

Arentz, Oliver et al.

**Working Paper**

Services liberalisation in Germany: Overview and the potential of deregulation. A study by the institute for economic policy at the university of Cologne

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Chair: Prof. Achim Wambach, Ph.D

Managing Director: Dr. Steffen J. Roth

## **Services Liberalisation in Germany Overview and the Potential of Deregulation**

**A study by the Institute for Economic Policy at the University of Cologne**

Commissioned by: Department for Business, Innovation and Skills (BIS)

Prepared by: Dr. Oliver Arentz (arentz@wiso.uni-koeln.de)  
Jun.-Prof. Dr. Hans Manner  
Dipl. Volkswirt Leonard Münstermann  
M. Sc. Econ. Clemens Recker (clemens.recker@wiso.uni-koeln.de)  
Dr. Steffen J. Roth

Scientific Leader: Prof. Achim Wambach, Ph. D.

**Otto-Wolff-Discussion Paper 1b/2015**

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# Services Liberalisation in Germany - Overview and potential of Deregulation

*Oliver Arentz, Hans Manner, Leonard Münstermann, Clemens Recker, Steffen J. Roth, Achim Wambach*

## Executive Summary

The structure of the German economy changed drastically over time. The decline of the proportion of gross value added of the manufacturing sector at the expense of the services sector is often cited as an indicator for this structural change. However, this shift is not necessarily an indication of a decreasing importance of the manufacturing sector, but rather it points to a fundamental change of the gross value added process in manufacturing. Within the manufacturing process, business services and product-related services are growing in importance in development, production, marketing and sales as well as in customer relations and maintenance.

With the increasing importance of intermediate inputs of the business services sector the interest in the regulatory framework for the provision of these services and the resulting welfare effect is also increasing. Inappropriate regulation can, inter alia, lead to the waste of resources in the production process and to unexploited innovation potential. Negative effects would especially occur in the downstream domestic production areas, which compete internationally and, therefore, need competitive services. Conversely, the reduction of unnecessary regulation- and trading-barriers can release unused growth potential not just in the services sector, but also in the manufacturing sector.

The OECD has recorded the level of regulation for selected professional services since 1998. The indicators of the OECD confirm that substantial structural reforms have taken place in Germany in the past. Nonetheless, Germany does not have one of the lowest indicator values of EU countries. In addition, other regulation measures like the Service Trade Restrictiveness Indicator also published by the OECD and the level of economic rents suggest further deregulation potential in the professional services sector.

This study offers three principles for the identification of potential deregulation targets. First, we recommend the equalisation of different profession-specific regulations for professions with comparable fields of activity to the currently lowest level of regulation. Second, one can consider the equalisation of state specific regulations within Germany for the same professions to the lowest existing intensity of intervention. Third, 'gold-plating' of existing and future EU demands should be avoided.

The results of the econometric analyses for selected business services carried out as a part of this study confirms the significant impacts on welfare of past structural reforms on the net value added in the downstream manufacturing production as well as in the overall economy. Furthermore, the discovered interrelationships give rise to positive indications for the expected effects of potential future reforms, which should have growth effects particular on the German manufacturing sector.

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## 1 Introduction

More than 7 out of 10 employees in Germany work in the services sector. In particular, the business services sector grew dynamically over recent years. Moreover, industrial products include an increasing proportion of services; the division between industry and services is becoming less clear-cut. This can also be shown in the employment structure of the manufacturing sector, where an increasing amount of employees provide services. Services and industrial products are closely interconnected and dependent on each other. Since the beginning of the 2000s the EU has increasingly focused on the services sector. The directive on services in the internal market and the directive on the recognition of professional qualifications are cornerstones for the development of the internal market in the services sector. Current efforts focus on reducing market barriers and on thereby creating positive welfare effects.

In Germany the debate on services liberalisation is apparently observed rather than actively advanced. Many proposals from Brussels lead to resistance from lobby groups. But there appears to be room for competition-enhancing deregulation as this study shows. Initially we define the term “service” and give an overview over the German market (chapter 2). In chapter 3 we resume the debate regarding the alleged services gap in Germany and scrutinise it by further analysis. Next we give an overview over the status quo of regulations in the services sector (chapter 4) and of current steps for services liberalisation (chapter 5). Afterwards we analyse the economic effects of services liberalisation both on a theoretical as well as on an empirical level (chapter 6). In chapter 7 we outline which politico-economic resistance against further steps for services liberalisation is to be expected. Finally, we summarise the results and show steps for economically reasonable deregulation, which do not seem politically hopeless (chapter 8).

## 2 The German services market – definition and overview

What exactly are services? In the literature the question of how to clearly separate manufacturing and services is intensively discussed. A widespread definition characterises services in contrast to manufacturing as non-material processes. According to this definition, the goal of the services process is to change the condition of a product or a person (Hill, 1977). Following this process thinking, services, in contrast to products, cannot be produced in advance as they are not storable until their sale or usage. Rather the processes of creation and of usage have to take place simultaneously.

Many services additionally require the presence of the consumer and the interaction with the provider. Examples are consumer-related services like being examined by a doctor, riding a taxi or attending a concert. These services are called time- and place-bound services, as their creation is linked to location and time. Due to the personal nature of the work, it is usually assumed that there is only a minor potential for development or increases in productivity (Eickelpasch, 2012). Another consequence of the necessary simultaneous presence of the services provider and the consumer is that the tradability of these services over a greater distance is very limited.

Due to the appearance and the further development of modern communication technologies this simultaneous presence is necessary for fewer and fewer services. Many services become unbound services. Examples are the remote maintenance of equipment or hardware, data teleprocessing or many financial services (Eickelpasch, 2012). In contrast to time- and place-bound services, unbound services just like manufactured products are usually tradable over a greater distance. Moreover, in many cases the creation of a service does not have to take place simultaneously to its usage. Some unbound services like manufactured products can therefore be created in advance. For example, the remote maintenance of equipment or technical planning and calculations for a customer can in parts make use of standard components from a provider's own product portfolio. In the case of unbounded services, increases of productivity similar to the increases in manufacturing are possible. These increases can mainly be evoked by economies of scale. This short overview shows that a clear differentiation of services and manufacturing among themselves is becoming more and more difficult.

For the following analysis of the services sector a functional view seems appropriate: The services and products in the services sector can be classified by considering whether they are meant for final consumption or as an intermediate input for manufacturing or other services (see Figure 1). Services sectors which are predominantly used as intermediate inputs, are called business services. Examples are advertisement and market research, consultancies, external research providers or whole sale. Business services can be separated from services in tourism, leisure, retail or the public sector, which are created predominantly for the final consumption and which are part of consumer-related services.

## Proportional use of domestic services

Year 2010, in per cent

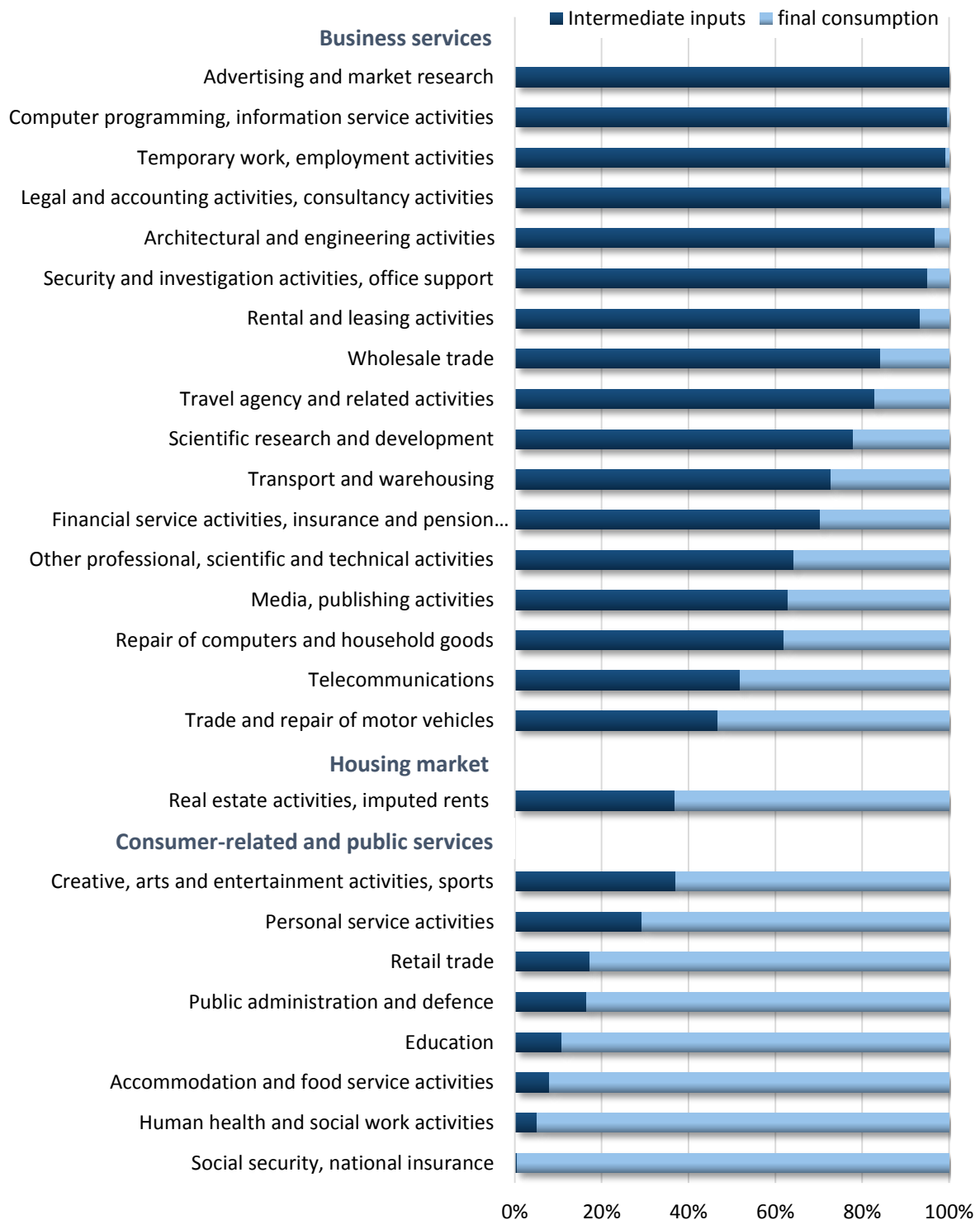


Figure 1: Last usage of domestic services products, intermediate inputs include manufacturing investments, assumption: domestic usage structure for exported services products. Source: input-output calculations of the German Federal Statistical Office, own calculations and illustration.

In the context of structural changes of the economy, services have grown in significance in Germany (see Figure 2). Following the widespread sectoral partition in a primary sector of initial production, a secondary or manufacturing sector and a tertiary or services sector, about 69 per cent of the domestic

gross value is contributed by services. The share of employment is even slightly higher with 74 per cent. The manufacturing sector contributes about 26 per cent of gross domestic value and about 19 per cent of employment. However, many occupations in the manufacturing sector today concentrate on services. Therefore, the overall importance of services cannot fully be comprehended by considering the sectoral economic structure (see chapter 3). The construction sector is statistically counted as part of the manufacturing industry and contributes about 5 % to domestic value and to employment respectively.

**Gross value added by economic sectors in Germany**

Time period year 1970 until 2013, in per cent

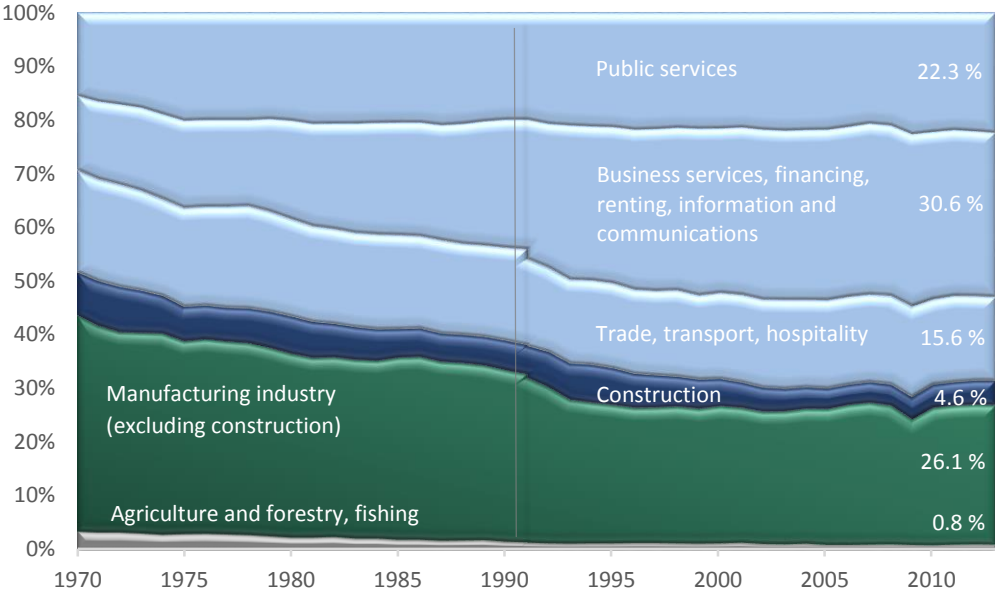


Figure 2: Share of gross value added by economic sectors, before year 1991 former West-Germany. Source: German Federal Statistical Office, own draw based on Eickelpasch (2012).

The increase in importance of the services sector is partly due to the increase of public services e.g. in health care or the social sector. More importantly, the increase in business services contributed to the increase of the services sector. There is an increasing demand for business input factors by other services providers as well as manufacturers accompanying products within their production or the export of products. Since the German reunification in 1991 both the gross value added and the employment in the area of business services grew the most. Business services firstly consist of knowledge-intense services like legal services, consulting, tax and public accounting, architecture, engineering as well as advertising and market research. Secondly also less-knowledge-intense services like security services or rental and leasing activities are counted as business services. Lower increases can be seen in information and communication services or predominantly consumer-related other services. However, the proportion of financial and insurance services as well as retail, hotel and guest industry and transportation within the domestic economic structure have almost not changed (see Figure 3).



## Increase of the gross value added and of employment in the domestic services sectors

Time period 1991 until 2013, in per-cent, gross value added inflation-adjusted for base year 2010

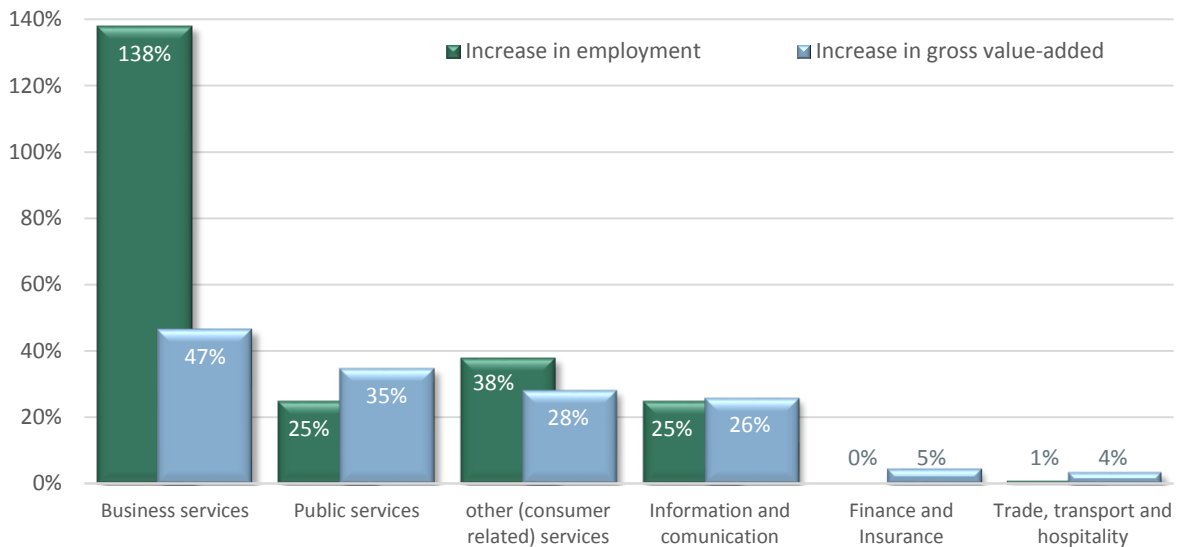


Figure 3: Increase of the inflation-adjusted gross value added and of employment in domestic services sectors since the reunification. Source: German Federal Statistical Office, own illustration.

There are considerable differences regarding the profitability within the area of business services. The profit to revenue ratio is usually used as a figure of the profitability of a company. In the national input-output calculation, the respective sector-specific net operating surplus is reported. The net operating surplus is the operational result after the subtraction of intermediate inputs, write-offs as well as expenditure on the compensation of employees. For independent companies the net operating result is the mixed income before the subtraction of taxes. Whereas the proportions of the gross value<sup>1</sup> of the output value are slightly below 50 per cent both in knowledge-intense as well as in less-knowledge-intense services, considerable differences regarding the net operating surpluses do exist. The sector of knowledge-intense business services made an average net operating surplus of 16 per cent of the production value in 2010 (see Figure 4). Particularly high surpluses were achieved in the areas of marketing and market research, legal services, consulting as well as architecture and engineering. In less-knowledge-intense services the net operating surplus was considerably lower, namely 6 per cent on average. In the domestic industry the net operating surplus was on average 9 per cent in 2010.

<sup>1</sup> The gross value added equals the production value minus the intermediate inputs. After subtracting write-offs you have the net value added. The relevant difference to the net operating surplus is that the compensation for employees is included in the gross value added, whereas the net operating value is the part of the gross value added, which a company has at its disposal for investments, capital service, taxes and withdrawals of profit.

## Gross value added and net operating surplus in the area of business services

Year 2010, in per cent proportional to production value

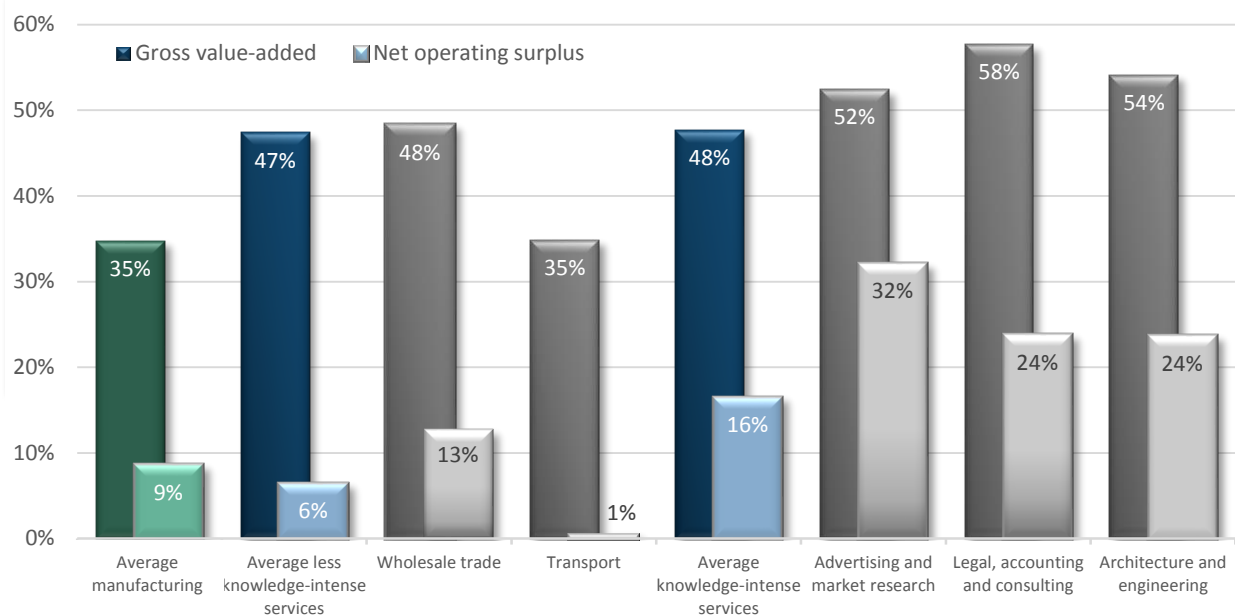


Figure 4: Gross value added and net operating surplus in selected sectors and sectors. Source: input-output calculations of the German Federal Statistical Office, own calculations and illustration.

Less knowledge-intensive services: retail, transportation, warehousing, renting and leasing, hiring-out of workers, traveling agencies and events, economic services (among others security).

Knowledge-intensive services: media and publishing, computer and information services, telecommunication services, financial and insurance services, legal, tax accounting and consultancy services, architecture and engineering, research and development, other liberal professions.

The domestic market is by far the most important market area for services created in Germany. Although the proportion of the services sector of the domestic gross value added is three times larger than the proportion of the manufacturing sector, 85 per cent of all German exports are industrial products. The share of exports in consumer-related services (without public services) like culture and leisure, retail or personal services like hairdressers or laundromats were below 4 per cent in 2010. The main reason is assumed to be the previously mentioned limited tradability of these services, which are linked to the provider. The proportion of exports of business services was slightly higher. On average less than 17 per cent of domestically created less-knowledge-intensive services were exported (see Figure 5). Within the less knowledge-intensive services there are, however, huge differences. While wholesale and transportation show above average export quotas, place-bound services like security were almost exclusively created for the domestic market. The services and products of knowledge-intensive services providers are increasingly part of the unbound services. Although services provider and customer do not have to be present permanently during the creation process, the export ratio of knowledge-intensive services is only 12 per cent. Within the knowledge-intensive services, the areas research and development, information and communication services as well as architecture and engineering show an export ratio above average.

**Export ratio in the sector of business services**

Year 2010, in per cent proportional to the total usage goods in a sector

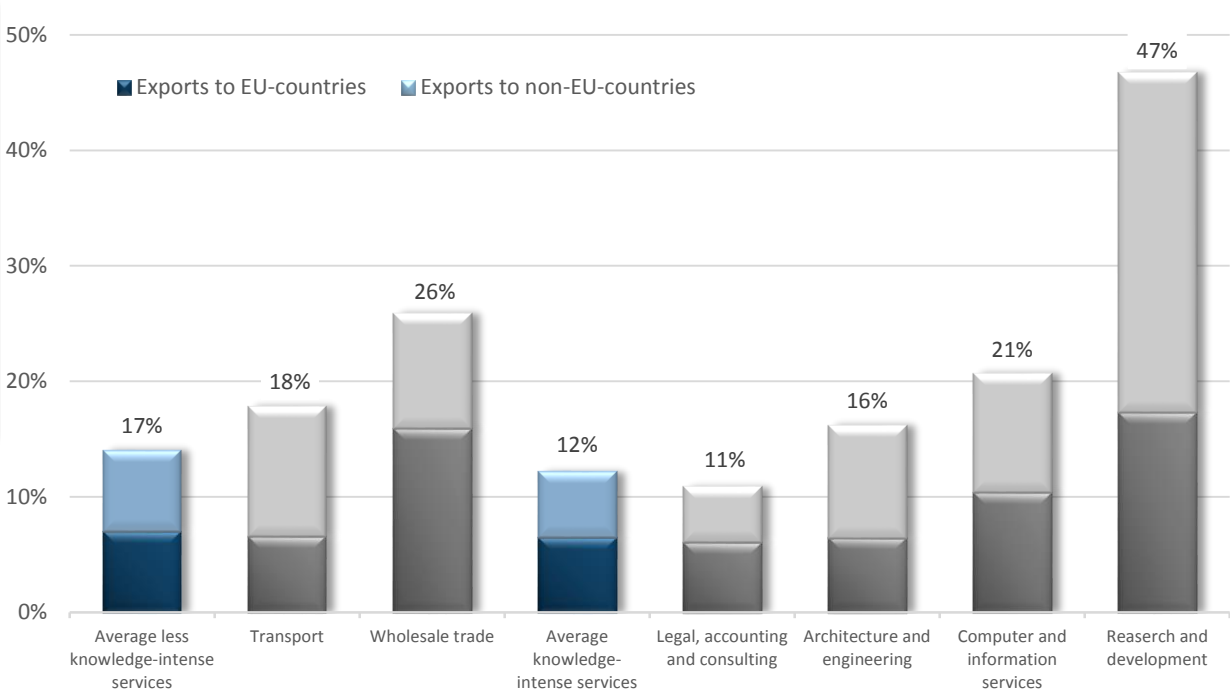


Figure 5: Export ratio of the total usage of goods in selected services sectors. Source: input-output calculations of the German Federal Statistical Office, own calculations and illustration.

The volume of services exported to the rest of the world surmounts the export volume to members of the European Union in many services sectors. Worth mentioning is the comparison with the entirety of all German goods and services exported in 2010. With a proportion of roughly 60 per cent, there were more exports to member states of the European Union than to the rest of the world.

### 3 Services gap - the relationship between the services sector and the manufacturing sector

In the debate about the German economic structure it is regularly remarked that Germany has a so called services gap, which could endanger the international competitiveness of the German economy in the long run. The discussion on the alleged services gap is based on the observation that in international comparison, the manufacturing sector still makes up a high proportion of the German economy. In other European economies like France or the United Kingdom the proportion of the manufacturing sector has decreased significantly in recent years, the manufacturing sector currently only contributes 13 and 16 per cent of their gross value respectively. In Germany the manufacturing sector's proportion of the gross value has remained almost constant during the same time period. With an share of manufacturing of about 24 per cent Germany is well above-average compared to the economies of the European Union or the US (see Figure 6).

#### The manufacturing sectors proportion of the gross value added by international comparison

In per cent, years 2000 and 2010

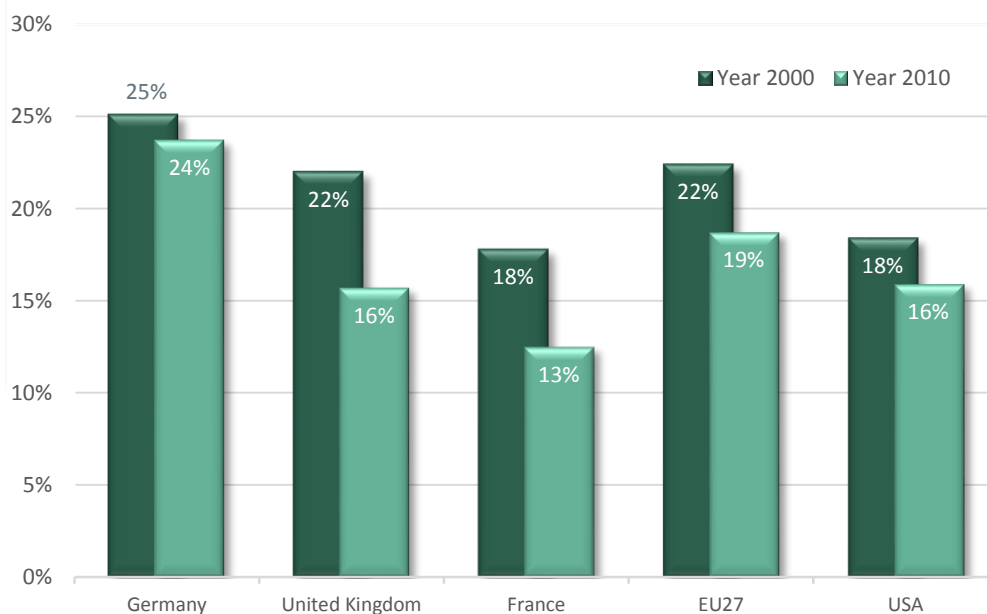


Figure 6: The manufacturing sectors (without the construction sector) proportion of the gross value added over time. Source: OECD, own illustration.

Sometimes the comparatively large share of the manufacturing sector in the German economy is viewed with criticism. An argument commonly brought forward says that a high share of manufacturing of the gross value added identifies a structural weakness of an economy, since a transition to a modern services society apparently failed<sup>2</sup>. This judgement is based on the idea that the average gross value added by manufacturing is lower than in services provision, which is particularly disadvantageous for employment in countries with a high wage level. The reason is primarily that simpler jobs with a low gross value added in manufacturing are affected by automation processes or relocations. Simpler services jobs are usually consumer-related and time-related tasks and are therefore barely affected by

<sup>2</sup> See the description by Schmidt, 2012, whereas the author does not adopt this position.

global relocations. However, simpler services are affected by automation processes and rationalisation processes. Examples are the disappearance of former services jobs like the petrol attendant or the appearance of self-service cash points in super markets.

In the debate about Germany's high share of manufacturing and the alleged services gap the structure of the domestic industry is partially misjudged. Sometimes the notion that the jobs in the manufacturing sector are mostly limited to physical manufacturing and therefore traditional jobs in manufacturing seems to be dominant. Nevertheless, within the manufacturing sector a structural change to servitisation has occurred that is similar to overall structural change of the three sectors of the economy. Within the domestic manufacturing sector employment in fabrication decreased for several years, while employment in product-related services like research and development or customer services are increasing continuously. For an industrial product to succeed in the market it is often not sufficient to solely produce goods. Customers increasingly expect customised solutions to their problems, which means that product-related services play an increasing role in the value of the product (Eickelpasch, 2014; De Baker et al, 2013). This part is in many cases the decisive competitive advantage. Industrial companies are therefore faced with the question whether they want to provide product or sales-related services like development activities, sales, customer services or legal services and strategy advice themselves or whether they want to purchase these services from third-party providers. With the currently used statistical classification, the statistically recorded total size of the services sector and manufacturing sector in a country depends on which alternative industrial companies choose (Döhrn et. al, 2008).

A differentiated view on the services share within the manufacturing sector and therefore on the total economic structure is offered by the employment statistic of the German Federal Labour Market Authority. The statistic discloses the primary field of activity for every employee. In this way service tasks within the manufacturing sector can be well recorded (Eickelpasch, 2014). In 2013 almost 50 per cent of all employees in the manufacturing sector executed service tasks (see Figure 6). The largest share of these service tasks were found in the areas internal research and development as well as management and organisation of a company. The third largest area of internally provided services encompasses tasks in acquisition and sale, in customer services as well as in marketing and product placement. Moreover, in many manufacturing sectors in-house logistics providers are used. In some export-orientated manufacturing sectors the proportion of services employees is well above the average of the overall manufacturing sector. In the domestic pharmaceutical industry 9 out of 10 employees are services employees, in the chemical industry it is 8 out of 10 employees. In particular, these two examples show how misleading the statistical classification between the secondary or manufacturing sector and the tertiary or services sector can be.

## Services sector employees in the German manufacturing sector

Proportion of total employment, year 2013

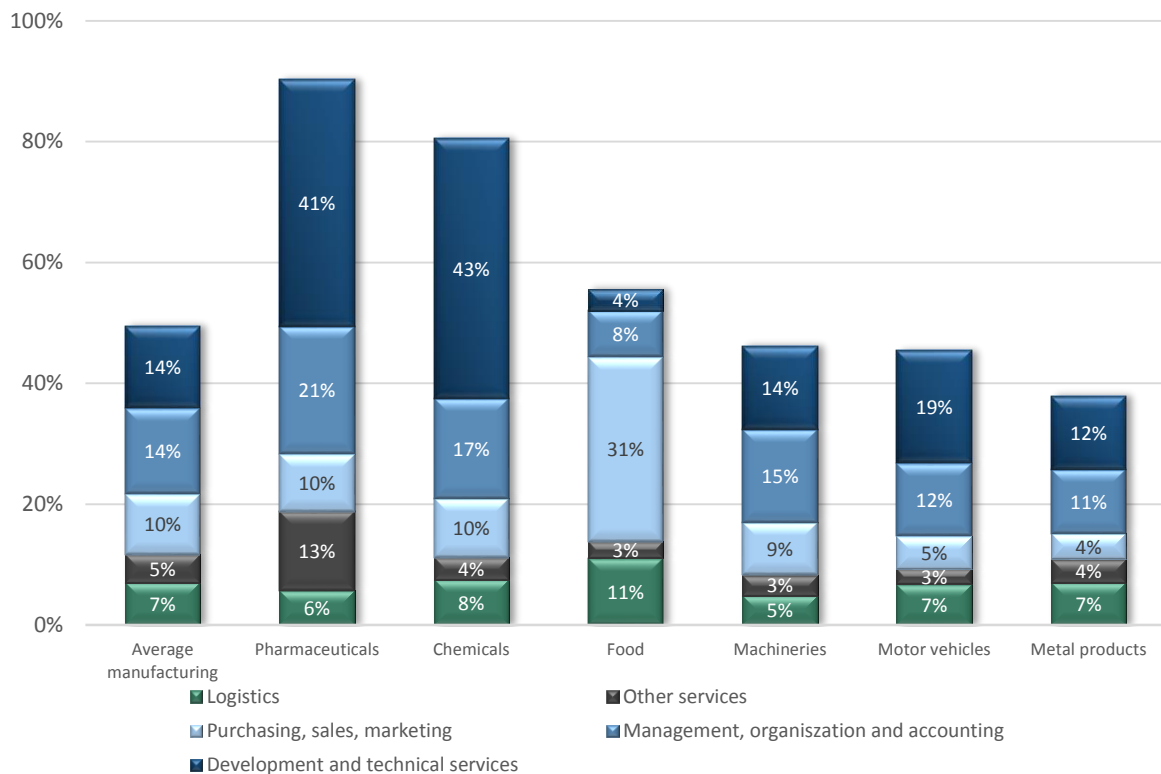


Figure 7: Employees with service task in the domestic manufacturing sector. Source: Employment statistics of the Federal Employment Agency, own calculations based on Eickelpasch, 2014, own illustration.

Döhrn et. al (2008) assume that industrial companies in the Anglo-Saxon area are more likely to use external services suppliers. German industrial companies rather prefer to control more operations themselves by keeping them in-house. These differences can partly be explained by different cultural traditions and corporate philosophies, diverging considerations for costs and efficiency as well as the need to prevent external parties insight into the company. However, the hypothesis that industrial companies are unable to find an adequate supply of intermediate inputs for some of the required services and therefore use in-house solutions is also reasonable.

Despite the comparably large services share of the domestic industry, purchased services as intermediate inputs also continuously increase in importance. In 2010 the industrial sector used intermediate inputs in the amount of 1,385 billion Euros. With 368 billion Euros about a quarter of these intermediate inputs came from the services sector (see Figure 8). Furthermore, a part of the intermediate inputs bought by industrial companies from other industrial companies are also services. With the production of accompanying services many industrial companies gain specific skills which they not only use for internal purposes. Rather many industrial companies directly appear as services providers themselves and offer their specific skills to third parties.

### Intermediate inputs purchased by the manufacturing sector

Year 2010, in billion Euros

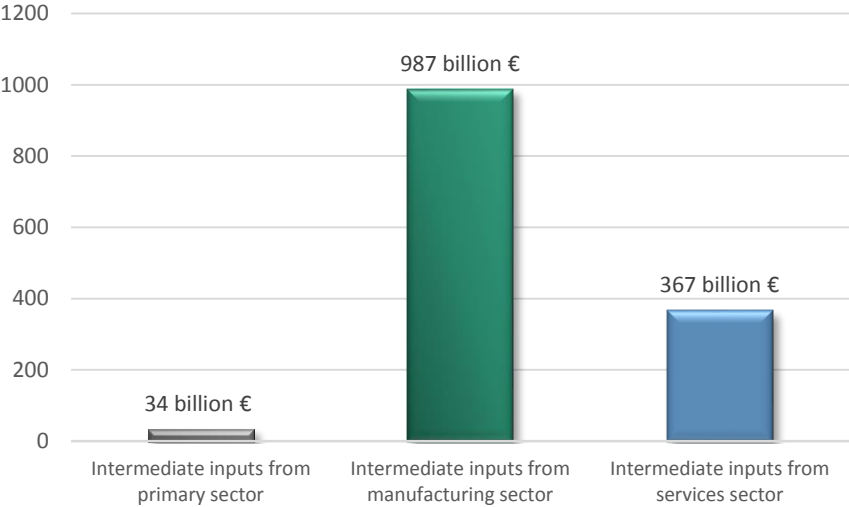


Figure 8: Intermediate inputs for domestic industrial products in 2010. Source: input-output calculations of the German Federal Statistical Office, own illustration.

While the structure of industry-internal input services cannot be measured in detail, the input-output calculations of the German Federal Statistical Office offer a differentiated overview over the intermediate inputs from the services sector. Considering the volume of purchased business services from the services sector, one can see that wholesale has the highest importance for the manufacturing sector. The second most important are legal services, tax and public accounting and consulting before transport and logistics. Architecture and engineering firms, other economic services like security services, rental and leasing, labour recruitment and provision of personnel as well as marketing and market research are also of high importance. The importance of external research and development activities varies significantly between different manufacturing sectors, whereas the industry average is negligible (see Figure 9).

### Business services purchase by the manufacturing sector

Year 2010, in billion Euros

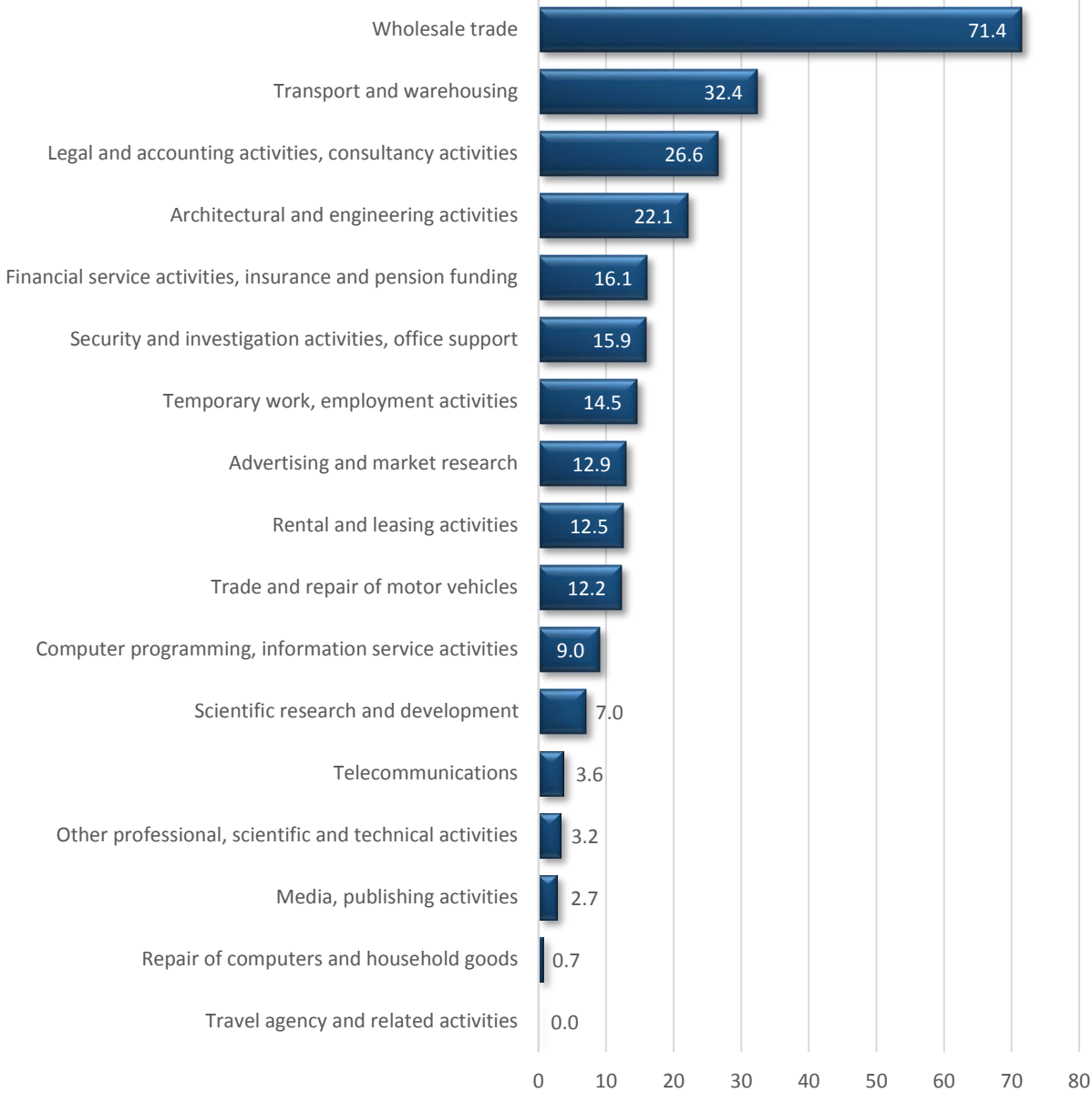


Figure 9: Intermediate inputs provided by business services providers for the domestic manufacturing sector. Source: input-output calculations of the German Federal Statistical Office, own calculations and illustration.

On the basis of the open statistical input-output model of the German Federal Statistical Office and thereby considering the external trade relations, one can understand how many units of a good of a domestic services creation are directly and indirectly needed to provide one unit of an industrial good for final usage (Schmidt, 2012). The intermediate inputs from the services sector are therefore of particular importance for export-orientated manufacturing sectors like the chemical industry, the construction and mechanical engineering sector as well as the automotive industry (see Figure 10). For example, 0.43 units of intermediate inputs from the services sector are needed if the production value increases by one unit on a value basis.



## Value based proportion of intermediate inputs from the services sector for the production of another value unit of domestic manufacturing production

Year 2007, on the basis of the statistical input-output-model of the German Federal Statistical Office

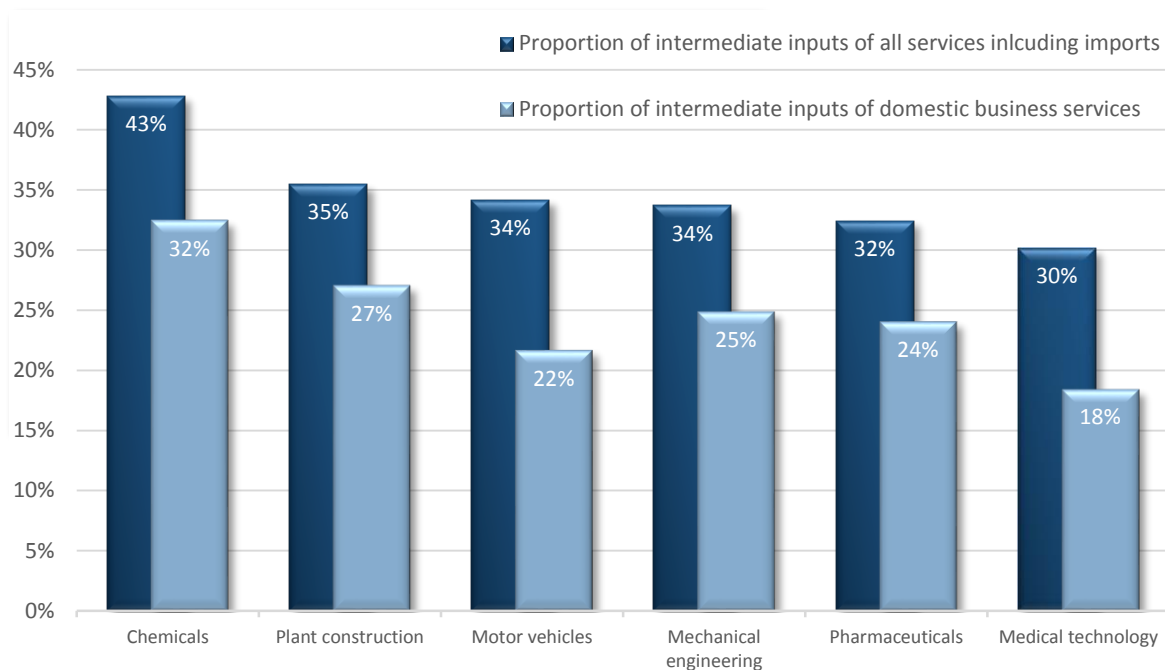


Figure 10: Intermediate inputs from the services sector for the manufacturing production in 2007. Source: Inverse coefficients of the input-output calculations of the German Federal Statistical Office, own illustration based on Schmidt (2012)

On the one hand, as the manufacturing sector is an important recipient of services from the services sector, this demand creates direct growth and employment effects in the services sector. Assuming the services demanded by the manufacturing sector go along with an identical employment share in the services sector, the demand for industrial products caused employment in the amount of 3.8 million employees in the domestic services sector in 2009 (Eickelpasch, 2013).

On the other hand, the effects of the services sector in the manufacturing sector are less direct. The demand for industrial intermediate inputs used for services creation amounted to only 20 per cent of the overall intermediate inputs of 1,084 billion Euros and was, therefore, lower than vice versa, as the services sector receives the major part of its intermediate inputs from other services providers (see Figure 11). Due to the purchasing of industrial intermediate inputs by the services sector direct demand effects, nevertheless, do exist. Furthermore, services intermediate inputs increasingly contribute to the development as well as the production and the distribution process of industrial companies. This suggests that the services sector does not only create demand effects, but also direct effects on the manufacturing sector. Both improvements in quality as well as in cost saving can, for example, positively contribute to the gross value added of the manufacturing sector during the course of deregulation efforts and the reduction of barriers of trade. A discussion of the supply effects of business services on the manufacturing sector can be found in section 6.2.

### Intermediate inputs purchased by the services sector

Year 2010, in billion Euros

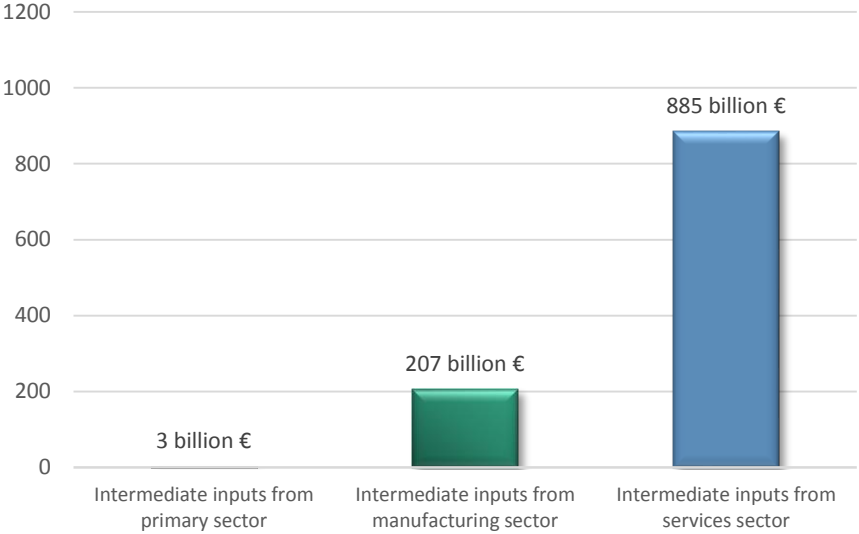


Figure 11: Intermediate inputs for domestic services creation in 2010. Source: input-output calculations of the German Federal Statistical Office, own illustration.

## 4 Empirical survey of the status quo of the regulation in the services sector

The regulatory intensity in the services sector can be derived from the totality of all specific regulatory interventions in the relevant legislation and decrees. An actual evaluation of all relevant sources is almost impossible. Particularly for international comparisons, this procedure would have to be undertaken for all countries. Therefore, empirical research usually resorts to existing regulatory indicators.

The OECD has been measuring the regulations in the non-manufacturing economy on a sectoral basis in 34 OECD and 22 non-OECD countries every five years since 1998 (OECD (2013), Product Market Regulation Database, [www.oecd.org/economy/pmr](http://www.oecd.org/economy/pmr)). Apart from the indicators for network sectors (energy, transportation and communication) and retail the OECD offers an indicator for “professional services”, which covers the professions public and tax accounting, legal, engineering and architecture. The “professional services” are of particular importance as a supplier of intermediate inputs for the manufacturing sector. They are among the five most important professional business services measured by the amount of the intermediate inputs received by the manufacturing sector (see figure 9). Market entry regulations (e.g. requirements for profession-specific educational qualifications, membership in a chamber) and behavioural regulations (e.g. fee scales, bans on advertisement) are registered for every profession. From these sub-indicators overall indexes are derived for every profession and for professional business services overall.

Figure 12 shows the development of the index values for Germany, Italy, France, the Netherlands and the United Kingdom. The scale reaches from no regulation (zero) to maximum regulation (six). Germany improved from 4.28 in 1998 to 2.65 in 2013. Thus it appears that in this time period massive deregulations took place. Italy and France show comparable levels of regulation. The Netherlands and the United Kingdom have OECD values slightly above and below an indicator value of one respectively, which are the lowest values in Europe.

### OECD Indicator on regulation in professional business services

All professions, including accounting, legal, architecture and engineering

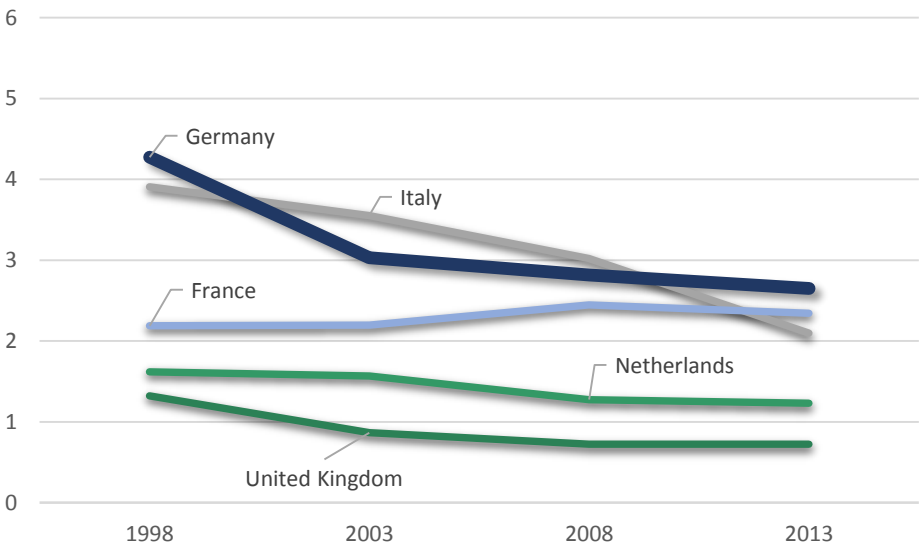


Figure 12: OECD Indicator on regulation in professional business services, Source: OECD indicators of regulation in non-manufacturing sectors (NMR)

A glance at the sub-indicators for the professions public and tax accounting, legal, engineering and architecture show improvements for Germany in all areas in the observation period. The strongest deregulation was measured for public and tax accountants with an improvement of the indicator value from 5.0 to 2.6. This development was mainly driven by easing the behavioural regulations (e.g. in the area of the fee scales). In the area of legal services the indicator decreased by slightly more than one grade point from 4.8 to 3.6. The underlying deregulation regarded both the behavioural regulations and the market entry regulations. The indicator value for architects decreased from 4.0 to 2.8. Particularly the abolition of behavioural regulations like “Interprofessionelle Zusammenarbeit”<sup>3</sup> contributed to this. Despite the low basic level the values for engineers decrease by more than one grade point from 3.3 to 1.7. This is partly due to the abolition of requirements for “Interprofessionelle Zusammenarbeit” and lower qualification requirements.

**OECD Indicator on regulation for accounting, legal, architecture and engineering**

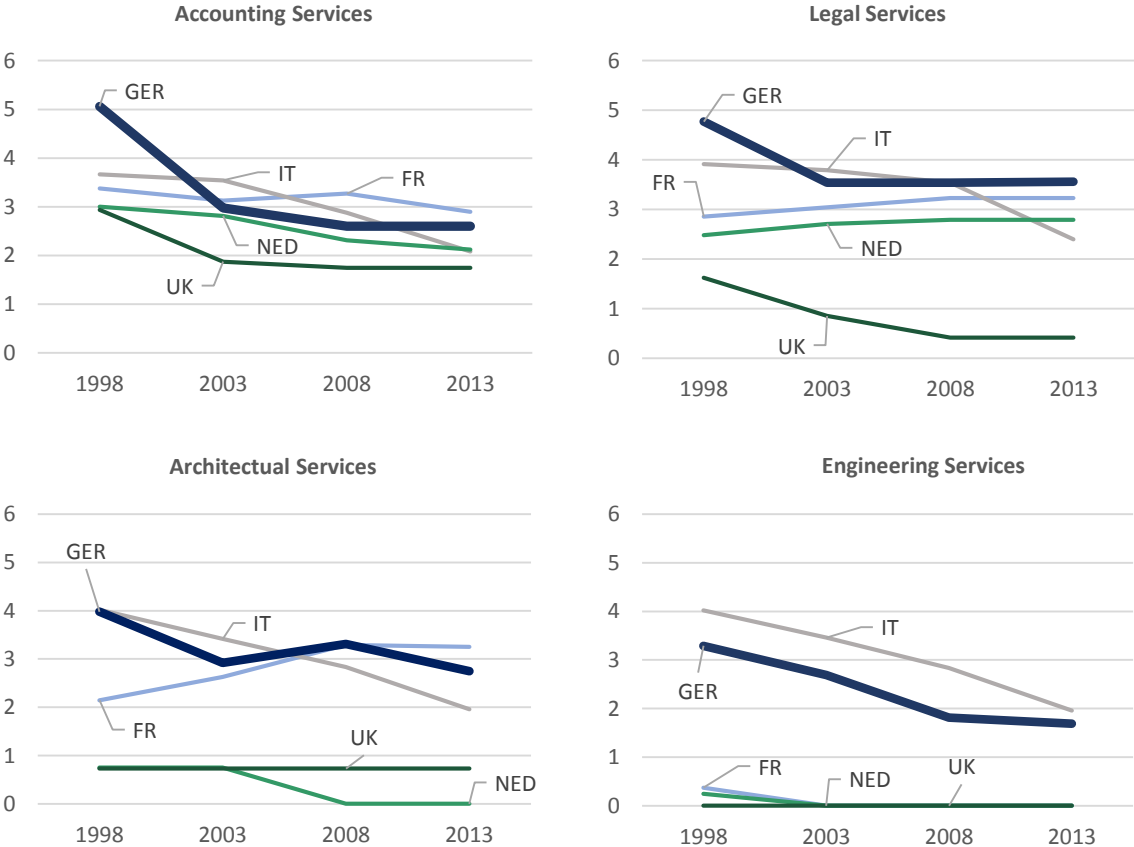


Figure 13: OECD Indicator on regulation in professional business services, Source: OECD indicators of regulation in non-manufacturing sectors (NMR)

The OECD first published the Services Trade Restrictiveness Index (STRI) in 2014, which should particularly show the international trade and investment barriers in the examined sectors. The underlying data refers to the current regulations in 34 OECD countries and six big emerging economies. The STRI values range from zero to one. Zero stands for a totally open and one for a totally closed economy. The STRI and the OECD indicators described above show certain overlaps, but they have different fo-

<sup>3</sup> In Germany, “Interprofessionelle Zusammenarbeit” means the cooperation of people of different professions (e.g. lawyers, accountants and doctors/physicians) within one legal form of organization (“Rechtsform”).

cuses and differ regarding their methodology. Figure 14 shows the values for Germany and other selected EU countries for engineers and architects as well as for lawyers and public and tax accountants (Grosso et al, 2014a und 2014b). The sub-categories are in accordance with the categories, which are used in the international trade agreements.

**OECD Services Trade Restrictiveness Index**

Year 2014



Figure 14: OECD Services Trade Restrictiveness Index, Source: OECD Services Trade Restrictiveness Index Regulatory Database.

As the STRI values only exist for one time point, developments cannot be shown. Nevertheless, it generally confirms the image portrayed by the OECD services regulation index Germany, Italy and France show the highest level of regulation for all professions, whereas Germany tends to have a slightly lower level of regulation than Italy. Lower trade barriers can be found in the Netherlands and the United Kingdom. For all professions and countries the requirements for the movement of people are the largest block in the respective regulatory index. Thereby, it has to be considered that the OECD also captures the freedom of movement regarding non-EU states.

The magnitude of economic rents in a sector of the economy can be used as an indirect indicator for regulation. The economic rent describes profits, which exceed the usual return on the used factors. Theory suggests that these profits go back to a low competitive intensity in the market (Boone, 2005). The level of economic rents can be interpreted as an indirect indicator of anti-competitive regulations. Nevertheless, these indicators should not be used as the only indicator for regulation since economic rents can have other causes like, for example, temporary demand shifts, misuse of market power or higher shares of profit in non-incorporated firms.

The net operating surplus from the input-output calculations of the Federal Statistical Office can be chosen as a rough indicator for economic rents. The net operating surplus (or the net mixed income for companies without legal personality) describes the proportion of the gross value added, which a company has at its disposal, e.g. for capital service, to pay taxes or for investments, after subtracting compensation for employees and write-offs. Between 1995 and 2007 the average net operating surplus in proportion to the production value for the whole economy was 10 per cent. In the same time period it increased from 2 to 8 per cent in the manufacturing sector, whereas it decreased from 18 to 14 per cent in the whole services sector. The average net operating surplus also decreased in the area of business services. Nevertheless, both the basis value of 34 per cent and the final value of 28 per cent were above the other aggregates. These values at least do not contradict the hypothesis that the competitive intensity in the area of business services could also be lower than in the manufacturing sector, due to regulation<sup>4</sup>.

**Net operating surpluses in selected sectors of the economy**

Years 1995 until 2007, in per cent proportional to the production value

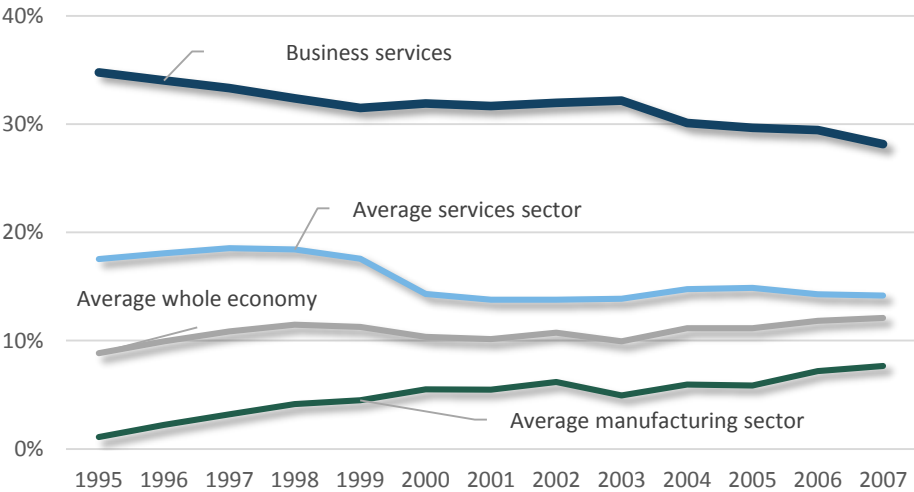


Figure 15: Net operating surpluses in selected sectors of the economy. Source: input-output calculations of the German Federal Statistical Office, own calculations and illustration.

In the context of the services directive there are numerous studies by the EU, which show among other things country-specific information regarding the level of regulation (z. B. Monteguado, 2012; European Parliamentary Research Service, 2014). In addition, the European Commission recommends Germany measures to increase the competition in the area of services (EU COM, 2014).

<sup>4</sup> For further information regarding the net operating surplus, see appendix B.

## 5 Endeavours to deregulate the services market

The European single market is a key element of the European integration process, whose welfare enhancing effect is commonly acknowledged. The specific design of the four fundamental freedoms (free movement of goods, people, services and capital) is being grappled with on a regular basis. Since the early 2000s the European commission increasingly focused on the internal market for services and developed their own strategy for liberalisation. This led to the directive on services in the internal market in 2006. The European commission still sees substantial room for improvement in the services sector. This is supported by a study for the European Parliament, in which the annual costs of the non-implementation of the internal market for services are estimated between 337 and 637 billion Euros (European Parliamentary Research Service, 2014). Although such calculation can only be used as a rough guide, there are strong theoretical arguments for further deregulation efforts (also see chapter 6).

Generally the country of origin principle applies to goods if there are no common European product standards. The country of origin principle implies that goods which were manufactured in accordance with the legal standards of its country of origin can be sold in every EU member state, even if the destination country has higher product requirements. Especially the European Court of Justice has reemphasised the importance of the country of origin principle ever since the *Cassis-de-Dijon* ruling on February 20<sup>th</sup> 1979 (case 120-78). In the initial draft for the directive on services, which was developed by the former Dutch internal market commissioner Frits Bolkestein, the country of origin principle was intended as a constitutive element. This led to massive protests of interest groups in the member states, which in turn led to the fact that the country of origin principle was formally removed from the directive. The resistance against the so called “Bolkestein-directive” was so strong, that some partly make the draft responsible for the failure of the votes on the common European constitution in France and the Netherlands (Crespy, 2010).

Although the country of origin principle for services cannot be politically implemented for now, there are currently efforts on the EU level to deregulate services and to strengthen the internal market for services. These efforts are mainly about finding common minimum quality standards (e.g. in the form of required qualifications for the access to professions), which will be accepted by all member states. This endeavour did not become easier since the last EU enlargement and the increased heterogeneity of the member states.

An important step was the passage of the directive on the recognition of professional qualifications in September 2005, which should among other purposes provide services providers with the necessary legal certainty regarding the recognition of professional qualifications in EU member states. The evaluation process, which shall determine whether the goals of the directive have been achieved or whether rectifications should be implemented, presumably ends in early 2016. The EU commission therefore does a legal scrubbing with the goal to decrease regulations for the access to professions. In a first step all member states were asked to submit all regulations for the access to professions into a central database. However, not all declarations of the member states have been submitted to the commission so far. In a next step the member states should evaluate the existing regulations for the access to professions in a peer-review-process, which should result in a national action plan for every member state. This process will be done in two waves and will presumably last until the end of 2016, whereas first intermediate results are expected in mid-2015.

Moreover, the so called High-Level-Group on business services presented its final report in April 2014. It includes numerous suggestions how the member states can strengthen business services –e.g. by further deepening the internal market for services. The High-Level-Group expects a strengthening of business services to lead to impulses for a reindustrialisation of the EU. The High-Level-Group sees particularly great potential for increases in wealth in the increasing service orientation of the manufacturing sector, meaning the combined supply of manufactured goods and adapted services by an industrial company, and the increasing interconnectedness of technical equipment associated with the keyword industry 4.0.

A public German debate on the possibility and benefits of a continued services liberalisation is currently not existent. The few existent debates on services liberalisation in Germany are predominantly facilitated by initiatives from Brussels e.g. in the context of the European semester. This passive attitude could not be in the best interest of German citizens, employees and companies in the mid- and long-run as the risk exists that deregulation processes and areas will be vastly set in Brussels. As the following analysis will show, it could very well be beneficial to facilitate a decentralised process from the bottom up, particularly by Germany.



## 6 Economic effects of services deregulation

In economic theory the decrease of regulation which limits access to a market or a profession is associated with the expectation of positive growth effects. However, it is important to notice that the theoretical models implicitly rest upon the assumption of a functioning general legal framework. This legal framework guarantees private property, it enables the enforcement of legally valid contracts and it prevents misuse of market power. Only under these conditions can it be theoretically concluded that decisions by market actors made in a system of free competition increase the overall welfare of society. It is assumed that markets perform their allocation function efficiently and the state function perfectly as a regulator.

The economic models are able to show general cause-and-effect relationships. When applying the results to real life cases, one has to consider that both market processes as well as the framework by the state can differ from the theoretical ideal. Market imperfections like asymmetric information or externalities can legitimise state regulation. From an economic perspective, it not only has to be shown convincingly that market imperfections make interventions seem desirable, but also that the intended additional regulation indeed leads to an increase in welfare.

The following analysis will show the theoretical effects of services liberalisation and will support these results with empirical studies where applicable. General effects of services liberalisation can be derived from this analysis. The empirical findings can be used to estimate the significance of the respective effects. Thereby the context of each study also has to be taken into consideration.

### 6.1 Direct effects

Liberalisations in a sector initially directly influence the supply and price structure in that sector. Due to the abolition of market barriers new companies can enter the market more easily. Market entries can occur by companies operating in other markets, foreign companies or start-ups. The threat of potential competition increases the competitive pressure for incumbent companies even before potential competitors enter the market. This (potential) competition leads to the fact that companies systematically evaluate their production process for cost saving opportunities in order to remain competitive.

Apart from process innovations the probability that economies of scale (e.g. through mergers) are implemented and economies of scope are used in the production process increases with the level of competition. Economies of scope can result from the simultaneous supply of different products by using synergies during production. An example of this in the services sector could be that constraints for lawyers and tax accountants regarding “Interprofessionelle Zusammenarbeit”<sup>5</sup> are decreased, which leads to the fact that legal and tax accounting services can be provided cheaper by one provider. Moreover, it is possible to use economies of scope by integrating different steps of the chain of economic gross value added. However, it is questionable whether this plays a relevant role in the services sector, as few intermediate inputs are used in the services sector. Although the usage of economies of scope plays a bigger role in the manufacturing sector, in which the sale of physical goods in combination with services is becoming increasingly important in the recent past, as described above.

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<sup>5</sup> In Germany, “Interprofessionelle Zusammenarbeit” means the cooperation of people of different professions (e.g. lawyers, accountants and doctors/physicians) within one legal form of organization (“Rechtsform”).

Another effect of the higher level of competition due to deregulation is that companies are forced to consider consumer preferences to a greater extent. Firstly, this means a constant improvement of existing products. Secondly, this tends to lead to more innovation activities, as companies have a higher incentive to develop new products in order to be temporarily protected from competitive pressure as an entrepreneurial pioneer. It can be argued that the opening-up of the telecommunication market in Germany in the late 1990s led to a variation of existing telecommunication services (e.g. through new rate structures) and contributed to a quick expansion of novel products (e.g. digital data transmission) for the wider population.

The increased use of process and product innovations usually leads to decreasing prices on sales markets.<sup>6</sup> Technically speaking the price approaches the long term marginal costs. One has to consider that this process does not have a limit point in reality, as further changes are triggered by every innovation. The advantage of a higher level of competition is that suppliers have self-interest to adapt technological breakthroughs more quickly than in closed markets and thereby contribute to their diffusion.

There are various pieces of evidence of the theoretically concluded positive effects of deregulation in empirical economic research. Griffith et. al (2006) show that the establishment of the European single market led to a significant reduction of the economic rents of providers in the affected industries and states. Aghion et al. (2004) use a simulation model on the basis of company-specific micro data and prove that existing companies which had to face increasing competition from foreign competitors due to the EU internal market integration, had a higher productivity. They explain this by pointing to increased efforts of established companies to differentiate themselves from new competitors. Increases in productivity can explain the withdrawal of less competitive companies less well. For lawyers, accountants, architects and engineers Canton et al. (2014) use econometric methods to estimate the connection between the regulatory intensity, measured by the OECD product market regulatory indicator, and the allocative efficiency as well as the profit rates in the respective sectors for the EU member states. Their results show that deregulation leads to an increase in allocative efficiency and to a decrease in profit rates in the respective sectors. Regarding the investment behaviour, a study by Alesina et al. (2005) using time series for 21 OECD countries and different regulatory indexes suggests that strict regulation suppresses investments.

Griffith et al. (2006) use an econometric analysis in order to examine the connection between efforts for deregulation in product markets in the context of the EU single market and the innovation activities of companies. Apart from the economic rents as an indicator for the level of competition, they used other variables to directly measure the level of competition e.g. the information of the European commission regarding the implementation of the internal market directive in the member states. They conclude that the innovation activities of established companies increased with stronger deregulation, whereas the competitors became less innovative. They explain this by referring to the fact that the removal of regulation generally decreases economic rents in the respective market, so that the incentive for innovation decreases for challengers. The incentives for innovation for established companies nevertheless increase, because innovations enable them to keep at least a part of their old economic rents. Aghion et al (2006) argue that established companies are incentivised by new competitors to innovate particularly in those sectors, which are already competitive by international comparison, as

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<sup>6</sup> Innovations can have a price increasing component. This is the case, if innovative behaviour leads to the supply of products and services with a higher quality. Consumer can then decide, whether they are willing to pay the higher price for the higher quality.

they can thereby escape competition. In contrast, established companies in internationally less competitive sectors react to new competitors with fewer innovative activities, as they see no chance to strengthen their competitive position through innovation.

It is important to note that it is a complex endeavour to empirically measure the innovative activities of companies in the services sector<sup>7</sup>. Most studies on innovation activities take the amount of patents or the expenditure for research and development as an indicator for innovation activities. In many services sectors these indicators play a minor role. Firstly, service processes are rarely patentable – for instance in the form of action guidelines. Secondly, many services are adapted to the wishes and preferences of the respective customer on-site. Patenting does not seem profitable due to the uniqueness of the innovation. For this reason many services providers cannot declare R&D expenditures, although they might indeed spend substantial resources to develop innovations.

## 6.2 Indirect effects

Apart from the described direct effects of the reduction of regulations, more indirect effects on upstream and downstream markets are to be expected. Companies on downstream markets profit from lower prices during the procurement of its primary products in liberalised markets. They can either buy the current amount for a lower price or they can buy a higher amount for the same price to increase their output. If the process of market competition functions properly, the general prices on downstream markets should decrease whereas the output increases. This channel is particularly important for services, as they are used as intermediate input by industrial companies to a large extent (see Figure 1).

On upstream markets the effects of liberalisation are not as clear. Liberalisation could lead to an increase of the traded quantity and higher prices on the upstream market, if companies on the liberalised market increased their output and therefore received more intermediate inputs. This effect can at least partly be evened out by increased cost saving efforts, if this leads to more cost consciousness in the procurement of its primary products. The services sector only receives a small proportion of its intermediate inputs from other sectors while the vast majority comes from other services providers (see Figure 11). The effects on upstream markets are difficult to measure and the amount of literature on this is very limited.

Strong empirical evidence does however exist for indirect effects on downstream markets: Forlani (2010) measures the competitive intensity of the French services sector by regarding company data. It is thereby assumed that high economic rents are an indicator for a low level of competition. He shows that a low level of competition e.g. due to high regulation requirements has negative effects on downstream markets. Corugedo and Ruiz (2014) examine the multiplier effect of services liberalisation for France, whereas the regulatory figures are taken from Monteagudo et al. (2012). They show that liberalisations have positive effects on downstream companies, which in turn positively affect other companies. Moreover, the initiated effects in the downstream markets can in turn create more demand for services.

Barone and Cingano (2011) use a cross-sectional analysis to examine the connection between the degree of regulation in the services sector, measured by the OECD services regulatory index, and the effects on downstream markets. They show that restrictive regulation in the services sector negatively

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<sup>7</sup> Maaß and Führmann (2012) describe the challenge of measuring innovations for small and medium sized companies, to which most services providers belong.

affects productivity, growth of the gross value added and exports in downstream markets. The negative effect is higher the more intermediate inputs come from the services sector. Based on the methodology of Barone and Cingano (2011), Mocci et al (2014) show that the reduction of services regulation has positive effects on downstream companies (particularly from the manufacturing sector).

We could prove positive effects of services liberalisation also for Germany. The methodology is generally equal to the approach of Mocci et al (2014) and is outlined in detail in the appendix A. Here we only outline the results of the fixed-effects-regression-model. The gross value added of the whole economy<sup>8</sup> (table 1) and the manufacturing sector<sup>9</sup> (table 2) respectively are the dependent variables. The OECD regulatory index for “professional business services” weight with the importance of professional business services as a supplier of intermediate inputs in downstream sectors (RegS) serves as the explanatory variable.<sup>10</sup> As control variables we use the level of regulation in the areas of energy (RegE) and telecommunication (RegT) as well as for sector-specific employment (EMP) weighted by the importance for downstream sectors.

Our calculations show that regulation of the services sector, measured by RegS, has a significant effect both on the manufacturing sector as well as the overall economy. Thereby the following relationship is valid: a decreasing value for RegS leads to an increase of the gross value added in the whole economy as well as in the manufacturing sector. Since RegS is a variable composed out of two values, it is hard to interpret the value of the coefficient of RegS. Therefore, we do not go into the degree of the effect. An assessment of the effects of a change of the OECD indicators within the model will be done in chapter 8.2. As our regression model is estimated in levels, we standardised the variables to have unit variance so that one can directly compare the estimated coefficients within the same model, but not the coefficients of different models.

**Table 1: Effects on whole economy**

OECD indicator & control for output, effects on value-added in whole economy

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.1255	0.0392	3.2039	0.001***
RegS	-0.0691	0.1019	-4.0171	0.000***
RegE	-0.0646	1.1001	-3.2067	0.001***
RegT	-0.0215	0.3882	-2.4211	0.016**
Output	0.4279	0.0508	8.4292	0.000***
R2	0.3685			
N	49			
T	9			

<sup>8</sup> As the whole economy we define all three sectors of the economy (agriculture, manufacturing and services). We exclude the sectors professional services, energy and transportation for which liberalisation effects on the other sectors should be measured.

<sup>9</sup> As the manufacturing sector we define all areas of the manufacturing sector except the construction sector as well as mining.

<sup>10</sup> Regarding the OECD indicator see section 4.

Note: This table reports the estimation result using the OECD indicator of regulation in non-manufacturing sectors (NMR) for “Professional services” as a measure of service regulation within the production sector NACE 74 Rev. 1.1 “Other business activities”. The dependent variable is In VA and the sample covers the years 1998-2007. The explanatory variables are included with one time lag.

**Table 2: Effects on manufacturing sector**

OECD-indicator & control for output, effects on value-added in manufacturing sector

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.0991	0.0675	1.4689	0.144
RegS	-0.0642	0.1495	-3.2753	0.001***
RegE	-0.0531	1.5667	-1.8765	0.062*
RegT	-0.0166	0.6642	-1.0889	0.278
Output	0.4344	0.0704	6.1684	0.000***
R2	0.4257			
N	25			
T	9			

Note: This table reports the estimation result using the OECD indicator of regulation in non-manufacturing sectors (NMR) for “Professional services” as a measure of service regulation within the production sector NACE 74 Rev. 1.1 “Other business activities”. The dependent variable is In VA and the sample covers the years 1998-2007. The explanatory variables are included with one time lag.

### 6.3 Effects on imports and exports

In most cases liberalisation measures increase competition with foreign competitors, as lower market entry barriers make it easier for them to operate in the country concerned. Generally there are more imported goods in a liberalised market. Whether domestic suppliers will be ousted depends on how successful they are in using process and product innovations to remain competitive. Moreover, deregulations again have indirect effects on imports and exports of companies in downstream markets. Particularly companies, which face international competition, should profit from the resulting cost advantages.

Domestic companies facing competition from foreign companies can also benefit directly from deregulation, if the existing regulation entails discriminatory provisions against domestic suppliers. A discrimination against domestic suppliers can for example result, if there are higher regulation requirements for domestic suppliers, which cannot be applied to suppliers from other EU member states due to reasons connected with EU law. A positive effect on exports can be identified if regulations are abolished, which particularly obstruct domestic suppliers when competing internationally.

Monteagudo et al (2012) simulate the effects of the directive on services on imports and exports of the EU member states. They develop different scenarios regarding the progress of implementation of the directive on services in the member states and consider the interdependencies of the EU economies. In a first scenario they estimate the effects of the directive on services as it is currently implemented. Thereupon imports increased to a greater extent than exports in Germany. This relation would, however, be reversed if all member states were to implement the directive on services more consequently, namely on the level of the 5 countries with the lowest intensity of regulation. The reason

for this should lie in the mutual dependencies, which should lead to the same results in all member states in case of stronger and particularly comparable liberalisation.

Other studies regard the effects of services liberalisation on exports in downstream markets. The already described positive effects on downstream markets improve the international competitiveness of companies operating in these markets. Among others Barone and Cingano (2011) prove this for the OECD countries. Correa-López and Doménech (2014) also show positive effects of services liberalisation for large international companies in Spain. The effects on the exports of small and medium sized companies are also positive, but to a smaller extent. Nordas and Kim (2013) show that particularly high technology industries can profit from a liberalisation in the area of business services with regard to exports. According to the findings of the authors, high quality services in the area of energy, transportation, telecommunication and finance lead to a strengthening and stabilisation of manufacturing exports. Moreover, they find that the higher the stage of development of the economy is the higher are negative effects for manufacturing exports due to disproportionate regulation in the services sector.

#### 6.4 Labour market effects

Deregulations lead to a shift of economic activities. Technically speaking resources are reallocated. This induces a process of change for employees. In highly regulated sectors with a low intensity of competition, wages are generally higher than in comparable sectors without regulation (Kleiner and Krüger, 2011), because companies can achieve higher economic rents due to the lack of competitive pressure, which are part of the redistribution mass in wage negotiations. The distribution opportunities are eliminated when regulations are abolished. Wages will therefore generally adjust to wages in comparable unregulated sectors. Nevertheless, it is not implausible that the production in the unregulated market increases, which generally leads to the creation of additional employment. Furthermore, deregulation can indirectly lead to the above described employment effects on downstream markets.

Copenhagen Economics (2005) estimate in a general equilibrium model that EU-wide employment will increase by 0.3 per cent due to the implementation of the directive on services. Badinger et al (2008) find effects of a comparable magnitude using an econometric estimation regarding the economic effects of the directive on services.

An often recited argument against deregulation refers to the loss of domestic employment due to the fact that more goods and services from foreign suppliers will be demanded. This is correct if suppliers are not competitive and are not sufficiently able to strengthen their competitive position through process and product innovations. Under these conditions the regulation kept jobs in the affected market alive, but on grounds of higher costs for intermediate inputs the employment development in the downstream markets was unfavourable compared to a situation without regulation. The regulation therefore only benefited a small group, while the costs had to be paid by all other employees and consumers of the affected products. All in all it seems reasonable to assume that the abolition of regulation strengthens the international competitiveness of the whole economy and thereby also strengthens the labour market. This is also supported by the German experience with the EU eastward expansion. Numerous studies identify mid- and long-term benefits for the whole economy after a short period of adjustment (Bug, 2011; Baas et al, 2000).

## 6.5 Impacts on consumers

If deregulation leads to a higher level of competition, consumers profit as a result. These can be companies who purchase affected products as intermediate inputs or end consumers whose consumption opportunities thereby increase. But also products for end consumers which use intermediate inputs from a liberalised market can generally be provided for a lower price. All in all, a broad range of consumers should profit from liberalisation activities.

A common fear is that the abolition of regulation will decrease the quality in the affected market, which would be disadvantageous for the consumer. But this is only true if the abolition of the regulation leads to a collapse of the market for high quality products. This case is known in the theoretical literature if the demand side has a significant informational disadvantage (Akerlof, 1970): As the consumer cannot observe the quality of the supplied good, they are only willing to pay a price according to the expected average quality. For suppliers it is no longer profitable to supply high quality products due to the lack of willingness to pay. This lowers the expected average quality which decreases the willingness to pay even further. Due to this downward spiral the market for high quality products collapses.

References to this scenario are often made to justify regulations in the services sector. Nevertheless, it needs to be shown that a regulation is capable and necessary to secure a certain minimum of quality. After all there are often private market alternatives to state regulation (Shapiro, 1983), since not only consumers, but also suppliers of a high quality have an interest in overcoming the information problem. Suppliers can, for example, voluntarily use certificates to signal certain quality standards and thereby counteract the market failure. Furthermore, liability law as an additional instrument to implement quality standards also offers opportunities for action. In order to correspond to the primacy of the freedom to choose an occupation and the contractual freedom within the European community of law, the burden of proof for occupation-specific regulations should generally lie on the side of the regulation. This means it has to be proven that the regulation can prevent a market failure and that it cannot be assumed that less invasive private market alternatives lead to similar results.

If private alternatives to deal with information problems (and therefore for quality assurance) exist, an abolition of the regulation offers a differentiation of the quality. Regulations often have the effect of state requirements for a minimum standard. These minimum standards tie suppliers and consumers. Consumers who prefer a low level of quality cannot (legally) acquire it. Only after the abolition of the regulation, suppliers can offer a broad range of different qualities, which enables them to better fulfil consumer preferences.

Empirical literature on the relation between (de)regulation and service quality with a focus on business services barely exists. This is due to the fact that quality is difficult to measure. Measurement problems are particularly substantial in the services sector, as quality can usually not be observed and it is not possible to reliably infer from the visible result to the quality of services.

## 7 Politico-economic considerations for services liberalisation

The considerations above have shown that deregulation in the services sector can lead to positive growth effects. Of particular importance are the effects on industrial companies which are facing international competition. They could be strengthened by services liberalisation. Nevertheless, considerations for services liberalisation often face resistance. In the following, some possible explanations are given.

Initially it can be said that the existing regulations could be welfare enhancing, if they are an appropriate measure to prevent a potential market failure. In those cases it is economically reasonable to keep regulation if no equally adequate and less invasive measure exists. Nevertheless, it seems doubtful that this is accurate for all existing regulations. A first indicator of that is the fact that numerous regulations only exist in some member states (EuZFB, 2014). In case of a market failure, it is reasonable to assume that all member states would implement respective regulations. Comparisons between the regulatory regimes of the member states have to be validated further. The chambers of lawyers in Germany, for example, undertake several tasks regarding the national rules governing the professions, which are fulfilled directly by the state in the United Kingdom. Irrespective of the question on which level this task is fulfilled, the regulatory intensity of both regimes is comparable. Given an equal regulatory intensity, the historic and cultural specifics of the member states should be taken into consideration, as an equalisation of the regulatory regimes is not a purpose in itself, but rather essential if it is needed to achieve welfare benefits.

Some services professions provide services which are ascribed to contribute to general welfare to a large degree irrespective of a possible market failure. Lawyers contribute to the administration of justice, doctors to health care. This context has to be considered when setting the competition framework. Nevertheless, even here it has to be proven on a case by case basis how the regulation in question serves the general welfare and why a less invasive regulatory measure does not lead to the intended outcome. Thereby it is hard to understand why all services of general (economic) interest are generally exempt for EU competition law, although economic research considers welfare enhancing competition to be possible (Jankowski, 2014; Kochskämper, 2014).

Even when taking these concerns into consideration it is generally recognised that numerous regulations remain which are not aimed at preventing a potential market failure or which are inadequate in preventing it. Nevertheless, resistance against efforts to deregulate even exists in these cases. Particularly in markets with a high intensity of regulation resistance is likely to be high. Here the defence of these regulations justifies special efforts by the affected actors. This reallocation of resources into lobbying can be a non-negligible part of the welfare loss, which is created by the (unjustified) regulation (Tollison, 1982). Apart from the amount of the economic regulatory rents, the organisational capability of interest groups plays a great role in preventing deregulation activities. This is advantageous for interest groups who already have established organisations and communication structures. Examples of this are professional associations, chambers or trade unions. These groups, firstly, have the opportunity to reach and if necessary mobilise their members through existing channels and, secondly, they are integrated into many political decision making processes. These groups enrich the political decision making process with their expertise regarding the conditions of the respective sector of the economy. This close involvement entails the risk that the interest groups lobby for regulation which primarily benefits its members but not the general public.



The political dilemma is that possible negative effects in the deregulated sector can easily be attributed and that interest groups can point that out, whereas the general efficiency gains for the whole economy are unclear. The success of deregulation is therefore difficult to market politically and to convert into electoral support. Gaining electoral support becomes even harder if a decrease of market barriers leads to more foreign suppliers entering the market, which would profit but are not themselves eligible to vote in domestic elections.

## 8 Approaches for reform for Germany

Significant efforts for liberalisation in the services sector were undertaken in the last years. Thereby substantial progress has been made. Nevertheless, there is still potential for further welfare enhancing deregulation activities. Although the directive on the recognition of professional qualifications has been put into place<sup>11</sup>, its implementation is in many cases not consistent considering its goal to create an internal market for services. This is true for the European level and particularly for Germany. The remaining potential consists of various small regulation screws that need to be adjusted in order to make use of the full potential of the process.

All of these measures together could contribute to a non-negligible extend to the overall economic development. In many cases resistance from occupational groups is to be expected if existing regulatory rents are endangered. This applies in particular, as most measures should be small steps for which occupational groups and their representatives have an information advantage. Overall it should, therefore, be very difficult to attract the interest of the broad public and to communicate the advantages of the sum of measures.

In what follows, we explain a few principles to identify possible areas of deregulation, which firstly suggest economic benefits and which are secondly, politically realizable with limited efforts (see section 8.1). Thereafter, the effects of different scenarios on economic growth are described using an econometric estimation model (see section 8.2).

In the long run a critical assessment of all specific regulation would be desirable, which evaluates both the purpose of the regulation regarding its acceptability as well as whether the chosen instrument is capable of achieving the declared goal. Moreover, it should be assessed whether alternative instruments with a lower regulatory invasiveness are suitable. This assessment has to be done separately for every sector. This cannot be carried out in this study.

### 8.1 Approaches for reform

Important impact channels for services deregulation are the associated advantages for the manufacturing sector and especially for exporting industrial companies. Therefore, it seems worth focussing on these services sectors which are particularly often used as intermediate inputs in industrial production. Figure 9 shows which services providers deliver intermediate inputs to the manufacturing sector. By far the largest source is wholesale, followed by transportation and warehousing. After that the knowledge-intense services legal services and tax accounting services as well as consultancies, under which public accountants are subsumed, as well as architecture and engineering offices follow.

In order to identify those areas of business services in which welfare-enhancing deregulations are potentially possible we look at the regulatory indicators used in the literature:

The OECD regulatory indicators for the knowledge-intense services in the areas legal and tax accounting (including public accounting), as well as architecture and engineering professions for Germany are usually values comparable to France and Italy. The values for the Netherlands and for the United Kingdom are, however, considerably lower (see figure 12 and figure 13). The Services Trade

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<sup>11</sup> The Federal Constitutional Court also forced liberalisations in several fundamental decisions. An example is the decision on 12.12.2006 (Az. 1BvR2576/04), which allows lawyers to take contingency fees under certain conditions.

Restrictiveness Index (STRI) shows similar results (see figure 14). Furthermore, research by Monteguardo et al (2012) and Canaton et al (2014) also point to further potential for deregulation in these sectors.

As argued in section 4, economic rents, for example measured by the net operational surplus, are often used as an indicator for the intensity of competition. Thereby high economic rents can be a sign for a low level of competition, which can result from anti-competitive regulation. For the sectors legal services and tax accounting, consulting as well as architecture and engineering offices the official statistics in Germany show a value above average compared to other knowledge-intensive services (see figure 4). In combination with the above mentioned regulatory indicators this can be seen as an indicator for possible sectors with potential for deregulation. Here it has to be considered that the aim is to decrease welfare-reducing regulation and not to decrease economic rents to a level considered “normal” for normative reasons, because the owner is also the manager and hence firm profits and labour income accrue to the same person. In these professions non-incorporated firms should be the dominant form, which could partly relativize the above-average net operational surpluses.

In a first assessment using statistical considerations it can be concluded that deregulation with expected positive effects on economic growth seems possible in the areas of legal and tax accounting (including public accounting) services as well as engineering and architecture offices. Before an actual implementation of reform measures, the statistical analysis, which is based on very general assumptions, has to be complemented by a case-specific qualitative analysis. The latter takes the overall context of the regulatory measure into account.<sup>12</sup> However, this exceeds the context of this study.

After potential areas of possible deregulation were identified in a first step, a second step is to identify promising deregulation measures in those areas. The following three principles may offer some assistance:

1. Equalisation of different profession-specific regulations in comparable fields of activity on the lower level of regulation.
2. Equalisation of different state-specific regulations for single professions on the lower level.
3. Implementation of EU guidelines on the suggested minimum level, which means no over-achieving of the EU guidelines.

Particularly the principles 1 and 2 offer the advantage that they do not demand a complete deregulation of historically grown structures, but instead do not (initially) question their basic justification. Nevertheless, they do offer potential for a reduction of the overall level of regulation. They demand equal regulatory measures or an equal regulatory intensity for comparable regulatory goals. As the reference point is always the regulation with the lower intensity of regulation used in a comparable situation in Germany, fundamental concerns and cultural difference, which might exist compared to other countries, should not matter. Principle 3 relies upon the fact that a consensus on the underlying regulation was obtained on the European level which allows foreign companies to offer their products in Germany. Fundamental concerns against this regulation (e.g. regarding quality) should not be appropriate, because Germany has consented the regulation on the EU level.

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<sup>12</sup> For example the indicator value for Germany in the area of legal services is 6 due to the mandated membership in a chamber, whereas the United Kingdom has the best possible indicator value of 0 due to the lack of a the mandated membership in a chamber. This does not take into consideration, that numerous tasks, which are done by the chamber of lawyers in Germany, are undertaken by the state in the United Kingdom. The difference in the intensity of regulation is therefore with a huge probability overestimated by the indicator.

An assessment of the OECD regulatory indicators for professional business services can offer first indications, where the three principles can be applied. Both in the area of legal as well as tax and public accounting services the exclusive right of these professions to be allowed to carry out certain tasks, requirements for educational qualifications, a mandated membership in a chamber and limitations in “Interprofessionelle Zusammenarbeit”<sup>13</sup> negatively affect the indicator. In legal services this is also true for a ban on advertising and a fee scale. With architects a better indicator value is mostly prevented by requirements for educational qualifications, a mandated membership in a chamber, a fee scale and a ban on advertising. The indicator for engineers could be improved particularly by changes in the exclusive rights of the profession, the fee scale and the ban on advertising.

Hereafter a few examples of the principles described above are outlined. They are used as an illustration of the principles. However, concrete deregulation measures in these areas must be analysed on a case by case basis.

The “Interprofessionelle Zusammenarbeit” is regulated differently in the respective professional laws (principle 1). Although first steps for equalisation were undertaken in the past, there are still substantial differences, which make “Interprofessionelle Zusammenarbeit” difficult (Henssler, 2009). The mentioned professions offer similar tasks, which are particularly characterised by the fact that clients must be able to trust in the confidentiality and due diligence requirements of the mandate holder. As this is a constitutive characteristic for all three professions, it is hard to comprehend why the “Interprofessionelle Zusammenarbeit” is obstructed by diverging requirements of the respective professions. Currently the strictest professional law prevails. Therefore, “Interprofessionelle Zusammenarbeit” often is no longer attractive for members of the other professions. These limited possibilities for “Interprofessionelle Zusammenarbeit” complicate the offer of a comprehensive range of services from a single source in closely related areas of the economy. Possible synergistic effects remain unused.

In a further step one can assess whether the cooperation between lawyers, tax and public accountants with other liberal professions like doctors or engineers in one company can also be simplified. Here the requirements are very different. For example, lawyers are only allowed to work in one company with tax and public accountants. Public accountants nevertheless, can found a company with people of all occupational professions with a right to refuse to give evidence. An explanation for these different requirements is not evident, particularly since lawyers are generally allowed to work with public accountants. These restrictive requirements prevent, for example, that law firms specialise on questions in medical law and take in a doctor as a partner.<sup>14</sup>

Another example of the application of principle 1 are shareholding requirements, which differ substantially between lawyers, tax and public accountants. While external shareholding is generally prohibited for lawyers, in tax accounting mere capital holdings are permissible for members of professions suitable for association<sup>15</sup>, if they do not exceed a certain threshold. There are no explicit requirements for public accountants (Henssler, 2009).

The requirements of “Interprofessionelle Zusammenarbeit” also offer possible starting points for principle 3. The law about an occupational order of the chartered accountants (WPO) is one example where

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<sup>13</sup> In Germany, “Interprofessionelle Zusammenarbeit” means the cooperation of people of different professions (e.g. lawyers, accountants and doctors/physicians) within one legal form of organization (“Rechtsform”).

<sup>14</sup> The Federal Constitutional Court currently examines, whether such prohibitions are constitutional (Vorlagebeschluss des Bundesgerichtshofs vom 16.5.2013 – IIZB7/11).

<sup>15</sup> Which professions count as suitable for association, can be seen in the respective professional law. In the case of tax accountants these are other tax accountants, public accountants and law and patent attorneys.

EU guidelines were implemented in a stricter way than required. According to § 28 Abs. 1 S. 1 WPO partnerships between members of different professions are only accepted if the majority of the partners are public accountants. Article 3 para. 4 of the directive 2006/43/EG only demands that the majority of the votes is held by public accountants. An implementation of the directive on the minimum level would simplify “Interprofessionelle Zusammenarbeit” (Henssler, 2009).

Principle 1 can also be used to analyse pricing, which is designed differently for lawyers, public and tax accountants. Except for public accountants the fees in the mentioned professions are regulated by a decree. But the bindingness of these fee scales varies substantially. Generally fee scales are justified by their contribution to quality assurance and by the reduction of information asymmetries for consumers. If that were true, which remains to be proven, it is still unsure, why the bindingness varies between the professions. Particularly since the fee scales for architects and engineers are also justified by the same arguments and they again have different levels of bindingness.

An example of principle 2, which sees a possible starting point in equalising different regulations between states, are the requirements for the coverage of professional indemnity insurance for consulting engineers, which differ considerably between states.<sup>16</sup> In addition, there are different requirements regarding the permissibility of advertisements (Bericht der Bundesregierung zur Lage der Freien Berufe, 2012). Regarding principle 2, one could also assess why doctors, dentists and psychotherapist in Bavaria are not allowed to found corporate enterprises, while this type of company is permissible for the mentioned professions in other states. Unlike in an international comparison, cultural differences and historic path dependencies cannot provide a sufficient explanation for these differences. If one does not want to shift the legislative competence away from the states, forming a government / federal state working group with the goal to equalise the requirements on a lower regulatory level could be one option.

Another possible application of principle 2 can be found in the German “point of single contact” system (PSC). The PSC should provide services providers from EU member states with all the necessary information required to be able to offer their products in Germany. Apart from the information function, the PSC should fulfil a mediating function and guide suppliers from other EU member states through the administration process by coordinating between the companies and the agencies in charge regarding the necessary procedures. While there is a nationwide single point of contact in many EU member states, in Germany the design of the PSC lies in the competence of the states, which has led to very different ways of implementation (Icks et al, 2010). In a working paper by the EU commission (2012), the implementation of the PSC in Germany is considered to be better than average. Nevertheless, Germany is not among the best member states in any category. Moreover, it is pointed out that the quality of the PSC services varies considerably between the states. One conceivable solution would be a low-threshold intervention in the form of a voluntary agreement between the states to create best practice guidelines. Apart from the experiences in the states one could include suggestions from EU member states which performed better according to the evaluation of the EU commission.

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<sup>16</sup> A collection of links on the relevant requirements regarding professional indemnity insurance for consulting engineers can be found here: (last accessed on January 15<sup>th</sup> 2015).

## 8.2 Model based estimation of the welfare effects

In order to estimate the effects of further services liberalisation in Germany on the net operational surplus of professional business service, we did our own econometric calculations. These are based on the model discussed in section 6.2 and in the appendix A. Thereby we have developed three scenarios:

1. In a conservative estimation we assume that deregulation measures are undertaken, so that the OECD regulatory indicator in the area of professional business services decreases by half a grade point.
2. The optimistic scenario assumes an improvement by one full grade point.
3. Additionally, we show, which effects result from the model and if the indicator value for Germany were to drop to the level of the EU member state with the lowest values (the United Kingdom).

The first two scenarios do not seem unrealistic. The third scenario will most likely not be politically feasible for the above stated reasons. Furthermore, it has to be considered that the model follows a simple linear logic, whereas a variation of the indicator value by one unit always leads to an increase of the gross value added of a certain percentage. Moreover, the forecast uncertainty of values on the edge like in scenario 3 is particularly high. The following values are therefore rough reference point and not to be considered as exact estimations.

In the conservative scenario the gross value added of the whole economy would increase by 0.51 per cent. For the manufacturing sector the increase would be slightly higher with 0.56 per cent. The optimistic scenario yields an increase of the gross value added in the whole economy of 1.01 per cent and of 1.13 per cent for the manufacturing sector. Assuming the OECD indicator for “professional business services” for Germany would drop to the level assumed in scenario 3, this would, under the assumptions of a linear estimation model, result in an additional gross value added of 2.16 per cent for the whole economy. For the manufacturing sector the increase would be higher with 2.42 per cent.

**Table 3: Econometric estimation results for different deregulation scenarios**

Effects of hypothetical reductions in regulation in the production sectors NACE M69 rev2 “Legal and accounting activities” and NACE M71 rev2 “Architectural and engineering activities” on value-added, linear approximation based on the estimation results of the models A2a and A2b

	Corresponding OECD index value	Effect on value-added whole economy	Effect on value-added manufacturing sector
Actual value 2013 OECD index value professional services	2.65		
Improvement of OECD index value by half a point	2.15	+0.52%	+0,60%
Improvement of OECD index value By one point	1.65	+ 1.05%	+1.21%
Improvement of OECD index value level of UK	0.72	+ 2.02%	+ 2.33%

## 9 Conclusion

This study has dealt specifically with the German services sector. First, we outlined the quantitative importance of the services sector in a descriptive part: in the past few decades the contribution of the services sector to the economic output increased. In 2012 one in seven Euros was generated in the services sector. Within the services sector the business services have the highest the growth dynamic. The output of the business services mainly enters the further production process in the form of intermediate inputs.

Due to a differentiated statistical analysis of the division of labour between sectors we could show that firms, which are counted as part of the manufacturing sector, produce an increasing amount of services. In 2013 on average five in ten employees in the manufacturing sector executed service tasks. In the field of pharmacy and chemistry even eight or rather nine in ten employees executed service tasks. This trend towards the servitisation of the manufacturing sector finds only little attention in the current debate about the supposed service gap in Germany. Because of the lack of data from other countries, we have only limited possibilities to interpret these findings. But even if we assume that the servitisation in Germany is more advanced than in other countries we can only formulate hypotheses about the causes. Cultural differences could be one reason: the German business structure is heavily influenced by owner-managed firms. We can assume that those businesses have a preference for executing important tasks in-house. A further hypothesis is that an outsourcing of services is blocked by regulations in the services sector.

An evaluation of several regulatory indicators leads us to the result that significant liberalisations took place in Germany since the year 2000. They can be explained, *inter alia*, by the services and professional qualifications directives, which contributed to the deepening of the common internal market for services on the EU-level. Furthermore, within Germany decisions of the Supreme Court (Bundesverfassungsgericht) led to a reduction of professional regulations. But the analysis of the available data shows that it can be assumed that further deregulation potential exists within the area of the professional services (lawyers, tax and public accountants as well as architects and engineering offices). This assumption is supported by the literature review of the evaluation of several statistical regulation measures and newer studies.

We introduced three principles for the identification of promising areas for potential deregulations, which on the one hand implicitly acknowledge the historic and cultural background of the existing regulations and on the other hand still allow for liberalisations. The first principle suggests harmonisation of different profession specific regulations for comparable professions with similar regulation aims to the lowest existing level. The second principle aims at harmonising the profession specific regulations between the German states to the lowest existing level. The third principle is to execute EU guidelines without going beyond the demanded regulations.

An important consequence of deregulations in the services sector is the expected positive effects on downstream manufacturing markets. If the prices for business services drop as a result of deregulation, this will constitute a cost advantage for firms, which depend on those services as intermediate inputs. Especially firms, which compete on the international-level, can thereby improve their competitive position. Furthermore, the consumers benefit from dropping prices and in the tendency more differentiated product offerings. Overall an increase in economic performance can be expected. With the help of an econometric model we estimated the impact of three different deregulation scenarios on the

gross value added of the overall economy and the manufacturing sector. In the course of this, we restricted our approach to deregulation of professional services. The results show that deregulations of these services, which are heavily used by the manufacturing sector as intermediate inputs, can have significant impacts on welfare. One should notice that the econometric estimates can only serve as a rough orientation, because of the generally associated uncertainties.

Based on the approach suggested by us, policy makers can identify concrete deregulation plans and evaluate their effects on welfare with the help of an individual case analysis. In the course of this, the suggested principles can be in general used for all service areas. Due to our approach to focus on business services, we have especially chosen application examples from the professional services. Possible further areas of application could for example be seen in services in health and social care or in the network-bound services like transport, energy and telecommunication. Before it comes to concrete reforms one should specify and extend our presumptions of deregulation potential, which rely on general and statistical considerations, by an individual analysis. This has to be done in order to respect the specific circumstances and to secure that liberalisation leads to an increase in welfare.



## Appendix A: Empirical Analysis for Germany

In order to quantitatively evaluate the impact of a further liberalisation in the services sector in Germany, we follow the approach of Mocci et al. (2014), which in turn is based on the methodology of Barone and Cingano (2011). Essentially, we apply a fixed effects panel data regression in which sector specific output is regressed on a measure of services liberalisation, some control variables and time dummies. Our regression model aims at gaining a deeper understanding of the effects that services deregulation had in Germany in the past. Based on our findings we draw some conclusions about the potential effects of a further liberalisation in the services sector.

### Regression model and data basis

The model considers the effects of deregulation in selected services sectors on the downstream production areas which use the selected services as intermediate inputs. The dependent variable of interest is the sector specific gross value added (VA) in real terms, computed from national input-output tables provided by Eurostat. The input-output calculations divide the production within an economy into different sectors and give an overview over commodity flows between the sectors.<sup>17</sup> Our sample period is limited by the fact that the classification of the sectors as well as the calculation basis was changed in the year 2008 and that it is not possible to compare the data before and after the re-classification. Therefore, the analysis can only be based on data until 2007. However, the last essential efforts on services deregulation in Germany took place at the beginning of the new century. Therefore, using data up to the year 2007 seems to be appropriate for analysing the systematic connection between changes of the level of regulation and output growth.

In order to measure the effects of deregulation in selected services sectors, a suitable indicator is needed. Based on Barone and Cingano (2011) as well as Mocci et al. (2014) our basic model uses the OECD regulatory indexes for 1998, 2003 and 2008 as a measure for sector-specific regulation (see OECD 2013). The OECD indicator measures the extent to which policies promote or inhibit competition in the areas of non-manufacturing-sectors. The indicator covers formal regulations in the areas of state control of business enterprises, legal and administrative barriers to entrepreneurship, barriers to international trade and investment. The indicator index records values on a scale from 0 to 6, where 6 represents the most restrictive-to-competition regulatory set up. The fact that before the year 1998 no information was available on regulation in the services sector further restricts the sample period available for the analysis.

In order to obtain annual observations we linearly interpolated the indicators for the remaining years. The motivation for doing so is that the deregulation did not only take place in the years in which the corresponding variable is available, but that deregulation is a continuous process. Furthermore, it is far from obvious how long it takes after a deregulating effort has been made until the new policy goes into effect. Mocci et al. (2014) suggest that three years may be an appropriate period, but this is difficult to verify. Most likely, new policies go into effect in a continuous way, as firms adjust slowly to changing regulatory conditions. Some may anticipate these changes and react rather quickly, while others may need a few years to change their behaviour.

A disadvantage of the OECD indicators is that they were only compiled for selected business services sectors. Therefore, our model can only grasp the effects of deregulation in those services for which an OECD indicator exists. These are the professional business services architecture, legal, accounting and

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<sup>17</sup> Until the change in the classification system in 2008 the production within an economy was divided according to the NACE Rev. 1.1 (2002) standard into 59 sectors. Our model uses the classification of the NACE 2002 standard.

engineering. Since our model measures the effects of deregulation on downstream sectors based on the dataset of input-output calculations, it requires a match of the services for which an OECD indicator exists with the corresponding productions sector in the input-output calculations. Within the classification of the input-output tables, those professional business services belong to the production sector NACE 74 Rev. 1.1 “other business activities”. In addition to the services of architects, legal professions, accountants and engineers, the production sector NECA 74 Rev. 1.1 also includes services of management consultancy, services of advertising and market research, employment activities (temporary work), investigation and security services as well as cleaning services. Nonetheless, the professions with corresponding OECD-indicators represent a large share of the production sector NACE 74 Rev. 1.1. However, it must be mentioned that the necessary assumption that the existing OECD indicators on professional business services fits for the whole production sector NACE 74 Rev. 1.1 is a drawback of the OECD indicator as a measure for the level of regulation within our model.

To overcome this drawback of the OECD indicator, we propose an alternative measure for the level of regulation based on the argument that effective deregulation should increase competitiveness in the deregulated (services) sector, which in turn should result in lower profits. Therefore, we consider the net operating surplus in the NACE 74 Rev. 1.1 sector “other business activities”, which is again obtained from the national input-output tables, as an alternative measure of deregulation instead of the OECD indicator. In this case, our measure for the level of regulation (the net-surplus) matches the entire production sector NACE 74 Rev. 1.1.

Using different model variations, we analyse the effects of changes in regulation in the areas of professional business services and the two control-groups energy<sup>18</sup> and transportation<sup>19</sup> on the gross value added in the following downstream production areas:

- “Whole economy”: as the whole economy we define all three sectors of the economy (agriculture, manufacturing and services)<sup>20</sup>. We exclude the sectors professional services, energy and transportation for which liberalisation effects on the other sectors should be measured.
- “Manufacturing sector”: as the manufacturing sector we define all areas of the manufacturing sector except the construction sector<sup>21</sup>.

Now let  $X_{s,t}$  be the variable measuring deregulation, either the OECD indicator or the net-surplus. In order to obtain a meaningful explanatory variable,  $X_{s,t}$  is weighted by the technical coefficient  $w_{j,s,t}$  which measures the importance of professional services sector  $s$  as an input for each sector  $j$ . In other words, the technical (input) coefficients  $w_{j,s,t}$  represent direct backward linkages of each sector  $j$  to the professional services sector  $s$ . The technical coefficient  $w_{j,s,t}$  is defined as the ratio between the costs of the inputs of service  $s$  and the value of the output of sector  $j$ . The explanatory variable  $RegS_{j,t}$  which measures the level of services regulation affecting industry sector  $j$  is computed as

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<sup>18</sup> There are OECD indicators for electricity and gas. The products of these energy services are equivalent to the production of the sector NACE 32 Rev. 1.1 in the input-output calculations.

<sup>19</sup> There are OECD indicators for road-transport, air-transport and railway-transport. The products of these transport services are equivalent to the production of the sector NACE 60 Rev. 1.1 and NACE 62 Rev. 1.1 in the input-output calculations.

<sup>20</sup> This excludes the sectors mining of coal and lignite (NACE 10 Rev. 1.1), which has negative gross value added, as well as mining of uranium and thorium ores (NACE 12 Rev. 1.1) and mining of metal ores (NACE 13 Rev. 1.1), in which there is no production.

<sup>21</sup> The manufacturing sector includes the sectors NACE 10-37 Rev. 1.1 except for mining of coal and lignite (NACE 10), mining of uranium and thorium ores (NACE 12 Rev. 1.1), mining of metal ores (NACE 13 Rev. 1.1) as well as publishing, printing and reproduction of recorded media (NACE 22 Rev. 1.1).

$$RegS_{j,t} = \sum_s w_{j,s,t} \cdot X_{s,t}.$$

The baseline model to be estimated then is

$$\ln VA_{j,t} = \alpha_j + \alpha_t + \beta_1 RegS_{j,t-1} + \beta_2 \ln EMP_{j,t-1} + \sum_{k=1}^K \beta_k Z_{k,t-1} + \epsilon_{j,t},$$

where  $Z_{k,t}$  for  $k=1,\dots,K$  are additional control variables and  $\alpha_j$  and  $\alpha_t$  represent the fixed effects included to account for unobserved heterogeneity across sectors and time. As additional control variables we consider the weighted OECD deregulation indicators for the transportation (RegT) and the energy (RegE) sectors defined and computed in the same way as for services. The latter two variables are included as control variables in order to avoid an overestimation of the effect of deregulation in the service sector, which is likely to be correlated with deregulation in other sectors. Sector specific employment (EMP) is obtained from the input-output tables.

### Model results

The estimation of our base model as described above yields the following results:

**Table A1a**

base model OECD-indicator, effects on value-added in whole economy

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.2615	0.0388	6.7339	0.000***
RegS	-0.0791	0.1106	-4.2375	0.000***
RegE	-0.1414	1.0673	-7.2407	0.000***
RegT	-0.0242	0.4222	-2.5158	0.012**
R2	0.2501			
N	49			
T	9			

Note: This table reports the estimation result using the OECD indicator of regulation in non-manufacturing sectors (NMR) for “Professional services” as a measure of service regulation within the production sector NACE 74 Rev. 1.1 “Other business activities”. The dependent variable is  $\ln VA$  and the sample covers the years 1998-2007. The explanatory variables are included with one time lag.

**Table A1b**

base model OECD-indicator, effects on value-added in manufacturing sector

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.3054	0.0641	4.7642	0.000***
RegS	-0.0673	0.1635	-3.1409	0.002***
RegE	-0.1472	1.4441	-5.6413	0.000***
RegT	-0.0195	0.7264	-1.1681	0.244
R2	0.3089			
N	25			
T	9			

Note: This table reports the estimation result using the OECD indicator of regulation in non-manufacturing sectors (NMR) for “Professional services” as a measure of service regulation within the production sector NACE 74 Rev. 1.1 “Other business activities”. The dependent variable is In VA and the sample covers the years 1998-2007. The explanatory variables are included with one time lag.

All coefficients have the expected signs and are significant. In particular, controlling for regulation levels in other sectors and for employment effects, deregulation in the services sectors can be associated with an increase in gross value added. As our regression model is estimated in levels, we standardised the variables to have unit variance so that we can directly compare the estimated coefficients both within and across all model variations. The interpretation of the coefficients is postponed until the end of the appendix where we predict the effect of hypothetical liberalisation measures on gross value added.

Next, we consider some robustness checks of the results. In the Tables A2a and A2b we consider the same specification as above, but we include the lagged value of the sector specific output as an additional control variable. This is done in order to include a variable that captures persistence in output and changing business cycle conditions. The data on sector specific output is again obtained from the input-output tables. The results shown in Table A2a and Table A2b confirm the findings from above. However, the estimated coefficient for the regulation in the energy sector changes quite substantially. It seems possible that the variable RegE partly captures the effect of structural change that is measured by the output variable and that the large (negative) coefficient in Table A1 is partly caused by the omission of that information. This could be explained by the presence of an omitted variable bias in tables A1a and A1b. The overall fit of the regressions measured by the coefficient of determination R2 and the statistical significance of the coefficient of the output variable suggest the appropriateness of the extended model in tables A2a and A2b.

**Table A2a**

OECD indicator &amp; control for output, effects on value-added in whole economy

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.1255	0.0392	3.2039	0.001***
RegS	-0.0691	0.1019	-4.0171	0.000***
RegE	-0.0646	1.1001	-3.2067	0.001***
RegT	-0.0215	0.3882	-2.4211	0.016**
Output	0.4279	0.0508	8.4292	0.000***
R2	0.3685			
N	49			
T	9			

Note: This table reports the estimation result using the OECD indicator of regulation in non-manufacturing sectors (NMR) for “Professional services” as a measure of service regulation within the production sector NACE 74 Rev. 1.1 “Other business activities”. The dependent variable is ln VA and the sample covers the years 1998-2007. The explanatory variables are included with one time lag.

**Table A2b**

OECD-indicator &amp; control for output, effects on value-added in manufacturing sector

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.0991	0.0675	1.4689	0.144
RegS	-0.0642	0.1495	-3.2753	0.001***
RegE	-0.0531	1.5667	-1.8765	0.062*
RegT	-0.0166	0.6642	-1.0889	0.278
Output	0.4344	0.0704	6.1684	0.000***
R2	0.4257			
N	25			
T	9			

Note: This table reports the estimation result using the OECD indicator of regulation in non-manufacturing sectors (NMR) for “Professional services” as a measure of service regulation within the production sector NACE 74 Rev. 1.1 “Other business activities”. The dependent variable is ln VA and the sample covers the years 1998-2007. The explanatory variables are included with one time lag.

A further robustness check was made concerning the choice of lag length, which was varied between 1 and 4 years. This did not qualitatively affect the results. The precise estimated results are not reported but are available from the authors upon request.

As mentioned above, a potential alternative measure for services liberalisation is the net operating surplus in the corresponding sectors. An additional advantage, besides providing a robustness check of our results, is that we are not restricted in terms of data, so we can use data starting in 1995. Hence, we do not need to rely on a linear interpolation to obtain data for the intermediate years. In tables A3a and A3b we considered the net-surplus in the sector “other business activities”, corresponding to the services covered by the OECD indicator. The control variables are the same as above. The results

continue to hold, but the interpretation of the coefficients is difficult without further exploring possible changes our proxy for deregulation may take. To be specific, the explanatory variable RegS is a weighted average of the net surplus. In addition to that, it is unclear what a typical value of this variable is and how much it varies. This also makes a comparison of the coefficients of, e.g., RegS and RegE difficult. Furthermore, it is indistinct how much net surplus is affected by deregulation efforts in the services sector.

**Table A3a**

base model net surplus, effects on value-added in whole economy

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.3855	0.0363	10.6153	0.000***
RegS	-0.0918	1.2493	-5.4824	0.000***
RegE	-0.0864	0.4194	-7.1303	0.000***
RegT	-0.0169	0.2871	-2.5202	0.012**
R2	0.2906			
N	49			
T	12			

Note: This table reports the estimation result using the net surplus for the sector NACE 74 Rev. 1.1 "Other business activities" as a measure of service deregulation within the production sector NACE 74 Rev. 1.1 "Other business activities". The dependent variable is In VA and the sample covers the years 1995-2007. The explanatory variables are included with one time lag.

**Table A3b**

base model net-surplus, effects on value-added in manufacturing sector

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.5030	0.0566	8.8929	0.000***
RegS	-0.0707	1.8024	-3.8054	0.000***
RegE	-0.1154	0.6066	-6.2570	0.000***
RegT	-0.0395	0.5893	-3.0688	0.002***
R2	0.3630			
N	25			
T	12			

Note: This table reports the estimation result using the net surplus for the sector NACE 74 Rev. 1.1 "Other business activities" as a measure of service deregulation within the production sector NACE 74 Rev. 1.1 "Other business activities". The dependent variable is In VA and the sample covers the years 1995-2007. The explanatory variables are included with one time lag.

Including output as an additional control variable again leads to an improved model fit in terms of the R2. The coefficient on RegS increases slightly, whereas again the coefficient on RegE decreases significantly (see tables A4a and A4b).

**Table A4a**

Net surplus &amp; control for output, effects on value-added in whole economy

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.1508	0.0336	4.4906	0.000***
RegS	-0.1045	0.0139	-7.5424	0.000***
RegE	-0.0356	0.0105	-3.3827	0.001***
RegT	-0.0058	0.0056	-1.0446	0.297
Output	0.5695	0.0365	15.6208	0.000***
R2	0.5163			
N	49			
T	12			

Note: This table reports the estimation result using the net surplus for the sector NACE 74 Rev. 1.1 "Other business activities" as a measure of service deregulation within the production sector NACE 74 Rev. 1.1 "Other business activities". The dependent variable is In VA and the sample covers the years 1995-2007. The explanatory variables are included with one time lag.

**Table A4b**

Net surplus &amp; control for output, effects on value-added in manufacturing sector

Variable	Coefficient	Std. err.	t-stat.	p-value
EMP	0.1784	0.0532	3.3567	0.001***
RegS	-0.0804	1.4550	-5.3634	0.000***
RegE	-0.0368	0.5352	-2.2622	0.025**
RegT	-0.0155	0.4839	-1.4673	0.144
Output	0.5674	0.0478	11.8832	0.000***
R2	0.5878			
N	25			
T	12			

Note: This table reports the estimation result using the net surplus for the sector NACE 74 Rev. 1.1 "Other business activities" as a measure of service deregulation within the production sector NACE 74 Rev. 1.1 "Other business activities". The dependent variable is In VA and the sample covers the years 1995-2007. The explanatory variables are included with one time lag.

In order to estimate the effects of further structural reforms in the area of professional business services a hypothetical improvement of the values of the OECD regulation indicator is assumed. On the basis of the results of our model one can conclude which effects a change in the level of regulation in the model has on the gross value added in the manufacturing sector as well as the gross value added in the whole economy<sup>22</sup>.

We consider three hypothetical scenarios. In a conservative estimation, we assume that the German level of regulation in the professional services improves by half a point. In an optimistic scenario, an improvement by one full grade point is assumed. Additionally, we consider the hypothetical case that

<sup>22</sup> The reader should be aware that the following estimates of the effect of a further deregulation have to be interpreted with care, as they rest on the assumption of linearity. Furthermore, our model does only cover the effects of services deregulation in the area of professional services, which is not whole services sector.

the domestic level of regulation in the area of professional services reaches the average level of the leading EU member state, the United Kingdom. In 2013, the average index value for United Kingdom was 0.72.

The prediction is complicated by the fact that the OECD-indicators for “professional services” do not cover the entire NACE 74 Rev. 1.1 “other business activities”. There are two possible ways to address this problem.

- For the model estimation based on the OECD indicators we had to assume that the OECD indicators have validity for the entire production sector NACE 74 Rev. 1.1 “other business activities”. If one considers this assumption acceptable, one could determine the effect of a further deregulation in the area of professional services on gross value added based on the technical coefficients for the entire production sector NACE 74 Rev. 1.1 “other business activities”. Since the intermediate consumptions for downstream sectors of the entire production sector NACE 74 Rev. 1.1 “other business activities” have a higher volume than the intermediates of the “professional services” architecture, legal, accounting and engineering (covered by the OECD indices), the resulting estimated total effects on gross value added are obviously higher (see table A5a). Thus one implicitly assumes that the other sectors within NACE 74 Rev. 1.1 are subject to the same deregulation as the ones covered by the OECD indices. If you follow this first approach, the value for RegS in the case of a hypothetical change of the OECD-indicator is given by

$$RegS = \sum_s w_{j,NACE\ 74\ rev1,2007} \cdot X_{hypothetical\ OECD\ index\ professional\ services,2013}$$

- The assumption that the OECD indicators for “professional services” have validity for the entire production sector NACE 74 Rev. 1.1 “other business activities” was necessary because of the coarse subdivision of the input-output tables until the year of 2008. If such assumptions are not strictly necessary, it might be appropriate to avoid them. As the OECD-indicators are only available for the services of architects, legal professions, accountants and engineers, it seems advisable to limit the prediction on the effects of further deregulation to these “professional services”. In order to take account of this, we used the technical coefficients for the production sectors NACE M69 rev2 “legal and accounting activities” and NACE M71 rev2 “architectural and engineering activities” of the more detailed German input-output table of the year 2008 to determine the importance of deregulation in the area of these four “professional services”. Since the prediction in this case involves a smaller number of services, the resulting estimated total effects on value-added are obviously lower (see table A5b). This results from the implicit assumption that the regulation level in the remaining service sectors remains unchanged. If you follow our second approach, the value for RegS in the case of a hypothetical change of the OECD-indicator is given by

$$RegS = \sum_s w_{j,NACE\ M69\ \&\ M71\ rev2,2008} \cdot X_{hypothetical\ OECD\ index\ professional\ services,2013}$$

If one assumes the hypothetical values of the OECD indicators for Germany in 2013, our model yields the following growth rates for the gross value added in the whole economy and in the manufacturing sector depending on the chosen approach:



**Table A5a**

Approach one: Effects of hypothetical reductions in regulation in the production sector NACE 74 Rev. 1.1 "other business activities" on value-added, linear approximation based on the estimation results of the models A2a and A2b

	Corresponding OECD index value	Effect on value-added whole economy	Effect on value-added manufacturing sector
Actual value 2013 OECD index value professional services	2.65		
Improvement of OECD index value by half a point	2.15	+1.31%	+1.41%
Improvement of OECD index value By one point	1.65	+ 2.63%	+2.84%
Improvement of OECD index value level of UK	0,72	+ 5.08%	+ 5.48%

**Table A5b**

Approach two: Effects of hypothetical reductions in regulation in the production sectors NACE M69 rev2 "legal and accounting activities" and NACE M71 Rev. 2 "architectural and engineering activities" on value-added, linear approximation based on the estimation results of the models A2a and A2b

	Corresponding OECD index value	Effect on value-added whole economy	Effect on value-added manufacturing sector
Actual value 2013 OECD index value professional services	2.65		
Improvement of OECD index value by half a point	2.15	+0,51%	+0.60%
Improvement of OECD index value By one point	1.65	+ 1,01%	+1.21%
Improvement of OECD index value level of UK	0.72	+ 2.02%	+ 2.33%

### Categorising the model results

In order to make our model results comparable to Mocci et al. (2014), we estimated the model on the basis of logs and with a three year time lag. The coefficient RegS for Germany is substantially lower in our model specifications than the values for Italy published by Mocci et al. (2014). Projections for the effects of further deregulation in Germany, which are directly methodologically comparable to our approach, are not to be found in the literature.

Most studies use general equilibrium models for projections, which cover different economic activities. These models are far more complex than our calculations. This offers the advantage to include numerous effects into the analysis simultaneously. On the other hand the dependency of the model results on the underlying assumptions increases. Monteagudo et al. (2012) estimate the effects, which were caused by the implementation of the services directive and the potential effects, which would result if it were implemented more consistently. Due to lacking data points after the implementation of the services directive, they also have to evade to a hypothetical scenario to calculate the effects related to the implementation. The effect sizes of the “what if scenarios” are – if a comparison is valid at all – within the scope of our results. Varga und Veld (2014) use the benchmark model of the European Commission in order to estimate the effects of different reforms. It is assumed that all countries implement reforms, which put them on the level of the average of the three “best” EU countries. Due to the structure of the model, they are able to show long term changes. The effects of services liberalisation published by Varga und Veld (2014) lie below our estimation. However in this instance a meaningful comparison of both models is once again almost impossible, as – apart from the methodology – the measuring of the regulatory intensity varies and baseline effects are probable.

# Appendix B: Operating surplus in a national and international comparison

In order to categorize the net operational surpluses into selected domestic services sectors, it is useful to do a comparison with European neighbour countries. Figure B1 compares the domestic net operational surpluses both with the EU average as well as with the surpluses of the leading neighbour countries in the OECD-NMR-ranking, namely the United Kingdom and the Netherlands. Comparing the net operational surpluses of the knowledge-intense services sectors, Germany as well as the Netherlands and the United Kingdom lie roughly in accordance with the EU average of 17 per cent. Differences do however exist in the area of the professions included in the OECD-NMR-indicator. In the area of legal, tax accounting and consulting services the domestic net operational surpluses lie roughly on the level of the United Kingdom and the EU average, while the surpluses in the Netherlands are substantially lower. However in the area of architecture and engineering services the domestic surpluses lie considerably above those in the Netherlands and the EU average. In the area of financial and insurance services the domestic net operational surpluses are much lower.

## Net operating surplus in the area of business services in an international comparison

Year 2010, in per cent proportional to production value

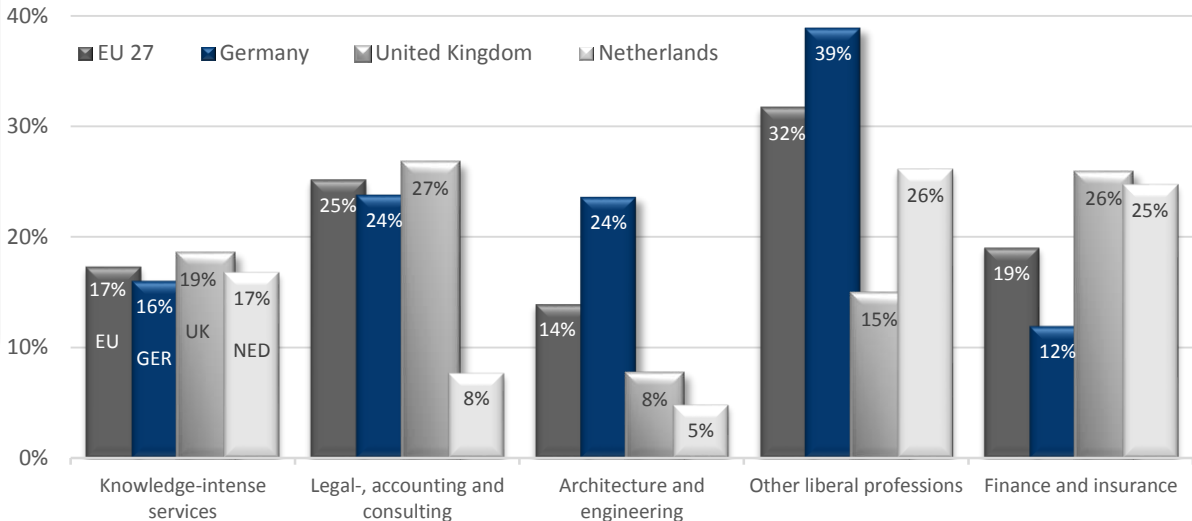


Figure B1: Net operating surplus in selected sectors and sectors in an international comparison, Source: country-specific input-output calculations, own calculations and illustration.

Knowledge-intense services: media and publishing, computer and information services, telecommunication services, financial and insurance services, legal, tax accounting and consultancy services, architecture and engineering, research and development, other liberal professions.

On the basis of the data of the input-output calculations a detailed breakdown of the net operational surpluses, for example within the combined group of legal, tax accounting and consulting services, is not possible. However, a more detailed breakdown for Germany is indirectly possible for Germany through the structure survey of the services sectors of the Federal Statistical Office. On the basis of these statistics differentiated values for the gross operational surpluses within the professions can be

determined (see figure B2).<sup>23</sup> In 2011 the gross operational surplus before subtracting write offs within the class of legal, tax accounting and consulting services in the area of legal services was about 49 per cent, in the area of public and tax accounting it was roughly 26 per cent, in the area of consulting services it was roughly 25 per cent and in the administration and management of companies it was roughly 8 per cent. Within the class of architecture and engineering offices the gross operational surplus in the area of architecture offices was roughly 36 per cent and in the area of engineering offices it was about 16 per cent.

**Gross operating surplus in the area of domestic business services**

Year 2011, in per cent proportional to production value

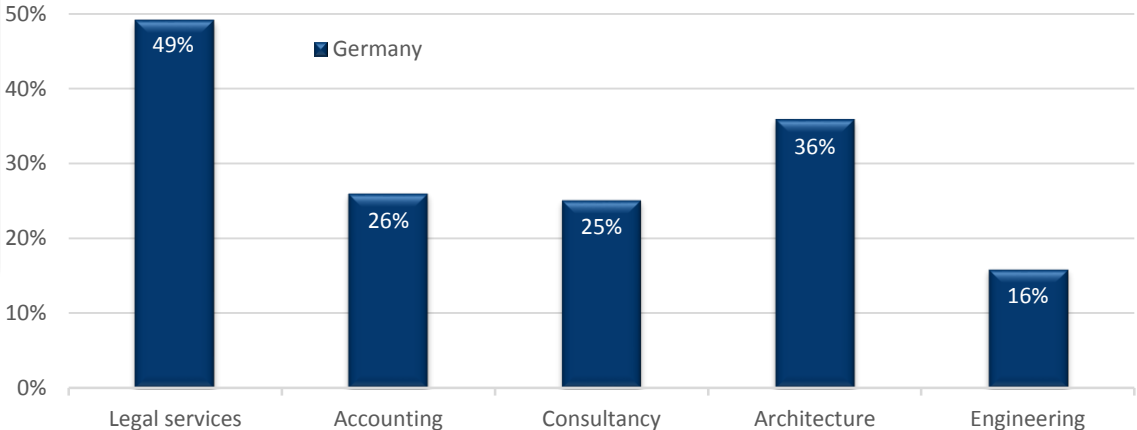


Figure B2: Gross operating surplus in the area of selected domestic business services, Source: *Strukturhebung im Dienstleistungsbereich 2011* (German services structural survey, German Federal Statistical Office, own calculations and illustration).

<sup>23</sup> The net operational surplus can be derived from the gross operational surplus after subtracting write offs. Regarding the input-output calculations, one can see that the write offs in the area of legal, tax accounting and consulting services are very low, as the values of the gross and the net operational surplus are almost identical.

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