


Regulation and productivity in the private service sectors



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Chapter 1

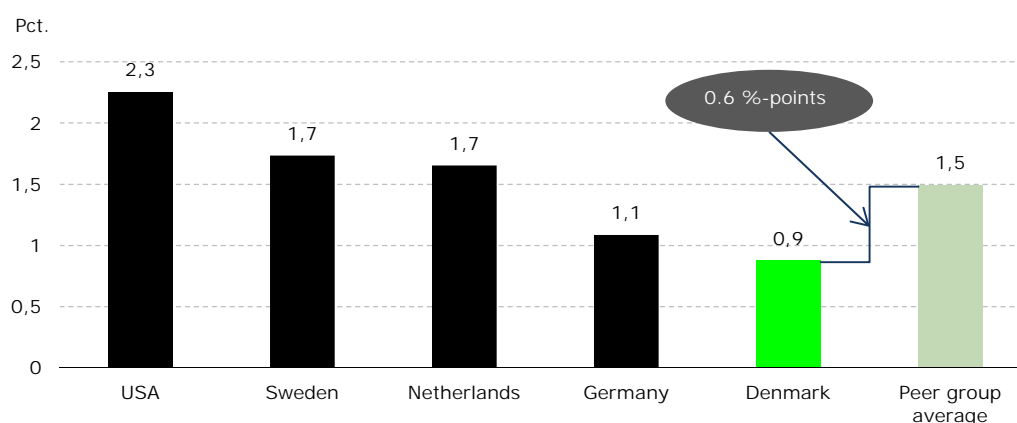
Productivity in the private service sector

Denmark has experienced, and is still experiencing, a slow productivity growth. There is a potential for productivity improvements in many industries, but the main problems are found in the private service sector. The Danish Productivity Commission finds that, if productivity in the private service sectors alone had grown at the same pace as in the U.S., total productivity across all sectors in Denmark would have grown by 1.5 per cent per year, instead of 0.8 per cent per year.¹

1.1 Low productivity growth in private services

From 1995 to 2011, productivity in the Danish private service sectors grew on average by 0.9 percent per year. In comparable countries, private service productivity grew at 1.7 per cent per year on average in the Netherlands, and even faster in the U.S. with a growth of 2.3 percent per year. Productivity growth in private services was also faster in both Germany and Sweden than in Denmark. Comparing Denmark with a peer group consisting of Sweden, the Netherlands and Germany, the average gap in productivity growth has been 0.6 percentage points on a yearly basis since 1995, cf. Figure 1.

Figure 1 Productivity growth in private service, 1995-2011



Note: Real productivity growth, peer group consists of Sweden, the Netherlands and Germany. Figures match real productivity growth figures in figure 16 of the Productivity Commissions first report "Denmark's Productivity – Where are the problems".

Source: Eurostat, Bureau of Economic Analysis and the Danish Productivity Commission.

¹ The Danish Productivity Commission (2013) –Report1 p. 52

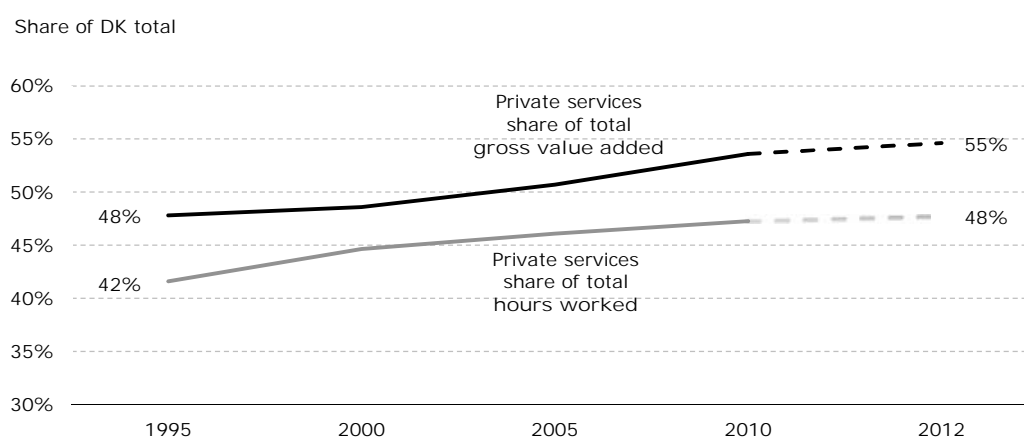
1.2 Private services are growing in importance

The private service sector is of growing importance to the Danish economy, and the sector's share of both gross value added and total hours worked has increased over time.

Private services' share of total gross value added increased from 48 to 55 percent between 1995 and 2012, and total hours worked increased from 42 to 48 per cent. Slow productivity growth in the sector thus has a large effect on the economy as a whole, and even small improvements will have significant effects on total GDP. The increasing share of the sector shows that its importance for the future growth of the economy is significant.

The effects are not only isolated to the private services sectors, low productivity also spill over to other sectors, such as the manufacturing industries and the public sector, in the form of higher cost for firms and higher prices for households. For the case of firms buying the services, it can also affect their competitiveness on the international market, especially if the services only can be purchased domestically.

Figure 2 The importance of private service to the Danish economy is increasing



Source: Statistics Denmark, NATE101, NATE104.

1.3 Regulation as a reason for low productivity growth

According to the Productivity Commission, the weak growth in the private services can mainly be attributed to those subsectors that are targeted towards the domestic market, and where there is a lack of international competition. This suggests that part of the reason why private service sector productivity growth is lagging behind in Denmark may be barriers that inhibit productivity growth.

While there are certainly a multitude of reasons for the low productivity growth, the focus of this report is on regulatory barriers. Such barriers can take the form of e.g. regulated prices, restrictions of marketing, or license requirements, which for example may limit

the number of new entrants to the market, and in the end, lower competition. The transmission of removing barriers to service provision is that competition is intensified, and forces firms to reduce prices and/or increase innovation or quality, which will increase productivity.

In addition, regulation may also have a cost creating effect which is not hindering domestic competition, but which nevertheless reduces productivity because it adds unnecessary costs to businesses.

The purpose of this paper is twofold. First, we identify 16 subsectors grouped in three (Retail, Knowledge Intensive Services and Network Industries) that seem to hold a particular potential for productivity growth resulting from regulatory changes. These three groups are relevant to investigate further due to:

1. they show a significant productivity gap
2. they account for a significant size of the economy
3. the sectors exhibit substantial regulatory barriers which restrict competition
4. the sectors may have considerable spill over effects on other industries

Secondly, we estimate that significant productivity growth potentials are possible in these sectors from regulatory changes designed to reduce barriers to entry, allow for more competition and reduce unnecessary cost burdens for firms.

1.4 Benefits from more openness and competition in the private service sector

Services, which include sectors such as telecommunications, postal services, transportation, and retail trade and business services, generate 68 percent of world GDP but account for just under 20 percent of world trade. Not all services are easily traded, and it is unlikely that services are traded as much as goods. Still, greater movement of service firms across borders in combination with new online and digital technologies have allowed an increasing number of services to be delivered internationally. Over the past decade, international trade in services has grown 8 percent, outpacing world GDP growth of 5 percent.²

As mentioned above, services are crucial inputs in other parts of the economy. The internet and telecommunications play a vital role in diffusing knowledge and digitizing products. Transport services are key for exporters of goods and for facilitating the movement of workers. Business and professional services such as accounting, engineering, consulting and legal services can reduce transaction costs and foster business innovations. Retail and wholesale distribution services link producers and consumers within and across countries.

Even those services which can be traded or established across borders are facing restrictions. The barriers for service trade are at least as high as those on goods trade. In-

² Data from World Bank Development Indicators (1998–2008).

deed, a number of studies using different methodologies, such as Dee (2005), Bradford (2005), and Dihel and Shepard (2007), have shown up to an order of magnitude of difference between barriers to services trade and barriers to goods trade, and consequently much larger benefits from services trade liberalization than from goods trade liberalisation. Better market access for services has also been a key objective for the European Commission, when negotiating free trade agreements, for example in the recently concluded agreement with South Korea.³

Restrictions on services trade and competition differ across service sectors. For example, a recent survey by the World Bank (Gootiiz and Mattoo 2009) of the extent of discriminatory policies restricting entry by foreign firms in 30 developing countries found significant heterogeneity across individual service sectors. Still, the consensus among economists is that the tariff equivalents of prevailing restrictions on services trade are a multiple of those that restrict merchandise trade.

Removing restrictions on services trade is expected to generate larger gains than removing those on goods trade. While estimates vary across the different studies, economic studies of the gains from trade liberalisation generally find a substantially larger impact from service liberalisation compared to goods trade liberalisation.⁴

Studies on the impact on the United States from global services liberalisation show an effect of between 1.68 and 4.3 percent of GDP, compared to an estimated gain of 0.03 to 0.1 percent of GDP from remaining goods liberalisation.⁵

The larger gains from services liberalization reflect greater restrictions on trade in services than in goods, as well as the larger role played by services in most economies.

By further liberalising cross-border provision of services and the free establishment within the EU, the Services Directive has become the largest recent reform effort in an area relatively protected and sheltered from international competition. The Directive was adopted in 2006 and its implementation deadline was December 2009. Although the majority of Member States have transposed the Directive, its full transposition is not yet completed. The estimated economic impact of the actual implementation of the Services Directive across Member States economic significance is still considerable.

The Copenhagen Economics (2005a) study suggested an economy-wide increase in GDP of 0.6% from implementing the proposed directive. The study included the country of origin principle (CoOP).

In a more recent study, the conservative estimate by the European Commission showed an EU-level impact on GDP of 0.8%, with the impact varying considerably across Member States (ranging from below 0.3% to more than 1.5%) and mainly determined by the com-

³ See Copenhagen Economics (2006) and CEPII (2011).

⁴ See USITC (2010), "Services Liberalization and Computable General equilibrium Modeling: Beyond Tariff equivalents".

⁵ See Brown, Deardorff, and Stern (2003), Robinson, Wang, and Martin (2002), and Anderson, Martin, and van der Mensbrugghe (2006).

bination of the undertaken barrier reduction and the share of the covered sectors in their economies. Although the results materialize over time, close to 80% of the gains are reaped within the first 5 years following the policy shock (barrier reduction from implementation).

Under an ambitious scenario where Member States move to the level of restrictions of the five best countries in the EU per sector, which is de facto close to a full elimination of barriers, the recent DG ECFIN study estimates that the service directive will bring additional gains amounting to 1.6% of GDP, on top of the 0.8% under the current level of implementation.⁶

An important finding of the analysis refers to the importance of the domestic channel of transmission, which turns out to yield very significant productivity results. The GDP and productivity effects reported are a lower bound as they do not incorporate the long-term effects that the estimate increased in trade and FDI would have on economic activity through their impact on productivity.

The estimation of the total impact on labour productivity in the selected sectors affected by the Directive shows that both an indirect impact through the international channel (effect on productivity of trade and FDI) and the direct impact through the domestic channel.

The estimated “central scenario” impact of barrier reductions from the implementation of the Services Directive – i.e. the effect of actually observed barrier reduction – for the whole EU shows a productivity higher by 4.7%, for those sectors which are covered by the analysis for labour productivity, from 2% and below (Malta, Austria) to more than 6% (Slovakia, Luxembourg, Greece, Cyprus). The productivity gains to Denmark are estimated to be around 2.7%.

Blind and Jungmittag (2004) presented a comprehensive study for Germany which looked at the effects of all the four international flows (exports, imports, outwards and inward FDI) in services firms. They focused on the innovation effects, but it can be assumed that more innovation usually leads to higher productivity. The authors showed that both inward FDI and imports had highly significant positive effects on product and process innovations. Vice versa, the export and foreign production activities of domestic firms supported innovations too. They attributed these effects mainly to pressure from foreign competitors and a build-up of firm specific asset needed to overcome entry barriers to foreign markets.

Since services are inputs into production and can both increase the productivity of capital and labour inputs (producing level-growth effects) and affect total factor productivity (producing long-run steady-state growth effects). We should expect increased access to low-cost and high-quality services to foster productivity increases in firms that consume those services, as well as in the broader economy as resources are reallocated toward

⁶ See DG ECFIN (2012).

more efficient sectors (or sectors that improve their efficiency as a result of trade liberalization in services).

Endogenous growth models developed by Romer (1986) and Lucas (1988) show that international trade can spur a “level effect” on economic growth that can create positive growth effects over a transitory period of time. These models encouraged a host of empirical studies on the impact of international trade on economic growth, documenting positive productivity effects of technology diffused through international trade in goods. In the services context, Hoekman and Javorcik (2006) assert that technology diffused through factor flows, such as increased services trade and competition, should affect TFP growth as well.

Another channel is via knowledge spillovers from foreign direct investment (FDI). Foreign establishment via FDI is key mode of entry into foreign markets and often needed to deliver services to consumers abroad, particularly in services that require face-to-face interaction.

Increased international competition is yet another channel that may produce productivity gains to a small economy. Competitive pressures can reduce prices and/or raise the quality of services, resulting in the so-called pro-competitive effects of trade.

Other effects may also provide opportunities for increased productivity. Deardorff (2001) examines “network effects”—i.e., the effects of improved efficiency on other sectors of the economy. Transport, communications, and distribution are key services sectors and tightly linked to trade costs. For example, it is shown that one day of delay in shipping time has been equated with an 0.8 percent ad valorem tariff (Hummels 2001).

Kox and Nordas (2007) assess the costs and benefits of regulations in the context of international trade in services. In general, aggregate regulatory indices are negatively correlated with service imports, but a number of other interesting findings emerge. They show that regulatory measures can affect either the fixed costs of entering a market or the variable costs of servicing that market or both. The authors also show that trade liberalisation and reform can affect the size of the average firm depending on how such changes affect fixed and variable costs. Higher barriers to entry and restrictive regulations tend to deter small and medium size enterprises (SMEs) firms from engaging in international trade in services, while regulations that promote harmonization, integration and mutual recognition among markets can promote SMEs involvement in trade.

The empirical evidence surveyed here suggests that reducing the barriers to international trade in services and allow better entry for international service firms can foster productivity gains, but also that services barriers differ in several ways and are difficult to reduce in practice.

Chapter 2

Focusing on sectors with regulatory barriers to productivity growth

In this chapter we review the Danish subsectors of private service with respect to four criteria in order to focus the analysis of those subsectors where regulation is likely to have the most adverse effect on productivity growth. The four criteria are: the productivity gap with peer countries in the subsector, the size of the subsector, the prevalence of regulatory barriers and the spill-over from the subsector to other sectors of the economy.

Before going through each the four criteria, we briefly explain how regulatory barriers can affect productivity growth and we discuss the four criteria for subsector focus in more detail.

2.1 Regulatory barriers may affect productivity growth

The economic impact of regulatory barriers can be divided into three main types: cost-creating, rent-creating and discriminatory.

The first effect, *cost-creating*, hampers productivity, because costs are higher compared to the same industry in other countries that do not have this type of regulation. This directly affects the productivity of the firms, but not necessarily competition. If the costs are the same for all firms in the market, competition may not be affected at all, since all domestic firms compete on equal terms. For example, it may require extra labour to overcome a given barrier. Removal of this type of barrier improves productivity in the sense that more output can be produced with the same amount of inputs.

The second effect, *rent-creating*, affects the mark-up of the firms in relation to their cost. If the market is not competitive, firms can set a higher mark-up and extract an extra margin, i.e. rent. Limited entry to a market is a typical example of a rent-creating regulatory barrier. In Denmark the zoning law, which restricts the access to good locations for retailers, is an example of a regulatory barrier that creates rent for incumbent stores.

The third effect, *discriminatory*, provides domestic market actors with an advantage compared to foreign entrants. This may be because foreign firms face outright discriminatory requirements, but also in a milder form, simply because the rules and regulations in foreign countries are different from the rules and regulations in their home country. Regulatory disparities and non-legal barriers necessarily give rise to additional costs even in the case when domestic and foreign firms – legally – are on equal terms. Furthermore, regulatory disparities between countries create barriers to foreign or cross-border operations.

While a certain regulation can be categorised as being one of these economic types, they need not necessarily be mutually exclusive. For example location restrictions in the zon-

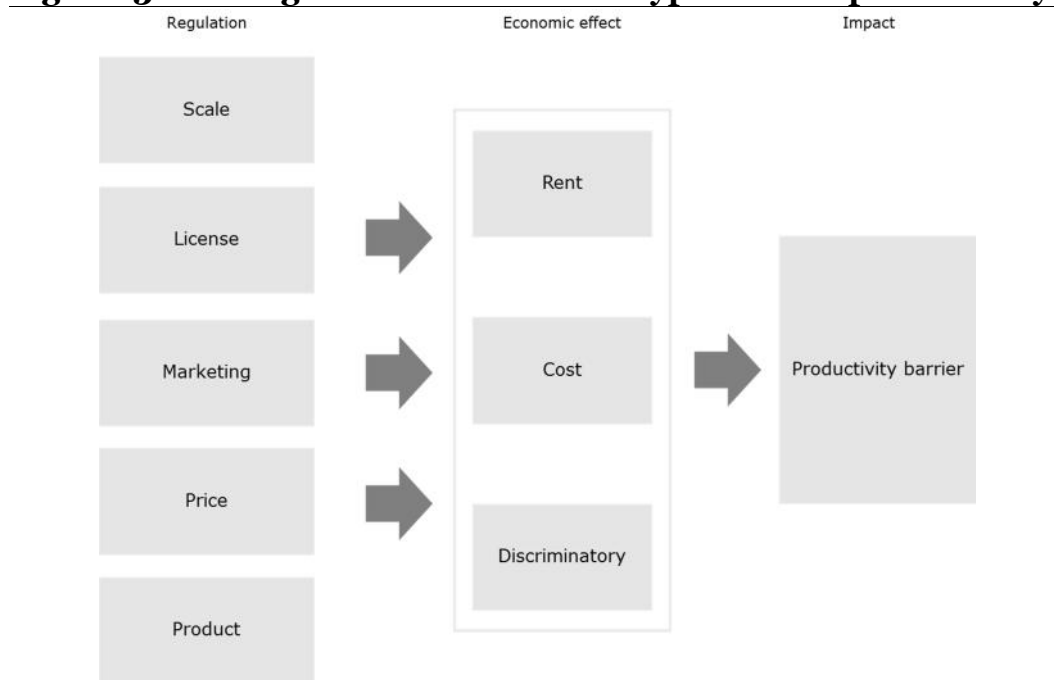
ing law may be rent creating by restricting access to good locations, as well as cost creating by only allowing entry to locations or store formats which may be suboptimal from a cost perspective.

The prevalence of fixed-cost, or entry, barriers are one way in which services barriers differ from goods barriers. In his typology of barriers, Hoekman (2006) organizes regulatory policy according to those with fixed versus variable-cost effects. Entry costs set up by regulatory policies, such as obtaining licenses or setting up legal entities to operate in the country, comprise a hurdle with implications different from a variable cost barrier. Fixed costs imply firms may need to reach a certain size before market entry becomes profitable, or that the market within a country needs to be large enough to cover the fixed costs.

We will categorize different regulations into five types:

- Scale (Restrictions that limits the size of operations)
- License (Restrictions that demand a license to operate)
- Marketing (Restrictions on marketing goods or services)
- Price (Restrictions on prices or regulated prices)
- Product (Restrictions on product quality or standards)

Figure 3 How regulations of different types affects productivity



Source: Copenhagen Economics

2.2 The four criteria applied for subsector selection

The main purpose of this report is to identify those sectors holding a particular potential for productivity growth resulting from regulatory changes. There are four main factors governing the total impact of reduced barriers on the economy.



The first criteria concerns the magnitude of *the productivity gap* as compared with other countries. Services that experience fast growth in foreign countries is an indicator of possibilities to achieve high growth. There may be several reasons for a Danish service sector to be lagging behind. The explanations may be founded in domestic reasons for either Denmark and/or for the country with which the comparison is made. Regardless why the sector is showing poor productivity growth, a large productivity gap indicates a possibility for improvements.

The second criteria is *the size of the subsector* and this criteria encompasses the fact that larger sectors are more important to the economy as a whole simply due to their size. Reduced barriers that stimulate growth for sectors that account for a significant size of the economy will have more extensive positive effects.

The third criteria has to do with *the prevalence regulatory barriers*. More barrier, or more extensive barriers, indicates that there is a potential for higher competition and productivity growth, if they are removed.

The fourth criteria concerns *the spillover effects*, which imply that reduced barriers, that impede productivity growth in the private services, will have a positive effect in other parts of the economy, by freeing up resources that can be used in other sectors and by delivering lower prices and better services to other industries. Even though the initial gain will originate in the re-regulated service, these benefits will pass through the economy, and result in lower cost for firms and lower prices for end consumers.

2.3 The productivity gap

Productivity is a measure of the level of output that can be achieved with a given amount of resources. There are several ways of defining what should count as resources used in production, like capital and labour. A good valuation of the resources spent includes all types of inputs, but due to empirical problems and data availability, most often resources are cast in the terms of labour measures, such as hours worked or the number of full time employees. Productivity is then a measure of labour productivity. The problems of using these measures stem from the fact that an increase in capital intensity in production, with a corresponding output increase, also will lead to an increase in this measure of labour productivity, even though the labour productivity may be the same.

Gross value added per hour worked is used as productivity measure

In this paper we measure output as gross value added in real terms, in the economy and in different sectors. We relate gross value added to the number of hours worked, thus measuring *hourly labour productivity*.

The growth in productivity measures how much more that can be produced for each hour worked. The productivity gap shows the differences in the growth rate between different countries for a certain time period.

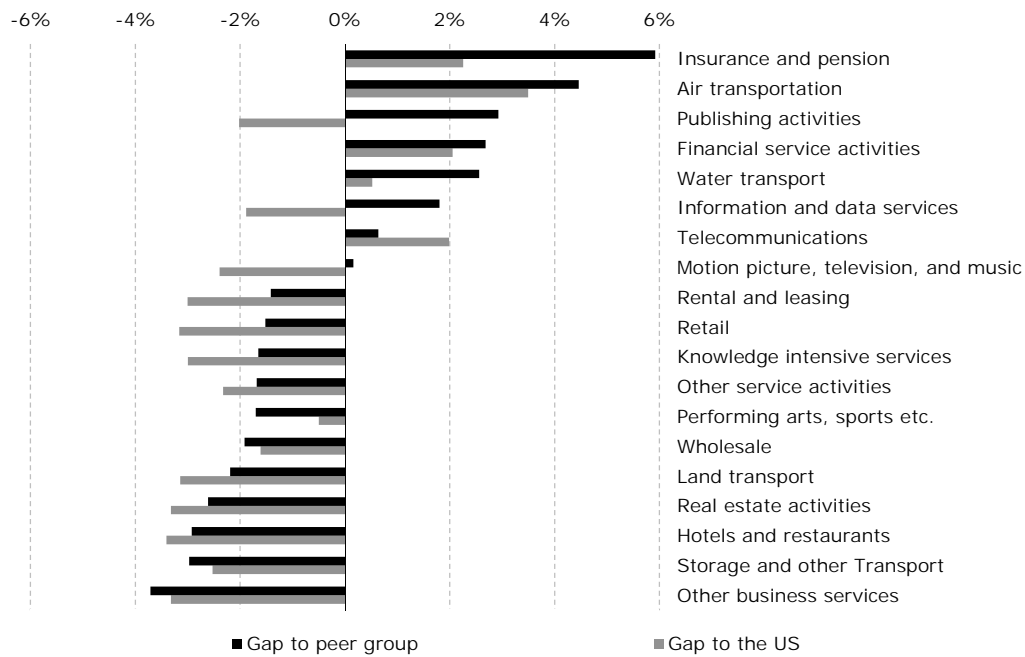
Comparisons with peer countries: Sweden, Germany, the Netherlands and U.S.

The Productivity Commission has requested that the focus of the comparison of the productivity gap should be between Denmark and the group of countries consisting of Germany, The Netherlands, Sweden and the U.S. Germany, the Netherlands and Sweden will also serve as a comparable peer-group. We adopt a long term perspective in this report and calculate how productivity has changed between 1995 and 2010.

Calculating productivity gaps vis-a-vis peer group

We have calculated the productivity gap for 19 private service sectors, based on data from Eurostat and the U.S. Bureau of Economic Analysis, cf. Figure 4. Of the 19 services, 8 sectors had a positive productivity gap compared to the peer-group, i.e. where productivity growth in Denmark was higher than in the peer countries. In the majority of subsector, i.e. the remaining 11, Denmark experienced a negative productivity gap, with lower productivity growth than the peers. Relative to the US, the productivity gaps are larger in most sectors, than compared to the European peer group. This indicates that the U.S. productivity growth not only is faster than in Denmark, but also faster than in the European peer group, for most services.

Figure 4 Productivity gap in the private service sectors, 1995-2010



Note: Real hourly productivity. Gap to the European peer group is based on a simple average of the growth rate for the three countries.

Source: Eurostat, OECD-STAN, Bureau of Economic Analysis (BEA) and the Danish Productivity Commission.

The average productivity gap, for the 11 sectors with negative productivity gaps, amounts to -2.2 percentage points, and the gap for each individual sector ranges from -1.5 percentage point for Rental and Leasing, to -3.7 for *other business services*.

The potential to increase growth, as compared to the European peer group, is the largest for *other business services*, *storage and other transport services* and *hotels and restaurants*.

We will focus on the 11 sectors with negative productivity gaps relative to the peer group for the rest of the paper. A short description of the sectors is given in table 1.

Table 1 Sectors with negative productivity gap to peer group

Short	Eurostat
Other business services	Security and investigation, service and landscape, office administrative and support activities and employment activities
Storage and other transport	Includes postal and courier activities as well as warehousing and support activities for transportation.
Hotels and restaurants	Accommodation and food service activities
Real estate activities	Real estate activities
Land transport	Land transport and transport via pipelines. Includes rail transport, road transport (buses, taxis as well as trucks)
Wholesale	Wholesale trade, except of motor vehicles and motorcycles
Performing arts, sports etc.	Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities; gambling and betting activities, Sports activities and amusement and recreation activities, Activities of membership organisations
Other service activities	Other personal service activities, Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use, Repair of computers and personal and household goods, Travel agency, tour operator reservation service and related activities
Knowledge intensive services	Legal and accounting, head offices, consultants, architects and engineering, science, market research, and other professional, scientific and technical activities; veterinary activities
Retail	Retail trade, except of motor vehicles and motorcycles
Rental and leasing	Rental and leasing activities

Source: Eurostat, the Danish Productivity Commission, Copenhagen Economics

2.4 Size of sectors

The size of a sector can be measured in several ways, for instance by the output, i.e. gross value added, by number of employed in the sector, or by the number of total hours worked. Since the focus in this report is the hourly labour productivity within different sectors, the most relevant measure is numbers of hours worked. Together with gross value added, hours worked, constitute the productivity measure.

In total, the sectors with a negative productivity gap, account for 81 per cent of total hours worked in the private service sectors. This means that a large part of the economy is experiencing significantly lower growth compared with its equivalent in other countries. The effects of this is not only isolated to these sectors, low productivity also spill over to other sectors in the form of higher cost for firms and higher prices for households, buying the services. For the case of firms buying the services, it can affect their competitiveness on the international market, especially if the services can only be purchased on the domestic market.

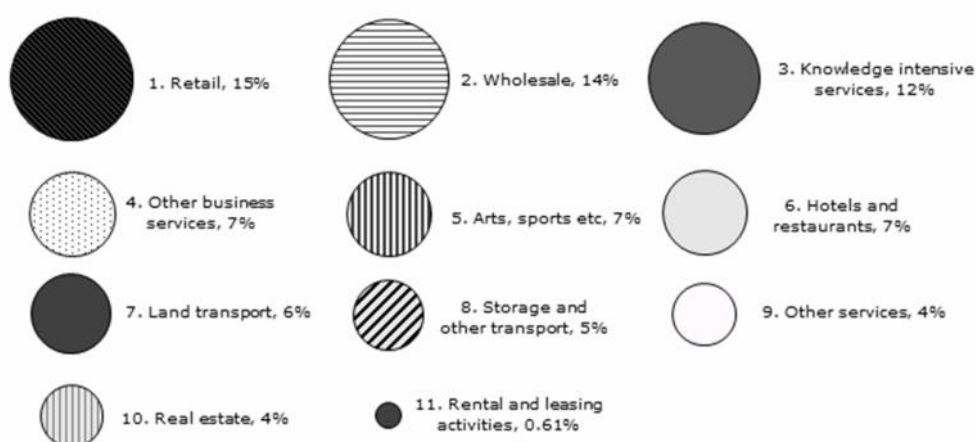
Three of the sectors, Retail, Wholesale, and Knowledge intensive services, account for more than 10 per cent each of total hours worked in the private service sector⁷. Based on

⁷ Expressed in shares of the total hours worked in the economy, a share of 10 per cent in the private service sector corresponds to 4.8 per cent.

the size factor, these sectors have the largest potential to increase growth in the economy as a whole, and even a small improvement in the growth rate, will have relatively large effects on total production.

The smallest of the sectors is Rental and Leasing accounting for 0.61 per cent of total hours worked in private services.

Figure 5 Sector sizes, share of total hours in private services



Source: Eurostat

2.5 Size of regulatory barriers restricting competition

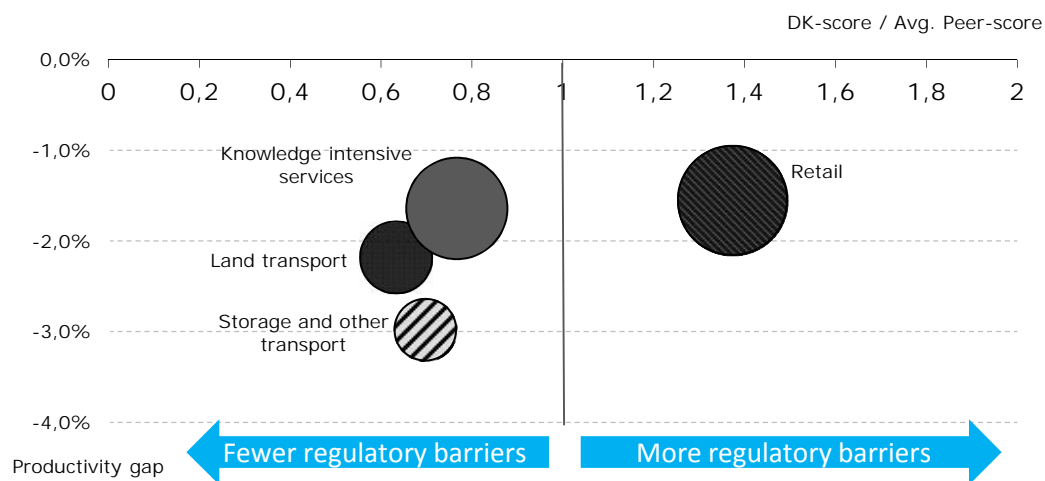
OECD has developed an indicator that measures how competition is restricted by regulations. The index is for non-manufacturing sectors and called Regim pact. The purpose of the index is to measure the spill-over effects. We will return to the Regim pact index in the section covering spill-over effects, and focus on one part of the index which measures the extent of anti-competitive regulation.

All services covered in the data from EUROSTAT do not match the data from the OECD. There are several problems concerning definitions of different sectors and how the indices are calculated. We have been able to match 4 sectors from the OECD data with data from EUROSTAT. From this we have calculated the relative difference in anti-competitive regulation between Denmark and the peer-group.

In Figure 6 three factors are combined, the productivity gap, the sector size and the relative size of anti-competitive regulations between Denmark and the peer-group. Sectors placed further to the right have a relatively higher score on the OECD anti-competitive regulation index, than the peer-group. Sectors located further to the bottom have a larger productivity gap. The size of the sector is correlated to the bubble size.

For the Retail sector the index indicates that the anti-competitive regulations are relatively larger in Denmark than in the peer-group. For the other three sectors the regulation barriers are estimated to be relatively lower.

Figure 6 Anti-competitive regulations for selected sectors, DK vs. peer group, 2007



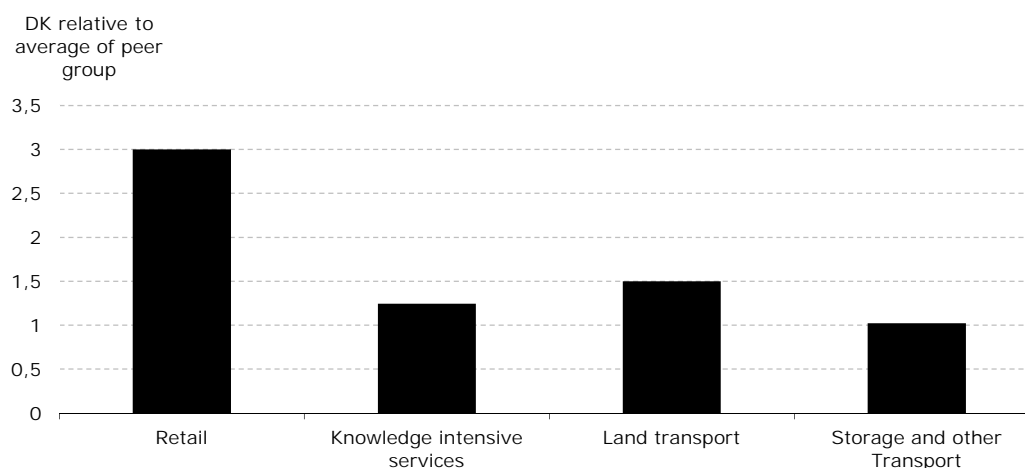
Note: Bubble size corresponds to hours worked in the subsector relative to total hours in private service sectors. Anti-competitive regulation score is calculated relative to peers using sectors for which the index is available. Knowledge intensive services correspond to professional services, Land transport correspond to rail and road transport, Storage and other transport correspond transportation overall. Index is from 2008. Retail has been adjusted to consider the new regulation regarding opening that was enacted in Denmark in the fall 2012. It is assumed that Denmark would receive a score of zero on opening hours if the index was updated.

Source: Copenhagen Economics based on EUROSTAT and OECD

The World Bank has developed an indicator that measures regulatory restrictiveness in services trade, the Services Trade Restrictions Index (STRI). The index covers a limited number of service sectors including Financial services, Telecommunication, Retail distribution, Transportation, Professional services and some subsectors of these. The index maps the policies in each subsector into five broad categories from completely open (a score of 0) to completely closed (a score of 100).

According to the STRI-index all sectors, covered in the data, scores higher in Denmark compared to the peer-group. The Retail sector stands out with a score of 3, which means that the STRI-index for Retail in Denmark is three times as large than for the peer-group.

Figure 7 Services Trade Restrictiveness Index



Note: A score higher than 1 indicates that DK is more restrictive than peer countries. Knowledge intensive services correspond to professional service, Land Transport to Domestic Road Freight, and Storage and other transport to the super category Transportation.

Source: The World Bank Services Trade Restrictions Database

Both the OECD and the World Bank indices point to the Retail sector as having relatively large regulatory barriers compared to the peer group. For Knowledge Intensive Services and Land Transport the indices point in different directions. For Storage and Other Transport the regulation barriers seems to be on par with the peer-group countries.

Study on the impact of the EU service directive

A study of the European Commission’s proposal for the services directive creating an internal market for private services in Europe calculated so-called *tariff equivalents*⁸ resulting from the regulatory barriers to be addressed by the directive.⁹ The study showed that regulatory barriers in private services had significant impacts as both rent-creating and cost-creating. The average tariff equivalent estimates across the EU15-countries ranges from 5-12 percent for knowledge intensive business services (e.g. accountancy) to 0.2-1.5 percent for other business services (e.g. IT services). Mid-size impacts were found for retail and wholesale trade with tariff equivalents ranging from 1 to 3 percent. The study also pointed out that a large share of these impediments could be reduced by the proposed directive. The study foresaw a potential of a 0.6 percent increase in the EU GDP as a result of the directive.

Review of the implementation of the EU service directive in Denmark

A more recent study of the impacts of the actual implementation of the EC service directive makes count of the number of identified restrictions in each country across nine subsectors.¹⁰ For Denmark, the study points towards five barriers for real estate business

⁸ I.e. measuring the impact of regulatory barriers in the equivalent amount of ad valorem tariff which would implicitly be applied to reflect the observed amount of cross-border trade or commercial presence.

⁹ See Copenhagen Economics (2005).

¹⁰ See DG ECFIN (2012).

and legal services. Three barriers are identified for large retail, construction, and accountants. Apart from one of the barriers for real estate businesses, the other barriers will remain unchanged by the services directive or will only be partially removed. The study predicts a large impact from the services directive.

A review of the implementation of the Service Directive in individual member states concluded that the implementation of art. 14 of the Services Directive was implemented through the adoption of LOV384/2009 and that the implementation of the Service Directive has to a large extent been successful.¹¹ The review also pointed to the following areas where potential compliance problems might occur.

Article 14 of the Services Directive, Article 10 of LOV384/2009 reproduces the list of prohibited requirements laid down in that provision. Furthermore, the study has not identified any of these prohibited requirements in sector-specific legislation:

- In three Ministerial Orders (BEK414/2009; BEK395/2010 and BEK396/2010) on sailing on certain specific lakes and streams nationality requirements were abolished to implement Article 14.
- LBK1192/2009 contains a requirement on travel agencies to obtain a financial guarantee, which is in close proximity to the scope of Article 14(7).

The Danish legislation has chosen not to transpose **Article 15** of the Services Directive through a horizontal provision. The study has identified several sectors in which national measures falling within the scope of Article 15 of the Services Directive apply:

- In the retail sector restrictions on the size of new shopping facilities have been maintained, cf. LBK937/2009.
- In the tourism sector a quantitative and territorial restriction applies to renting of holiday homes, as foreigners (including EU citizens) have a very limited access to acquire property in Denmark, pursuant to Protocol 32 on the Acquisition of Property in Denmark.
- In the food and beverages sector a restriction on the location of facilities for serving alcoholic beverages has been maintained, cf. LBK135/2010.
- In the real estate sector a requirement on land surveying businesses to take special legal form and a shareholding requirement have been maintained, cf. LOV439/2011.
- A requirement for real estate agencies to take a special legal form has been however abolished, cf. LOV364/2009.
- In the construction/crafts sector rules prescribing maximum tariffs on building inspections; services provided by authorised energy consultants carrying out energy labelling of buildings and services provided by boiler and heating system consultants have been maintained, cf. BEK432/2011 and BEK60/2011.
- Among the regulated professions only the legal profession is subject to national regulation falling within the scope of Article 15 of the Services Directive. A requirement for law firms to take a special legal form as well as a shareholding requirement for law firms has been maintained, cf. LBK1237/2010.

¹¹ See Milieu (2011), *National Report for Denmark*, June 2011.

Finally, as regards **Article 16**:

- LOV384/2009 contains horizontal measures mainly focused on the transposition of Article 16(1) of the Services Directive. The Act does however not list all the prohibited requirements mentioned in Article 16(2) of the Services Directive.
- Second, BEK575/2011, which transposes Directive 2005/36/EC, prescribes general rules on recognition of education and occupational experience obtained in another EU or EEA Member State

As regards Article 16(2) of the Services Directive the majority of the national Danish measures within the scope of this provision concern variations of authorisation, accreditation and registration requirements. Such requirements have been maintained regarding:

- Sale of pyrotechnic articles (BEK1424/2009);
- Sale of food products (retail as well as restaurants) (LOV486/2004 and BEK 628/2009)
- Renting out areas for the purpose of camping (BEK844/2010)
- Renting of holiday homes (LBK785/2010)
- Travel agencies (LBK1192/2009)
- Serving of alcoholic beverages (LBK135/2010)
- Land surveyors (LBK439/2011)
- Real estate agents (LBK1717/2010 and BEK213/2010)
- Driving instructors (BEK1563/2007)
- Provision of education in food hygiene (BEK123/2008)
- Provision of courses for taxi drivers (BEK220/2000)
- Provision of special courses for drivers within the scope of Directive 2003/59/EC (BEK337/2008)
- Provision of courses for bus drivers (BEK1488/2007)
- Provision of courses for truck drivers (BEK1489/2007)
- Provision of education in maritime professions (incl. commercial divers) (LBK207/2011)
- Chimney sweepers (BEK239/1993 and BEK1308/2007)
- Service providers carrying out work on gas installations, installations connected to water and discharge pipes and work on sewerage and draining pipes (LBK988/200)
- Electrical engineers (LBK989/2003)
- Inspections of ventilation and climate installations in buildings (BEK1104/2007)
- Electrical contractors from other EU and EEA Member States (BEK1200/2007)
- Building inspectors under the Danish Building Inspection Scheme (BEK1667/2010)
- Service providers carrying out energy labelling of buildings (BEK61/2011)
- Service providers carrying out inspections of boilers and heating installations in buildings (BEK62/2011)
- Businesses (cross-sector) carrying out polluting activities (BEK1640/2006) and businesses (cross-sector) submitting green accounts.

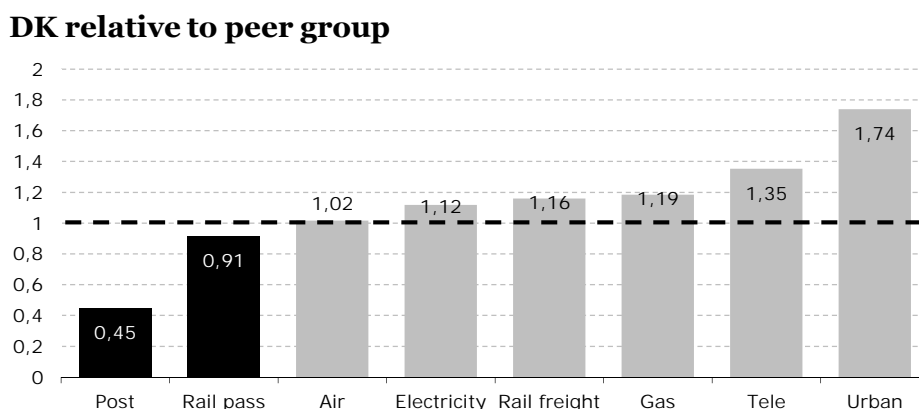
- Regarding legal professions it can be added that pursuant to BEK1429/2007 lawyers established in an EU or EEA Member State other than Denmark have a general right to provide legal services in Denmark.
- Pursuant to LOV123/2007 accountants who have registered at the Danish Commerce and Companies Agency may provide the service of performing audits in Denmark.

Finally, restrictions on use of vouchers and lotteries for marketing purposes have been abolished for service providers established in EU and EEA Member States other than Denmark, cf. LBK839/2009.

Study on network industries

Another study analysed the impact of market opening in so-called network industries such as rail transport, electricity and postal services.¹² The study used an index measuring the degree of market opening in 15 (old) EU member states. Comparing with peer group of Sweden, Germany and the Netherlands shows that the degree of market opening by the early 2000's was as progressed in Denmark as in the peer group, if not more open in Denmark. However, two labour intensive network sectors came out as having had less market opening at the time, namely postal services and rail transport services. The study estimated a positive contribution from market opening to productivity based on firm-level data. This certainly contributes to explaining part of the poor historic productivity performance in some of the network sectors, and it points towards a potential impact from further market opening in some of the network sectors, but not all of them.¹³

Figure 8 Market opening in Danish network industries



Note: The diagram shows the market opening index for Denmark relative to the average of the market opening in the three other countries in the peer group (Sweden, Germany and Netherlands). A value above unity indicates that Denmark had more market opening than the peers. Data are reflecting the 2003 situation. See report on network industries for more data and updated data for Denmark.

Source: CE analysis based on Copenhagen Economics (2005b).

¹² Seven network industries were analysed in total, see Copenhagen Economics (2005a).

¹³ See the report on network sectors from further details.

In sum, the available information on the prevalence of regulatory barriers and their impact on productivity growth points towards subsectors such as the retail sector, the knowledge intensive business services (also called regulated professional services), and the network sectors. However, the review also points to regulatory challenges in other subsectors, but these are generally smaller in size and/or have a less significant productivity gap.

2.6 Spillover effects

The spillover effects of increased productivity in one service sector, transmits through to the rest of the economy through lower prices or higher quality of the services delivered. For firms purchasing the services, for their own production, lower prices will in the end mean that their own cost of production is reduced. This is particularly important for industries operating on the international market with high competition. Exporting firms depending on services with low productivity performance will suffer a loss in competitiveness. Reducing barriers, that impede productivity growth, will therefore have a positive effect in other parts of the economy, by freeing up resources that can be used in other sectors. Exactly which industries that will reap the benefit, by for example increased output, is not clear, but the long equilibrium effect is a higher output as a whole.

These spillover effects are likely to have become particularly more important over recent years, given the increased role of the service sector as a supplier of intermediate inputs. For example, almost 80 per cent of the output of the business services sector was used as an intermediate input in the production processes of other sectors in the economy in the late 1990s.¹⁴

The OECDs *Regimpact index* is a measure of the spill-over effects on other parts of the economy. The index consists of two parts; the first covers the extent of anti-competitive regulations in the selected non-manufacturing sector, and is called *NMR* (Non-Manufacturing Regulation). This is based on the OECD Regulatory Indicators Questionnaire and is equal to the OECD product market regulation index. The second covers the importance of the sector as supplier of intermediary inputs and is based on the gross input and output of the sector. This part measures the sectors interaction with the rest of the economy.

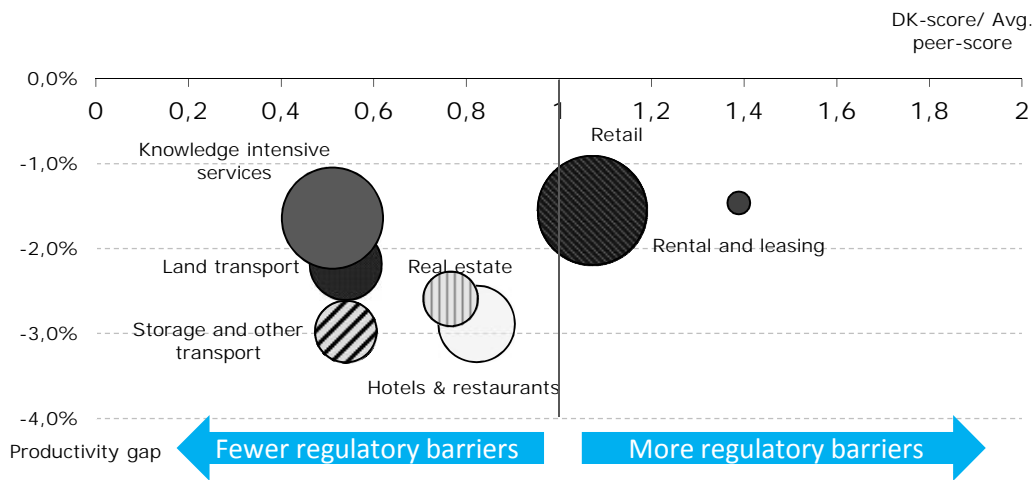
In Figure 9 the spill over effect is combined with the productivity gap, and the sector size. For sectors placed further to the right the regulatory spill-over effect is higher than in the peer-group. Sectors located further to the bottom have a larger productivity gap. The size of the sector is correlated to the bubble size.

For two sectors the impact of regulatory barriers are larger in Denmark than in the peer-group, Rental and leasing, and Retail. At the same time Retail is among the largest sector and account for more than 14 per cent of hours worked in the private services. Together with a relatively large productivity gap this suggests there is a substantial potential for

¹⁴ Product market regulation in the non-manufacturing sectors of the OECD countries: Measurements and highlights. 2006

improving both competition and productivity in the economy if the regulatory barriers in the Retail sector is reduced.

Figure 9 Productivity gap and regulatory impact, DK vs. peer group



Note: Bubble size corresponds to hours worked in the subsector relative to total hours in private service sectors. Retail has been adjusted to consider the new regulation regarding opening that was enacted in Denmark in the fall 2012. It is assumed that Denmark would receive a score of zero on opening hours if the index was updated. The spill over factor in the index is for retail and wholesale combined due to OECD input-output data availability.

Source: Copenhagen Economics based on EUROSTAT and OECD

The second part of the OECD regimpact index is calculated based on harmonized input-output data which exist at the 2-digit (ISIC rev3) level. The consequence is that some sectors that have a NMR index are not considered separately in the input-output data. This is true for retail, which is categorized jointly with wholesale at the 2 digit level. Accordingly the input- index relates to both retail and wholesale. Sales to the rest of the economy from sectors with negative productivity gap are presented in Table 2. Table 2 is based on detailed Danish input-output tables and show that by far the largest share of retail sales goes to final consumption suggesting a relatively low impact on other sectors. But as this is also true in peer countries the problem should not be big when using the index relative to the peer group.

Examining the input-output data for each sector separately Knowledge intensive services has the largest spill over effect on the rest of the economy, wholesale is second, and real estate activities third. When viewed together land transport and storage and other transport, which comprise part of the network sectors, has the second largest spill over effects. Other business services have the fourth largest.

Table 2 Sales from sectors with negative productivity gap

DKK Billion	Own use	Sales to others	Final consumption except export	Export
Knowledge intensive services	5.9	116.8	13.7	20.7
Wholesale	2.5	69.7	50.9	84.0
Real estate activities	0.1	53.2	168.0	0.0
Other business services	0.5	40.8	4.6	2.0
Land transport	7.7	39.2	15.0	11.8
Storage and other transport	0.8	36.4	3.8	10.8
Hotels and restaurants	1.6	17.0	31.9	1.2
Rental and leasing activities	0.2	13.8	1.9	1.2
Performing arts, sports etc.	1.2	13.0	45.6	0.6
Retail	0.1	12.0	79.1	0.1
Other service activities	0.0	6.0	23.1	0.2

Note: Input-output data in current prices from latest available year 2009.

Source: Statistics Denmark, Copenhagen Economics

2.7 Selection of sectors for further analysis

In Table 3 we summarise the four factors investigated in earlier sections. For the factor size of regulatory barriers, we show both the World bank STRI index and the OECD NMR index.

Retail represents a large share of the economy, both in form of hours worked and gross value added. Combined with a relatively large productivity gap, and a high score on the size of the regulatory barriers, the Retail sector is a good candidate for further investigation.

The Knowledge Intensive Services is the third largest service, and scores high on the World Bank index for high regulatory barriers as compared to the peer-group. Together with a negative gap of -1.6 per cent and large spill overs when measured as sales this sector is also selected for further investigation.

We chose to bundle the sector Land Transport with Storage and other Transport, and call it Network industries. The size of the bundled group then exceeds 10 per cent of total hours worked. This, with a relatively high score on the World Bank index compared to the peer-group makes the industry interesting for a deeper study.

All sectors are further sub grouped into 16 subsectors. These are listed in Table 4.

Table 3 Summary of selection factors

	Productivity gap	Size	Size of regulatory barriers		Spill over	
	Percentage point compared to peer-group	Share of total hours in private services	World Bank STRI (relative to peer-group)	OECD NMR (relative to peer-group)	OECD Regimpact (relative to peer-group)	Sales to rest of the economy, DKK bn (excluding final consumption and exports)
Retail	-1.5%	14.7%	3.0	1.4	1.1	12.0
Wholesale	-2.0%	14.0%				69.7
Knowledge intensive services	-1.6%	12.2%	1.25	0.8	0.5	116.8
Other Business services	-3.7%	7.2%				40.8
Performing arts, sports etc.	-1.7%	7.0%				13.0
Hotels and restaurants	-2.9%	7.0%			0.8	17.0
Land transport	-2.2%	6.2%	1.50	0.6	0.5	39.2
Storage and other Transport	-3.0%	4.8%	1.02	0.7	0.5	36.4
Other service activities	-1.7%	3.9%				6.0
Real estate activities	-2.6%	3.8%			0.8	53.2
Rental and leasing	-1.5%	0.6%			1.4	13.8

Source: Copenhagen Economics

Table 4 Overview of subsectors within the three group of sectors

Retail	Network sectors	Business services
Grocery	Post	Professional services
Department Stores	Telecommunications	Technical services
Clothes, shoes etc.	Air transport	Operational services
Pharmacies	Rail Transportation	
Others and repairs	Urban Transportation	

Source: Copenhagen Economics

2.8 Results from analyses of individual services

This report is accompanied by three reports describing in detail the main barriers and the potential in different subsectors of the economy. Here we summarize the main findings of each of these reports.

Retail

The productivity gap between the Danish retail sector and the peer group was 1.5 percentage points per year on average from 1995 to 2010. We find that this corresponds to a loss

of gross value added of DKK 12.5bn in 2010 compared to a scenario where the Danish retail sector had grown at the same pace as the group of peer countries. When examining the main regulation governing the Danish retail sector we identify the zoning regulation as the regulatory factor contributing most to poor productivity growth in the Danish retail sector. The zoning regulation restricts the maximum size of retail outlets as well as the location of stores.

Within retail, the pharmacy subsector is heavily regulated, and some of the provisions in the laws governing the pharmacy sector may also have an impact on productivity.

Overall we estimate that productivity in the grocery retail subsector would be 13 per cent higher without the zoning regulation. This corresponds to about DKK1.6bn. Depending on the time it takes for the grocery retail sector to adapt all or only parts of the effect could be achieved by 2020.

Network sectors

In the report about network sectors we examine more closely potential barriers to productivity growth of parts of the sectors Land Transport and Storage and other transport. We find the largest potential gains in the subsectors of postal services and in rail transport of passengers. In land transport barriers are also identified in the urban transport sectors of buses, taxis and local trains.

The total effect of reducing the identified barriers is estimated at between DKK 2 billion and DKK 3 billion.

Business Services

The productivity gap to peer countries in the overall business services sector was 2.0 percentage points per year on average from 1995-2010. In the report about business services we especially zoom in on the knowledge based services, which include professional and technical services. The productivity gap for knowledge intensive services alone was 1.7 percentage points per year on average.

We identify a range of restrictions on ownership in some of the knowledge intensive subsectors. For auditing and accounting the impact on productivity is not obvious. For legal services the ownership regulation is stricter in Denmark than in Sweden for instance. We believe that this difference could affect productivity, but whether the impact is important is uncertain.

Chapter 3

Lost ground and the future potential of reduced barriers

Regulation can be designed to minimise barriers to entry, and thereby allow for more competition and reduce unnecessary cost burdens for firms. In this section we estimate the impact on the Danish economy in 2020 of reducing barriers in the key private services sector identified in the previous chapter. To put this into a perspective we also estimate “the lost ground” since 1995, i.e. the historical impact of the slow growth in the private service sectors, by comparing how the development would have been if the growth in the lagging private services had been higher.

3.1 Lost ground since 1995

Since 1995, the productivity growth differences between Denmark and the peer countries have been substantial in several sectors. In some sectors, the growth in Denmark has been higher, in other basically on par, and in other sectors again, Danish productivity growth has been lagging behind. In this section we will do a series of what-if calculations to estimate the impact on gross value added in 2010, if productivity in the Danish service sectors had grown at the same pace:

1. as the average of the peer-group, for lagging sectors
2. as the maximum growth rate in the four countries Denmark, The Netherlands, Germany and Sweden
3. as in the U.S., for lagging sectors

We will also quantify the effect of reducing the regulatory barriers, through regulatory changes, on total gross value added in 2010. It should be observed here that all our calculations in this section are based on the detailed development of individual services. Our results will therefore differ to some of the calculations made by The Productivity Commission, which are based on the private service as a whole.

No negative productivity gaps compared to the peer-group

If the lagging Danish service sectors had followed the historical productivity growth rate of the average of the peer group, then this is the same as assuming that the lagging private services had no negative productivity gaps at all, compared to the peer group. Sectors with a positive gap are assumed to grow at their historical rates.

This stylized calculation shows that the hourly labour productivity in private services in Denmark in 2010, on average across sectors, would be 21 per cent higher. Adjusting for the relative weights of the different sectors implies that the total gross value added would be 30 per cent higher, which corresponds to approximately DKK 200 billion, in 2010. In terms of productivity growth for the economy as a whole, growth would have been 1.0 percentage point higher on an annually basis

Table 5 Growth potential for different scenarios

	Peer group average	Max in peer group	Regulatory changes	U.S.
Billion DKK 2010	202	308	3.5	233
Percent increase in services sector GVA	30%	45%	0.5%	34%

Source: Eurostat, OECD STAN, Copenhagen Economics

No negative productivity gaps compared to the U.S.

As a comparison we also calculate the economic impact if the growth in the lagging Danish service sectors instead had followed the growth in the U.S. The assumptions and the calculations are the same as in the previous scenario, except U.S. growth rates are used.

On average, across sectors, the hourly labour productivity would be 26 per cent higher in 2010 if the lagging service sectors had grown according to their US counterparts. In gross value added terms this amounts to an extra 233 billion DKK in 2010, or that the gross value added in the private services would be 34 per cent higher. In terms of total productivity growth this corresponds to a yearly growth rate of an additional 1.1 percentage points.

Maximum growth in productivity across services in Denmark

The maximum growth rate scenario assumes that each individual service sector grow at the maximum pace for the four countries, Denmark, The Netherlands, Germany and Sweden. This means, for example, that the Danish retail service, with an annual growth rate of 0.5 per cent between 1995 and 2010, instead is assumed to grow at the same pace as in Sweden, which had the highest growth rate of the four countries during the period, 4.0 per cent per year. The average growth rate of productivity in the Danish economy would have been 1.4 percentage points higher

The average effect, across sectors, is an increase in hourly labour productivity with approximately 36 per cent in 2010. In gross value added terms this amounts to approximately 308 billion DKK, or a 45 per cent increase.

The historical economic impact of regulatory barriers

Achieving the productivity growth of the peer group, or the U.S., is not straight forward, but if the barriers were reduced historically, it may have spurred growth. To exemplify the impact on the economy, that a better regulation may have had, we calculate the potential effect of the reduced barriers. We describe the calculations in more detail in Box 1.

We estimate that better regulations would have improved the private service sector productivity level in 2010 with 0.5 per cent. Given the same input of hours this corresponds to an increase in gross value added of DKK 3 billion.

Box 1 How is the economic impact of better regulation calculated?

The calculation of the economic impact of better regulation is based on two key parameters.

Table 6 Potential impact and share of service affected

Sector	Subsector	Potential impact (PI)	Share of service affected (SA)
Retail	Retail	20%	14%
Network sectors	Rail, buses and taxis (part of Land transport)	44%	55%
	Postal services (part of "Storage and other transport")	10%	27%
	Telecommunications	3%	100%
Knowledge intensive services	Knowledge intensive services	N/A	N/A

Source: Copenhagen Economics

The parameter, potential impact (PI), measures the long run effect on hourly labour productivity. This can be seen as how much larger the productivity would have been in 2010 if better regulations had been in place already in 1995.

Not all parts of a sector are encompassed by all regulations in the sector. The different subsectors within Networking, Retail, and Knowledge Intensive Sectors are all affected in different ways and by different regulations. The parameter (SA) measures the share of the sector that can be assumed to be affected by reduced barriers.

We assume that the a better regulation with fewer barriers have been in place since 1995 and that all positive effects from increased productivity within the private services have disseminated through the economy. Based on the economic impact from the individual, on the productivity level, we aggregate the effect for the whole private services sector, thus adjusting for the size of the individual subsectors.

Source: Copenhagen Economics

3.2 The future potential of better regulation

To estimate the future potential from productivity improvements in the private services, with better regulation, we start out by making a projection for the development of the private services until 2020. The base year is set to 2020 and the economic conditions for the calculations are summarized in Table 7.

The Danish Ministry of Finance projects that the gross value added for the Danish economy in 2020 is DKK 1.525 bn.¹⁵ We assume that the private service will increase its share of the total economy, which is in line with the historical development, from 54 per cent to 59 per cent of total gross value added in 2020. The annual growth rate in productivity was

¹⁵ Danish Ministry of Finance (2013), Vækstplan DK 2020, Teknisk Baggrundsrapport.

0.8 per cent per year between 1995 and 2010 for private services; we assume that this is also the case for the period 2010 to 2020.

Table 7 Base scenario for private services 1995-2020

	1995	2010	2020
Gross value added, private services (DKK bn 2005 prices)	505	704	900
Hours worked (millions)	1.549	1.947	2.283
Productivity (GVA/Hour DKK)	326	362	394
Share of gross value added (Private services/Total economy)	47%	54%	59%

Source: Copenhagen Economics based on OECD and Danish Ministry of Finance

An important consideration in this context is whether all positive impacts of the reduced barriers are fully incorporated into the economy by 2020. Possible frictions may arise due to slow implementation of better regulation, time lags for the market actors to react to the new regulations and other market adjustments as the positive benefits pass through the economy. All these factors may contribute to the process taking a longer time, and that all positive effects may not have been reached by 2020. Thus the effect of better regulation may contribute to higher growth rates over a longer horizon and our positive effects of better regulation is expected to accrue after 2020 as well.

In the calculations we have not considered the wider economic benefits that may arise from higher productivity in the private services. The spillover effects, in the form of reduced costs, on other industries purchasing the services may be significant and also affect their international competitiveness. For the households, and end consumers, the higher productivity implies lower prices for the services, which in turn will affect the relative prices they meet on the markets. This will alter their consumption, and affect their demand of other products and services.

We assess that better regulations may improve the productivity growth over a longer time period in private services. Given the same input of worked hours as in the base scenario we estimate that this would correspond to an additional increase in gross value added of DKK 3bn in 2020, cf. Table 8.

Table 8 Better regulation in private services yields 3bn additional GVA in 2020

	Base scenario	Better regulation scenario	Additional GVA in 2020
Gross value added, private services (DKK bn 2005)	900	903	3

Source: Copenhagen Economics based on OECD and Danish Ministry of Finance

Here it is important to keep in mind that higher productivity not necessarily has to be converted into output and gross value added. A higher productivity in 2020 can also be interpreted in the terms that the same output can be produced with fewer resources, or fewer hours worked. In this sense the benefits of higher productivity may also, fully or partly, be reaped in the form of more leisure. Irrespectively, the higher productivity will lead to increased welfare, but how welfare is increased, by increased consumption or more leisure, is an open question.

References

- CEPII (2011), Estimations of Tariff Equivalents for the services Sectors, CEPII working paper nr. 2011-24.
- Conway, P. & Nicoletti, G. (2006), Product market regulation in the non-manufacturing sectors of OECD countries: measurement and highlights, Economics Department Working Papers No. 530, 7 December 2006.
- Copenhagen Economics (2005a), Economic Assessment of the barriers to the Internal Market for Services, January 2005
- Copenhagen Economics (2005b), Market opening in network industries, prepared for DG Internal Market, September 2005.
- DG ECFIN (2012), The economic impact of the Services Directive: A first assessment following implementation. European Economy. Economic Papers. 456. June 2012. Brussels
- Drusilla K. Brown & Alan V. Deardorff & Robert M. Stern, 2003. "The Effects of Multinational Production on Wages and Working Conditions in Developing Countries," NBER Working Papers 9669.
- Finansministeriet (2013), Vækstplan DK – Stærke virksomheder, flere job, februar 2013.
- Finansministeriet (2013), Vækstplan DK 2020 – Teknisk Baggrundsrapport.
- Kym Anderson & Will Martin & Dominique van der Mensbrugge, 2006. "Distortions to World Trade: Impacts on Agricultural Markets and Farm Incomes," Review of Agricultural Economics, Agricultural and Applied Economics Association, vol. 28(2), pages 168-194.

Milieu (2011), National Report Part One, Analysis of the implementation of the freedom to provide services clause laid down in Article 16 of the Services Directive.

Milieu (2011), National Report Part Two, Analysis of national requirements in specific service sectors.

Monteagudo, J., Rutkowski, A. & Lorenzani, D. (2012), The economic impact of the Services Directive: A first assessment following implementation, European Commission, June 2012.

OECD (2006), Product Market Regulation in the non-manufacturing sectors of OECD countries: measurement and highlights, Economics Department Working Papers no. 530, 2006.

Produktivitets kommissionen (2013), Danmarks produktivitet – Hvor er problemerne?, analyse-rapport 1, april 2013.

Sherman Robinson & Zhi Wang & Will Martin, 2002. "Capturing the Implications of Services Trade Liberalization," Economic Systems Research, Taylor and Francis Journals, vol. 14(1), pages 3-33.

USITC (2010), Services Liberalization and Computable General Equilibrium Modeling: Beyond Tariff Equivalents. (2010)