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Regulation of Professional Services in EU Member States

Classification, Measurement and Evaluation

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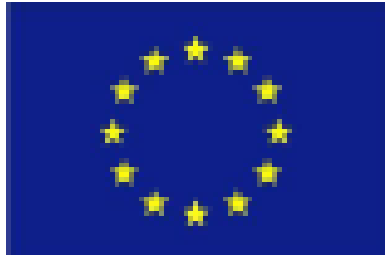
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Abstract

This paper has a two-fold purpose: on the one hand of presenting methods and results from studies (mainly involving the authors) that have fed into ongoing efforts at European Union level to classify regulatory systems in Member States, to find ways to measure the extent of regulation, and to evaluate whether state-legislated or self-regulation is anti-competitive as distinct from quality-enhancing regulation for consumers', rather than producers', benefit. On the other hand, the paper presents results from a partial update of regulatory knowledge (regulation indices) and further develops a new measure of regulatory effect of professional services throughout the Member States' economies based on newly developed empirical measures of interlinkage (Cf. Paterson and Sellner 2012). The results of the updated indicator show some modest decrease in anti-competitive regulation in professional services, mainly with respect to market conduct behaviour: more openness to new forms of businesses, price setting, fees and advertising. The newly introduced regulatory economic-impact indicators capture the degree of anti-competitive regulation of professional services together with the strength of (direct and indirect) inter-industry linkages and their importance (by sector weight) for the economy.

Keywords: professional services, knock-on effects, regulation,

JEL Classification: L84, C67, O52, K23.

1. Introduction

This paper has a two-fold purpose: on the one hand of presenting methods and results from studies (mainly involving the authors) that have fed into ongoing efforts at European Union level to classify regulatory systems in Member States, to find ways to measure the extent of regulation, and to evaluate whether state-legislated or self-regulation is anti-competitive as distinct from quality-enhancing regulation for consumers', rather than producers', benefit. On the other hand, the paper presents results from a partial update of regulatory knowledge (regulation indices) and further develops a new measure of regulatory effect of professional services throughout the Member States' economies based on newly developed empirical measures of interlinkage (Cf. Paterson and Sellner 2012). Together these strands of the paper lay a basis for further discussion of policy for professional and business services.

Since the 1990's research has been carried out by the OECD into the extent of various kinds of economic regulations, such as employment protection legislation (EPL), product market regulation (PMR), barriers to entrepreneurship, state controls, barriers to trade and investment; at the same time economic evidence was gathered relating possible adverse effects of certain aspects of anti-competitive regulation on economic development throughout OECD countries.

Central to the investigations of regulation and associated economic outcomes was the development of summary indicators, chosen according to the likely influence of regulations on the choices and market opportunities of firms (cf. Nicoletti, Scarpetta and Boylaud, 2000). Most relevant to the service sector is the connection between product market regulation and economic growth: the research questions have focussed on whether, and to what extent, product market regulation hinders rather than assists development of productivity, employment and GDP. (Cf. Alesina et al. 2003, Arnold et al. 2008, Nicoletti and Scarpetta 2003.)

The PMR indicator was originally developed at the economy-wide level, thereafter sectoral indicators of regulation were constructed for non-manufacturing sectors (NMR). Network industries for which NMR indicators were developed were in energy sectors (electricity, gas), transport sectors (by air, rail or road), communication sectors (post and telecoms). Among other services sectors covered were retail trade and professional services. Especially in such services and in non-manufacturing services in general economic regulation plays an important role.

In 2002, IHS carried out a study on the economic effects of regulation in professional services on behalf of the European Commission, DG Competition (Paterson, Fink, Ogus, Merz, Berrer, 2003), which gathered data on restriction to market entry and market conduct, as well as economic performance data of the (then) 15 EU Member States. The approach built on some of the previous OECD indicators and developed *regulation indices* appropriate for the mostly self-regulated professional services (also known as liberal professions). The methodology and main findings of the IHS study are dealt with in section 3 of this paper. Around this time another study (CSES 2002) on administrative burdens on business start-ups was carried out by the Centre for Strategy & Evaluation Services for the European Commission, DG Enterprise (cf. Conway, Janod and Nicoletti 2005).

The methodology of the IHS regulation indices developed in 2002 (Paterson et al. 2003) was used by the European Commission to evaluate regulation of professional services in the 2004 accession Member States.

In 2003 OECD carried out an update of the original PMR indicators from 1998. Among the wider range of product markets regulations, indicators concerning the accounting, legal services, engineering, and architectural professional services were constructed using the data from Paterson et al (2003), taking into account updates (Conway, Janod and Nicoletti 2005 p. 7). In the stead of carefully chosen fixed weightings for sub-indicators – that feed into higher level indexes – a bandwidth of index values was derived by using random weights.¹

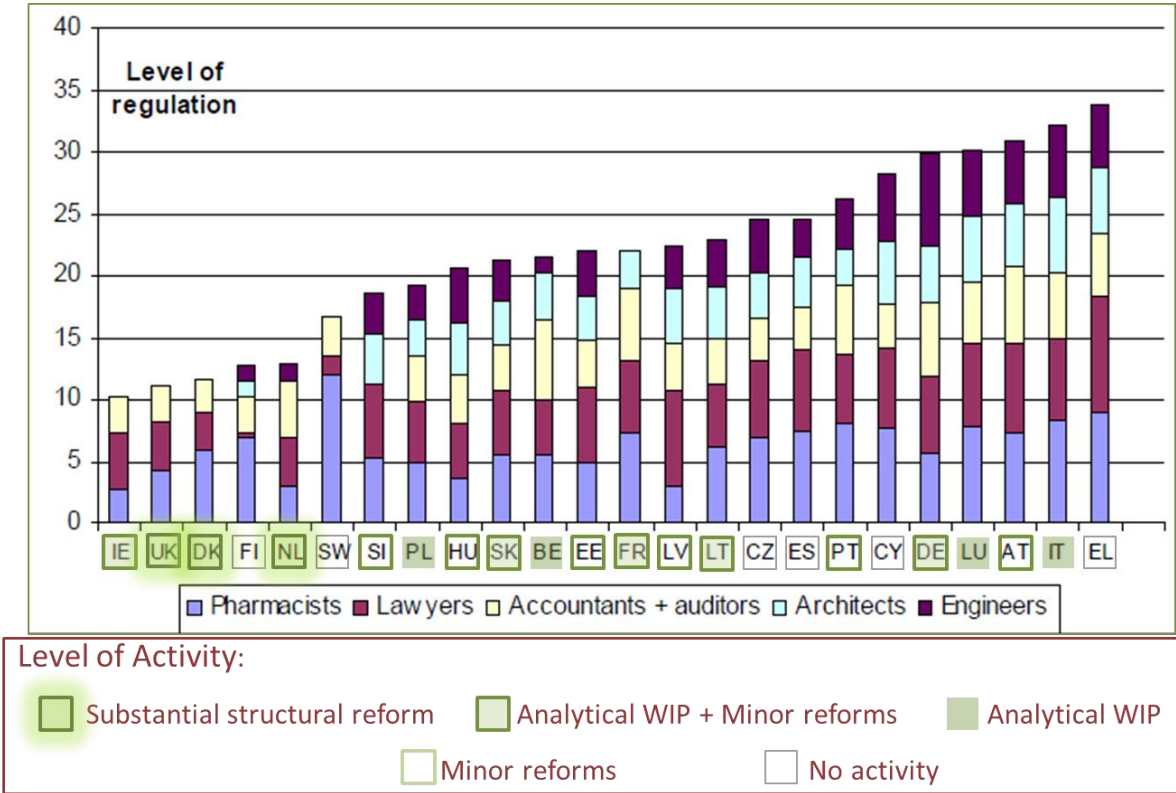
The PMR indicator system was revised and updated by OECD once more in 2008, and the basis for the OECD indicators for retail and professional services remained close to the IHS regulation indices (cf. section 4). Although some differences exist in the input factors and weightings used at different times, the three editions of professional services PMR indicators and the IHS 02/04 regulation indices allow an assessment of changes in economic regulation over the time series. We also use this time series to answer the question of knock-on effects of economic regulation in professional services in section 5.

While reforming the regulation of professional services has not left the agenda, the EC was particularly active in the first half of the 2000's. In 2005 the Commission published a 'progress report' based on the IHS regulation indices and activities undertaken in 2004/05 (European Commission 2005). Figure 1 shows this information for 5 professions: for each country (as sum). The Commission reported that during 2004 it had established a structured dialogue with the European professional bodies of lawyers, notaries, engineers, architects, accountants, tax advisers, and pharmacists, and with national regulatory authorities to discuss the justification of existing professional rules and explore what can be done to make them more pro-competitive. The level of receptiveness to reform varied depended on how open and deregulated the particular profession under discussion already was. Further, national competition authorities had been active and a step change had been seen in their activity with the majority reporting being engaged in work in this field during 2004/05 (cf. Figure 1)

Notwithstanding this assessment by the EC, and that the OECD also a discerned a general liberalisation of product markets in the 2000's, the pace of reforms was slower between the second (2003) and third (2008) editions of the PMR indicators than between the first and second editions (Wölfl 2009). Perhaps this is a case of "low-hanging fruits" being plucked more readily (e.g. removal or reduction in price and advertising restrictions for professional services). A general consensus regarding the need for regulations that maintain quality of services for consumers' benefit in some professions may exist, but there is less likelihood of agreement (from country to country) as to where exactly regulation of particular activities should start and end.

¹ In all cases the PMR indicator values fall within the 90% confidence interval that arises from using uniform input distributions. So there is actually little gained by using random weights.

Figure 1 Index of level of regulation in Member States, with reform activity 2004/05



Source: European Commission, IHS

The IHS professional services regulation indexes were updated for Austria in 2007, as part of an evaluation of Austria’s National Reform Programme focusing on professional services. (Berger, Felderer et al. 2007). Reforms implemented since 2002 varied between “considerable decrease” (accountancy profession), “modest, small and marginal decreases” (lawyers, architects, engineers and notary professions, respectively), and “no change” (pharmacy profession).

In this current paper a review of regulation in the same professional services as investigated in 2002 (cf. Paterson et al. 2003) has been carried out for subset of EU-27 Member States, and an update of the IHS regulation indices for 2012 is reported on in section 6. The countries and professions covered in 2012 are shown in Table 2.

2. Background: Comparative studies on professional and other services at EU-level

2.1. Reserves of Activities

A recent study was carried out by the Centre for Strategy & Evaluation Services (CSES 2012)² for the European Commission's DG Internal Market and Services (DG MARKT). The *policy context* for this study is completion of the internal market in services.

There are currently about 800 different regulated professions in the EU that have been reserved to individual professionals and to service providers holding specific qualifications. The reserve of activities to holders of a specific professional qualification has frequently been mentioned as a barrier to the effective functioning of the Single Market in the provision of cross-border services, notably between Member States in which professions are, and are not, regulated. Indeed, many service activities are regulated in only a few Member States or even a single Member State.

In a Communication on April 2011³ the European Commission referred to the need to "review the scope of regulated professions" and "carry out further assessments on reserved activities". In its conclusions from March 2011, the Competitiveness Council recognised that unjustified or disproportionate requirements reserving access to certain service activities to service providers holding particular qualifications can constitute a major barrier to the effective functioning of the Single Market and welcomed the Commission's intention to further assess this issue.

The **Professional Qualifications Directive** (PQD) adopted in 2005 provides a framework to facilitate the mutual recognition of professional qualifications⁴. The Directive defines a set of rules for the recognition of professional qualifications of professionals wishing to establish or to provide services in another Member State where a particular profession is regulated. There is a distinction between permanent establishment and temporary mobility.

The CSES study was not directly concerned with assessing the effectiveness of the implementation of PQD, since this has been subject to a separate evaluation (European Commission 2011). However, barriers to the free movement of professionals linked to reserves of activities may arise in the case of professionals moving from a Member State in which a given profession is non-regulated to one in which it is regulated. The PQD foresees a special mechanism to facilitate mutual recognition in that a professional from a non-regulating country should prove two years of professional experience or he/she has followed a regulated education or training.

In December 2011 the Commission presented a legislative proposal to modernise the Directive⁵. This proposal includes a provision on the transparency and mutual evaluation of regulated professions. It also addressed the above requirement of two years of professional experience.

² The quantitative economic assessment was supported by the Institute for Advanced Studies (IHS).

³ Single Market Act 'Twelve levers to boost growth and strengthen confidence "Working together to create new growth", COM(2011) 206/4

⁴ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications, OJ L 255, 30/09/2005, p.22-142.

⁵ Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on Services in the Internal Market, OJ L376 of 27.12.2006, p.36

The **Services Directive**⁶ was adopted at the end of 2006 with the aim of facilitating the full implementation of the Internal Market in the services sector and modernising the legal framework in respect of the provision of services activities. The main aim of the Services Directive is to unlock the full economic and job-creation potential of the EU's internal market in services, which has been estimated as potentially adding up to an additional 0.6-1.5% of EU GDP by removing unjustified and disproportionate barriers. The Directive concerns activities which account for 40% of EU27 GDP and for a high proportion of total employment. It complements the Professional qualifications Directive for regulated professions by dealing with other matters than those linked to the recognition of professional qualifications (commercial communications, insurance, multidisciplinary partnerships).

The CSES Study established a *legal inventory of reserves of activities*, whose purpose was to set out the current position on reserves of activities within regulated professions linked to the exclusive (or shared) right for professionals to provide particular types of services. The inventory also identifies the qualification requirements associated with these reserves of activities (where information was available). A two stage process was adopted for the regulatory mapping to inform the development of the legal inventory of reserves of activities:

1. Identify all the regulated professions within study scope across three sectors - business services, construction and tourism.
2. Identify which of these regulated professions was subject to a reserve of activities linked to the possession of specific professional qualifications.
3. Map out whether reserves of activities were exclusive to a single professional or shared between multiple professionals, and specify which activities and tasks were reserved.

The issue of reserved professional titles was not been examined in depth.

The *key findings* of the CSES study (CSES 2012) were that many EU Member States reserve tasks through national legislation to professionals holding a specific professional qualification, either through an exclusive or a shared reserve of activities.

The number of regulated professions within scope varied considerably across the three sectors within scope (business services, construction and tourism). There was a range from a high of 55 Regulated Professions in Germany to a low of 16 in Finland (including reserved titles). In total, across the sample of 13 EU Member States, and in the three sectors within study scope, 481 reserves of activities were identified. There were with significantly more shared than exclusive reserves of activities (197 compared with 284). This was especially the case for professions such as architecture and engineering.

There were clear differences in regulatory approach between countries in the sample to regulating access to the market for professionals. Across the 13 Member States, nine countries reserved activities frequently, while four countries did so more seldom (Denmark, Finland, the Netherlands, and the UK). Moreover, there was strong recourse to the use of exclusive reserves of activities in southern EU countries (Greece, Italy and Spain) and in the new member states (Czech Republic, Slovenia and Poland).

⁶ Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on Services in the Internal Market, OJ L376 of 27.12.2006, p.36.

In contrast, EU countries such as Denmark, Finland, the Netherlands and the UK had low numbers of exclusive reserves of activities. This reflected a greater tendency towards the use of alternative means of regulating the market, such as through reserved professional titles overseen by professional associations and licensing schemes.

Shared reserves of activities were most commonly identified in Greece, Spain (especially in engineering) and in the UK (mainly in the legal sector).

The only EU country in the sample – according to the information available - that used reserved titles as the primary mechanism for regulating professions (as recognised under Art 3(2) of Directive 2005/36/EC) was the UK. However, several other Member States also have reserved professional titles overseen by professional associations not linked to any reserve of activities (e.g. Denmark, Finland and the Netherlands).

Caution is needed in adopting a quantitative approach to assessing the relative degree of entry restrictiveness linked to the presence of reserves of activities. In some EU Member States, a profession may have ten different exclusive reserves of activities, whereas in others, the same profession may be divided into several sub-professions, each with a single reserve of activities.

Sectoral Level reserves of activities

The regulated professions that were most commonly subject to an exclusive reserve of activities were: legal professionals, architects and engineers, and some areas of specialised construction activities (e.g. electricians, electrical engineers, gas installers).

The greatest number of exclusive reserves of activities was identified in legal services, followed by engineering, architecture and surveying. Accountancy had a lower number of reserves of activities compared with other professions⁶.

Engineering accounted for the highest number of shared reserves of activities followed by architecture, legal services and accountancy. The high number of shared reserves in the engineering sector was influenced by the situation in Portugal and Spain, where there are many shared reserved tasks across both the technical and higher branches of engineering. It was common within some professions, especially in architecture and engineering, to have the right to carry out a combination of specialised exclusive and shared reserved tasks. This was particularly the case in southern EU Member States in the sample.

Some EU Member States had a high number of reserves of activities in specific sectors, such as the Netherlands and Slovenia (private security), Spain and Portugal (engineering), and Poland (business services).

There are a high number of reserves of activities in the tourism sector once regional reserves linked to area-specific qualifications requirements are taken into account (e.g. Italy, Poland, Slovenia and Spain). This was especially the case in tourist guiding and mountain guiding.

Economic analysis

The purpose of the economic analysis was to assess the extent to which a link could be established between the presence of reserves of activities, sectoral performance and overall economic impacts.

The methodology involved (i) the development of a quantitative regulatory Index of Reserves of Activities (RA Index) based on the results of the legal mapping exercise (Table 1); (ii) an analysis of general sectoral patterns and trends to establish possible links with reserves of activities (iii) a statistical analysis consisting of a rank correlation and regression analysis drawing on Eurostat’s Structural Business Statistics (SBS) database and (iv) an analysis of knock-on effects based on Eurostat’s input-output tables.

Table 1: Weighted RA Index and ranking – Business Services, Construction, Tourism

Sectoral RA-Indexes					
Business Services		Construction		Tourism	
Index	rank	Index	rank	Index	rank
0.527	EL	0.645	DE	0.833	IT
0.410	PL	0.463	EL	0.667	PT
0.333	ES	0.460	CZ	0.500	SI
0.320	DE	0.425	FR	0.333	ES
0.313	PT	0.388	ES	0.333	PL
0.313	CZ	0.375	IT	0.300	FR
0.303	SI	0.320	SI	0.167	CZ
0.280	IT	0.315	PT	0.167	DE
0.247	NL	0.315	PL	0.167	EL
0.233	FR	0.200	DK	0.000	DK
0.190	DK	0.075	NL	0.000	FI
0.143	UK	0.050	FI	0.000	NL
0.103	FI	0.025	UK	0.000	UK

EU-13 MS in decreasing order of reserved Activities Index

Source: IHS

A number of market entry and conduct barriers across different services markets – among which reserves of activities exclusive to professionals holding specific qualifications – may influence aggregate sectoral performance. There are challenges in attributing economic impacts to a single cause given that multiple ‘independent variables’ influence ‘dependent variables’ such as sectoral employment and turnover. Despite the methodological challenges, various conclusions can be drawn in respect of the impacts of reserves of activities within regulated professions, drawing on the quantitative research.

Whereas the regression analysis supported in all but one sector an inverse relationship between the presence of a reserve of activities and average labour productivity. the results of the analysis, however, are not statistically significant at a confidence level of at least 90%. Overall, the quantitative results from the regression analysis should be treated with caution.

The lack of conclusive findings from the quantitative analysis across professions and Member States reflects the difficulty in isolating impacts to a single cause only. It also suggests a need for further in-depth assessment of economic impacts to be undertaken in future through possible follow-up studies based on empirical research.

2.2. Conveyancing Services Market

A study of the Conveyancing market) was undertaken in 2007 (Schmid et al., 2007) for the European Commission, DG Competition, led by the Centre of European Law and Politics (ZERP) at Bremen University. The study sought to further explore the economic impact of professional services regulation on a specific market and to analyse the effects of professional regulation on the efficiency and performance of the EU markets for legal services associated with house and land sales (conveyancing services). Conveyancing services comprise, for instance, pre-contract searches, transfer deed drafting, signature certification and deed registration in the Land Registry.

This market was selected for in depth study as it is of direct interest to consumers and of high overall economic significance. It is estimated that property turnover in the EU27 for 2005 was almost €1,800 billion (16% of EU27 GDP) with the corresponding turnover in conveyancing services being around €16.7 billion. Measures to open up this market would therefore directly contribute to the Lisbon objectives of growth and jobs.

This study was seen as another step by the European Commission's efforts to promote reform and modernisation of restrictive regulation in the professional services area. The IHS-Study of professional services (Paterson et al. 2003) underlined wide disparities in levels of regulation across the EU and reveals links between excessive regulation and economic inefficiency. Drawing on the IHS study and other fact-finding work, the Commission then published two policy reports (European Commission 2004, 2005) which summarise the Commission's thinking on the scope to reform or modernise specific professional regulation and rules in the professions. Whilst the Commission is not opposed to all regulation of professional services as there are legitimate arguments in favour of certain regulations in this area e.g. to protect consumer interests or safeguard the independence and integrity of a profession, the Commission argues that restrictive regulation needs to meet a strict proportionality test. This means that it is only justified if it serves a clearly defined public interest goal, is objectively suitable to obtain that goal and is the means least restrictive of competition to achieve this goal. This is because such regulations eliminate or limit competition between service providers and thus reduce the incentives for professionals to work cost-efficiently, lower prices, increase quality or offer innovative services. However, a considerable part of current professional regulation was seen as not meeting this test. (Schmidt et al. 2007).

Furthermore, the inefficiency of some EU countries' property transfer systems is illustrated in a World Bank 'Doing Business' Report (World Bank 2005), which shows wide disparities in costs and the time taken to register property transfers. In other Member States including England and Wales, the Netherlands and Italy, deregulatory reforms have been undertaken in recent times to deliver better services to citizens, business and consumers. Yet the economics of deregulation in conveyancing services remains controversial. Whilst the majority of economists expect competition benefits in this field, there are also some warning voices who raise concerns about the quality and integrity of service providers – and especially continental 'Latin notaries' – following deregulatory reforms.

Against this background, the study was comparative, integrating a legal and an economic perspective, on professional and related regulation and its impact on the efficiency and performance of the conveyancing services market. 21 countries are surveyed in the study: Austria, Belgium, the Czech Republic, Denmark, England and Wales, Finland, France, Germany, Greece, Hungary, Ireland,

Italy, Luxembourg, the Netherlands, Poland, Portugal, Scotland, Slovakia, Slovenia, Spain and Sweden.

In terms of methodology, in a first step, the study gathered reliable and detailed information on the regulation currently existing in the Member States. This was achieved by means of a detailed questionnaire covering legal and economic topics, which was sent to selected national reporters, in most cases leading professionals, academics or both. This questionnaire was accompanied by a survey, answered by about 700 persons from 22 countries. It asked for the opinions of professionals and consumers on *choice*, *professional quality*, *speed* and *costs* of services as well as on problems such as legal disputes between the contracting parties and between parties and professionals. Finally, interested parties and stakeholders were consulted extensively.

In order to compare and evaluate the different regulatory '*legal systems*' under which legal conveyancing services are provided in the 21 EU countries examined, the systems were categorised into four distinct regulatory models for the purposes of this study:

- The **traditional, highly regulated Latin notary system**, which reflects the public office characterisation of notarial activities. This model may be found in the vast majority of continental European countries including Spain, Portugal, France, Italy, Luxembourg, Belgium, Germany, Poland, Slovenia and Austria⁷. In addition, Latin notaries exist also in Greece but this country has been classified as a hybrid system given that the additional presence of two lawyers is also required in an average transaction. The Latin notary model is characterised by mandatory involvement of notaries, even though the scope of involvement (contract and deed of conveyance, only deed or just the authentication of signatures) differs widely. Other important features include numerus clausus of professionals, fixed fees and strict regulation on market conduct.
- The **deregulated Dutch notary system**, which reflects a more modern vision of the notary as a private entrepreneur fulfilling public tasks. Under this model, no numerus clausus exists, fees are negotiable and market structure and conduct regulation is generally less strict.
- The **lawyer system** existing in the UK and Ireland, the Czech Republic and Slovakia and – to a lesser extent – also in Austria (where both notaries and lawyers have a high presence on the market). A hybrid system may be found in Hungary⁸ where in average transactions lawyers take care of the conveyancing (mandatory intervention) whereas notaries are usually involved in setting up the mortgage. The lawyer system is characterised by quality control of professionals licensing and professional exams only, negotiable fees and lower levels of regulation on market structure and conduct.
- The **Scandinavian licensed real estate agent system** under which real estate agents provide legal services, too. This model is also characterised by quality control of professionals through professional exams and licensing only, negotiable fees and lower levels of regulation on market structure and conduct. This system can be found in Sweden, Finland and Denmark; however, each has its own characteristics.

⁷ Austria is supposed to be part of this group, although lawyers have a high presence on the market as well and certification of signatures could not only be done by a notary, but by a court as well. Yet, the consultation of a notary in many cases is "quasi-mandatory", as banking institutions in most cases of a mortgage stipulate the involvement of a notary.

⁸ In this study Hungary has been treated as a hybrid system along with Greece, as both notaries and lawyers are involved in the average transaction.

Regulatory Indices

In order to capture the essential structure of conveyancing services in EU countries with different regulatory models (Latin notary, solicitor/lawyer etc.) four regulation indices for each country and each profession providing legal services in the conveyancing process were constructed. Each index has a range of “0” (no regulation) to “6” (highest degree of regulation). The methodology builds on the widely used regulation indices of professional services developed in the IHS study (Paterson et al. 2003), here specifically tailored, and further extended, to account for conveyancing tasks.

In addition to a *Market Entry Regulation Index (MERI)* and *Market Conduct Regulation Index (MCRI)*, the binding involvement of legal professions in real estate transactions is reflected in a *Mandatory Intervention Index (MII)*, and, additionally, specific regulations and instruments of quality control are captured in a *Consumer Protection Index” (CPI)* for each relevant profession in every country. As well as providing common scales for comparison of the level of regulation of conveyancing systems between countries, the regulation indices provides a fundamental quantitative input for further econometric analysis. The results showed:

- MERI and MCRI are by far most restrictive in the group of Latin notary countries, whereas in regimes dominated by lawyers and licensed real estate agents much more liberal rules are in place. The Netherlands is a paradigmatic example for a deregulated Latin-notary system. The differences between the notary systems and the other three groups become even more visible (in all three models of weighting), when the Mandatory Intervention Index (MII) is taken into account as well.
- Regarding the Consumer Protection Index (CPI) the Netherlands exhibits one of the highest levels and the average level for the groups of “lawyers” and “notaries” countries is close. Average CPI in the Scandinavian countries is somewhat lower than in the other three groups, but this applies mainly due to the ratings for just one country, Finland.
- The suitability of the indices was tested against plausible alternative schemes, with the result that, overall, the two alternative models of weighting confirm to a high degree the original outcomes obtained from our regulation indices. In other words: sensitivity towards different forms of weighting is low in our regulation indices. This supports the validity and robustness of the regulation indices calculated according to our model of weighting. There is no large distortion of results caused by particular “subjective weightings”.

Market Outcomes: Transaction Costs

- Transaction costs incurred by the buyer and/or seller of property or land comprise fees to professionals, such as real estate agents, for technical services (surveyor etc.) and for legal services (lawyers, notaries, licensed conveyancers), and, in addition, fees for land registration and taxes. In this study the focus is on fees for legal services. To arrive at the fees for legal services in each country and in order to make a cross country comparison, the average steps and costs associated with buying real estate and obtaining proper legal title in each country were assessed: Legal fees typically represent 15% – 25% of all professional fees, accounting for about 7% – 13% of transaction costs (without mortgage) or around 12% of transaction costs for an average house transaction with a 100% mortgage. Nevertheless, this represents a sizeable cost for consumers, and a notable feature is the variation in legal fees between different countries. The results showed:

- Comparison based on a benchmark transaction value of €250,000 demonstrates that legal fees in Scandinavian countries and the Dutch deregulated notary system are lowest, followed by the lawyer-based conveyancing countries. Latin notary countries are generally the most expensive. Among these, the surveyed new Member States of Eastern and Central Europe have markedly lower fees in absolute terms than the Western European States. However, fees within the various systems vary widely, so that, for example, there are some Latin notary systems where fees are lower than in the lawyer-system countries of Ireland and Scotland.
- Whereas in the notary countries, legal fees are incremental conditional on the value of the transaction, in Scandinavian countries as well as the UK and Ireland, and to a certain extent in the Netherlands, fee schedules are nearly flat. When fees are adjusted by net earnings across countries, or, alternatively, when fees are measured relative to the average house price in each country a similar picture emerges: relative fees are generally lower in Scandinavian countries, followed by many lawyer-system countries and some Latin Notary countries (including the Netherlands). The Latin notary countries of France, Belgium and Italy are found to have relatively high legal fees. In general, countries exhibiting higher fees tend also to be those countries with a high degree of regulation, as is shown in detailed tables and supported by simple plots of legal fees versus regulation index. Furthermore, an analysis on the basis of fees adjusted by net earnings also indicates that the cross-subsidisation between low and high value transactions in almost all cases does not hold i.e. fees adjusted by net earnings in Latin notary countries are consistently higher than those in the other systems where service providers manage to provide an economically viable service, including in the case of low value transactions.

Market Outcomes: Assessment of Service

As has often been claimed, higher levels of regulation leading to higher prices could be economically efficient if, the levels of service quality (in a broad sense of the term) were also higher. Survey data was gathered for this study for the purpose of testing such claims. Respondents in EU countries – comprising a high proportion of professionals – made assessments of services provided by professions involved in conveyancing in their country in four basic areas – reflecting on the amount of choice available to consumers, (professional) quality – including value for money, legal certainty and speed of transaction.

Answers to survey questions addressing each of these aspects of service provided raw data for mathematical conversion into specific variables of service assessment, thereafter aggregated into choice, quality, certainty and speed assessments, each computed per response. For each country studied the average score of each of the four service assessment variables provides a country index. Giving equal importance to these four facets of service provision, an *Overall Service Assessment Index (OSA)* was calculated for each country. The results showed:

- The OSA index is robust (sample size as well as the distributional effects having been considered). The ranking of countries implied by overall service assessment shows that nearly all places in the ‘bottom half’ of the ranking are taken by Latin notary countries, with the notable exception of Germany. The difference in index values between mainly (non-Latin notary) countries and most Latin notary countries is statistically significant. This result is in itself dramatic: not only does the empirical assessment of service in EU countries, by

professionals, associations and consumers not support claims of ‘better’ service in more regulated systems, it indicates that the opposite seems to be happening – namely, that better service in less regulated countries represents the norm.

Econometric Analysis

The connections between regulation, legal fees and service assessments of conveyancing in EU countries are the subject of econometrical cross-section analysis in the final part of the economic section of the report. The results showed:

- The relationship between regulation and price and service perception, here measured, respectively, by regulation indices, by different price categories (fees) and a set of service assessment indices was analysed empirically. Correlations between these three sets or variables were inspected and various regressions measuring the effect of regulation on prices and fees were estimated. The main finding demonstrates empirical evidence that low regulation leads to lower prices thus showing a potential financial benefit for consumers from deregulation. No empirical support for a connection between high regulation and high service assessment of choice, quality, certainty and speed was found. To the contrary, the results support more a slightly negative relationship between regulation and service assessment than the existence of a positive one. Consequently, *the empirical results do not support the argument that high prices are needed to assure high levels of service assessment (quality in a broad sense)*

3. Overview of IHS Professional Services Study for EU-15 (2002) / Extension by EC to EU-27 (2004)

This study for the European Commission, DG Competition by the IHS, Institute for Advanced Studies (Paterson, Fink, Ogus, Merz, Berrer, 2003) presented a comparison of the legislation, regulations and codes of practice governing the practice of a range of professional services across member states of the European Union. The professions covered by the study are legal services (lawyers and notaries), accountancy services (accountants, auditors and tax advisers), technical services (architects and consulting engineers) as well as pharmacy services (community pharmacists).

No adequate knowledge base of regulations or outcomes was previously in existence, so survey questionnaires were sent to professional bodies in each of the fields covered in all member states, and additionally to European professional umbrella organisations, as well as to some relevant Government departments. The questionnaires sought details of market entry and conduct regulation, recent changes in regulations, and basic economic data of the market for each profession. Other sources were texts of laws, professional associations' websites and academic literature

Typical **market entry regulations** are qualification requirements (formal certificates of qualifications:

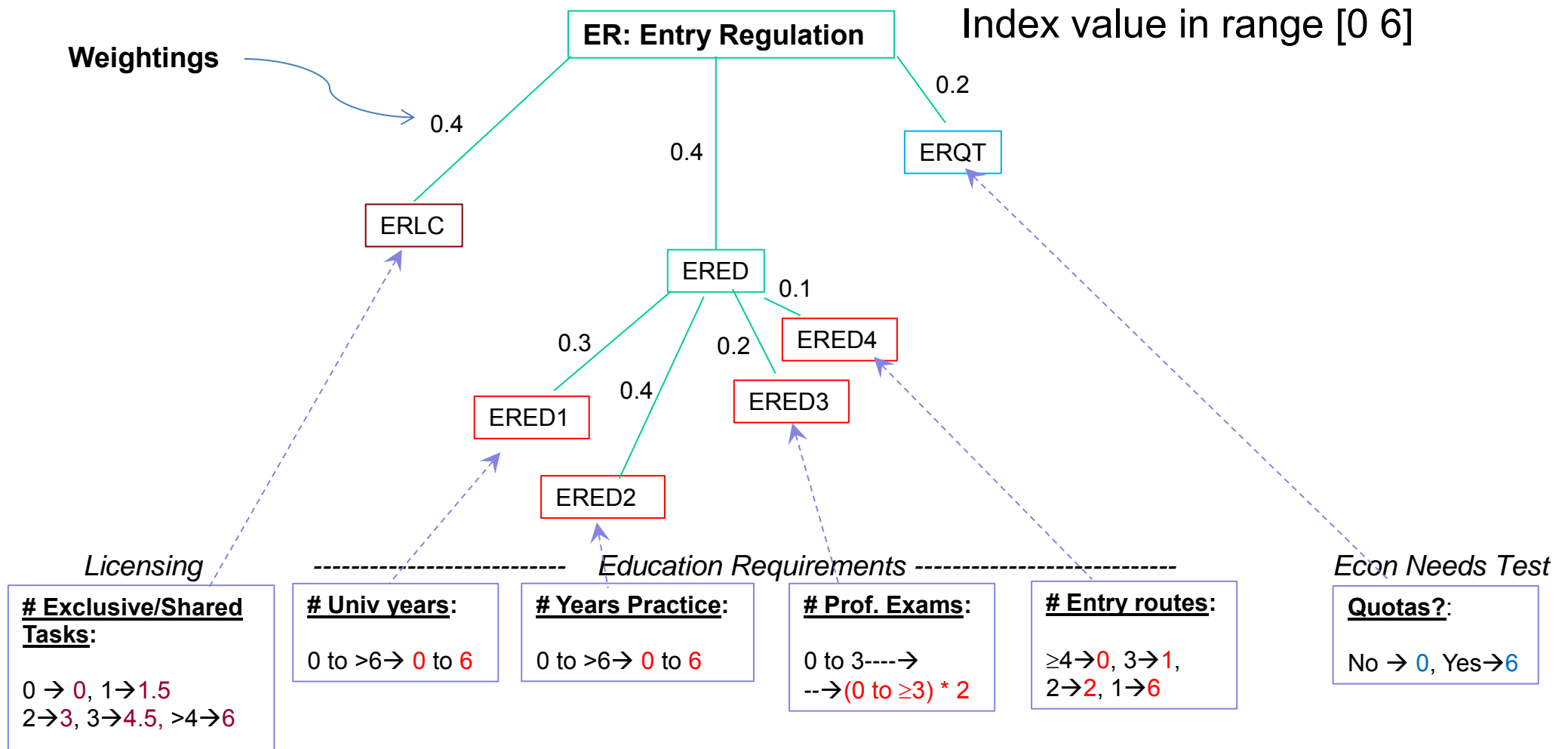
- *university degrees,*
- *length of practice and/or professional examinations),*
- *registration or membership in a professional body,*
- *rules on areas of reserved practice (i.e. exclusive rights for one – or sometimes more – professions to offer specific services or goods on the market),*
- *and, in some cases economic needs tests.*

Typical **conduct regulations** are:

- *regulation of prices and fees (fixed prices, minimum and/or maximum prices etc.),*
- *regulation of advertising and marketing,*
- *regulation of location and diversification (geographical restrictions on offering services, restrictions on establishing branch offices),*
- *restrictions on interprofessional co-operation or*
- *restrictions on forms of business (e.g. whether incorporation is allowed and under what preconditions).*

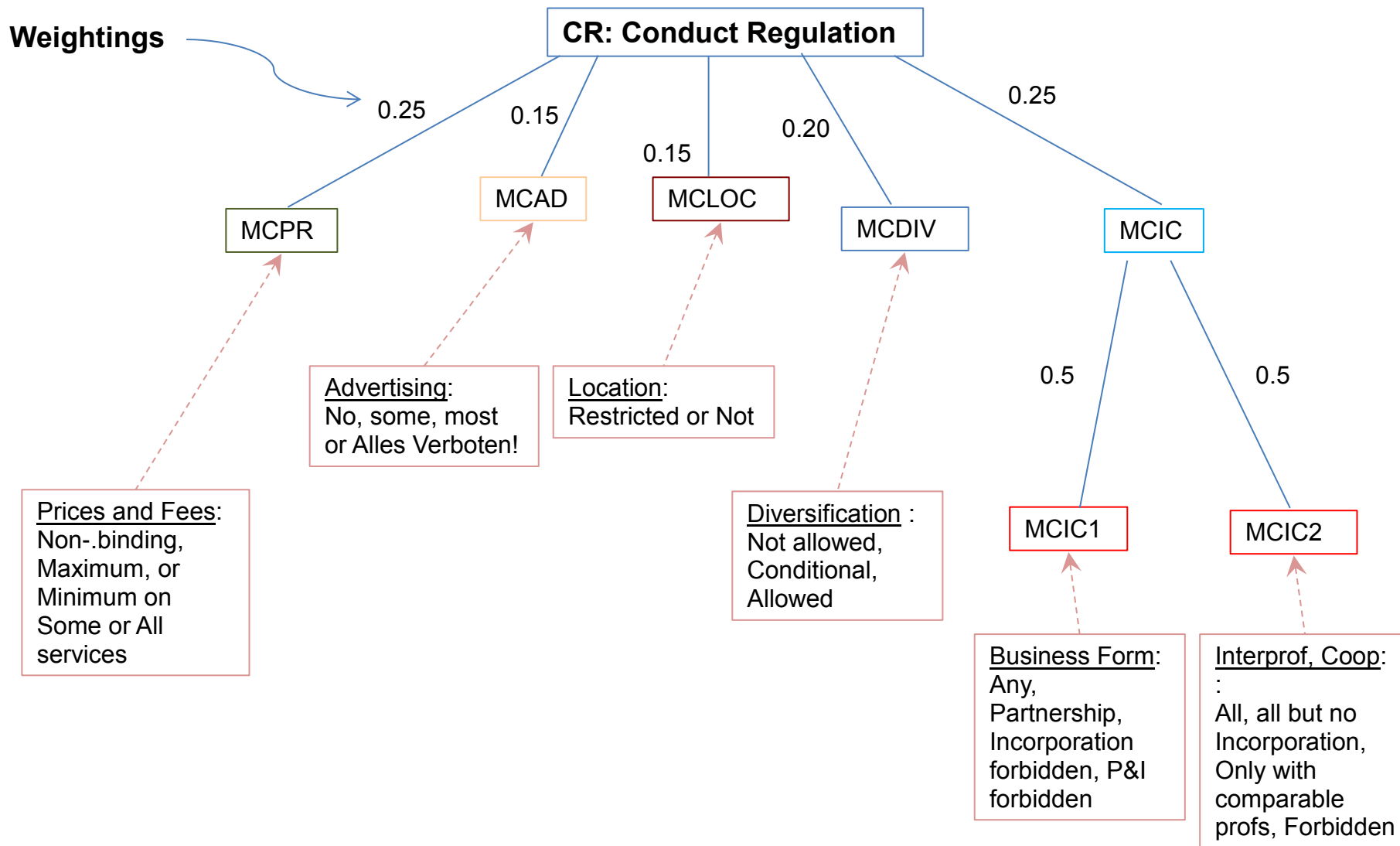
For each of the regulations (see box above) a score between 0 (no regulation) and 6 (maximum degree of regulation) is assigned. For each type of regulation index (market entry and market conduct) the component fields of regulation are given a weighting (such that the weights sum to 1), according to their importance in determining outcomes. (The choice of weights given considerable attention, but is not as decisive as it would appear ; cf. footnote 1.) Weighted scores are summed to get the index value (see Figure 2 and Figure 3).

Figure 2: Regulation index tree - Market Entry



Index is composed of lower level indices: All scores 0-6 (low – high regulation.)

Figure 3: Regulation index tree - Market Conduct



Index is composed of lower level indices: All scores 0-6 (low. – high regulation.)

To simplify the rather complex picture of different forms of regulations on different professions in different countries, a regulation index each for market entry and for market conduct has been computed for each profession/professional group and member state. Subsequently the respective indices for market-entry and market-conduct were combined into an overall regulation index for each profession/professional group: the higher the degree of regulation (intensity), the higher the respective figure (within a range from 0 to 12).

The results for Member States of EU-15 can be summarised as follows:

- Countries with a **high degree of regulation** intensity for all professions studied are Austria, Italy, Luxembourg and, with some exceptions in the field of technical services, Germany as well as France (and possibly Greece).
- Belgium, Spain (and possibly Portugal) appear in a **medium category**, whereas
- UK, Sweden (with the exception of pharmacists), the Netherlands, Ireland, Finland and Denmark (the latter again with the exception of pharmacists) show rather **liberal regulatory regimes** (at least from a comparative point of view within the EU).

With regard to the degree of regulation in the various professional fields

- The most extensive/restrictive regulation can be found in regards of **pharmacies/pharmacists**. Only Ireland, the Netherlands and the UK show comparatively low regulation indices.
- In **architectural** and especially in **engineering services** the situation is rather bi-polar:
 - in respect of *market entry* some countries show rather restrictive licensing models (especially Austria, Germany, Italy, Luxembourg),
 - in others certification without or with only very limited exclusive tasks reserved to the professions is the standard model (e.g. Sweden, UK, The Netherlands, Finland, Denmark).
 - The *conduct regulations* for architects and engineers are – compared to those of other professional groups – rather less restrictive in most of the countries.
- In **legal services (lawyers)** one can observe all degrees of *market entry* regulation. The same is true for *conduct regulation*. This leads to a high level of diversification in the overall regulation indices:
 - from very low (Sweden, Finland) to very high (Greece, Austria, France, Spain, Germany and others).
- For **accountancy services** *market entry* in all countries exhibits some type of licensing model, but the scope of exclusive rights to offer services varies considerably. The same is true – albeit to a lesser degree – regarding qualification requirements. Together with variations in the degree of *conduct regulation* this leads to a rather high intensity of regulation in
 - Belgium, Austria, Germany, Italy, France, Greece and Luxembourg.
 - In all the other countries regulation lies in the medium category.
 - Interestingly it appears that a high degree of regulation in accounting professions very often goes hand-in-hand with similar structures in the field of legal professions (lawyers).

Some general trends were indicated by the **benchmarking analysis** of economic data for the legal, accounting, technical and pharmacy professional services, summarised as follows:

- Relatively high volumes of turnover from revenues (fees) compared to the number of practising professionals in countries with high degrees of regulation (conduct and entry).
- Lower volumes of turnover from revenues (fees) - only in proportional relation to the number of practising professionals - in countries with low degrees of regulation (conduct and entry).
- A tendency towards market 'shake-out' in professions and countries with a low level of regulation, allowing the formation of larger enterprise units. In the professions studied this effect is not associated with a higher than usual level of business (volume per capita), and high market concentration, except in accountancy services.
- A negative correlation between degree of regulation and productivity for the case of legal, accounting and technical services. (Since the measure of volume factors out differences in price levels and overall output levels of the economies, and since neither technological differences between countries nor lower employment levels are apparently the decisive source of higher productivity here, the correlation may also indicate a shortfall in potential output among highly regulated countries and professions.)

These empirical findings point in the direction of effects predicted by the 'private interest' theories of regulation, particularly in those aspects that are termed by economists as being 'rent-seeking'. Whereas more detailed economic analysis would be needed to measure the strength of these effects, and establish statistical significance – the data for such an analysis simply is not available at this juncture – we may at least regard these effects as more than working hypotheses.

The data does not allow for estimating the impact of the differences between regulatory regimes on the *quality of services* provided for consumers in detail, but there have been no apparent signs of market breakdown in those member states which we have shown to be less regulated.

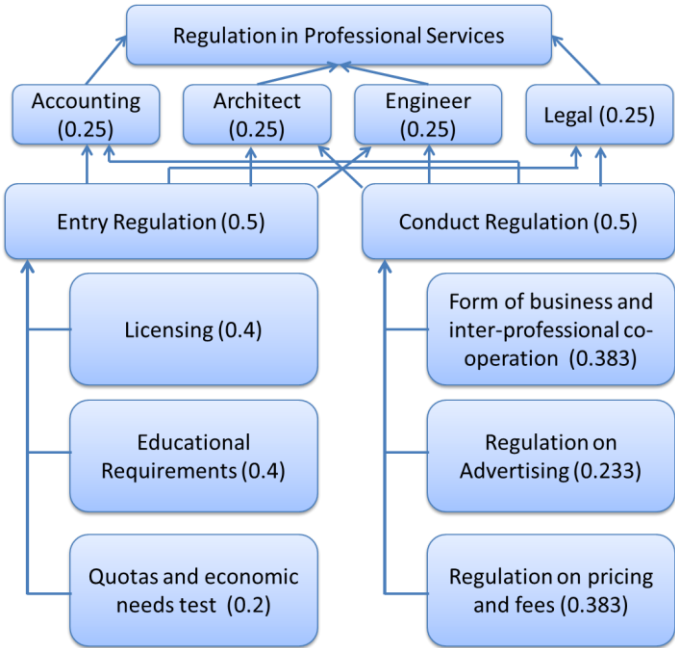
In conclusion, assuming a reasonable homogeneity of quality in the services throughout the EU, the available empirical evidence points in the direction of regulatory induced suboptimal economic outcomes (especially for consumers), these being present to varying degrees in restrictively regulated legal, accounting, technical and pharmacy professional services in many Member States. lower regulation strategies which work in one Member State might also be implementable in another, without decreasing the quality of professional services, and for the ultimate benefit of the consumer.

4. Overview of Professional Services Regulation (OECD)

Measuring the extent of anti-competitive regulation in non-manufacturing industries (NMR) has gained importance, as those sectors account for around two thirds of economic activity in developed countries and yet competition induced by imports remained rather limited (see Conway and Nicoletti, 2006). Since 2001 the OECD measured regulation in NMR and their indicators have since then been used in economic research and policy analysis. The indicators aim at reflecting the extents of regulation that curb efficiency-enhancing competition whereas areas in which competition would not lead to efficient outcomes are not covered. The sectors covered include energy, transport and communication (ETCR), retail distribution and professional services.

Considering professional services, the indicators cover accounting, architects, engineers and legal services for the years 1996, 2003 and 2008. The calculation is based on Paterson et al. (2003), with values ranging from 0 (no anti-competitive restrictions) to 6 (highly restrictive). The overall regulation in professional services is simply the average of the four professions. The score for the single professions is the average of the main dimensions entry regulations and conduct regulations. Each main dimension comprises three sub-dimensions⁹ as shown in Figure 1

Figure 4: Regulation in professional services by professions, 2008



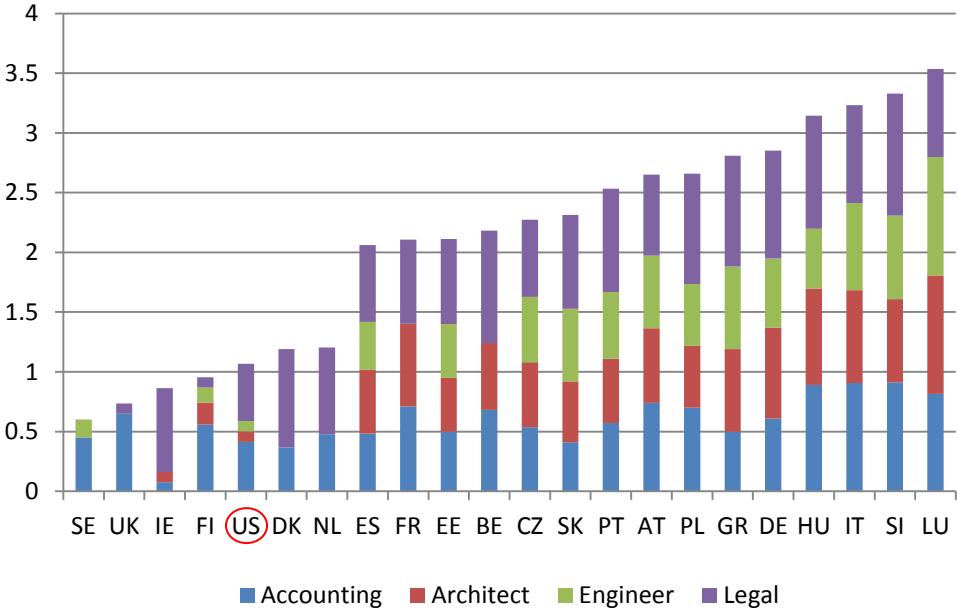
Source: Conway and Nicoletti (2006), own illustration.

Figure 2 shows the overall indicator, by single sector component, for the year 2008. The graph includes all available EU-27 country covered by the OECD and the United States, as it is often used as a benchmark country with especially low NMR in general (see Barone and Cingano, 2011 or Bourlès, et al., 2010). Regarding professional services, it can be seen that the US is not the least regulated country compared to the EU countries covered by the OECD. The northern European countries

⁹ For more details on the indicators see Paterson et al. (2003) and Conway and Nicoletti (2006).

Sweden, United Kingdom, Ireland and Finland show a less anti-competitive regulation. Also the Netherlands and Denmark can be found in the group of countries with the lowest degree of regulation in professional services. The remaining countries can be split up in three groups ranging from the scores 2 to 2.5, 2.5 to 3 and above 3. In 2008, the most restrictive group includes Luxembourg, Slovenia, Italy and Hungary.

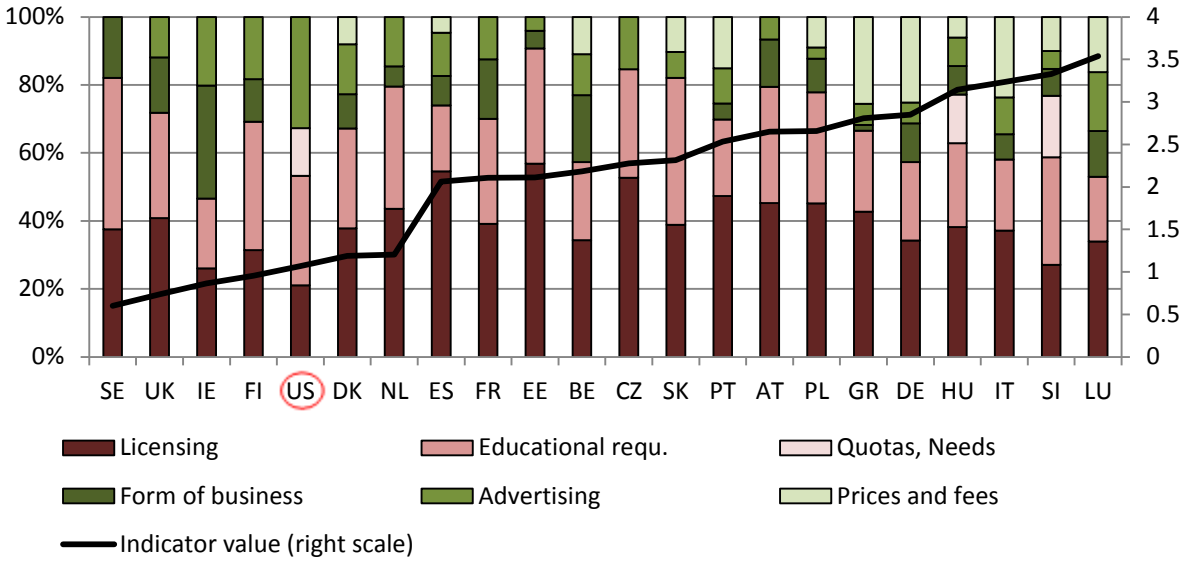
Figure 5: Index of regulation in professional services



Source: Conway and Nicoletti (2006), own illustration.

Among the more highly regulated countries, there seems to be a more or less even contribution of the single professions to the total regulation indicator. Notable exceptions are Belgium and France that do not show any anti-competitive regulation in Engineering. The relatively low overall scores of the Netherlands and Denmark are simply due to the fact that Architects and Engineers face no anti-competitive regulations in those countries. Still, Accounting and Legal professions show similar extents of regulation compared to countries with overall indicator values.

Figure 6: Regulation in professional services by low-level indicator, 2008



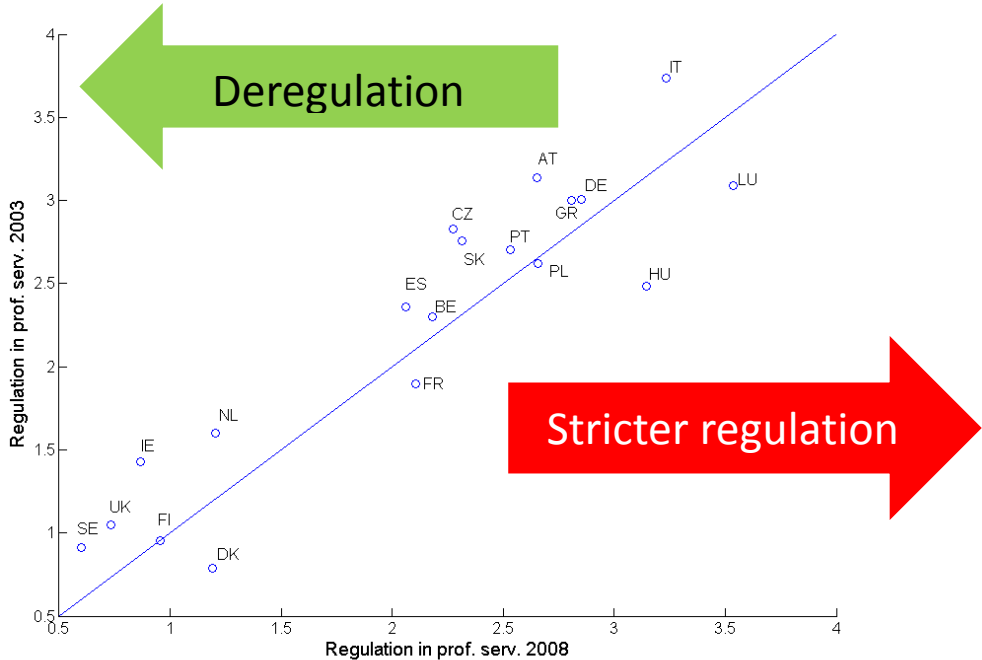
Source: Conway and Nicoletti (2006), own illustration.

Figure shows the NMR of professional in 2008 by low-level indicator. The black line and the right scale of the figure show the values of the overall score, already given in Figure 5. On the left scale the contributions of the low-level indicators for the dimensions market entry regulation (in shades of red) and conduct regulation (in shades of green) are given in percentage of the total value. In most of the countries, two thirds or more of the existing anti-competitive regulation relate to market entry regulations, especially licensing and educational requirements. Quotas and economic needs tests are very rare and, if present as in the US, Hungary and Slovenia, contribute only a small fraction (also due to the weighting system) to the overall restrictiveness of professional services.

Besides the level of regulation, policy makers are interested in the evolution of regulation in different countries, given that numerous studies found potentials for efficiency gains via de-regulation¹⁰. In Figure we plot the indicators of regulation in professional service of the years 2003 and 2008 against each other. Note that the sample of EU countries shrinks from 21 to 19, due to missing values of the indicator for some countries in 2003. The horizontal axis plots the values in the year 2008 and the vertical axis those for 2003. The 45° line indicates the area where both values are equal (no change over time), while points to the left (right) of the axis show the countries that abolished existing (introduced new) anti-competitive restrictions. Overall, the observations are gathered around the 45° line, indicating very little change in regulation between 2003 and 2008. This is in line with Wölfl et al. (2009) arguing that regulatory reforms have slowed down in the recent half-decade compared to the extensive liberalization of most countries between 1996 and 2003. Moreover, some countries introduced new anti-competitive restrictions in professional services (Luxembourg, Hungary, France and Luxembourg). Still, the majority of countries abolished regulation existent in 2003.

¹⁰ See Barone and Cingano (2011); Braila, Rayp and Sanyal (2010); Daveri, Lecat and Parisi (2011); Arnold, Nicoletti and Scarpetta (2008); Bourlès, et al. (2010) and Fioramanti (2011) among others.

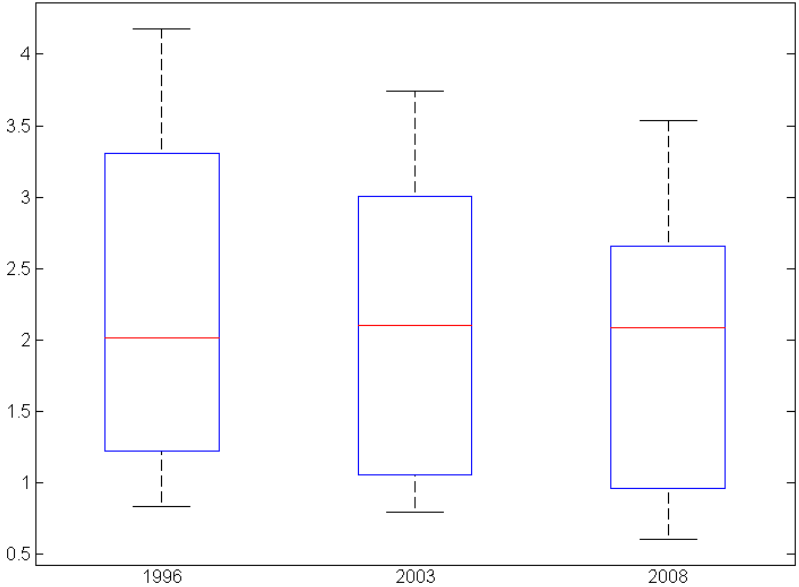
Figure 7: Development in regulation in professional services, 2003-2008



Source: Conway and Nicoletti (2006), own illustration.

Figure shows the distribution of the indicator for regulation in professional services for 1996, 2003 and 2008 across economies. Note that only those countries are covered for which data in each year has been collected by the OECD. The liberalisation efforts of the countries can be seen in terms of decreasing maximum and minimum value as well as 75th and 25th percentile. Nevertheless, the introduction of new regulations some countries have left the median virtually unchanged over time.

Figure 8: Distribution of NMR professional services, 1996 - 2008



Source: Conway and Nicoletti (2006), own illustration.

Remark: Countries included: AT, BE, DK, FI, FR, DE, IE, IT, LU, NL, PT, ES, SE, UK.

5. Knock-on Effects of Regulation of Professional Services

The role of professional services as intermediate supplier implies that regulation of professional services has important implications for many other sectors of the economy. Cf. our companion paper Paterson and Sellner (2012).

Barone and Cingano (2011) have also shown that Professional services especially suffer from a high degree of anti-competitive regulation. The regulatory burden in these professions is then transmitted in the form of higher prices and less product variety, i.e. less deliveries, to ‘downstream’ sectors.

Decreasing the regulatory burden – as measured by indicators such as PMR or regulatory impact (see below) – for those sectors can improve productivity (Bourlès, et al., 2010, Fioramanti, 2011 or Arnold, Nicoletti and Scarpetta, 2008), increase value added and exports (Barone and Cingano, 2011), or boost competition (Braila, Rayp and Sanyal, 2010 or Daveri, Lecat and Parisi, 2011).

Bourlès et al. (2010) mention two channels through which regulation in one sector might affect other downstream sectors in their performance. First, anticompetitive regulations in an ‘upstream’ sector can reduce competition downstream if they are dependent on intermediate inputs (access and product variety is limited by regulation). Second, downstream firms may have to negotiate with (and can be held up by) suppliers, in which case, regulations that increase suppliers’ market power can reduce incentives to improve efficiency downstream.

In this paper we develop indicators that measure regulatory-economic impact using the interlinkage measures introduced in this paper, We show regulatory-economic impacts for upstream effects (by backward linkages) as well as downstream effects (by forward linkages).

5.1. Regulatory knock-on measures

So-called “knock-on” effects of regulation of one sector on to another were first introduced by Conway and Nicoletti (2006), with the aim of quantifying the whole impact of regulation, not only on the particular regulated sector itself.

Conway and Nicoletti (2006) formalise the regulatory knock-on effects as follows:

$$RI_{jt} = \sum_i R_{it} b_{ij} \quad (1)$$

with R_{it} being an indicator of anti-competitive regulation in non-manufacturing sector i at time t and the weight b_{ij} being the total input requirement of sector j for intermediate inputs from non-manufacturing sector i (i.e. the corresponding element of the Leontief inverse coefficient matrix B). The extent of anti-competitive regulatory impact in a sector j is thus dependent on

- the extent of anti-competitive regulation in all other sectors that the sector receives inputs from, and
- the importance of these sectors as suppliers of intermediate inputs.

The resulting measure RI is thus a weighted sum of the regulatory indicators, usually ranging on a scale from 0 to 6. Thus the higher the measure the higher the regulatory burden of the sector.

5.2. Regulatory-Economic Knock-on Measures

A second type of knock-on measure – the economic knock-on effects – was recently introduced by the authors in another paper (CES 2012). The idea behind this type of knock-on effect is to fully illustrate the importance of particular sectors. Besides a sectors' own production value or value added, sectors might take important key positions in an economy in terms of intermediate deliveries. By providing inputs – directly *and indirectly* – these sectors also provide organisational and product-embodied specialised know-how. The more sophisticated the intermediate services and goods become, the more the procurement of those intermediates may be outsourced.

We consider here that anti-competitive regulation in one sector not only may have an adverse effects transmitted by forward linkages into downstream sectors, but also that potentially retarded development of a 'overregulated' sector implies that upstream sectors, i.e. sectors that supply intermediate inputs directly and indirectly to the regulated sector, are themselves restricted by non-fulfilment of potential supply. For this reason we construct a measure that takes not only downstream effects into account – as in equation (1) – but also upstream effects. By invoking the λ coefficients (Fujita 2009) a correct measure of forward and backward linkage, based on direct and indirect inputs per unit of *gross output* is used (cf. Paterson and Sellner 2012).¹¹

For the professional services sector, we apply the regulation index of OECD for years up to 2008 and, take both the regulatory impacts from backward linkages, as well as forward linkages into account.

Thus forward regulatory-economic impact (FREI) at time t , for a particular country (here not subscript-indexed), with respect to (professional) services sector s :

$$FREI_{st} = \sum_j R_{st} \lambda_{sj} \frac{x_j}{\sum_j x_j} \quad \forall j \quad (2)$$

and, backward regulatory-economic impact (BREI) at time t , with respect to (professional) services sector s :

$$BREI_{st} = \sum_i \frac{x_s}{\sum_j x_j} R_{st} \lambda_{is} \quad \forall i \quad (3)$$

together form total regulatory-economic impact (TREI) at time t , wrt. (professional) services sector s :

$$TREI_{st} = \frac{x_s R_{st}}{\sum_j x_j} + FREI_{st} + BREI_{st} \quad (4)$$

which takes the economic output of the (professional) services sector s itself into account.¹²¹³

The extent of total anti-competitive regulatory-economic impact of (professional) services sector s therefore takes into account:

¹¹ Leontief inverse coefficients, in contrast, measure direct and indirect inputs per unit of final demand.

¹² The inclusion of terms such as $\frac{x_j}{\sum_j x_j}$ in (2) to (4) takes both a) the relative size of sectors into account (numerator), and b) allows comparison across different sized economies (denominator).

¹³ The λ -contribution of (professional) services sector s is taken into account in both (2) and (3); this 'double counting' justifiable in the context of forward *plus* backward linkages.

- the extent of anti-competitive regulation in the (professional) services sector that may be transmitted by forward linkage (knocked-on) into all other sectors,
- the extent of anti-competitive regulation in the (professional) services sector that may be holding up supply from all other sectors (knocked-back by) backward linkage,
- the importance of all sectors as suppliers of intermediate (direct and indirect) inputs/outputs, and
- the relative importance of sectors in terms of size of output.

Compared to the regulatory impact index of Conway and Nicoletti (2006), the regulatory-economic FREI-index, which is its nearest counterpart, comprises λ 's (instead of inverse Leontief coefficients), the sectoral regulation index, and , in addition, the relative size of sectors in terms of gross output. On the other hand, our attention here is focused solely on the regulatory effects associate with professional services, whereas the OECD index aggregates regulatory effects over several service sectors. The FREI, BREI and TREI indexes could also be extended to calculate in a similar fashion a broader range of service sectors.

5.3. Data Sources

For the following analysis we used the harmonized Input-Output tables of the OECD (see Yamano and Ahmad, 2006). Symmetric industry-by-industry Input-Output Tables are available for 22 of the EU-27 countries¹⁴, with the latest release covering the year 2005. The tables include the intermediate input flows between 48 sectors (ISIC Rev. 3 industry classification) in millions of national currency in basic prices. Data of countries outside the Eurozone have been converted to Euros using the average annual exchange rate published by Eurostat.

The sectoral information used to construct the IO-Tables varies in detail over the countries covered. Therefore we needed to aggregate some sectors to ensure comparability over countries¹⁵. Furthermore, we excluded the countries Luxembourg, Ireland, Poland and Sweden due to missing data in some sectors. Excluding the sector 'Private households with employed persons & extra-territorial organisations & bodies', we end up with 39 sectors that are comparable over the 20 countries in our sample¹⁶. A full list of industries including abbreviations is given in in Annex 2.

Within the resulting industry structure, the professional services accounting, architects, engineers and legal services are (among others) included in the sector 'other business activities'. To get an idea of the relevance of professional services within other business activities, Figure shows the share of the production value¹⁷ of the four professional services in other business activities. On EU-27 average

¹⁴ Austria, Belgium, Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, Greece, Hungary, Ireland, Italy, Luxembourg, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia and Sweden.

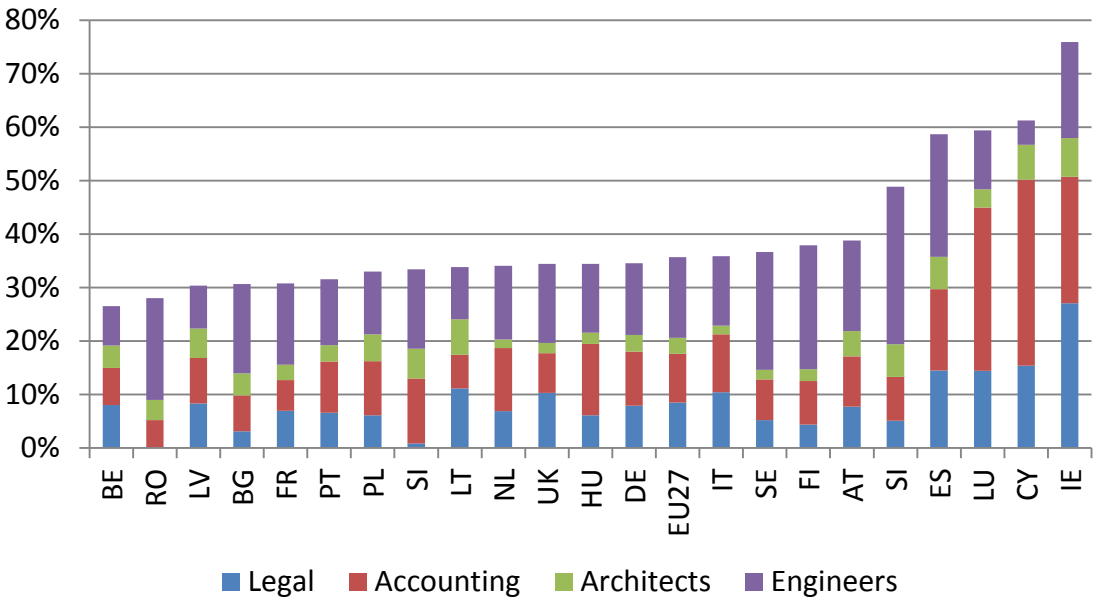
¹⁵ Specifically we merged the industries 'Coke, refined petroleum products and nuclear fuel' and 'Chemicals excluding pharmaceuticals', 'Iron & steel' and 'Non-ferrous metals', 'Building & repairing of ships & boats', 'Aircraft & spacecraft' and 'Railroad equipment and transport equipment n.e.c.' and the sectors 'Production, collection and distribution of electricity', 'Manufacture of gas; distribution of gaseous fuels through mains', 'Steam and hot water supply' and 'Collection, purification and distribution of water'.

¹⁶ We excluded Sweden and Romania due to missing data for key sectors of our analysis.

¹⁷ We chose the production value rather than the value added to show the importance of professional services in other business activities, as this measure is more closely related to the inter- and intra-industry flows contained in the Input Output tables used in the preceding analysis of this paper.

the share amounts to 35% in 2009. Particularly high shares are observed in Ireland, Cyprus, Luxembourg, Spain and Slovenia (50% or above). On average, engineering services account for the highest share (15%), while architectural activities only display a share of 3% on average.

Figure 9: Production share of professional services in other business services, 2009 by country



Source: Structural Business Statistics (SBS), Eurostat (2012).
 Remark: Other business services are NACE Rev. 1.1. K 74 and contains all professional services.

For the following analysis, the relevance of professional services within other business activities should always be borne in mind. The upward bias of results for professional services using data on other business activities will on average be of factor 3. However, when it comes to relative industry interlinkages, such as the amount of a standard good (sector) *i* embodied in one unit of gross output in sector *j* of the economy, the interpretation will rely on assumptions that the intermediate Input linkages of other business activities and professional services are similar.

The regulation in professional services indicators are derived from the OECD Product Market Regulation Database (see OECD, 2011). They are available for the years 1996, 2003 and 2008 and are described in detail in Conway and Nicoletti (2006).

5.4. Results Regulation Knock-on Effects

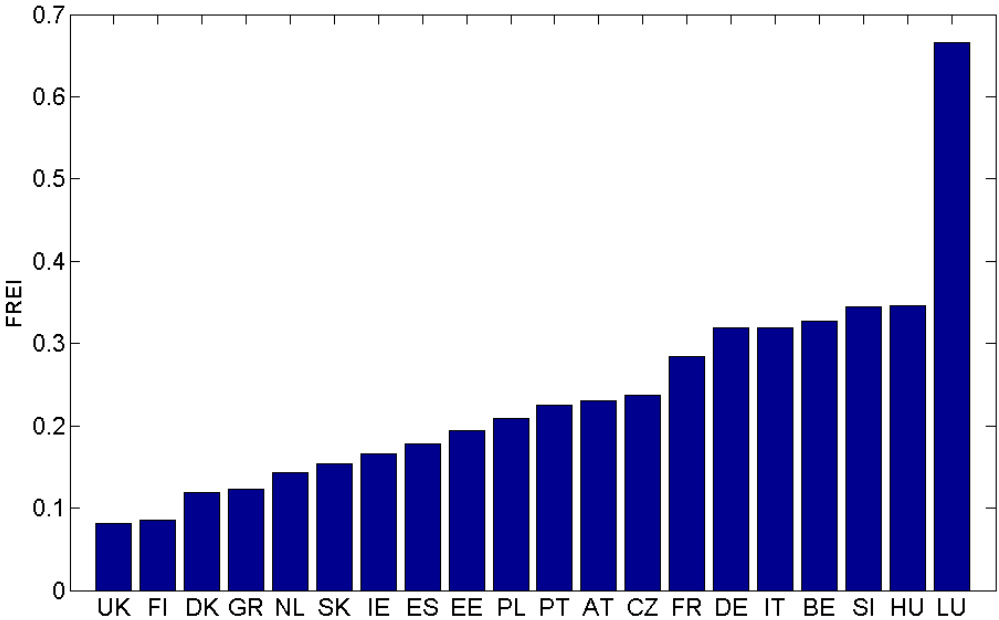
In the following we use the forward linkages based on OECD Input-Output Data for the years 1995, 2000 and 2005 and combine them with regulation data for the years 1996, 2003 and 2008 in matching the years 1995/1996, 2000/2003 and 2005/2008. We first outline the three regulatory-economic impact indicators for the most recent year 2005/2008 for 20 countries of the European Union and then compare the development of the total regulatory-economic impact indicator over the three years for a common sample of 13 countries¹⁸.

¹⁸ We had to restrict the time development analysis to 13 countries due to missing data in IO-Tables and/or regulation indicators.

Note that the scale of the indicator values cannot be interpreted on its own and only the relative differences contain the information we are interested in. Given the construction of the indicators, a regulatory restriction value between zero and six is multiplied by linkages and sector weights that are less than one. Therefore the bounds are between 0 and something smaller than 6.

Figure 10 shows the forward regulatory-economic impact indicator (FREI) for the year 2005/2008. Luxembourg shows the, by far, highest value of regulatory knock on of professional services regulation onto the whole economy. As shown in Figure 5, Luxembourg accounted for the most restrictive regulation in professional services of our sample. However, Hungary, Slovenia and Italy show only slightly lower levels in regulation, but their FREI values are substantially lower. On the other end of the Figure, UK and Finland show the smallest values of FREI, also partly due to their low restrictive regulations in professional services.

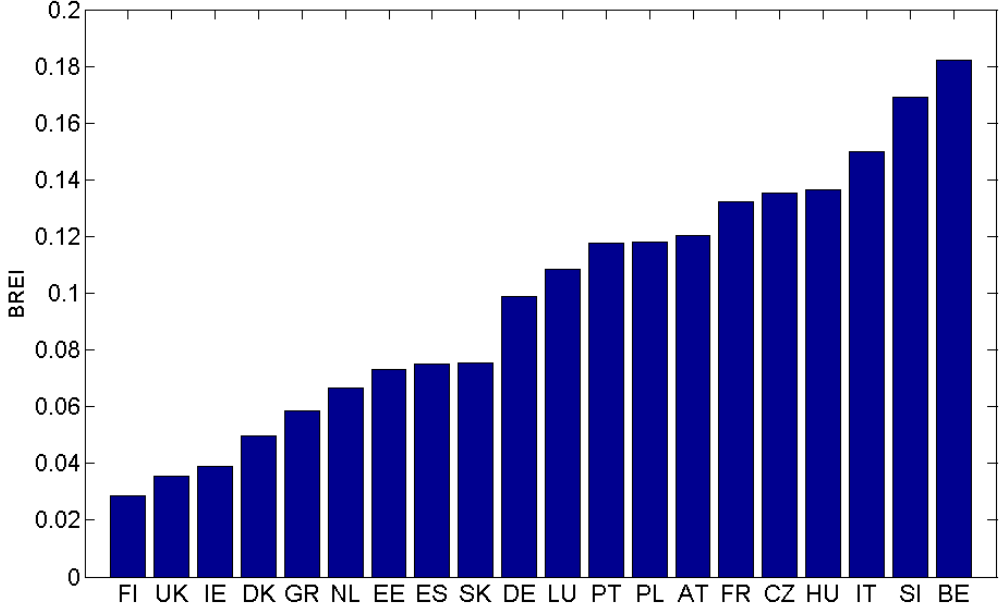
Figure 10: Forward Regulatory-Economic Impact, Professional Services 2005/2008



Source: Yamano and Ahmad (2006), OECD (2011), own calculations.
 Remark: Input-Output Data is from 2005, Regulation in Professional Services Indices from 2008.

Figure 11 shows the backward regulatory-economic impact (BREI) for the same sample and period. We notice that the extent of regulation in holding up supply from other sectors looks somewhat different than the FREI results, and the effects are generally around one third in size. Luxembourg is placed in an average position, while Belgium and Slovenia account for the highest values. However, once again, UK and Finland are positioned on the lower end of the Figure. Note that the differences in the position between the FREI and the BREI can only be accounted for by the differences between the forward and backward linkages of other business services in the Member States.

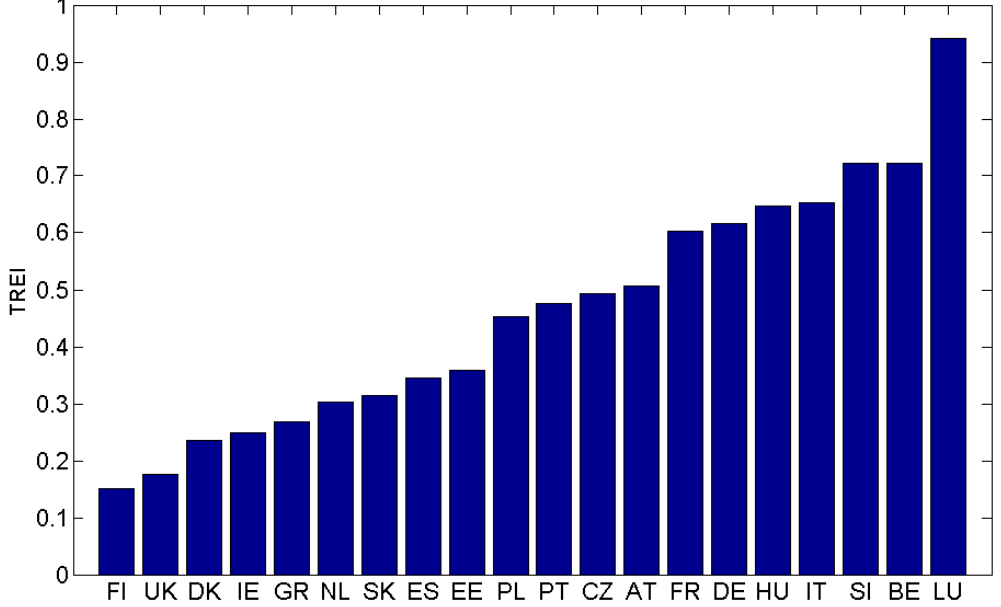
Figure 11: Backward Regulatory-Economic Impact, Professional Services 2005/2008



Source: Yamano and Ahmad (2006), OECD (2011), own calculations.
 Remark: Input-Output Data is from 2005, Regulation in Professional Services Indices from 2008.

Taking the two indicators together and adding other business services’ own regulatory impact, we receive the total regulatory-economic impact (TREI) indicator given in Figure 12. The Member States whose economic sectoral performances would appear to be most harmed by anti-competitive regulation are then Luxembourg, Belgium and Slovenia. Interestingly, Belgium did not account for very restrictive regulations in professional services in that year, but still is in the top three of this indicator. This can only be due to the relatively economic weight of the sector other business services in Belgium and the strong Belgian forward and backward inter-industry linkages in this sector.

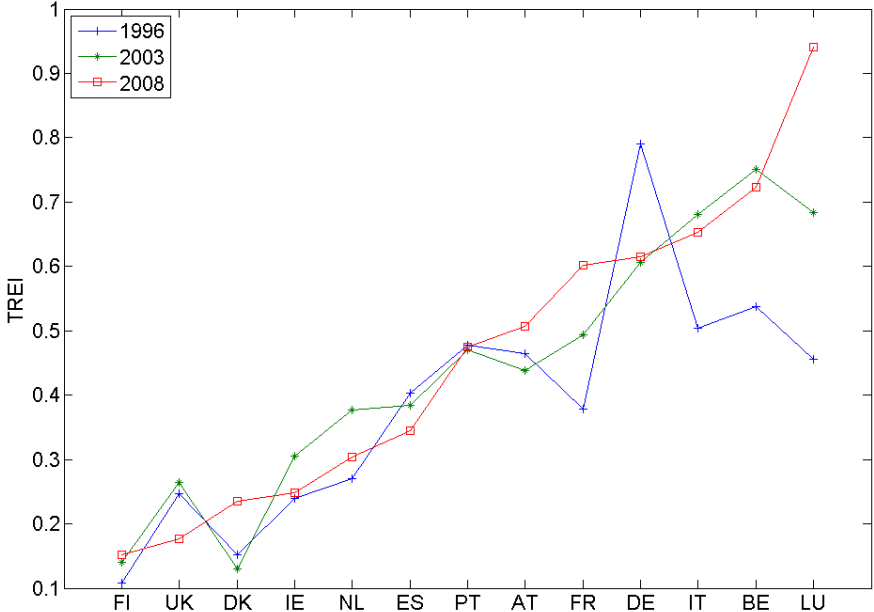
Figure 12: Total Regulatory-Economic Impact, Professional Services 2005/2008



Source: Yamano and Ahmad (2006), OECD (2011), own calculations.
 Remark: Input-Output Data is from 2005, Regulation in Professional Services Indices from 2008.

Figure 1 compares the TREI indicator over the three time periods. The countries on the x-axis are arranged in ascending order based on the latest period 2005/2008. The years in the legend are based on the regulation in professional services indicator. It can be seen that in 1996 Germany accounted for the highest regulatory economic impacts, while in 2003 it had been Belgium and in 2008 Luxembourg. Note that there is no clear time trend downwards, as the values of some countries in earlier years lay below the most recent year (Finland, Denmark, Austria, France).

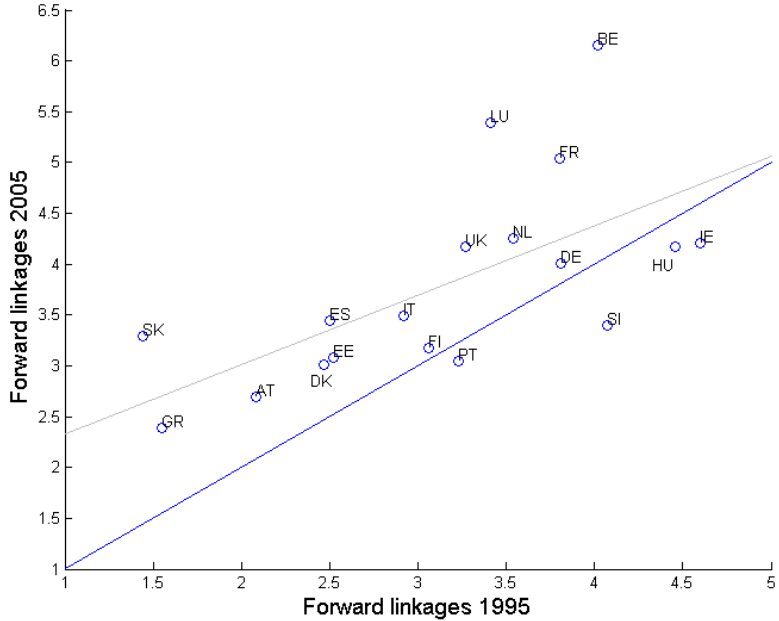
Figure 13: Total Regulatory-Economic Impact, 1995/1996; 2000/2003; 2005/2008



Source: Yamano and Ahmad (2006), OECD (2011), own calculations.

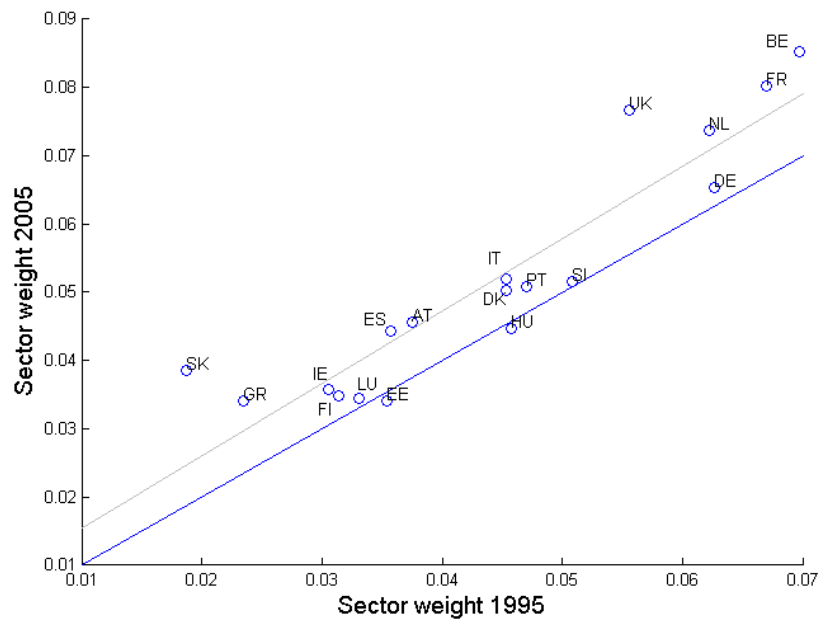
This again shows the interplay between linkages, sector weight and regulation. In Figure we saw that only Denmark and France increased regulation between 2003 and 2008, while Austria decreased regulation and Finland remained on its 2003 level. The increasing regulatory-economic impact is thus due to the increasing importance of other business services and their role as intermediate input supplier and, to some extent, receiver. The increase in inter-industry linkages of other business services is demonstrated by the sum of forwarded interlinkages for the years 1995 and 2005 in Figure 2. Especially Belgium shows high increases in forward linkages of other business services. As Figure 3 shows, Belgium additionally shows a marked increase in other business services sector weights, from an already high level compared to the other 17 EU countries in the sample. Except for Hungary and Estonia, the sector weight of other business services (its output divided by total output of the respective economy) grew in each country of the sample. On average the sector weight grew from 5.5% in 1995 to 6.9% in 2005.

Figure 14: Increase in forward linkages of other business services, 1995-2005



Source: Yamano and Ahmad (2006), own calculations.
 Remark: Sample size shrinks to 18 due to missing data. Blue Line indicates 45°-line, grey line the simple least-squares fit.

Figure 15: Sector weight (in percent) of other business services, 1995/2005



Source: Yamano and Ahmad (2006), own calculations.
 Remark: Sample size shrinks to 18 due to missing data. Blue Line indicates 45°-line, grey line the simple least-squares fit.

6. Update of Regulation Indices (selected countries) 2012

The subset of EU Member States selected for updating the regulation indices for professional services in 2012 and the professional services covered is shown in Table 2 :

Table 2: Scope of update of IHS professional services regulation indexes 2012

Countries	Professional Services
▪ Austria	▪ Accountancy
▪ Estonia	▪ Architects' Services
▪ Finland	▪ Engineering (consultants)
▪ Germany	▪ Lawyers Services
▪ Italy	▪ Notary Services
▪ Spain	▪ Pharmacy Services
▪ UK, England and Wales	

For the 2012 study we used the methodological approach as in 2002 behind the construction of the IHS regulation indices (Paterson et al. 2003). These indices provide quantitative information on professional regulation of market entry (e.g. number of exclusive/reserved tasks, educational requirements, duration of compulsory practicing etc.) and market conduct and behaviour (e.g. regulation on prices and fees, advertising, diversification, form of business, forms of professional cooperation etc.).

For updating the indices a survey questionnaire was sent by email to Professional Bodies (i.e. national associations of professionals, often responsible for the development and oversight of professional rules and regulations of the “self-regulation” model in the target countries). The survey strategy slightly differs from 2002, in that respondents were asked to fill in changes compared to 2002. Overall the questionnaire from 2012 was sent together with the filled in questionnaire from 2002 to 61 Professional Bodies. Although the scope was reduced for this study there were considerable difficulties in obtaining responses. The main reasons for either delayed answers or not answering seem are not known, but it may be speculated that the response would be higher if the Commission was directly involved in the exercise (as in 2002/2004, cf. section 1). Especially Bar associations and Pharmacists associations have shown relatively little interest in participating in the study. However, some concerns from Professionals Bodies regarding the use of data from the study we also encountered.

For the calculation of the regulation indices 2012 data from 2002 was compared with newly gathered information of 2012 survey to identify changes. Along with The information gathered from other contexts (cf. section 2) regulation index tables for market entry and conduct were updated. Identical scales (0-6 for market entry, conduct, 0-12 overall) and weightings of the lower level indicators were used as in 2002/2004, so that Table 3 presents a direct comparison of any changes in degree of regulation discernible over the last decade.

Table 3: Regulation Indices 2012, Selected Member States

ALL	Accountancy		Architects		Engineers		Lawyers		Notaries		Pharmacists	
	2012	02/04	2012	02/04	2012	02/04	2012	02/04	2012	02/04	2012	02/04
Austria	4.9	6.2	4.5	5.1	4.3	5.0	6.2*	7.3	9.5	9.6	7.3*	7.3
Estonia	n.a.	0.0	n.a.	3.6	n.a.	3.6	6.0	6.0	10.0	10.5	7.2	3.9
Finland	3.6	3.6	0.0	1.4	0.5	1.1	0.3	0.3	n.a.	n.a.	7.3	7.0
Germany	5.5	6.1	5.6	4.5	5.7	7.4	6.1	6.1	n.a.	11.0	n.a.	5.7
Italy	3.8	5.1	3.6	6.2	n.a.	5.8	n.a.	6.4	n.a.	10.7	8.1	8.4
Spain	2.7	3.4	n.a.	4.0	n.a.	3.2	n.a.	6.5	10.2	9.4	n.a.	7.5
United Kingdom	2.4	3.0	0.0	0.0	0.0	0.0	n.a.	3.5	n.a.	n.a.	n.a.	4.1

Source: IHS indices 2012

*Austria: No response 2012 from Lawyers and Pharmacists professional bodies, index values are from 2007 (Cf. Berger, Felderer et al. 2007).

6.1. Discussion of regulation Indices – 2012 survey

The results for the **Accountancy** profession in 2012 show for all countries a decrease of the regulation indices compared to 2002. Main determinants for this deregulation are the duration of compulsory practice and the liberalisation on prices and fees as well as on advertising.

For **Architects** a decrease of regulation indices can be identified. In *Austria* for example this is largely because there are now two entry routes into the profession. Access to the profession is no longer only for University graduates possible but also through “Fachhochschule” (polytechnic). However for the market conduct regulations in Austria a liberalisation took place for advertising and for prices and fees. Binding and recommended fees have been abolished for the benefit for clients, according to the Professional Body. Currently under review are the regulations on interprofessional co-operation and the access to the professions chamber. The deregulation of market conduct can be identified in all countries.

For *Germany* the regulation indices have a higher value compared to 2002. The reason for this increase is that more shared exclusive tasks with Engineers have now been identified (indicating a correction of the market entry index since 2002). Differences between bachelor graduates and master graduates were also identified. In *Italy*, Bachelor graduates (or junior architects) do not have access to the same number of exclusive and/ or shared tasks as senior architects (master degree). We do not consider a bachelor grade to represent a second entry route into the profession since they have not the same rights as Master graduates, although it does represent a liberalisation, opening up more career chances for graduates. However we have taken this ‘opening’ of the profession into account by a corresponding slight reduction of the market entry index.

A similar development was reported from *Italy* leading to a slight decrease in its market entry index (from 3.2 to 3.0). The major changes in Italy are reported in the abolition of all price restrictions and most regulations on advertising. The overall regulation index for Italy has decreased considerably by 2.6 points on the 12 point scale.

For the **Engineering** profession often the same deregulation impulses as for Architects apply. The decrease can be chiefly explained by the liberalisation of market conduct behaviour. In *Austria*, for instance, the same reforms for Engineers as for Architects have been implemented during the last years (some administrative structure is shared by both professional bodies).

Only three responses came from **Lawyers'** professional associations, and no changes were reported since 2002.

For **Notaries** few changes took place in the recent years (since 2002). For the notary profession in *Austria* the index slightly decreased because of a certain degree of deregulation in advertising. However there have been liberal impulses which are not index relevant. For example the nationality condition for access to the notaries' profession in Austria has now been abolished (in line with other Member States). Today, all nationals with EU or Swiss citizenship can participate in the selection procedure for nomination as notaries in Austria. This change is based on a decision of the EU court of Justice in 2011. Also the number of notarial offices has been increased during 2002 and 2012 from 456 to 494. At present access to the profession is currently under review by the EU Commissions (Revision of the Professional Qualifications Directive). It is worth noting that the speed and alacrity by which common standards at the European level are enacted nationally varies considerably. Some implementations have to wait until a decision of the European Court is obtained.

For a more competitive market, reforms have been implemented in *Estonia* which enlarge the competences of Notaries (Notaries Act 2009).

Only three responses have been obtained from the community **Pharmacy** profession to date. The conduct regulation index for *Finland* has been revised on two counts since 2002. On the one hand, there are regulations governing location and diversification (i.e. branch offices) which were not taken into account in 2002. On the other hand, interprofessional cooperation is allowed. Altogether this represents a slight upward revision of the overall index (combined market entry and conduct indices).

The regulation index calculation for *Estonia* in 2012 reveals, however, a large discrepancy with the regulation index value published by the EC in 2004. Restrictions on opening community pharmacies have been implemented: community pharmacy per 3000 inhabitants in towns, and outside towns there should be a minimum distance between community pharmacies of 1 km, since January 1st 2006. The Estonian professional body states that there was a trend to concentration of pharmacies opening in towns, and a corresponding shortage in the countryside. This would represent a case where regulation be introduced in the public interest.

Other detailed changes of the regulatory regimes – at the level of index components – in respective counties/professions may be determined from Table 6 in the Annex 1.

6.2. IHS (2002) Regulation indices Revisited

Since completion of the professional services study for EU-15 (Paterson et al. 2003) some information and data was received by the Commission after publication. The complementary work carried out by DG Competition in 2004 for accession countries added to the indexes data for (up to) 10 countries for the 6 professions surveyed. Some revisions of data were received by the Commission at the behest of professions, and some inconsistencies were discovered after the authors received data from the Commission in 2012¹⁹. (See Pharmacist, Table 5) for example.

Table 4 and Table 5 show regulation index data (for market entry, market conduct, and total) is given for EU-27, (Romania and Bulgaria did not accede till 2007). Changes to previous publication are in red.

Table 4: Regulation Indices (IHS: 2002; DG COMP 2004), Accountants, Architects Engineers

2002/04	Accountants			Architects			Engineers		
Accountants	Market entry	Market conduct	Total	Market entry	Market conduct	Total	Market entry	Market conduct	Total
Austria	4.2	2.0	6.2	3.9	1.2	5.1	3.8	1.2	5.0
Belgium	3.9	2.4	6.3	2.4	1.6	3.9	0.0	1.2	1.2
Denmark	2.2	0.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Finland	2.6	0.9	3.6	1.4	0.0	1.4	1.1	0.0	1.1
France	4.0	1.8	5.8	2.2	0.9	3.1	0.0	0.0	0.0
Germany	3.6	2.5	6.1	1.8	2.7	4.5	3.7	3.7	7.4
Greece	3.6	1.5	5.1	3.3	0.0	3.3	3.3	1.9	5.2
Ireland	2.7	0.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	3.2	1.9	5.1	3.2	3.0	6.2	3.0	2.8	5.8
Luxembourg	3.8	1.2	5.1	2.6	2.7	5.3	2.7	2.7	5.3
Netherlands	3.1	1.4	4.5	0.0	0.0	0.0	1.5	0.0	1.5
Portugal	2.7	2.9	5.6	2.2	0.6	2.8	3.4	n.a.	n.a.
Spain	1.9	1.5	3.4	3.2	0.8	4.0	3.2	0.0	3.2
Sweden	2.4	0.9	3.3	0.0	0.0	0.0	0.0	0.0	0.0
United Kingdom	2.7	0.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Bulgaria*	..	..	..	..	..	..	..	..	..
Cyprus	3.2	0.3	3.5	3.0	0.5	3.5	3.3	2.2	5.4
Czech Republic	1.4	0.0	1.4	3.2	0.0	3.2	3.8	0.5	4.3
Estonia	0.0	0.0	0.0	3.6	0.0	3.6	3.6	0.0	3.6
Hungary	n.a.	n.a.	n.a.	3.6	0.3	3.8	3.9	0.5	4.4
Latvia	0.0	0.0	0.0	3.9	0.5	4.4	3.5	0.0	3.5
Lithuania	0.0	0.0	0.0	4.1	0.5	4.6	3.8	0.0	3.8
Malta	..	..	..	..	..	..	..	..	..
Poland	2.4	0.9	3.3	3.0	0.0	3.0	2.8	0.0	2.8
Romania*	..	..	..	..	..	..	..	..	..
Slovakia	2.6	0.5	3.1	3.6	2.2	5.8	3.2	0.0	3.2
Slovenia	0.0	0.0	0.0	3.7	1.9	5.6	2.8	0.5	3.3

¹⁹ The authors wish to thank the European Commission for their support in providing data.

Source IHS, European Commission

Notation: n.a. = "not surveyed"; ".." = survey data not received.

Table 5: Regulation Indices (IHS: 2002; DG COMP 2004), Lawyers, Notaries Pharmacists

2002/04	Lawyers			Notaries			Pharmacists		
	Market entry	Market conduct	Total	Market entry	Market conduct	Total	Market entry	Market conduct	Total
Austria	4.1	3.3	7.3	5.4	4.2	9.6	3.6	3.7	7.3
Belgium	2.5	2.1	4.6	4.0	5.3	9.3	3.6	1.8	5.4
Denmark	2.1	0.9	3.0	n.a.	n.a.	n.a.	2.3	3.6	5.9
Finland	0.0	0.3	0.3	n.a.	n.a.	n.a.	4.0	3.0	7.0
France	3.7	2.1	5.8	5.3	4.7	10.0	3.8	3.5	7.3
Germany	3.9	2.2	6.1	5.5	5.6	11.0	1.6	4.1	5.7
Greece	..	..	..	5.2	5.9	11.1	4.4	4.5	8.9
Ireland	2.4	2.1	4.5	n.a.	n.a.	n.a.	1.5	1.2	2.7
Italy	2.6	3.9	6.4	4.8	5.9	10.7	4.8	3.6	8.4
Luxembourg	3.8	2.8	6.6	5.1	3.3	8.4	4.0	3.9	7.9
Netherlands	2.1	1.8	3.9	3.6	2.6	6.3	1.2	1.8	3.0
Portugal	3.5	2.2	5.7	4.6	..	..	4.2	3.8	8.0
Spain	3.4	3.1	6.5	4.6	4.8	9.4	3.6	3.9	7.5
Sweden	2.0	0.4	2.4	n.a.	n.a.	n.a.	4.2	5.4	9.6
United Kingdom	2.9	0.6	3.5	n.a.	n.a.	n.a.	2.7	1.4	4.1
Bulgaria*	..	..	..	..	..	..	..	..	..
Cyprus	3.3	3.2	6.5	..	..	..	2.1	4.2	6.3
Czech Republic	3.9	2.3	6.2	5.4	3.6	9.0	5.1	1.8	6.9
Estonia	3.6	2.4	6.0	4.8	5.7	10.5	2.1	1.8	3.9
Hungary	3.8	0.6	4.4	5.1	4.7	9.8	1.5	2.1	3.6
Latvia	4.0	3.7	7.8	3.7	4.6	8.3	3.6	0.0	3.6
Lithuania	3.6	1.4	5.0	4.6	2.7	7.3	2.3	3.0	5.3
Malta	..	..	..	3.8	1.6	5.4	3.7	3.0	6.7
Poland	4.0	0.9	4.9	4.4	4.5	8.8	2.2	1.8	4.0
Romania*	..	..	..	..	..	..	..	..	..
Slovakia	3.9	1.4	5.3	5.4	5.7	11.1	1.9	3.0	4.9
Slovenia	3.8	2.4	6.1	5.0	4.2	9.2	2.2	2.4	4.6

Source IHS, European Commission

Notation: n.a. = "not surveyed"; ".." = survey data not received.

7. The Policy Context of ‘Professional Services’

In this paper we have focused on the one hand on regulation indices as a means of differentiating degrees of regulation between various countries, various different professions, and different approaches to obtaining an adequate regulatory structure. This may be regarded as the “input” side of regulation, describing and quantifying systems of rules. The questions being asked, on the other hand, concern differences in economic effects. The answers are not always readily available, but considerable empirical evidence has been obtained on the “outcome” side in several studies that show (negative) links between particular types of regulation and economic performance e.g. in conveyancing services (Cf. section 2.2).

For example, Molnár and Bottini (2010) find that mark-ups are high in professional services in most countries, where human capital is a major input reputation is a key asset and most products are customer-specific, and hence markets are segmented. In segmented markets, suppliers have a certain degree of monopoly due to switching costs that are manifest in discretionary price settings. Some of these services, such as legal services, are less tradable than other professional services, implying even higher mark-ups.

We note that the term ‘Professional Services’ has been used here mainly in its narrow sense, pertaining to professions such as accountants, architects, engineers, lawyers, notaries and community pharmacists that are to a large extent ‘self-regulating’ professions (Cf. Ogus 1995, 2000) The term is also used in a wider sense to include the estimated 800 or so professions/occupations in EU Member States which are the subject of the Professional Qualifications Directive. (Section 2.1 on ‘reserves of activities’ deals with regulated professions in this sense in the construction and tourism sectors, in addition to business services.)

Recent policy initiatives have focussed at the European level by the Council and European Commission (EC) on professional services in both the wider and narrow meanings.

Regarding Professional Services in the wider sense: at the beginning of 2011 the EC set up a steering group with external experts to discuss the need for and the feasibility of a **European Professional Card** (EPC). According to the European Council the EPC would be an electronic certificate issued by the professional's country of departure that would facilitate the automatic recognition in the host country (the country where the professional seeks establishment). Applications for professional cards would be made through the competent national authorities using the Internal Market Information (IMI) System.

Three objectives were identified in the proposal: facilitating the mobility of professionals and the intra-EU trade in services, addressing the challenge of filling high-skill jobs, and offering more possibilities for job seekers. The EPC will be an alternative tool which can be implemented for those professions which meet several objectives: bottom-up demand by members of the profession, significant mobility and better cooperation between competent authorities through the IMI system.

Advantages of the European Professional Card are seen for those professions interested mainly in *temporary mobility*. Its use will depend on whether professions request its introduction. But it is hoped that it would be an attractive innovation leading subsequently to more and more adoption by professional groups. Introducing an EPC also aims at improving the *recognition procedure*, thereby

shifting and certain costs and administrative burdens from the host Member State to the home Member State. However, the use of IMI should reduce these costs and the new procedure.

A prerequisite of adopting a European Professional Card would be agreement between Member States leading to automatic recognition based on professional experience. Regarding the *architecture profession*, the Commission proposed to the Council in December 2011 that there should be a stipulated minimum training for architects, including time spent under the supervision of established professionals, of at least six years. Either 4 or 5 years of full-time university study, complemented by 2 or 1 years of paid traineeship, respectively, would be required. We note that for Italy, the professional body pointed out in our survey 2012 that it is now possible to become a 'junior architect' with 3 years completed study. It would appear that this opening of the profession would fall short of meeting the commonly agreed quality standards. (Cf. section 6.1).

As regards *pharmacists*, the proposal means that it would no longer be possible for pharmacists with qualifications from other Member States to be barred from opening new pharmacies (a liberalisation that is already the case in Netherlands, Ireland and UK). The European Court of Justice has also ruled that territorial restrictions can be upheld only if they do not imply discrimination.

The proposal also has implication for *medical professions*: doctors, midwives and nurses. The need for reaching agreement on mobility has been highlighted by a complex situation regarding nurses from Poland and Romania that has come to the fore after these countries' accession in 2004, and which is the subject of a technical assessment by the Commission in 2012.

Under the aegis of the Commission, expert groups comprising relevant Ministries (Economy, Health, Education) have been working since early 2011. The individual expert groups have undertaken case studies for each of the following professional service providers: doctors, nurses, engineers, pharmacists, mountain guides, physiotherapists and real estate agents.

In a Communication in June 2012 the EC has outlined a programme aimed at furthering the implementation of the **Services Directive**. In addition to a demand for "zero tolerance" policy for non-compliance, a modernisation of the regulatory framework of professional services has been called for. The EC is asking for the European Parliament and the Council to adopt a proposal for a modernised **Professional Qualifications Directive** as already urged by the European Council.

Progress is sought by the Commission on enhancing the mutual recognition of professional qualifications, in order to reduce the number of regulated professions and remove unjustified regulatory barriers (Cf. section 2.1 of this paper). There should only be exceptional checking of qualifications with respect to cross-border service provision, and Member States will be faced with the burden of justification of exceptions. Member States will also have to ensure that the annual declaration that service providers may have to make is valid for the whole territory of the Member State, which it is claimed will reduce unnecessary bureaucracy and remove uncertainty for professionals.

After the revised Directive is adopted, the Commission intends to issue a Communication in 2013, so that progress in Member States will be assessed, and that Member States will carry out the mutual evaluation of regulated professions that is foreseen in the Directive.

Links to relevant European Union documents are listed in Annex 3.

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Annex 2

Table 7: List of industries of the OECD IO-Tables

ISIC Rev. 3 code	No.	IO Industry description	Abbrev.
1+2+5	1	Agriculture, hunting, forestry and fishing	Agriculture
10+11+12	2	Mining and quarrying (energy)	Mining
13+14	3	Mining and quarrying (non-energy)	Mining
15+16	4	Food products, beverages and tobacco	Food
17+18+19	5	Textiles, textile products, leather and footwear	Textiles
20	6	Wood and products of wood and cork	Wood
21+22	7	Pulp, paper, paper products, printing and publishing	Pulp
23	8	Coke, refined petroleum products and nuclear fuel	Coke
24ex2423	9	Chemicals excluding pharmaceuticals	Chemicals
2423	10	Pharmaceuticals	Chemicals
25	11	Rubber and plastics products	Rubber
26	12	Other non-metallic mineral products	oth minerals
271+2731	13	Iron & steel	Iron & Steel
272+2732	14	Non-ferrous metals	Iron & Steel
28	15	Fabricated metal products, except machinery and equipment	Metal prods.
29	16	Machinery and equipment, nec	Machinery
30	17	Office, accounting and computing machinery	Office mach
31	18	Electrical machinery and apparatus, nec	Electrical
32	19	Radio, television and communication equipment	Radio
33	20	Medical, precision and optical instruments	Medical
34	21	Motor vehicles, trailers and semi-trailers	Motor veh.
351	22	Building & repairing of ships and boats	Trans. Equip
353	23	Aircraft and spacecraft	Trans. Equip
352+359	24	Railroad equipment and transport equipment n.e.c.	Trans. Equip
36+37	25	Manufacturing nec; recycling (include Furniture)	oth manu
401	26	Production, collection and distribution of electricity	ElecGasWater
402	27	Manufacture of gas; distribution of gaseous fuels through mains	ElecGasWater
403	28	Steam and hot water supply	ElecGasWater
41	29	Collection, purification and distribution of water	ElecGasWater
45	30	Construction	Construction
50+51+52	31	Wholesale and retail trade; repairs	Trade
55	32	Hotels and restaurants	Hotels...
60	33	Land transport; transport via pipelines	Trans. Land
61	34	Water transport	Trans. Water
62	35	Air transport	Trans. Air
63	36	Supporting & auxiliary transport activities; activities of travel agencies	Supp. Trans.
64	37	Post and telecommunications	Telekom.
65+66+67	38	Finance and insurance	Finance
70	39	Real estate activities	Real Estate
71	40	Renting of machinery and equipment	Renting
72	41	Computer and related activities	Computer
73	42	Research and development	R&D
74	43	Other Business Activities	oth. Business Act.
75	44	Public administration and defence; compulsory social security	Public
80	45	Education	Education
85	46	Health and social work	Health
90-93	47	Other community, social and personal services	Oth. Social
95+99	48	Private households with employed persons & extra-territorial organisations & bodies	(dropped)

Source: OECD, Yamano and Ahmad (2006).

Annex 3:Links to European Union documents

<http://register.consilium.europa.eu/pdf/en/11/st18/st18899.en11.pdf>

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/intm/130562.pdf

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/intm/130562.pdf

http://ec.europa.eu/internal_market/services/docs/services-ir/implementation/report/COM_2012_261_en.pdf

http://ec.europa.eu/internal_market/smact/docs/single-market-act2_en.pdf

http://ec.europa.eu/internal_market/qualifications/policy_developments/european_professional_card/index_en.htm