficult to construct an average price index. This is made more complex, as Istat official statistics do not distinguish between fixed and mobile telephony.

Quality

Also given the fragmentation of the market, a reliable monitoring of the quality of service is hard to provide. An important aspect is however the development of infrastructures, which are developing at considerable pace, but not without contradictions. Broadband technology is also developing, albeit slowly, but recent data are not yet available.

Table 10
Development of Tlc infrastructures in Italy

	1991	1993	1995	1996	1997	1998	1999	2000	2001
Analogue access lines (x 1000)	23,071	n.a.	n.a.	24,918	24,801	24,251	23,453	22,569	22,244
Tlc channels per 100 inhabitants				44.6	45.8	46.4	47.4	49.4	50.8
Population coverage of mobile networks (%)			95	95	97	98	100	100	100
Digital access lines (% of total fixed lines)		57	76	n.a.	94	98	100	100	100

Source: OECD Communication Outlook, 2003.

Annex 3 - Railways

The railway industry in Europe has been liberalised over the last 13/15 years. The European Commission wanted to increase competition and revert the downward trends in rail market share relative to other transport modes. The main European Directive dictating the guidelines for liberalisation, EU Directive 91/440 EEC, stipulates:

- separation of infrastructure from operation, with compulsory separation of accounting and recommended separation of institutions;
- non-discriminatory rules and prices for track access;
- competition in transit and international combined freight;
- conditions for entry.

Table 11 and Table 12 set out EU-wide details on the background to rail policy.

Table 11
Shares of railway traffic over total traffic, 1999 (in % based on tkm performed)

	Passengers	Goods
Great Britain	7	10
Italy	6.2	8
Germany	-	14.5
European Union	6.1	13.4

Source: DG Energy and Transport

Table 12
Shares of passengers railway traffic over total traffic, 1991-2001
(in % based on tkm performed)

	1991	2001
Great Britain	4.93%	5.51%
Italy	6.75%	5.77%
Germany	8.05%	8.72%
European Union	7.13%	6.83%

Source: Transport Statistics Great Britain, International Comparisons.

EU countries responded differently to this EU reforms. The UK promoted the most radical liberalisation of the industry beyond the requirement of the EU directive, Italy, just achieved the minimum EU requirements and Germany actively adhere to the directive.

United Kingdom

The railway network in Britain was built by the private sector in the 19th Century. The railways started to lose money in the mid-1950s and the Beeching reports (1963; 1965) reduced total route mileage reduced by a third. Finances got worse in the 1970s and early 1980s and subsidies rose (at 1999/00 prices) £600m in 1968 £1.6bn by 1985/86. Given the heavy burden on public finance, in 1992 a White Paper proposed the privatisation of the British railways. This plan was carried out between 1995 and 1997.

Structural issues

The industry was separated (vertically and horizontally) into more than one hundred companies, aimed to allow competition to develop in the contestable elements of the business. Restructuring was initially within the public sector and the companies thus created were later sold. The key change was the separation of track infrastructure (reasoned to be a natural monopoly) from train operation (reasoned to be contestable).

Regarding infrastructure, in 1994, most fixed railway infrastructure was transferred to a company called Railtrack, separate from BR, but still Government-owned. The company was then sold in 1996. At the same time, BR's infrastructure services were reorganised into seven infrastructure maintenance and six track renewal companies (they were then sold between February and July 1996).

As for operation, BR's rolling stock was divided into three leasing companies (ROSCOs). The ROSCOs (sold in January/February 1996) lease locomotives and carriages to the passenger train operating companies. Six heavy maintenance depots provide services to ROSCOs (these were also sold in April and June 1995). The right to run passenger train services was franchised to 25 private sector train operating companies (TOCs). TOCs lease almost all of their rolling stock from the ROSCOs, and pay Railtrack for access to track and stations.

Freight operations were separated into six companies (later consolidated into two) and sold between December 1995 and November 1997. In addition, many other BR central services operations were sold to private sector companies or management teams.

Regulation

As part of the reorganisation, two regulatory bodies were also created. The Office of Rail Regulator (ORR) was created principally to regulate Railtrack. The Office of Passenger Rail Franchising (OPRAF), mainly responsible for awarding franchises, paying subsidies, and regulating the TOCs. Rail Users' Consultative Committees (RUCCs) were established to work with OPRAF in protecting the interests of rail users. Safety regulation was placed with the Health & Safety Executive.

Competition and productivity

Table 13 shows data on UK rail traffic. Passenger kilometers have risen and employment has sharply fallen, with an apparent rise in productivity. One has to be careful about these data however, since employees who were previously deemed to have been working in rail and are now working in rail but for contracted out agencies would give a false impression of productivity gains.

Table 13
UK Rail traffic, passengers, employees and productivity, 1996-2002

	1996	1997	1998	1999	2000	2001	2002
PassengerKm	38,748	41,698	43,597	46,287	46,505	47,394	47,974
relative to 1996	100	107.61	112.51	119.46	120.02	122.31	123.81
Employees (ths)	75	43	50	49	49	50	51
relative to 1996	100	57.33	66.67	65.33	65.33	66.67	68.00
PassengerKm/employee	516.64	969.72	871.94	944.63	949.08	947.88	940.67
relative to 1996	100	187.70	168.77	182.84	183.70	183.47	182.07

Prices

Railway prices have increased. According to Kay (2004) prices from December 1979 to 1999 rose by 45.7%, and have risen by 1.7% since 1999 (privatisation).

Quality

Quality has been controversial in the UK rail industry. There has been a rapid expansion in demand since privatisation, without a corresponding increase in network capacity. Many travellers perceived an increase in delays and cancellations after privatisation, and while some companies were fined for these, some received bonus payments for other aspects of their operations which far exceeded the fines, creating political difficulties. Furthermore, three major accidents in four years (Southall, September 1997, 7 killed, Paddington, October 1998, 31 killed, and Hatfield, October

2000, 4 killed) led to a public crisis of confidence in rail safety. Although there is a perception that the industry has been reluctant to spend money on safety improvements which would save lives, the verdict on safety and quality in the railways is at worst “not proven”. Rail travel remains far safer than road transport, of course.

Italy

Like in the rest of Europe, railways experienced in the second half of the twentieth century a marked decline in market shares, relative to other modes of transport, as regards both passengers and goods. However, Italy is historically characterised by a particularly low market share of railways, particularly as regards goods.

The Italian railways were run by a State owned monopolist (Ferrovie dello Stato), which was part of the public administration until 1999 when it was turned into a limited company (not listed in the stock market). Comparative analyses carried out until the mid-Nineties indicates that Italian railways were characterised by lower productivity of labour, higher labour cost (at PPP), considerable overmanning, lower quality of services (measured by the percentage of trains arriving on time). Prices were considerably lower than the European average, and the service was characterised by considerable public subsidies.

Structural issues

Rail is still wholly owned by the Ministry of Economics and Finance. In 2000, within the FFSS different limited companies (although not listed and wholly owned by the FFSS) have been created. In particular, RFI (Rete Ferroviaria Italiana) owns and manages the railway tracks (with a concession – namely an exclusive license), while Trenitalia owns and manages all carriages (and has a non-exclusive authorisation to run the railway service). Thus, Italy has decided to have only a legal unbundling of the network, which remains vertically integrated with the company which operates the trains. Moreover, within Trenitalia there has been an unbundling of accounts and management among three divisions, namely “Passengers” (for long distance passenger trains), “Local transport” (for regional and local passenger services) and “Cargo” (for the transport of merchandise). As for carriages and trains, they all belong to Trenitalia, and their separation from the rest of the company has never been seriously considered.

Regulation

The main European Directive dictating the guidelines for liberalisation is Directive 440/91, which was implemented in Italy only in July 1998, with the Decree nr.277/98. Until 1999, the regulatory framework was almost non-existent, in that everything revolved around an arm's length relationship between the Ferrovie dello Stato (FFSS) and the Ministry. Prices were determined directly by a Governmental body (CIPE). The situation was particularly informal until the 1992 license given by the State to FFSS implemented the EC regulations 1191/69, 1107/70 and 1893/91. Since 1992 the financial relationships between the Ferrovie dello Stato and the Government have been ruled by two contracts:

the Service Contract defines the “public services” the FFSS is committed to provide to passengers, and which entail a loss for the firm, namely regional and local transport. This excludes “commercial services” such as long distance passenger services and goods transport. The Contract also defines service prices and public subsidies.

the Program Contract on the one hand defines the payments the State owes to FFSS for infrastructure costs and on the other hand singles out the reciprocal commitments of the State and the FFSS as regards the development of the network and of the carriages.

Since 1997, however, the competence referring to regional and local passenger transport has been attributed to the Regions, so that the Service Contract has lost considerable part of its importance. Economic regulation is still in the hands of a governmental body (CIPE), which determines the prices and the conditions for having access to the network. The regulator still coincides with the only shareholder of the (almost) monopolist. Quality control is done by CIPE on the basis of data provided by the regulated firms.

Competition and productivity

As for the technical conditions for having access to the network, RFI – despite being part of a limited company, part of which (Trenitalia) competes for the right to use the network – acts as a body with a public mission and has to certify the technical suitability of potential competitors to operate the service.

Competition in the field is admitted only for merchandise transport and long distance international trains; to date there are some examples of competition for goods transport, but very few examples in the passengers' segment.

Competition for the right to operate passengers services may start, but it is seriously limited by two facts: (a) Trenitalia is the owner of all trains and carriages previously owned by FFSS and (b) Law

146/1999 states that potential competitors must prove to have the necessary carriages and personnel to run the service already when they apply for it.

Competition, which in the long distance services has not yet been applied, is made even more difficult because tracts up to 70% of total network capacity may be awarded to an operator on a non-competitive basis with long term contracts. On each tract, moreover, an operator may sign long term contracts for 85% of the “sub-tracts” which he has been awarded.

Competition for the market in local and regional transport is moving its first steps. In most cases, the tender refers to the whole regional transport, so that Trenitalia is most likely to easily win the tender. Other Regions have preferred to tender only few lines (three, in the case of Lombardy) and some competition is expected to emerge, both because a local competitor already exists (Ferrovie Nord) and because there is a reasonable amount of time between the tender and the actual beginning of the service.

To synthesise, several political decisions – in particular the one not to attribute trains and carriages to a separate company, with the obligation to rent them to whoever operates the service – have harmed the development of competition, but this will also depend on the structure of the tender that each Region decides to adopt.

Regarding productivity, Table 14 shows a rise and fall in traffic and a steady fall employment and a rise therefore in productivity.

Table 14

Output, employment and productivity in the railway sector, 1996-2002

	1996	1997	1998	1999	2000	2001	2002
Passengers-km in million	44782	43591	41392	40971	47133	46675	45956
- long range	25442	24642	23398	22843	27537	27307	25973
- regional transport	19340	18949	17994	18129	19596	19368	19983
Passengers-km	100.0	97.3	92.4	91.5	105.2	104.2	102.6
Employment (large firms)	100.0	97.7	95.5	92.9	89.8	85.8	81.6
Productivity (passengers - km/employees)	100.0	99.7	96.8	98.5	117.2	121.5	125.8

Source: Istat, Annuario Statistico.

However, restructuring has taken place despite the lack of direct competition at least for the bulk of the service. As one can see, employment in the sector has been drastically reduced without affecting output. Especially since 2000, productivity (measured on passengers' traffic) has increased both due to a continuous decrease in employment and because of an increase in the nr of passengers/km, probably also due to a greater quality of the service.

Prices

Until 1999, the price of final services were determined by CIPE (a governmental body) on the basis of the firm's costs, and firms when considered necessary or possible and were revised without a fixed schedule. Given vertical integration, no distinction between the price for the use of the network and the price of the train service was ever made.

In 1999, the EC Directives 18/95 and 19/95 on the access to the railways network were implemented. Thus the Government instructed CIPE to design the rules for third party access (including the methodology to determine access prices), which were approved in the same year (CIPE decision 180/1999).

Network revenues are determined in the Program Contract between the Government and RFI. The Program Contract for the period 1994-2000 introduced a subsidy cap, setting an upper limit to the resources the Government would transfer to FFSS, aimed at providing some incentive for the firm to keep its cost under control. This system was however full of loopholes and proved non-credible; for instance, on the one hand the firm was allowed to run a deficit, while on the other the Government ran into financial difficulties and decided not to transfer the resources already envisaged by the contract.

The Contract for the 2001-2005 period does not even include an attempt to cap subsidies; in nominal terms transfers to RFI are decreasing from 2003.

Quite clearly, the coincidence between the regulator and the (only) shareholder makes the whole logic of the relationship between the Government and RFI quite confused. Moreover, there is no obligation to properly evaluate the economic merit of investment projects⁸. Law 725/94 states that railways' investment should be distributed among regions in a balanced way, proportional to the population and the area served. The economic meaning of these criteria is mysterious, but the idea that investments should serve a purpose of territorial balance is still quite evident.

⁸ The economic evaluations of only 6% of the total investments (more than 30 M €) envisaged by the 1999-2003 plan have been made public (Boitani, 2002).

As for *passengers' fares*, in 1999 CIPE decided to introduce a price-cap rule on a basket of Trenitalia fares on medium-long distance travels. The formula is the typical RPI - X + K, where K should take into account qualitative improvements over the period.

For the first regulatory period, X was set to zero, so that cost decreases have benefited public budget in terms of lesser subsidies, while K was set at 3.5%, conditional on the respect of the targets set by the Ministry of Transport on cost savings and quality standards. In the first two years, the standards have actually been met by Trenitalia, and the first two price increases (January 2001 and 2003) were allowed. However, in December 2001 the Ministry of Economics and Finance blocked the price increases for fears of inflation, and prices of medium-long distance trains have not changed since⁹.

Given that regional and local transport is regulated by the Regions, in this field we have a multitude of situations, and providing a synthesis is hard.

Quality

Although a reliable measurement of quality is hard to obtain, given the absence of an external regulator, the speed of trains and their reliability is considered greater than it used to be.

Germany

German railways were nationalised in 1920. In 1993, state railroads were in a deficit of DM 16 million and DM67 billion in debts.¹⁰ This sparked tremendous consumer protest and made way for necessary reform.

Deregulation measures were started in 1994 following administrative and organizational difficulties and still continue today. The focus was centred around the consumer. Regional transport and non state owned railways was put under the realm of the individual *ländern*. These states receive monetary grants to subsidize operations. The general law on railways regulates the conditions for competition for which 136 federal laws had to be amended.¹¹

⁹ In the same period, energy prices have also been frozen, but only for three months (automatic adjustments following wholesale price increases now take place only every 6 months. The reasons for this difference are probably two. In energy sectors price changes are directly linked to changes in input prices. Most important, energy firms are partially private and are listed in the stock market. The importance of privatisation appears quite clear.

¹⁰ Häfner, Peter Feature: Restructuring Railways Part 2, The Effects of Railroad Reform in Germany www.jrtr.net/jrtr08/f27_haf.html 02.06.04

¹¹ New restructuring plans highlight problems of railway reform www.eurofound.eu.int/print/2000/01/feature/de0001234f.html 02.06.2004

In 1994, the Deutsche Bahn AG (DB) was formed following the re-unification of Berlin where the Bundesbahn and Deutsche Reichsbahn merged. In 1998, the business sectors were changed in to separate stock corporations of the DBAG holding.

Structural issues

The largest operator in the German rail market is the former monopolist Deutsche Bahn. It operates in passenger transport (long distance and regional), freight transport, rail track and railway stations. DB is owned by the federal government and owns about 36,000 km of track and over 90% of the market share in operations.¹²

At the beginning of 2000 the chairman of DB announced plans for re-structuring the German national railway company. DB Reise & Touristik and DB Regio have been merged to cater more efficiently to passenger traffic. 2004 is the year in which the company is to be floated on the stock market and the year in which it plans to be independent of state aid. A significant focus of these plans is to reduce costs of personnel evoking fears from the rail workers' trade union.

One of the principles of the EU Directive regarding railways is the independence between infrastructure and transport divisions. This is realised in a form of legal separation between the network firms and the operating unit: this means that the infrastructure department is independent but still with the same holding. Companies that want to run their business must apply to the DB netz, responsible for the running and management of DB tracks.¹³ Parties though are looking to completely divide the two indicating perhaps that there still exists discrimination for third parties in the market.

Market participants not integrated with the network are appealing for an independent regulator and have proposed to make tracks federal property. This is due to several reasons; first of all, the DB monopoly of tracks and the future listing of DB on the stock exchange results in a neglect of low demand areas. Another area of concern is the fact that railway companies have to bear the cost of total railway system maintenance making prices for consumers much higher.

Regulation and prices

Deutsche Bahn has introduced a price system for using rail infrastructure, which considers. It is based on prices per train kilometre and is differentiated by train and line types. There are ten line types and twelve train categories resulting in a considerable number of fee combinations. Naturally they then pay less for the same service and realise a cost advantage. Pricing of the fares for both

¹² Railway Sector in Germany www.uktradeinvest.gov.uk/railways/germany/profile/overview.shtml 02.06.04

¹³ Please refer to www.x-rail.net/render.asp?0=2801&c=4 02.06.2004

private and state owned rail services are adjusted to DB levels. As a result the consumer does not gain the benefits of competition.

Cross subsidization is no longer possible. Under certain conditions the DB must grant third party access without discrimination and under control of a neutral authority.¹⁴ New entrants and the DB's own business sectors pay a usage fee.

Competition and productivity

The number of employees is gradually decreasing though additional staff is being hired in customer service areas.

Private investors in the German rail market are operating in less than 10% of the market particularly the local and regional public transport business. Most private companies are located in their own region and some have their own tracks.¹⁵ There are however foreign players in the German market. Cost reductions of about 20% have been seen as a result of competition in the German rail market.¹⁶ There exists a system of bidding in the awarding of rail services. The DB Regio is still doing rather well in terms of winning tenders against other competitor. The usual practice is to advertise routes for bids.

External observers feel however that liberalisation and privatisation in the German rail market are still in the nascent stages. Considering that DBAG still calls all the shots and consumers still have to pay prices higher than many other EU members, there seems to be considerable room for improvement.

¹⁴ Häfner, Peter Feature: Restructuring Railways Part 2, The Effects of Railroad Reform in Germany www.jrtr.net/jrtr08/f27_haf.html 02.06.04

¹⁵ Please refer to www.x-rail.net/render.asp?0=2801&c=4 02.06.2004

¹⁶ Please refer to www.x-rail.net/render.asp?0=2801&c=4 02.06.2004

Annex 4 - Professional Services

United Kingdom

UK professions are generally self-regulated. Such self-regulation by professional bodies groups includes professional entry and training requirements, codes of conduct, standards of service, quality certification, dispute settlement etc.

Regarding lawyers for example, although the Lord Chancellor's Department is the responsible government department, basis regulation is self-regulation under general statutory schemes or, more simply, tradition.

Accountancy is lightly regulated: anyone may call themselves an accountant unless they have met the relevant training requirements and have been admitted to membership they cannot describe themselves as a member of a professional accountancy body. Statutory audit is reserved to those who are appropriately qualified members of certain professional accountancy bodies. All other activities can be done by anyone.

As for architecture, the Architect Registration Board, created by statute and determines the standards of education and professional competence required for registration as an architect in the UK. However, the Royal Institute of British Architects issues recommended fee scales for different project types.

The key regulatory change has been to bring the professions within the ambit of UK competition law. Professions were previously excluded from the main provisions of competition law (in particular the Restrictive Trade Practices Act 1976). A price fixing agreement between the members of the professions was not illegal for example, unless it was contrary to wider European competition law. All this changed with the Competition Act 1998 and anticompetitive agreements between enterprises providing of professional services are prohibited unless they are specifically exempted on the grounds of a sufficient consumer benefit.

In addition to bring the professions under competition law, the government is reviewing possible anticompetitive situations from the law, or culture and practice. A 2001 OFT report, directed at lawyers, accountants and architects and found progress in the getting rid of restrictive arrangements in recent years, but highlighted areas where more could be done. These areas were such as:

- restrictions access to barristers, demarcation between barristers and solicitors,
- prohibitions on banks and building societies in the conveyancing and probate markets and similarly for probate work

- Limits to multidisciplinary partnerships
- Limits on advertising and marketing by accountants, solicitors and barristers.
- Recommended fees for architectural work and legal probate work.
- Legal professional privilege favouring tax advice from lawyers against accountants

Italy

Regulation of professions in Italy is quite heavy. It is based on self-regulation, but self-regulatory bodies, besides having a strong “public” mission (they are endowed with administrative duties and powers) are also allowed to introduce heavy controls on competition, controls which are supported by legislative interventions, which often determine prices and place severe entry restrictions.

In Italy, three categories of professions may be distinguished.

- 1) Protected professions, characterised by two elements
 - a) to exert such professions a person needs to be admitted to a special register (*elenco* or *albo*), to which access is granted through an entry test;
 - b) the activity is controlled by a professional organisation (*ordine*, or *collegio professionale*) which is formed by all those registered in the *albo* and which is given by the law some regulatory functions.

Recognised professions, for which the inclusion in the *albo* is still necessary, but where the professional organisation is not a necessary element, and – if it is actually formed – does not play a similar regulatory role;

Publicly held registries exist for more than thirty professions, from journalists to lawyers, from psychologists to engineers, from alpine guides to geologists. Both protected and recognised professions are exerted within the norms of the civil code on “intellectual professions”. However, fortunately some professions are not regulated...

- 2) unregulated professions, not subject to a specific legal regulation but represented by professional associations.

If a person wants to exert a “protected” profession, he/she must apply to the national register, which requires a certain training (and/or degree) and an entry test. In some cases, a training period after the degree is required (e.g., three years for certain types of accountants, “commercialisti”), which often represents a period of unpaid work for a member of the profession. Sometimes being registered in the *albo* is necessary not only to claim to be part of the profession (certification role),

but also to carry out certain reserved activities; this is the case of doctors, for instance, or of barristers. In other cases, however, being included in the register does not imply having reserved activities; for instance, most of the activities of commercialisti (accountants, but also business consultants) are not reserved. In the latter cases, the privilege of being a member of the professions is mainly linked to status considerations.

The national register is kept by the national council, which dictates norms of conduct and exerts a certain surveillance on their respect by the members of the profession. These norms, collected in a “deontological code”, span from purely ethical recommendations to clear restrictions to the competition among members (which seems to imply that most aspects of competition are “unethical”).

The price of professional services is determined by these national associations and typically is then included into a Presidential Decree which confers these indications the force of the law. However, while these tariffs used to be considered compulsory, now they either represent mere indications (e.g. for engineers) or they are maximum prices (e.g., for lawyers).

The ethical codes also specify several restrictions on the possibility to advertise the service of a professional, in particular they prohibit advertising through the media, through a distribution of leaflets, through “unsolicited phone calls” and so on. The justification provided is the alleged need to defend the “dignity” of the profession.

Entry is decided through professional tests, which are run by the professional organisations themselves in collaboration with academic structures. In some cases these tests are mere formalities (e.g. 90% of graduates in engineering who apply for the national register pass the test), while in other cases represent clear barriers to entry.

In the case of lawyers the tests have been for many years have been run locally, and the pass rate displayed an enormous variability (from 16% to 87%, around a mean value of about 40%), often attributed to different attitudes of local professional organisations towards competition. Given that candidates used to exploit these differentials to apply in the cities where the test was considered easier, the profession has now returned to national tests.

An explicit barrier to entry is instead created by the law in the profession of notaries. The number of positions (max possible number of notaries) is determined in each area (district of the Corte d’Appello) by a Presidential Decree, considering parameters such as the size of the population, the extent of business, the size of the territory, and making sure that for each position there is a population of at least 8000 people and that each position is associated (in expectations) to a given minimum income. The number of positions is decided after hearing the local councils of notaries

and is revised every 10 years. As one can see from the following table, the evolution of the number of positions over time is extremely slow.

Table 15
Number of notaries and positions in the main courts, Italy

Corti d'Appello	Positions in 1997	Notaries in 1996	Positions in 1986	Positions in 1976
Milan	617	551	573	510
Turin	498	350	519	506
Rome	571	535	563	542
Bologna	437	393	414	392
Venice	364	316	338	313
Florence	360	325	343	325
Total main courts	2847 (53%)	2470 (53%)	2750(53%)	2588(53%)
Others (20)	2465	2148	2434	2344
Total	5312	4618	5184	4932

Source: Various Italian laws; Annuario del Notariato Italiano, 1996.

To sum up, for “protected” professions the self-regulatory organisation is a compulsory association among all professionals, which has the public mandate to supervise that professionals operate according to recognised ethical principles. In exchange, professional bodies also have the power to restrict competition, in a way that very often is deemed “unnecessary” and excessive by the Italian antitrust authority.

The role of these associations as defenders of consumers against their own members is however rarely decisive.

These professions are evolving quite slowly, and only under international pressure. This is happening for instance among lawyers, where the Nineties have witnessed the arrival of large law firms, starting with Clifford Chance in 1993, or in engineering, where large engineering firms have entered the market, changing the nature of the work itself. In both cases, the arrival of large, entrepreneurial subjects has reduced the role of individual professionals, who remain important, but are no longer the sole actors on the scene.

In non “protected” professions, national register exist, the requirements for entry may be similar, but the professional associations are typically voluntary aggregations of professionals. However, these associations aim at achieving the same type of protection that more traditional “protected” professions have been granted by the law. Price indications or recommendations about advertising do not have the same force as those of protected professions, but the systematic attempts to restrict competition find considerable legitimacy by the fact that the law accepts analogous restrictions in analogous sectors, where informational asymmetries between suppliers and consumers are equally present.

Germany

Most traditional professions in Germany are subject to self-regulation, where the professional organisation also performs a public mission. Entry requirements are quite strict especially as regards notaries and lawyers. Price determination was traditionally done by professional organisations, but in recent years greater freedom in prices is allowed. Restrictions to advertising are more stringent for most professions. The details for the different professions follow below.

Lawyers

In order to become a lawyer in Germany, one is expected to write and successfully pass two state exams and complete a period of training. This takes a minimum of ten years creating quite a barrier to entry in itself. They are also expected to continue their education throughout their career.

All lawyers are expected to take part in a lawyer association (*Rechtsanwaltskammer*). There exists 28 such “chambers” throughout Germany. This is a statutory body for self administration of the legal profession and as such it guarantees the independence of the law profession and protects it from the influence of the state.

With regard to price determination, lawyers are allowed to charge any fees when the case is settled out of court. Even though this rule exists most lawyers continue to charge client based on the guidelines set out by Federal Tariff for Lawyers.

Advertising for lawyers was strictly forbidden until 1994, when this prohibition was relaxed somewhat, while direct and targeted advertising of lawyers or law firms is still prohibited. Booklets, circular letters and other forms of similar informative material are acceptable. Internet information has to follow the regulations of online law services.

Inter-professional cooperation exists among lawyers with tax advisers, chartered accountants and legal advisers since the mid nineties. It is restricted to these specific professions to protect consumer interest. There is a compulsory indemnity insurance.

Notaries

The German Federal Notarial Code classifies the Notary as a holder of public office. Notaries are normally in charge of authenticating and certifying various documents. Notaries in Germany are also self regulated by associations. Though they are holders of public office, they are not civil servants. They come under the category of self employed professionals. Fields of operation include

- Real estate law
- Commercial law and law of associations
- Family law which includes marriage, adoption etc.
- Law of succession which refers to wills, contracts of inheritance.

To be a notary in Germany it is required that one have German citizenship and have the appropriate qualification. The fees that a notary charges are regulated by the law. In other words there is single prescribed system and it charges a client based on the kind of transaction involved in terms of importance and value.

Advertising is prohibited when it goes against the notary's public office status though this is an area that is currently open to debate and discussion. Cooperation among other professions is not allowed for notaries. There is a compulsory indemnity insurance.

Since the particular situation of notaries within the field of liberal professions is strongly regulated, and changes in the tasks of notaries can only be made by law, there are little changes with respect to the entrance conditions and notary tasks to be expected.

Accountants

As for accountants, there exist no special tariff rates or fee regulations. Fees are freely negotiable and this only inapplicable when tax advice is also included. Theoretically the market of accountants is price competitive. This doesn't apply to tax advice which is subject to a general tariff. The remuneration of accountants are not allowed to be dependent on the results of his work. They are also prohibited from accepting commissions for referrals and other such services.

Until 1995, there was a ban on advertising for accountants, specifically advertising that is contrary to the ethics of the profession. The Chamber of Accountants also imposes a lot of restriction regarding advertising on its members. So though advertising is a relatively open aspect for

accountants with respect to the law, the Chamber of Accountants limits this freedom to a great extent.

Tax Advisors

In principle the tariffs of tax advisors are subject to the legal tariffs given by the Federal Assembly. This provides the lower required of limit of tariffs for tax advice. Upper limits are only possible if there is no written acceptance by the client for a free charge contract. Tax advisors are also not allowed to relate their payments to the outcome. The fee is compensate the tax officer for his time, the value of his services and the nature of the task.

Tax advisors are expected to conduct their affairs in a faithful, discreet and independent manner without advertising. The only case when advertising is allowed is in the form of reporting. This should describe only professional activities and should not be directed to a single determination. The restrictions with respect to advertising were greatly liberalised in the 1990s.

Architects and Engineers

There are compulsory minimum and maximum fees for architectural and engineering services in Germany. This is based on the recommended price structure. Only misleading advertising is completely forbidden for architects and engineers.

Annex 5 - Retailing

Retailing links producers and end-consumers and therefore plays a major role in the price formation process. Traditionally the retail industry has been regarded as being characterized by monopolistic competition with barriers to entry and rather high rates of entry and exit. Recent concentration trends in European retail markets and the emergence of powerful retailers have raised concerns about market power exerted by large retailers. According to studies of the European Commission (Dobson Consulting 1999) and the OECD (OECCD 1999), the grocery retail market in several states of the European Union is now dominated by a small number of large retailers, which are also increasingly active across borders.

Table 1 provides concentration ratios for the five top firms.

Table 16
Five firm concentration ratio for EU countries in 1993, 1996, and 2000 (%)

	1993*	1996*	2000**
UNITED KINGDOM	50	56	63.7
ITALY	11	12	28,8
GERMANY	45	45	62.4

Sources: (*) Dobson Consulting 1999; (**) M+M EUROdata (www.mm-eurodata.de)

Concentration has increased markedly from 1996 to 2000 in all three countries, which may mirror recent trends of deregulating retail markets. This is not surprising, as retail regulations traditionally favoured small scale retailing, which had to be protected by competition coming from larger outlets.

The United Kingdom has the most concentrated retail market among the three countries, mirroring substantial re-organization of retail services. It is not surprising that the United Kingdom has also taken the lead in deregulating its retail industry when compared with Germany and Italy. Most prominently, opening hours have been completely deregulated in the United Kingdom, while shopping hours in Germany and Italy still remain restricted in many ways. With regard to access restrictions and the associated issue of planning and construction restrictions the picture is less simple. After a long period of *laisser-faire* policy regarding planning permissions in the United Kingdom, recent policies show a more restrictive pattern. Because of these policy changes (in

particular, in the London area) it is hard to rank the three countries in this regard. Finally, restrictions on promotional practices appear to be particularly restrictive in Germany.

Overall, one can argue that the United Kingdom presents the most liberalized model, while Germany's and Italy's retailing structures appear to be more regulated. Moreover, labor markets are generally more rigid in Germany and Italy compared to the United Kingdom, which tends to confirm the conclusion that the United Kingdom has created the most liberalized retailing environment among the three countries. As we will show next, this ranking is mirrored in the evolution of the productivity figures.

Labor productivity in Germany, Italy and UK

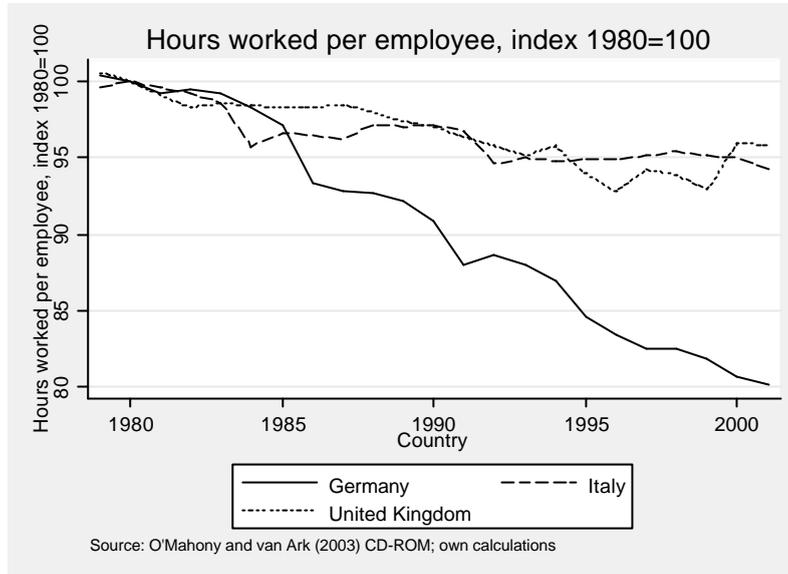
Figure 1 shows that the number of people employed in the retail sector (approximated by the number of engaged persons) has increased over the last twenty years. The evolution though is quite different in these countries. Notably, Germany has experienced steady increase in employment, while the others show a more levelling slope of employment growth.

Figure 1



As Figure 2 shows, Germany experienced a substantial reduction in the number of hours worked per employee. This may be explained by collective bargaining agreements concerning the reduction of working hours and the increase in the number of part time workers. From 1996 the deregulation of shop closing hours may have further contributed to the increase of part-time workers such that the overall number of hours worked per employee decreased.

Figure 2



We now turn to the output side. Figure 3 shows the (deflated) retail turnover for the three countries. The UK has grown steadily while Germany and Italy has remained largely stable since the 1990. Germany however exhibits a burst of output growth after reunification in 1989. The gap between UK and the other two countries seems to widen further towards the late nineties.

Figure 3

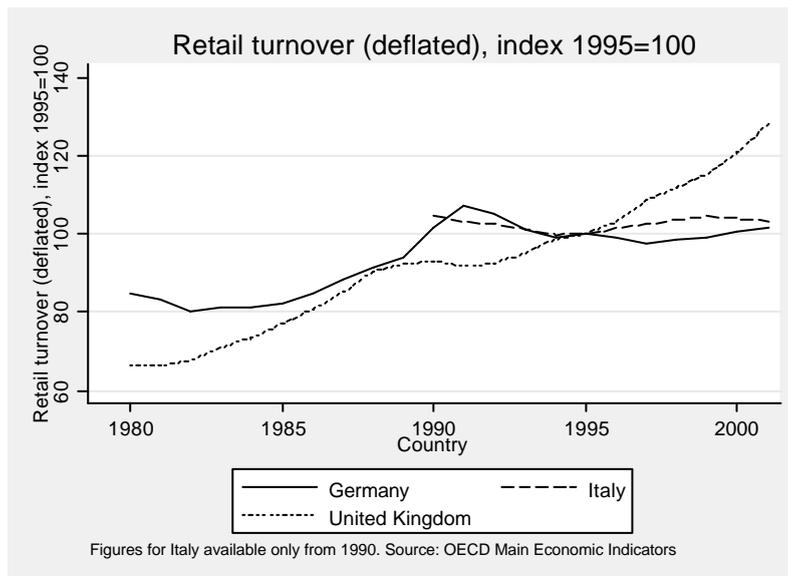


Figure 4 shows that labour productivity per person has increased in all three countries over the last twenty years. However, the patterns are markedly different. While Italy and Germany exhibit

similar patterns of labour productivity growth, the UK experienced a tremendous growth period from the early 90ies onward resulting in a large productivity gap between the UK and the other two countries.

Figure 4

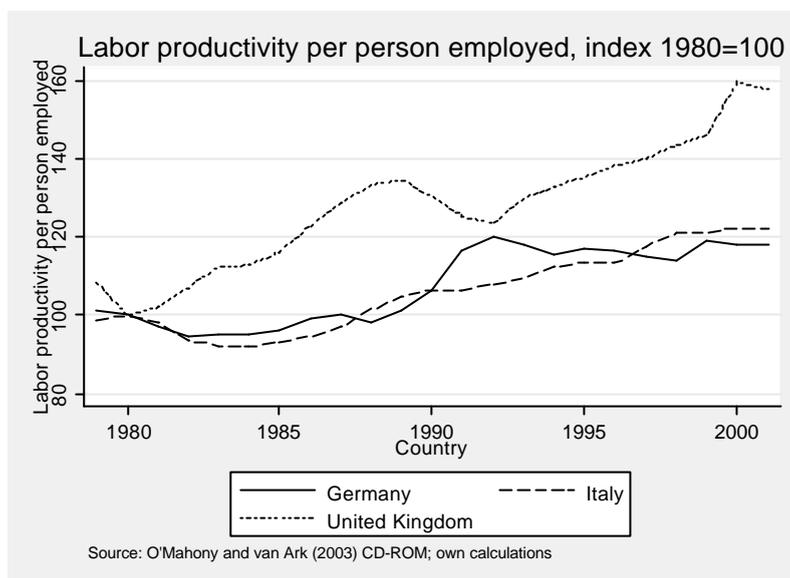


Figure 5 examines labour productivity per hour worked and therefore controls for the reductions in working time per employee. This is of particular importance for Germany because the increase in employees has been largely due to the reduction in working hours per person. Taking this into account Figure 5 shows that Germany's labour productivity increased more substantially particularly so in the nineties, which was absent in Figure 4. Overall, we can rank the countries in terms of labour productivity (with respect to 1980 as the base year) such that the UK exceeds both Germany and Italy in that order.

Figure 5



United Kingdom

Deregulation of the UK retail industry already began with the Thatcher government, when planning requirements for out-of-town developments were eased, which coincided with a rapid growth in the number of superstores and, to a lesser extent, hypermarkets. Sunday opening was deregulated in 1990. Restrictions on opening hours therefore apply only to licensed premises (premises selling alcohol).

Planning has not been greatly reformed. There are a number of key aspects. First, there are large areas of ground where nothing can be built (the Green Belt in particularly, a large area surrounding London). Second, commercial developers wishing to build or use retail premises must apply for permission from local authorities. A very strong preference is shown to licensing retailing in the centre of established towns and cities. To build out of town the applicant must show very strong reasons for not building in towns.

Work undertaken by OECD has suggested that the main restrictions on market entry in the commercial distribution sector in the OECD countries are linked in particular to regulations on large stores. Restrictions, they say, have three consequences: they slow down modernisation and consolidation in the sector; they benefit incumbent firms and make it difficult for a new competitor to enter the market and may speed tendencies to concentration at the national level; finally, they may reduce firms' market power over their suppliers. All European countries restrict to some degree the development of large stores and restrictions have often been increasing. There are

various motivations and national and local policy reasons for such limits. Broadly they relate to urban and regional planning, to environmental and traffic concerns, to concern for accessibility to services and social equity, and to concern for small shops and centers.

In England, national planning guidance PPG6 (Planning Policy Guidance No. 6) sets out policy goals and the ways in which development proposals for such stores should be considered. This is presently under review (references here include Boylaud, O. and G. Nicoletti, 2001).

Structural issues

Concentration has increased significantly. While the top five retailers obtained a market share of around 30.5 in 1973, this figure increased up to 50% in 1993 and 63.7 % in 2000.

Competition and productivity

What is the effect of this on retailing productivity? The precise answer awaits a study which matches features of interest to planning regulations and the like. In the interim there are two pieces of suggestive evidence (Griffiths et al, 2003). First, UK supermarkets are below minimum efficient scale. Second, the fraction of entry and exit accounting for productivity growth is about 93% in the UK and around 40% in the US, consistent that planning regulations inhibit productivity increasing entry.

Italy

The Italian retail trade has some peculiarities with respect to other European countries. Among the main elements of difference one could list:

- The average dimension of each firm (in terms of employees) is very low;
- the average level of sales are very low;
- no particularly large companies are present;
- the employment in retail trade in Italy is fairly low.

Traditionally, the retail sector in Italy has been subject to very strict regulations, in order to preserve the familiar nature of most shops, for which an exposure to tough competition might have created fatal difficulties. Therefore, the Italian legislation has been characterised by:

- o strong and strict regulation on opening hours, working time, the type of merchandise that could be sold in the same premises, and so on;
- o barriers to entry (public licenses were needed for all types of shops, with quantitative restrictions to the number of shops of a certain type in a certain area);

- anti-competitive policy, in the sense that pricing and discount policies were also subject to limitations and controls.

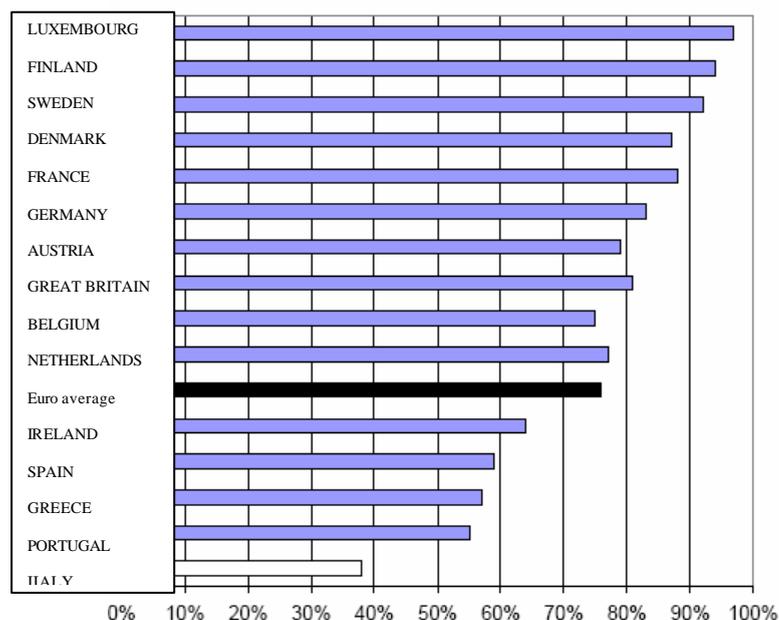
Small shops are the dominant feature of the Italian market. As one can see from the following tables, relative to other European countries Italy was characterised by a smaller number of all categories of large distribution points and a lower concentration, as measured by the concentration ratio for the ten largest companies.

Table 17
Number of large distribution points (min 400 m²) and free service shops, 1996

	GERMANY	BELGIUM	SPAIN	FRANCE	ITALY	NL
Hypermarkets	56	47	54	109	17	24
Supermarkets	83	148	85	122	81	184
Hard discount	65	41	26	24	20	56
Free service	204	236	165	255	118	264

SOURCE: Ottimo 1999

Table 18
Cumulated market shares of the ten largest companies in retailing, 1996



Source: Ottimo, 1999.

As for the weight of the sector in the national economy, one can see that Italy remains in the low end of the distribution, contrary to a common perception that retail trade was a major source of employment for the country.

Table 19
Percentages of employment and value added in retailing, 1996

	EMPLOYMENT (% of total)	VALUE ADDED (% of GDP)
AUSTRIA	6.6	4.3
BELGIUM	12.7	...
DENMARK	6.9	3.8
FINLAND	6.0	3.1
FRANCE	7.2	4.0
GERMANY	8.2	4.1
GREECE	15.6	6.5
IRISH	9.6	...
ITALY	7.6	2.9
JAPAN	11.2	...
LUXEMBURG	10.0	3.4
NETHERLANDS	6.9	3.7
PORTUGAL	8.4	4.4
SPAIN	12.8	...
SWEDEN	4.6	...
UNITED KINGDOM	10.0	...
USA	8.9	...

Source: OECD

Another particular feature is that a large proportion of workers in the sector are independent, another clear sign that we have a sector where the presence of small independent shops is very important. It is however apparent from the table below that already in the mid-Nineties there was a tendency towards a decrease in the number independent workers and an increase in employees, a sign that the traditional nature of the sector was already changing.

Table 20

Employed and self-employed in retailing (thousands of units), Italy

	1995	1996	1997	1998
Employed	1.337	1.364	1.380	1.402
Self-employed	2029	2034	1955	1948
Total	3.366	3.398	3.335	3.350

Source: Confesercenti

The Law 114 of 1998 (DLgs. 144/98, Legge Bersani) provided an impulse for a reform of the general rules for this sector. The new approach requires the Public Administration to check only ex post the necessary qualification of little concerns, reducing to a minimum (in theory) the authorisations needed to start a business. Many authorizations are still required for outlets of middle or large size. The most important interventions are:

- A) reduction of administrative constraints and development in large distribution, and (in principle) deregulation in:
- opening hours;
 - licences reduction;
 - barriers to entry reduction;
 - the formalities to obtain a licence reduction.
- B) structural interventions:
- modernisation and development of the supply system;
 - promotion an industry's growth;
 - favouring a differentiates supply system;
 - protection of commercial services.

The co-existence of declared principles of liberalisation and of promotion of the sector indicates a potential contradiction. In particular, the explicit aim to favour a differentiation of the supply system means a defence of small shops, which – if exposed to open competition – would run the risk of disappearing.

Not by chance, the principles on liberalisation are never taken to an extreme. For instance, as for opening hours, shops may not be open more than 13 hours a day, between 7 A.M. and 10 P.M..

Sunday is the usual closing day, and local authorities may decide to have an additional half day of closing for all retailers. However, exceptions are envisaged for touristy areas and in particular periods of the year.

Moreover, the Legge Bersani leaves large autonomy to local authorities, in particular regions, but municipalities as well. This entails that there is no unified national framework dictating all relevant rules for the sector, as many aspects of considerable importance are delegated to a local level. As Ventura (2003) shows, the resistance to liberalisation is still strong, particularly in southern Italy. Most regions still envisage a quantitative planning regarding the number of large retail compounds in each sub-area of the territory. In most cases special sales are still regulated, which entails restrictions in pricing strategies, in the categories of goods to which such special sales can be referred, and so on.

However, although territorial policy is still in the hands of local authorities, which are free to authorise (or deny the authorisation for) the opening of large commercial centres, large distribution is developing. This is especially true for large stores (see table below), which increase rapidly and cause a quick increase in employment

Table 21
Number of various categories of stores and employment, Italy

	1999	2000	2001	2002
SUPERMARKETS				
- <i>Number</i>	5,892	6,206	6,413	6,804
- <i>Employees</i>	108,688	114,507	114,380	121,344
DEPARTMENT STORES				
- <i>Number</i>	971	984	1,072	1,203
- <i>Employees</i>	24,748	24,702	26,438	27,181
HYPERMARKETS				
- <i>Number</i>	251	304	349	359
- <i>Employees</i>	40,431	52,178	62,923	63,399
Total number of stores	7,114	7,494	7,834	8,366
Total - Index number	100	105	110	118
Total employment	173,867	191,387	203,741	211,924
Total - Index number	100	110	117	122

SOURCE: ISTAT 2003

Competition and productivity

This liberalisation – albeit slow – is producing positive effects on competition in retail trade. The number of new shops has increased in these years thanks to a decrease in entry barriers.

Table 22
Density of the number of stores, Italy

	1998	1999	2000	2001
Large stores per 1000 people	7,72	8,02	8,56	9,22
Small shops per 1000 people	108,54	106,85	108,16	109,17

Source: Ventura, 2003

This shows that an increase in the number of large stores is not incompatible with an increase in the number of small shops. As shown in the final table below, the development of large organised distribution is not detrimental to the total employment of the sector: on the contrary, employment in the retail sector is on the increase.

Table 23
Total sales and employment in the retailing sector, Italy

	2000	2001	2002	2003
Value of retail sales (a)	100	102,7	105,2	107,3
Employment (b)	100	105,4	112,5	120,6
Productivity (a) / (b)	100	97,4	93,5	89,0

Source: Istat

The data on “productivity” (average value of sales per employee) is clearly not very meaningful, in that its negative trend may well be due to a decrease in prices or a different composition of expenditure. Given the obvious heterogeneity of the goods traded, indices of the volume of sales are not produced by Istat.

Germany

The German retail industry is regulated in many ways:

- Shop closing laws restrict the opening hours of retailers,
- planning and construction is restricted and managed at the local level,
- promotional activities and below cost pricing behavior is restricted,
- labor market restrictions spillover to the retail market in many ways.

Germany's retail units are governed by regulations on shopping hours, promotional activities and planning and construction regulations. Most prominently, the Shop Closing Hours Act (*Ladenschlussgesetz*) which came in force in 1956 has restricted retail markets over a period of four decades.

In 1996, the year considered to mark German deregulation efforts in general, the Federal government decreed that shop opening hours during the week and on Saturday were to be expanded.

The direct effect of this decree were as follows:

1. Stores are currently open for 68.5 hours a week.
2. The four Saturdays before Christmas the stores were to stay open till 18:00 pm.
3. Stores continue to be shut during public holidays and Sundays with the exception of bakeries.

In 2001, the legal provisions restraining discounts and promotional offers were abandoned i.e. the *Rabattgesetz* (Rebate Law), though related provisions are still in place. From 2003 onwards, lower parliament sanctioned that stores could stay open till 8pm on Saturdays. The almost 100 year old tradition of the biennial sales (*Winter-* and *Sommerschlussverkauf*) came to a close in 2004. These and other developments are tabulated below.

Table 24

Year	<i>Institutional Change</i>	<i>Direct Result</i>
1956	Ruling powers write out the Ladenschutzgesetz(Shop Closing Act)	Labour working hour protection Prevent excess competition
1989	First move towards liberalisation of shop opening hours	Total working hours in a week = 64.5 Store hours on Thursday could stay open till 8:30 pm Open on Sat. till 6pm from Apr to Sept and 4 Sat before Christmas No additional demand for labour has been identified Regulation not made use of by rural and small town retailers
1996	Bundesministerium für Wirtschaft decreed that shop opening hours during the week and Sat were to be expanded	Important key indicator for Germany's overall economic de-regulation efforts 6-20 Weekdays and 6-16 on Saturdays Stores remain closed on Sunday exception of bakeries and convenience stores Overall stores are open 68.5 hours p/w
2001	Rabattgesetz was abolished	Legal provisions restraining discounts and promotional offers were abandoned but related provisions are still in place
2003	Sanctioned by lower parliament that stores could stay open till 8pm on Sat	Owner managed retail businesses sharply declined
2004	The biennial sales (Winterschlussverkauf and Sommerschlussverkauf) came to a final close	Potential for further competition

Despite recent liberalization trends with regard to closing hours and promotional activities, Germany's retail industry remains highly regulated. Most importantly, small scale retailing still enjoys a protected status by regulations on use of urban space set out in the *Baunutzungsverordnung* by the German federal Government. This protection was extended in the following years (through addenda in 1977 and 1990). Moreover, this regulation is applied at municipal level, so that a transparent and coherent approach towards the planning and construction of new retail outlets is not reached yet. Interestingly though, the German law regarding construction appears to be less

restrictive than in other European countries and in sparsely populated areas outside of cities, the laws are highly flexible considering building projects (OECD 1997).

As mentioned previously, labour unions and laws are very strong in Germany. They have exerted considerable influence in limiting the degree of competition in the market.

Structural Issues

German retailing has become more concentrated. The top five concentration ratio remained at 45 % in 1993 and 1996, and has increased up to 62.4 % with signs of further consolidation in the last years. A particularity of the German retail market is the strong position of discounters like Aldi, Lidl, Penny, Plus ect. Discounters have increased their market share of the German grocery retail trade (excluding drug stores) by almost 10 % from 24.3% in 1992 to 33.5% in 2001, which is estimated to amount of 35% in 2002 (see M+M Planet retail Press release 2002). Accordingly, the number of discount stores in Germany grew from around 9,500 in 1992 to almost 14,000 in 2002. As this success story of discount retailing is a unique feature of the German retail market.

Competition and productivity

Barriers to entry in retailing still exist in a number of ways in Germany. As argued above, large scale formats must fulfil certain requirements before they can be established. These restrictions may frustrate market entry by foreign retailers and they can affect equilibrium retailing structures such that scale economies are not realized. The German cartel law may be regarded a second entry barrier, which restricts loss leader pricing and other promotional activities, which can be seen as preconditions to attract shoppers. The third barrier to entry refers to the retailing rules and environmental standards. Germany has some of the most stringent rules regarding such issues. The *Grünepunkt* system appears to be quite expensive to participate in and it is organized by an industry association, which raises antitrust concern and may tend to discourage foreign retail chains from entering the German retail market. Retail units crossing a certain size are required to participate in the scheme. Hard discount retailers like Aldi and Penny circumvent this procedure because they do not sell branded products. They have in-house brands and accept only their own bottles back.

The fact that there are very few foreign players in the Germany's retail marketplace could be an indicator that there needs to be further competition in this sector. There does seem to be price competition, specifically with the presence of hard discounters.

As analysed above, labour productivity as measured in hours worked has increased since the mid of nineties, while labour productivity measured in persons engaged has remained largely constant.

Discounters typically carry only a very limited about of products. The strong position of discounters and the fact that supermarkets have not been able to provide credible alternative shopping model, leads one to the supposition that Germany's retail performance with regard to shopping services and product variety is relatively weak.

Retail sales floor area has increased from 5.5 to 16.8 million square meters from 1971 to 1991. This highlights a trend towards larger retailers. Owner managed retail units have sharply declined over the years and the concentration of hard discounters seems to be increasing.

Annex 6 - Postal Services

Postal services throughout the EU generate substantial revenue (1% of EU GDP) and employment. Direct employment is mainly for the Universal Service Providers(USPs) (1.2 million units) and indirectly 500,000 in courier and parcel service. In total there are about 5 million people employed in the postal or related services. Postal services are the key link between several other industries, playing a substantial role in communications, with relevant variability from country to country, as documented in Table 25.

Table 25
Per capita mail volumes in European Member States, 1998

Member States	Mail volume (pieces per capita)
Austria	542
Belgium	348
Denmark	348
Finland	316
France	442
Germany	256
Greece	45
Ireland	189
Italy	112
Luxembourg	339
Netherlands	449
Portugal	118
United Kingdom	321
Spain	113
Sweden	634
European Union	276

Source: Visco Comandini and Lettieri, 2001

Postal services throughout the member states were earlier dominated by one market player who had the monopoly. These services were varied across the states in terms of quality and efficiency but often administered by loss-making and possibly inefficient monopolies.

The first Postal Directive was issued in 1997.

- This Directive requires member states to have a separate regulatory authority for postal services.
- A minimum standard and definition for the universal services.
- A maximum reservable area, the conditions governing non-restricted services, access to the network, tariff principles, transparency of accounts, quality and harmonisation of technical standards.
- Member states could establish authorisation procedures, which may include individual licences and a compensation fund in the universal service area.
- They must ensure that adequate consumer protection measures are in place particularly with regard to complaints and redress procedures.
- These standards are to be adapted by the member states.

Regulatory framework differs from state to state due to the implementation measures. This lack of coordinated regulatory measures across the member states, slows down the process of a more competitive market.

- Germany and the UK have modified their primary legislation to transpose and conform to the Post Directive provisions.
- Italy still has yet to conform.

The UK shows the greatest amount of de-regulation. Germany is advancing rather quickly in this direction as well with Italy dragging along. Germany and Italy still have authority in the area outside the universal service i.e. the free market access area. Thus indicating room for further market competition.

United Kingdom

The UK post delivery system in the UK has a venerable history. In 1516 Henry VIII appointed Sir Brian Tuke as his Master of the Posts, to ensure the King's mail was carried safely (the Mail was

almost exclusively the King's, use of the service by the public was not encouraged). Oliver Cromwell awarded the Office of Postage monopoly of the postal market in 1654. In 1840 Rowland Hill introduced the key reforms: the Penny Post of prepaid postage (resulting in the development of the first postage stamp, the Penny Black). Within the next fifteen years, roadside post boxes and residential postal slots were opened, in 1870 the first postcards were introduced as a cheap alternative to letters, in 1883 parcel post and 1919 the first regular international airmail service begins between London and Paris.

In 1969 The British Post Office ceased to be a government department and became a nationalized industry responsible for Posts and Telecoms, with the two being split in 1981. In 1990 Royal Mail Parcels became Royal Mail Parcelforce, an independent division of Royal Mail and in 1992 Royal Mail restructured, reducing 64 districts to nine Divisions, forming a Consultancy Services Group, Strategic Headquarters and Business Units are formed. Royal Mail first entered the North American market on July 4, 1994(Royal Mail US, Inc.).

Whilst privatization is not yet on the agenda the government has set up an independent regulator for the transition to competition. Postcomm – the Postal Services Commission – is an independent regulator was set up by the Postal Services Act 2000. In particular it is instructed to protect universal service – the arrangement whereby letters are delivered anywhere in the UK at a uniform and affordable stamp price. It is also charged with introducing competition into postal services where it is in the interest of customer and regulating prices and quality.

Structural Issues, regulation and prices

The market for delivery over 305 grams is open for competition. However, currently every company that delivers letters weighing up to 350 grams and costing less than £1 needs a license from Postcomm. Such Competition is being introduced in three phases.

Phase one from 1 January 2003 - 31 March 2005: Competition is allowed for bulk mailings of 4,000 items or more (from a single site and in a similar format). This will open up around 30% of the UK letter market by value. Phase two from 1 April 2005 - 31 March 2007: the bulk mail threshold will be adjusted to open up a total of 60% of the market by value. Phase three, from 1 April 2007, all restrictions to market entry abolished.

In 2002 Q2, UK Mail a potential entrant, requested that Postcomm determine the terms and conditions of access to Royal Mail's downstream delivery network. In Mar 2004 Royal Mail signed a deal with UK Mail on access price. UK Mail, a unit of Business Post, is thus become the

first commercial operator to break the monopoly (in existence for 300 years) by paying the Royal Mail to deliver bulk mail. The deal starts in April 2004.

The proposed terms of access has the following major elements.

1. prices will be uniform throughout the UK.
2. Prices will be geared to the weight of the item of mail, rather than the size or shape of the package.
3. UK Mail wants to deliver most of its mail to Royal Mail's 1,400 or so delivery offices where Royal Mail would sort it manually before final delivery, as currently happens to around 50% of Royal Mail's own mail. Royal Mail would prefer the mail to be delivered to their inward mail centers for machine sorting *before* going to delivery offices. Postcomm proposes that UK Mail should be entitled to drop mail at delivery offices, but for a higher price so as to reflect the additional cost of manual sorting
4. The access price is set with no contribution to Royal Mail's upstream costs but with a contribution to that part of Royal Mail's joint costs which have been attributed to its downstream activities.
5. Prices are set at a given rate for the period ending 31 March 2004. Prices are set out by weight, varying between 11p 0-60g to £3.70 to 1750-2000g (for access to the delivery office). After this, prices will be required to fall by RPI-1% pa.

Competition and productivity

Key to the success of introducing competition is access pricing to the infrastructure of Royal Mail. Postcomm is licensing 'consolidation' which allows a company to pick up and sort mail from customers, and then deliver it to a point in the Royal Mail delivery chain, for Royal Mail to take to its final destination. Royal Mail is required under its license to allow competitors to use its network, in return for a fair price. If it cannot negotiate access arrangements and prices with competitors, Postcomm may determine them.

Quality

Postcomm sets service targets for Royal Mail. These require, for example, that 92.5% of first class mail is delivered next day. Postwatch, the independent Consumer Council for Postal Services, monitors Royal Mail's performance against these and other aspects of customer service.

Italy

The Italian mail services has been traditionally managed in a monopolistic regime by Poste Italiane. The Directive 97/67/CE has started the process of market opening, pushed further by Directive 2002/39/CE.

As shown in table 25 above, Italy is characterised by a relatively low use of mail services relative to other European countries. Possible explanations for this fact often point at the low quality of the mail service (in terms of long delivery periods and the general unreliability of it), although counterfactuals are always difficult to test.

As economies of scale in the sector are usually considered fairly important (Cohen and Chu, 1997), low demand together with the traditional alleged inefficiency of the monopolist has generated high unit costs for the service and large losses for Poste Italiane. For instance, Cohen et al. (2002) reported a cost per piece in Italy of 79 US cents, against a cost of 31 c in the US, 40 in France and estimates between 34 and 62 cents in countries such as Canada, Finland, Germany, Portugal and the UK.

Since 1998 Poste Italiane – which since 1946 had been part of the public administration, within the Ministry of Post and Telecommunications – has become a limited company (S.p.A.), although not listed and entirely owned by the Treasury. It is a vertically integrated group, which also provides a considerable quantity of financial services (service Banco Posta). Its privatisation is not on the immediate agenda of the Government.

Before the 1999 Decree implementing Directive 97/67 the sector was regulated by the Ministry and – as regards prices – by CIPE. This Decree has defined the reserved areas and has defined the liberalisation process. It also generically mentions an “Authority”, which at the moment is still the Ministry, who approves all prices, and has the right to intervene even on the closing of post offices. The programme contract is for the moment a formal document of little substance.

The monopolist is de facto the only source of data, some of which only recently start being made public, so that clear comparisons over time are extremely difficult.

Structural Issues, regulation and prices

Poste Italiane is a vertically integrated firm, managing all segments of the service, from collection to distribution. No opening of its network to third parties is envisaged.

Prices are determined directly by the Ministry and CIPE (a governmental body).

Competition and productivity

Since January 2003 the new Directive on postal services has come into force (Directive 2002/39/CE), determining the next steps in the liberalisation process. As a consequence, since January 2003 the limit of reserve is 100 g. and 1,86 Euro. The main consequence will be that registered mail – apart from judicial acts – will no longer be reserved to Poste Italiane. International mail still remains exclusive competence of Poste Italiane. The universal service obligations, referring to basic postal services, which are provided at a uniform price throughout the country, entail losses, which are typically covered through a protection in other areas, so that cross subsidies are widespread.

Although no official figures are available, the Italian market is served by Poste Italiane who has a share of approximately 97-98% (the remaining 2-3% only refers to direct mail and is shared among large number of very small local firms). The total number of employees of Poste Italiane was 183.920 in 1998, and has decreased to 166.452 in 2001 (-9.5%) while in the same period total cost of personnel decreased by 7%. Certainly not a spectacular result in a period of liberalisation.

Table 26

Costs and revenues of Poste Italiane (Million Euro) by category of service

	1998	1999	2000	2001	2002
Total operating costs	6.594	6.612	6.781	6.911	6.562
<i>Cost of personnel</i>	5.351	5.225	5.127	4.959	4.781
Total revenues	5.720	6.111	6.473	6.776	6.718
<i>Mail division</i>	3.187	3.329	3.456	3.712	3.508
<i>Banco Posta</i>	2.215	2.398	2.630	2.660	2.984
<i>SDA Courier</i>	244	225	218	222	226
Net profit	-1.377	-651	-393	-74	22

Source: Poste Italiane, annual budgets, various years.

The firm's financial results are improving substantially, and in 2002 Poste Italiane has had for the first time a net positive profit of about 22 million Euro. The total lack of reliable unbundling prevents one (probably even the firm itself) for disentangling whether this is due to increase in

efficiency in the traditional mail services or by the increased profitability of the banking services, in that the two services are provided in the same premises and by the same personnel and probably cross-subsidies are paramount.

Table 27

**Total postal and reserved postal revenues of main European Postal Operators –
fiscal year 1998 (billion Euro)**

Main European Postal Operators	Total Revenues	Postal Revenues	Reserved postal Revenues	Reserved revenues as % of total revenues
Poste Italiane	6,0	3,5	2,4	68.8
TPG	7,5	7,2	6,0	82.3
Post Office (UK)	10,9	9,1	8,4	92.2
Deutsche Post World Net	13,4	12,5	10,0	80.3
La Poste	14,2	10,9	9,4	85.8

Source: Annual Report of postal operators, National Regulatory Authorities for Post (see Visco Comandini and Lettieri, 2001)

The reserved area is shrinking, also because of the implementation of the new Directive. For 2003 the percentage of revenues of PI in the reserved service is around 55% while it was 70% in 2000 (Table n...). Notice that this is the combined effect of two forces: the reduction in the area of reserved services, and the continuing expansion of PI in other sectors, in particular in banking (service Banco Posta).

Table 28

Percentage of revenues from reserved services on total revenues of Poste Italiane

Years	Share
1997	73,0
1998	73,0
1999	66,0
2000	66,0
2001	66,0
2002	70,0
2003(*)	55,0

(*) Estimate
Source: Poste Italiane

Quality

The quality of the service is now subject to specific checks, and quality is improving, as shown by the following table:

Table 29
Quality of universal mail services in Italy
(Delivery time after the day of posting - Percentages)

Product	Expected delivery time in days	1999	2000	2001	2002	
Ordinary mail	3	Target	80	85	90	90
		Actual result	77	84	87	92
Priority mail	1	Target	70	75	80	80
		Actual result	80	82	83	84
Registered mail	3	Target		85	90	90
		Actual result		87	90	93
Insured mail	3	Target		85	90	90
		Actual result		86	93	93
International incoming mail	3	Target	85	85	85	85
		Actual result	73	88	88	88

Source: Poste Italiane

Needless to say, the fact that these figures come from the monopolist may justify substantial caution in their use.

Germany

The market for postal services was dominated by the state monopoly, the Deutsche Post. This monopoly was characterised by high prices and losses. Germany brought in postal reforms as a result of the EU Postal Directive. Since then the primary legislation has been transposed and conformed to.

The postal service market in Germany is dominated by the Deutsche Post AG. This is a public limited company that is largely state owned. The DP AG is well established in the market and still controls a large section of the same.

Structural Issues, regulation and prices

The DP AG have a natural monopoly in terms of the national network, delivery, collecting and sorting that they enjoy. This is further substantiated by the fact that consumer inertia does not allow immediate switching over to another supplier. Hence it prevents licence holders from realising optimal volume levels in order to gain from economies of scale. The EU directive dictates that member states must ensure the provision of universal services and at a certain standard. In accordance to this directive the DP AG has been granted a statutory licence till 2007. Following which the market is supposed to be open completely to competition. An interesting point to note here, is that complete privatization in the postal market seems rather unlikely.

Postal services in Germany are regulated by an independent regulator, namely the RegTP. This is the regulator for postal and telecommunication services in the country. The main functions of this body are to ensure de-regulation measures are in place and functioning. In an attempt to create more competition in the market, they hand out licences to interested parties. These licence holders are then allowed to offer their services in various market segments.

The type of licences issued can be divided in to two categories; the old and the new. The Old licence allowed private parties to deliver addressed large mailings i.e. in excess of 250 grams. The new licence which came in to effect in 1998 allowed more rights to the private parties interested in providing mail services. This licence stated that

1. Letters weighing between 200-1000 grams
2. Letters of identical content weighing greater than 50 grams and a minimum of 50 items
3. Document exchange service
4. Services distinct from universal services i.e. higher quality services.

Licence holders are generally classified as small and medium size enterprises. These licence holders are monitored by the RegTP and a serious breach in the quality of service or failing to perform the required services, could result in revoking of licences. This has thus far not really been the case and it seems that private parties are keen on entering this market. This is particularly seen in the new Ländern.

One of the benefits of having an independent regulator, one that is distinct from the universal service provider(USP) is the ability to act as a go between. The RegTP often intervenes on behalf of the licence holders. Though this seems to be an assurance of increased competition and a

curbing of monopoly power, often complaints are overlooked because there is just not enough evidence. Currently despite the effort to de-regulate the market still sways in favour of the USP, DP AG. The national postal is obliged to provide the universal service. It should be accessible in terms of price, quality and convenience with the customer in mind.

Over the years many institutional developments have taken place in the German postal sector. This can be seen from the following table.

Table 30
Postal Services Time-line, Germany

Year	Institutional Change	Direct Result
1995	Licences granted for delivering addressed large mailings. > 250 gms	Market liberalisation came in to focus Old Licence No. of licences given is unlimited
1996	Weight restriction for licence holders reduced to 100gms and above	
1997	Postal Law ended Dec. 31 st	Gave monopoly rights to the Deutsche Bundespost AG
1998	Postal Act came in to effect on Jan. 1 st	Conscious focus shift from monopoly to competition Delivery of letters (<1000 gms) requires licence from RegTP → New Licence: Letters with identical content (>50 gms with >=50 per mailing) Higher quality services
1999	Postal Universal Service Ordinance (PUDLV) promulgated on Dec. 15 th	Defines content and scope of postal universal services including minimum quality standards and price criteria
2001	First amendment to the Postal Act in Sept.	DPAG holds statutory licence on letters(<200 gms <€2.81)
2002	Letters weighing > 200 gms fully liberalised The RegTP issues ruling and approves fees set by DPAG to gain access to PO Box facilities (Valid from 1 st May 02- 30 th Jun 04) Court in Köln declares same day delivery as higher quality service	Increase in number of licence holders from 1998 DPAG still holds 90% of this market Market has grown by 10% since 1998 Overall market area: monopoly area(~€7.9bn) competitive area(~€2.3bn)
2003	The third Amendment of the Postal Act came into effect Jan. 1 st RegTP organises a platform forum for licence holders	To further increase competition Lowered both monopoly weight and price.(Weight 100 gms, Price from €2.81 to €1.35)

	Court in Köln declares day certain services as higher quality services.	Outgoing international letters no longer part of exclusive licence Monopoly of DPAG reduced to ~68% and competitive area to ~32% Court rulings have affected licence holders' volume Forum allows licence holders to address their problems with the DPAG
2004	EU-VAT Directive should be passed whereby national postal institutions are no longer exempt from VAT	Price level for all regulated postal services will change by rate of inflation minus 1.8% → Licence holders oppose this Market for letter (<1000 gms) has not faced major competition yet. Licence holders still have access problems to PO Box facilities and redirection addresses.
2005	Transposition of EU-VAT Directive expected	
2006	From Jan. 1 st monopoly weight is reduced to 50 gms and price to €1.13	Expected that DPAG will have only 59% of market share, competitive area, 41%
2007	Statutory licence ends and the market will be open for full competition	

The power to determine tariffs rests in the hands of the national regulating authority guided by the principles set out in the EU directive on postal services.

The Postal directive is working towards a single EU market for postal services. With this in mind, it has lowered the weight and cost of letter items for all the USPs but this continues to push out competitors currently. The reason for which being that competitors find it difficult to offer better prices than those offered by the DP AG and still make profits.

Price trends that have occurred so far are:

1. The price for addressed mailing (as part of the old licence), services provided by licence holders has steadily decreased from €0,71 in 1995 to €0,42 in 2002.
2. The prices for single letter items greater than 200 grams or greater than €2,81 have also decreased from €2,50 in 1998 to €1,29 in 2002.
3. The prices of letter items of identical content greater than 50 grams have increased from €0,46 to €0,58 in 2002.
4. Regarding higher quality services the prices have also increased from €0,49 in 1998 to €0,58 in 2002.

Competition and productivity

Licence holders in fact only cater to a periphery of customers the rest of whom are catered to by the Deutsche Post AG. The following tabulation indicates more clearly the situation of licence holders in the German postal market.

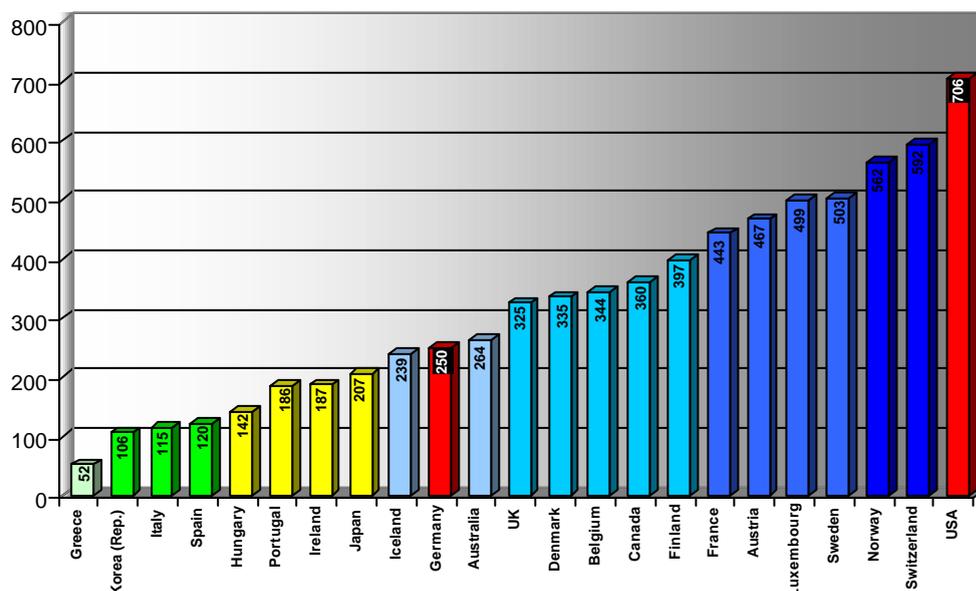
Table 31
Postal licences in Germany, 2002

Market Segments	Deg. of Competition	Outline Description of Competition
Domestic Mail	Emerging	Competition-Limited due to reservable areas. Main competitors are mostly niche market players .
Cross-Border Mail	Substantial (Controlled by UPSs)	Despite reservation, competition is substantial involving USPs, consolidators and large mail operators.
Parcel Services	Intense(Consolidation led by USPs)	USPs are extending and consolidating their often leading mkt positions through alliances and private operators.
Express Services	Intense(Mergers and acquisitions led by USPs)	There is a substantial presence of private operators and USPs who are actively seeking M&A to enter the market.
New Services	Emerging	This new market segment is still characterised by fragmented competition and a strongly contested delimitation for value added services.

Source: "Sixth Market Study in the Field of Licensed Postal Items"

The market for parcel, express and courier **services** is open to intense competition.

Figure 6
Letter items per inhabitant and year (selected OECD countries)



In 2001 the market open to competition was just under 23% yielding revenue of about €2.3 billion. The rest of the area roughly 77% came under the realm of the USP namely DP AG. A separate study with respect to the market and position of the market reveals that letters per inhabitant and year is lower for Germany when compared to other nations. This indicates growth potential for the letter market. Germany though has shown itself to be a leader in reform not just postal services. There is still room for improvement however. Participation of third party competitors is still low and the incumbent is still the major player.

Licence holders have thus far created about 20,000 jobs. These jobs were not transferred from the DP AG. This in fact applies to both part time and full time jobs.

1. Hamburg uses the facility of competitive postal services the most out of all the other ländern.
2. Interestingly the new ländern make use of this facility a lot more than the other states.

Licence holders however face several problems in the German postal market. This includes the lack of cooperation by the incumbent namely in the areas of PO Box access facilities and address re-directions. The DP AG is further exempt from the Value Added Tax(VAT). This further distorts competition because the licence holders are not exempt. The licence holders believe that either the tax should be removed for all players in the market or the VAT should be imposed on the DP AG. The current EU Directive amendment states that the EU VAT Directive is to be abolished and the USPs are no longer to be exempt from the tax. The transposition to national laws is however not expected till 2005.

It is expected that in 2006, the DPAG will have only about 59% of the market whereas 41% of the market is expected to come under competition. The market for letters under 1000 grams has not faced any major competition. Licence holders actually derive most benefit from providing higher quality services. Though this is also riddled with problems. Licence holders have very narrowly defined delivery and collection times(collection after 5 om and delivery latest by 12 pm the next day). As such it is quite unclear as to what constitutes a higher service. A court ruling in Köln however has further clarified and perhaps increased the standard expected from licence holders.

Document exchange, delivery to DP AG acceptance offices and collection from DP AG PO Boxes do not bring in much revenue for licence holders. In fact legal issues regarding what constitutes special and higher quality services prevents private parties from acquiring the necessary funds to participate and set up a business. Licence holders hence find themselves to be in a position of legal insecurity.

Despite these glitches, a study carried out by the RegTP indicates that revenues earned by private companies providing postal services has grown considerably especially the companies generating revenues in the range of €100,00 –500,00. €500,000 to €1 million and about €1million. The total size of the areas served by licence holders working in cooperation with partners is more than 50% larger than the areas served by the licence holders operating alone.¹⁷ Several companies participate or work as subcontractors in other companies(like DP AG) within the same industry. Perhaps another reason why the deregulation efforts are not so successful.

As mentioned before, the DPAG is the universal service provider in the German market for postal services. They in fact still hold monopoly status and face no major competitor currently. This is not really expected to change until the end of the exclusive licence in 2007.

¹⁷ Taken from the „Sixth Market Study in the Field of Licensed Postal Items”

Annex 7 - Water

Water is one the last public sectors to be brought under the realm of reform and further enhancement for consumers. The main goals of the EU regarding water policy are the protection and improvement of aquatic environment and contribution to sustainable, balanced and equitable water use.¹⁸

United Kingdom

Water and sewerage in England and Wales consists of 635,000 km of mains and sewers. The supply network consists of pipes, facilities for obtaining water from the ground, treatment plants, pumping stations, storage facilities. Sewerage includes sewers and treatment facilities.

Water was nationalised in 1973 having been previously owned by municipal authorities. In 1989 the 10 Water and Sewerage Companies (WASCs) were privatised in 1989 as natural local monopolies.

Structural issues

Each company has a licence to operate a monopoly in either water or sewerage or water supply only within their licensed area. It was envisaged that product market competition might develop but this did not happen. The regulator has therefore concentrated on introducing yardstick regulation of water companies in the absence of competitive pressure. In addition, there were 29 privately owned water companies who existed before 1989.

After privatisation the number of companies has fallen from 39 to 23 due to mergers. OFWAT helped introduce competition for some users via inset appointments for large users and Greenfield sites (threshold was reduced in 2000 to 100 megalitres per year). This has reduced tariffs for large users. Most smaller customers, who are the majority of customers, do not have a choice of supplier and water companies are a monopoly. Thus there are price controls for licensed water and sewerage services.

¹⁸ EEB: A Review of Water Services in the EU Under Liberalisation and Privatisation Pressures www.eeb.org/activities/water/special-report-water-services.pdf 01.06.04 p.5

Regulation

This is done by RPI-X using yardstick regulation to help estimate X. OFWAT (1998) uses such analysis whereby less efficient firms being required to reduce prices (and hence costs) by more than more efficient firms. To this end the MMC has been reluctant to allow mergers in the water sector, with the MMC (1994) reported that the value of the loss of one water company by merger with another would have a present value of £50-250m.

Competition and productivity

There seems to be accumulating evidence that the cost efficiency of water companies has improved significantly since privatisation due to under the pressure of yardstick regulation and takeover pressure.

Different companies have fared differently. The NAO (2001) report the following. OFWAT have made extensive use of yardstick competition and made efficiency savings since 1990 as follows: base operating expenditures (costs of delivering a fixed service, 3-37% for individual companies, quality enhancement, up to 30% and capital maintenance expenditure up to 15%.

Prices

Prices rose since privatisation until April 2000 to fund the very large investment programme. In the 1999/2000 review OFWAT cut average prices by 13% in 2000/01 with price caps expected to cut prices by £25 in real terms 2000-2004/5. Between 1995-2000 however companies did pass on rebates to consumers due to efficiency savings made being passed on by regulatory action.

Quality

The government has given a role on quality to the water regulator. At first, the regulators were limited to publishing quality statistics, but the Competition and Service (Utilities) Act of 1992 gave customers the right to compensation for specific instances of bad service, or the failure to reply to correspondence. Following huge investment there has been an improvement in quality; reductions in the number of properties subject to unplanned supply interruptions, fall in properties at risk of low pressure from 1.8% in 1990/01 to 0.11% in 2000/01 and fall in properties subject to sewer flooding (0.05% in 1992/3 to 0.03% in 2000/01).

Italy

The restructuring of the water industry in Italy started in January 1994 with law 36/94 (Legge Galli). This law intervened on an extremely fragmented sector, where thousands of small operators served extremely small portions of the country. Very often, in the same area different operators would intervene in different stages of the water cycle (from abduction to purification and disposal). The water service has always been considered a local service, and only since 1990 (law 142/90) may the service be provided by limited companies. In such a fragmented sector data have always been little more than approximations, but it is reckoned that in 1996 about 8,100 independent subjects were managing at least one part of the water service in the country.

Table 32
Providers of drinking water services, Italy, 1996

	Percentage of population served, 1996
Local public firms	42,5%
Private firms	8,0%
Municipalities	49,5%

Source: Comitato di Vigilanza sulle risorse idriche, relazione al Parlamento, 2000.

About 50% of the population was getting water services directly by municipal offices. Direct provision by municipalities was particularly common in sewage, in the South and in small centres.

Prices were determined locally, with little national co-ordination or compelling national guidelines. Traditionally, water prices have been extremely low, with a strong tendency to consider water as a necessary service that should have been provided independently of market logic and even disregarding the financial equilibrium of service providers, who have been heavily subsidised.

The law of 1994 was the catalyst for reform. It starts from the following principles:

- a) the water service should be considered as an integrated service, including water treatment and disposal
- b) the integrated service should be provided on the basis of larger areas, to be defined locally according to hydrologic and administrative criteria (Optimal territorial areas, ATO);
- c) within these ATO the service will be co-ordinated and investment will be centrally determined by a plan;

- d) the tariff should be regulated and should be such to guarantee the coverage of all costs, and in particular investment should be encouraged
- e) the creation of a national body to supervise the service (not an actual Authority)

From the viewpoint of the organisation of the service, the 1994 law envisages four different important stages:

- forming the ATO;
- investigating the current situation and investment needs;
- approving the investment plan;
- awarding the license for the management of the plan and of the service.

The initial phases, the resistance to change was widespread. Forming the ATO means that numerous municipalities have to relinquish the control of a politically delicate service, and this brought about huge political difficulties both in deciding the ATO and in convincing local authorities that they had no alternative. In June 2003 the situation is the following:

Table 33
Implementation of law 46/94: situation at June 2003.

	ATO envisaged	ATO formed	Investigations completed	Plans approved	Management licenses awarded
Italy	91	84	66	40	25
<i>North</i>	44	38	22	6	7
<i>Centre</i>	19	19	16	13	13
<i>South</i>	28	27	28	21	5

Source: Bardelli and Muraro (2003)

As already stated, in 1996 more than 8.000 independent providers of different water services operated in the country. In 2003 the signs of a substantial rationalisation are already significant. The water service is now (or will shortly be) organised by 91 bodies. Notice however that within each ATO there could be more than one provider of the water service and – for few years – more than one price for the service.

The transition towards a single price in each area should eventually be completed, while in practice the drive towards having a single entity managing the service is reducing drastically the number of bodies providing the service. It can be expected that in the near future there will be 91 firms running the service. Although the service is probably still very fragmented for international standards, the change from 81.000 “entities” to 91 water companies, each serving on average more than 600.000 people, is certainly a remarkable achievement.

Structural issues

While prior to the 1994 reform the provision of the service was extremely fragmented, one of the key elements of the reform is the notion of integrated water service and the provision that in all areas the co-ordination among different phases should be encouraged and promoted. In each ATO the planning is concentrated, and refers to all phases of the service. However, the law does not explicitly envisage that the whole service should be provided by the same entity. Therefore, in each ATO – at least in principle – different firms might run different phases of the service; however, as already stated, the drive towards a total horizontal and vertical integration of the service within each ATO is quite substantial.

This means that, unlike other utilities where unbundling is seen as a key element to introduce competition and favour efficiency, here not only – as we will see – competition is seen only in terms of competition “for” the market, but the key to reach efficiency is considered to be vertical integration rather than the opposite.

Regulation

Prices are now regulated, and this regulation will be enforced in each ATO once the ATO is actually operating as envisaged by the law. This regulation is based on a national formula (the “normalised method”) which is a complex mixture of cost-of-service and price-cap elements. Its primary explicit goal is the coverage of all costs, so that subsidies are ruled out.

In each area (ATO) the starting point is typically a multitude of tariffs, which will eventually converge to a single tariff per area. In the transition period, each tariff will be fixed according to the following principles. Each ATO determines a reference price, to which the prices in different parts of the area will have to converge. This reference price for period t is

$$p_t = (C + A + R)_{t-1} (1 + RPI + K)$$

where

C = standard unit (per litre) operational cost

A = standard unit (per litre) amortisation

R = standard unit (per litre) remuneration of investment

RPI = inflation rate

K = a pre-determined value which caps real price increases

The expression “standard” cost indicates that the formula does not consider actual costs, but costs imputed on the basis of different elements. For instance, total operational cost is the sum of three components (cost for drinking water; cost for sewage; cost for treatment of disposed water), whose

values in turn are calculated on the basis of given factors such as output, length of the aqueduct, an index of difficulty of treatment of water, the length of the sewage network, and so on. The amortisation is determined by accounting principles on the basis of the assets initially acknowledged by the public body supervising the ATO operations, taking into account the investment plan approved. The remuneration of investments is set by the law at 7%. Therefore, the “cost” components are actually almost entirely exogenous to the firm and the formula appears closer to a price-cap than to a cost-of-service regulation.

As one can see, the management, remuneration and functioning of the water services is heavily centralised and regulated in each ATO according to criteria set by the law. The degrees of freedom at local level appear to be restricted by the basic initial decision on the needs of the area and the related investments. This is claimed to be justifiable given the blatant irrationality of the initial situation and the astonishing level of waste of water.

Competition and productivity

Competition in this area is restricted to the competition for the market (to become the provider of the service in each ATO), and here the situation – analogously to situation of all local public services in the country – is extremely confused because of laws which appear contradictory, where ill defined concepts have been introduced, and where the compatibility between national laws and EC indications is still unsettled. The tendency of local public authorities to protect their role of incumbent is extremely strong, and their ability to be listened in Parliament is considerable.

Prices

Traditionally, the price of the water service in Italy is considered extremely low for international standards. As

Table shows,

Table 34
Average prices for water services in some cities, in Euro, 2001.

	Nr of clients	Average price per m ³
Amsterdam	1,258,756	1.81
Antwerp	557,052	1.85
Athens	3,860,000	0.91
Barcelona	2,693,000	1.45
Berlin	3,450,000	5.10
Brisbane	879,000	1.53
Bristol	1,100,000	0.88
Brussels	995,184	1.94
Budapest	1,974,341	0.52
Copenhagen	499,840	4.20
East-West Midlands (UK)	7,446,000	2.46
Gelsenkirchen	2,479,000	2.16
Hamburg	1,992,000	4.31
Helsinki	556,900	2.36
Los Angeles	3,833,400	1.51
Maastricht	1,142,000	1.67
Marseille	1,254,751	2.65
New York City	9,000,000	1.40
Oslo	535,000	1.20
Perth	1,376,000	1.26
Stockholm	1,135,000	1.96
Sydney	4,029,000	1.63
Tokyo	11,676,650	1.76
Zurich	783,700	3.83
Average	2,687,774	1.98
Rome	3,000,000	0.70
Turin	1,367,813	0.74

Source: Peruzzi (2004)

Also in the light of this, water firms have substantially increased prices throughout the decade. The Istat national price index for drinking water indicates that between 1990 and 2003 these prices have more than doubled. This has happened however without clear co-ordination among the providers of the water service and without a clear national directive. In the next future, water prices are expected to increase by about 50% in the next 15 years.

Quality of service and investment

Italy is certainly lagging behind in particular as regards purification, where in 2002 the EC issued a fine for late implementation of the Directive 91/271/CEE, implemented in 1999 with effects which are extremely slow to develop. Aqueducts serve about 96% of the population, sewage serves about 84% of the population, while the coverage ration for purification is on average 73%, but it falls to 60% in certain areas of the country.

More in general, the average age of the different network elements is quite high. Distribution pipelines and sewage are about 30 years old, while sewage networks are more recent (16 years).

Some very substantial losses in drinking water are documented. Although it is hard to distinguish actual physical losses from unaccounted sales, on average 42% of water flowing through pipelines is not “officially” delivered and accounted for, with peaks close to 60% in whole regions.

Again, even in this respect the Italian situation is still in transition. Probably also as a consequence of the uncertainty which has dominated the sector, investment in water services has collapsed during the Nineties. In real terms, investments in 1998 are 29% of those in 1985 – and the negative trend is quite consistent. No data is available after that date, but the plans approved by the ATO indicate that the in the next 20 years investment per capita per year will be of about €35.5 (the total estimate for an yearly average is close to €2 bn – perfectly in line with the 1998 figure in real terms).

Germany

The Act on the regulation of Matters relating to Water came about in 1957 and was most recently amended in 2001. The German system of water and sewerage is characterised by thousands of utilities and extremely fragmented. Municipalities are largely responsible for these utilities along with medium sized enterprises. These municipalities underwent tremendous reform and have reduced in number greatly but still remain on the high side. In order to cover the incurred expenses, the municipalities charge consumers with tariffs and fees.

In 1996 more than 80% of the German population received their water supply from public owned enterprises. In contrast to French, English and Welsh policy, the German water policy is in public hands. The rising phenomenon though appears to be public-private partnerships which more often than not arises voluntarily but is also initiated by the state. This seems to be the most common way for private parties to enter the German water market. The Ministry of Economy has initiated a discussion regarding the liberalisation of water services which has great momentum of late.

Only 1.6% of the total water service of the total water supply is delivered by private companies. The rest of which is catered to by municipalities. It is believed that increased concentration would lead to reduced protection for ground water. A primary concern regarding water policy in Germany seems to be the environmental factor. Germany is Europe's forerunner with regard to environmental awareness. Another cause for concern is the endangering of current water structures. These structures cater specifically to each individual region. Germany's geographical and federal structure make it a very complex country where water is concerned. About 98.6% of the German population is connected to the drinking water network.¹⁹

In the German Water Act, water is defined as a regional monopoly. The municipalities who essentially control water services can decide up to what degree private participation can be allowed. Between 1971 and 1990, around 14% of Germany's water was delivered by public-private companies and by 1998, this share rose to 22%.²⁰ There are about 6500 water suppliers and 8000 waste water treatment companies.²¹

Structural issues

In 1999, the part privatization of the Berliner Wasserbetriebe took place, 50.1% of the shares remained in the possession of the Land Berlin, 49.9% was held by a consortium consisting of the French corporation Vivendi, the multi-utility company RWE and the Allianz insurance company.²² The competition is likely to rise with an increasing number of suppliers and with an increased likelihood of consumers changing to another supplier. Yet, the specific characteristics of water will most likely favour the further existence of monopolies.²³ One of the biggest arguments in favour of liberalising water markets in the EU is the increasing competitiveness it might allow European companies to have internationally. This could result in bigger and more powerful companies due to concentration processes and mergers.²⁴

Liberalisation of the water markets will make it more difficult for authorities to control and ensure water protection since the water market in Germany is largely saturated, as seen from Figure 12. Currently non profit activities related to water such as lakeside cleaning, waterside protection measures etc. are carried out by public institutions. Since these services do not directly relate to the

¹⁹ Gramel, Stefan: Results of a Case Study on the Water Supply in the region Frankfurt/Germany

²⁰ Gramel, Stefan: Results of a Case Study on the Water Supply in the region Frankfurt/Germany

²¹ Gramel, Stefan: Results of a Case Study on the Water Supply in the region Frankfurt/Germany

²² Bundesministerium für Wirtschaft und Technologie: Optionen, Chancen, und Rahmenbedingungen einer Marktöffnung für eine nachhaltige Wasserversorgung. Endbericht, Juli 200, p.15

²³ Berliner Wasserbetriebe :<http://www.bwb.de/e/pgs/unternehmen/chronik.html>

²⁴ EEB: A Review of Water Services in the EU Under Liberalisation and Privatisation Pressures

www.eeb.org/activities/water/special-report-water-services.pdf 01.06.04

provision of water and are costly the chances that private companies will invest in them is rather low.

Prices

Price mechanisms for water supply depend on principles that are different from those of water supply. Wastewater disposal costs are passed on to the consumer and may or may not include a profit. Price mechanisms for water supply systems are not under the municipalities instead under the anti-trust agency. Water supply utilities must demonstrate if the need arises, that their prices are not higher than that of comparable companies and suppliers. This system is not different from other countries who have central price regulations. The only difference in Germany being that there are no uniform rules or formulas to be administered, cases are considered on an individual basis.

Quality

German standards for water are being steadily adapted to the CEN and becoming EU standards. The German water service system is further enhanced by interested private parties, experts whose advice and views are both obligatory and welcome. Competition within the market could be enabled through the abolition of exclusive concession and of demarcation arrangements. The demarcation arrangement between different operators refers to each contractor who supplies water exclusively within a confine area.²⁵

Germany is supposed to artificially increase prices for water extraction because of extra costs aimed at financing the achievement of environmental and quality standards which are even higher than those demanded by the EU.²⁶

²⁵ Deutsche Bank Research: Wasserwirtschaft im Zeichen von Liberalisierung und Privatisierung Aktuelle Themen Nr.176 August 2000.

²⁶ Deutsche Bank Research: (August 2000) p. 20.