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Towards the Development of a Services Trade Restrictiveness Index (STRI) for Professional Services

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EXECUTIVE SUMMARY

This study aims at preparing the ground for the construction of a services trade restrictiveness index (STRI) for professional services, in particular by identifying the most relevant measures affecting trade in these services. The analysis is based on three main elements: 1) a description of trade and investment patterns in professional services to contribute to a better understanding of how trade by mode is conducted; 2) a detailed analysis of regulations in these services; and 3) preliminary econometric estimates on the impact of regulations on trade flows by mode.

Professional services are among the fastest growing business services sectors in OECD countries and play an important role in the functioning of modern economies. These services are highly skilled-labour intensive and can be provided through different modes of supply. The form of private practice differs somewhat among professions and has been evolving over time. In particular, an increasingly important feature of the leading international firms, especially in the accounting and legal sectors, has been to establish international networks of local companies in a large number of countries where they are often the prominent providers.

Trade and investment in professional services have undergone solid growth in recent years. Current data availability does not allow a direct comparison of trade by mode, but mode 3 would appear to be the preferred mode of supply at least in the legal and accounting sectors. Perhaps as a result of the expansion of fields of practice such as corporate restructuring and cross-border mergers and acquisitions, trade in legal and accounting services in leading OECD countries has experienced steady growth over the last decade or so. The pattern of trade over time in architectural and engineering services has been less regular in the largest markets, maybe in light of the relationship between these services and cycles in the construction sector.

This paper develops a framework to identify and classify according to their nature the most significant measures affecting trade in professional services. These regulations can take many forms according to different modes of delivery, making them somewhat difficult to classify. Nevertheless, there are two distinctions that tend to apply across many types of measures: regulations that apply to establishment or entry of firms versus those affecting their operations; and measures that are discriminatory versus non-discriminatory ones.

An analysis of available information in OECD countries highlights that professional services generally remain subject to a high level of regulation. Legal and accounting services are the most heavily regulated sectors, while regulation seems to affect suppliers of architectural and engineering to a lesser degree. This is in part related to the fact that professional standards in the architectural and engineering services sectors are also controlled through product-related regulation. A number of mutual recognition agreements have also been established, particularly in architectural and engineering services.

However, available information on regulations does not allow obtaining a comprehensive and up-to-date picture of the regulatory landscape with respect to discriminatory measures. There is evidence that in the past a range of discriminatory regulations were not infrequent in OECD countries and that members have preferred to maintain flexibility to use these measures in the GATS context. The study reviews

several sources that will be used to collect information on discriminatory regulations, an important input into the construction of the STRI.

The greatest source of market failure associated with the provision of professional services is asymmetric information between the service provider and the less informed consumer. Experience in some countries has shown that it is possible to relax regulations that may negatively affect competition in professional services, while ensuring that consumer protection and other public policy objectives are adequately addressed. The report identifies a range of alternative-less restrictive regulatory approaches, which could be used to assign lower scores to a particular measure in the STRI.

The empirical analysis carried out, although still preliminary in light of data limitations, makes initial progress in identifying how regulations affect trade in professional services. Although they have some negative impact on the probability to enter the market via mode 1 in architectural and engineering services, *entry* restrictions are not generally associated with lower trade in professional services. In the case of mode 3, the issue will need further investigation, but the limited negative impact of measures affecting entry may be related to the nature of the regulations covered in the analysis and at least in some subsectors to the modern organisation of professional firms.

Restrictions to *ongoing* operations in the importing country have a generally negative impact on trade in professional services, a result that is fairly consistent for both modes 1 and 3. One issue, which will need to be investigated in the future, is a possible complementarity between modes of supply, whereby there is little impact of regulation on cross-border trade without prior establishment. Finally, there is evidence in the case of mode 1 that regional preferences can significantly boost trade in professional services among members of the agreements.

The actual construction of the STRI for professional services will begin towards the end of the year, as the required additional regulatory information becomes available. Such information should also allow for a more thorough econometric analysis, which will provide initial guidance for the quantification process. Scores and weights will be assigned by employing both statistical methods and expert judgement. The latter is expected to be provided at the 2008 OECD Experts Meeting on Business Services.

The econometric approach applied in this study can also provide one avenue to advance discussions surrounding the development of the STRI. Estimates from the type of model employed here could be used to construct multilateral resistance terms, which express all costs affecting trade from one country into another, relative to trade costs from all other suppliers. As Anderson and Van Wincoop (2003, 2004) show, these terms represent one type of ideal aggregation of trade barriers. As such, they could be a useful basis for measuring restrictions to services trade in a rigorous way, provided that it is possible to produce sufficiently precise econometric estimates.

I. Introduction

1. As part of the broader project on developing a services trade restrictiveness index (STRI), this paper presents a detailed analysis of professional services. The objective is to develop in the field of these services the initial steps outlined in the Road Map for work in this area presented to the Trade Committee last June (OECD, 2007a) and a subsequent document presented to the first Services Experts Meeting on the STRI last September (OECD, 2007b). Awaiting the release later this year of the latest OECD Product Market Regulation (PMR) survey, an essential input into the actual construction of the STRI, this study aims in particular at identifying the most relevant measures affecting trade in professional services. These would then be included in the STRI for these services.

2. Against this background this study covers the following elements:

1. Describes trade and investment patterns in these services to contribute to a better understanding of how trade by mode is conducted. This also allows an assessment of strides made in recent years in collecting data on trade in these services and remaining challenges.
2. Develops a framework for identifying and classifying according to their nature regulations affecting trade in professional services; and presents and analyses available information on regulation by OECD country. It further discusses alternative regulatory responses to market imperfections in these services.
3. Provides preliminary econometric estimates on the impact of regulations on trade flows, with the aim of shedding light on how regulations affect trade in professional services.

3. The next section of the report reviews by way of introduction the principal characteristics of professional services. Section III, IV and V then present the main elements of the analysis as discussed above. The last section concludes and lists the next steps envisaged towards the construction of the STRI for professional services. Questions for further discussion are included at the end.

II. Characteristics of professional services

4. Professional services are among the fastest growing business services sectors. In the UK and Germany, two of the largest traders of these services, employment in the legal and accounting sectors in 2004 accounted for around 6% of total services employment (918,335 up from 710,896 in 1998 and 780,506 up from 646,624 in 2000, respectively). Employment in the architectural and engineering sectors represented about 3% of total services employment (416,676 and 384,731 people in Germany and the UK respectively) in the same year (OECD Structural and Demographic Business Statistics database). These services are of similar increasing importance in other leading OECD markets.

5. Professional services play an important role in the functioning of modern economies. Legal services underpin the effective conduct of business transactions, including those of a trans-national nature, and accounting services are key for management control of firms and the implementation of financial and prudential regulatory measures. Architectural and engineering services are vital in creating physical structures and new production processes.

6. The defining characteristic of professional services is the provision of human capital obtained through high standards of education and training. Hence, these services are highly (skilled) labour intensive (Nguyen-Hong, 2000). The form of private practice differs somewhat among professions.

7. Legal services were traditionally provided by individual professionals or small firms, with a relatively small number of large firms mainly from a few developed, common law countries. Over the past decade or so, the sector has experienced significant consolidation resulting in the creation of a growing number of large multinational law firms with vast international networks. Between 1997 and 2002, employment of the top 50 legal firms grew by 51% while revenue increased by 62% (The American Lawyer, 2003). In addition, in the past few years more large firms have also emerged in civil law jurisdictions (e.g. France, Germany and the Netherlands) and in Asian economies (e.g. Hong Kong, China and Singapore).

8. Small-scale firms have typically been prominent also in accounting services, although provision is by firms and partnerships rather than individuals. However, the international market for these services is dominated by a few very-large scale entities known as the “Big Four”.¹ Each of them is organised as a network of firms, generally owned and managed independently, with presence in a large number of countries where they are often the prominent providers. For example, in Japan the largest auditors are local affiliates of the Big Four.² Architectural and engineering services are mostly provided by small firms, although often these activities are combined with construction services in one company.

9. Like many other services, professional services are generally supplied directly by providers in foreign markets and are associated with the international movement of capital and labour (and accompanying knowledge). International trade would thus appear to take place to a large extent through firms establishing a commercial presence in foreign countries (mode 3) and by professionals travelling overseas (mode 4). These services can also be traded cross-border (mode 1) either incorporated into products (a CD) or transmitted via the telecommunications networks being facilitated by advances in ICT. Examples include legal documents, blueprints and designs.

10. Professional services have traditionally been subject to a high level of regulation. Legal and accounting services are considered to be the most heavily regulated, while regulation seems to affect suppliers of architectural and engineering to a lesser degree. This is in part related to the fact that professional standards in the architectural and engineering services sectors are also controlled through object-related regulation, such as building standards and safety norms (WTO, 1998). A number of mutual recognition agreements have also been established, particularly in architectural and engineering services.

11. The greatest source of market failure associated with the provision of these services is asymmetric information between the service provider and the less informed consumer. Mechanisms to ensure quality of service are thus generally viewed to be appropriate. Nevertheless, experience in some countries has shown that it is possible to relax regulations that may negatively affect competition in professional services while ensuring that consumer protection and other public policy objectives are adequately addressed. This is particularly true in the case of international trade in these services, which overwhelmingly involves producers of other services and goods.

¹ Pricewaterhousecoopers, Deloitte Touche Tohmatsu, Ernst & Young and KPMG. This group was once known as the “Big Eight” before a series of mergers and Arthur Andersen’s conviction for obstruction of justice in the wake of the 2001 Enron scandal.

² ShuinNihon (affiliate of Ernst & Young), AZSA & Co. (affiliate of KPMG), MISUZU Audit Corporation (affiliate of Pricewaterhousecoopers) and Tohmatsu (affiliate of Deloitte Touche).

III. Trade and investment patterns

12. The analysis is based on the OECD database on bilateral services trade flows and the OECD FDI database. In line with the IMF balance of payments (BOP), the OECD services trade database covers mostly cross-border supply (mode 1). The database includes trade flows as defined in the Extended Balance of Payments Services (EBOPS) classification. It covers legal and accounting services separately and under the same heading; and architectural and engineering services only under the same heading. 25 OECD countries (all members except Iceland, Japan, Korea, Mexico and Turkey) report total trade figures combined for legal and accounting and for architectural and engineering services. More limited data are also available for legal and accounting services trade separately.

13. OECD FDI data are used here as a proxy for trade through commercial presence (mode 3), given that Foreign Affiliates Trade in Services (FATS) statistics or firm-level data on professional services are limited. The dataset is based on the International Standard Industrial Classification (ISIC Rev.3), which includes both legal and accounting services and architectural and engineering services combined under two headings. However, data on architecture and engineering are not available. About half of the OECD members report statistics on FDI stocks in legal and accounting services combined, which is the only heading on professional services broadly similar between the two databases (see Table 1).

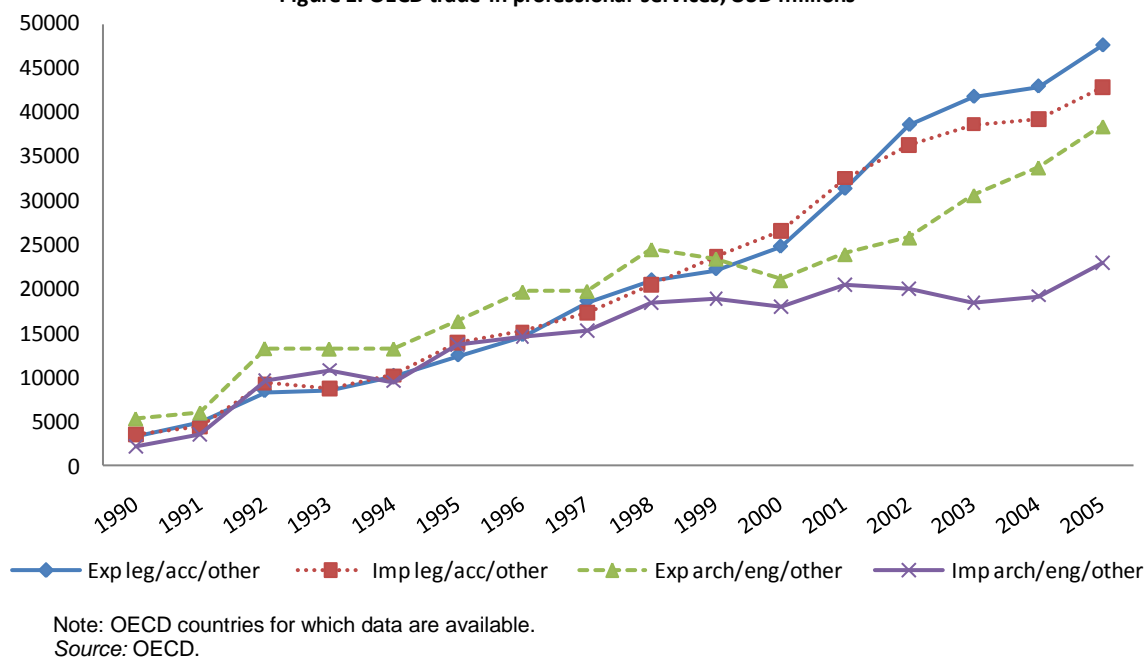
Table 1. Professional services in standard international classifications

EBOPS	ISIC Rev.3
268. Other business services	74. Other business activities
273. Miscellaneous business, professional and technical services	
274. Legal, accounting, management consulting, and public relations	74.1. Legal, accounting, market research, business and management activities
275. Legal services	
276. Accounting, auditing, bookkeeping, and tax consulting services	
280. Architectural, engineering, and other technical services	74.2. Architectural, engineering and other technical activities

The OECD services trade database

14. Figure 1 presents total exports and imports of legal and accounting and architectural and engineering services for OECD countries for which data are available (EBOPS 274 and 280). Trade in these services has been steadily increasing over the past 15 years and the data show it to be larger for legal and accounting services, particularly since 2000. The growth of architectural and engineering services trade slowed at the end of the 90s, though exports significantly increased again after 2000.

Figure 1. OECD trade in professional services, USD millions



15. Bearing in mind the country coverage of the data, figures 2 and 3 below indicate that the largest exporters of legal and accounting services are the US and the UK, while the leading importers of these services are Germany and the US, the latter particularly after 2001. Legal and accounting services exports account for an increasing share of total services exports in the leading OECD markets, for example representing 6% in the UK in 2005 (up from 4% in 1995). Imports of these services accounted for a similar share of total services imports in Germany in the same year (up from 3% in 1995).

16. Exports and imports of the major traders have generally experienced steady growth during the period covered, perhaps as a result of the expansion of international trade and of fields of practice, such as corporate restructuring and cross-border mergers and acquisitions. The exception is the Netherlands for which the data show a strong growth in trade of these services, particularly from 2000 to 2002, and a subsequent steep decrease. This may be related to the fact that the Netherlands transferred responsibility for trade in services data collection from the Central Bank (bank settlement system) to the Central Bureau of Statistics (survey system) from 2003 onwards.

Figure 2. Leading OECD legal and accounting services exporters, USD millions

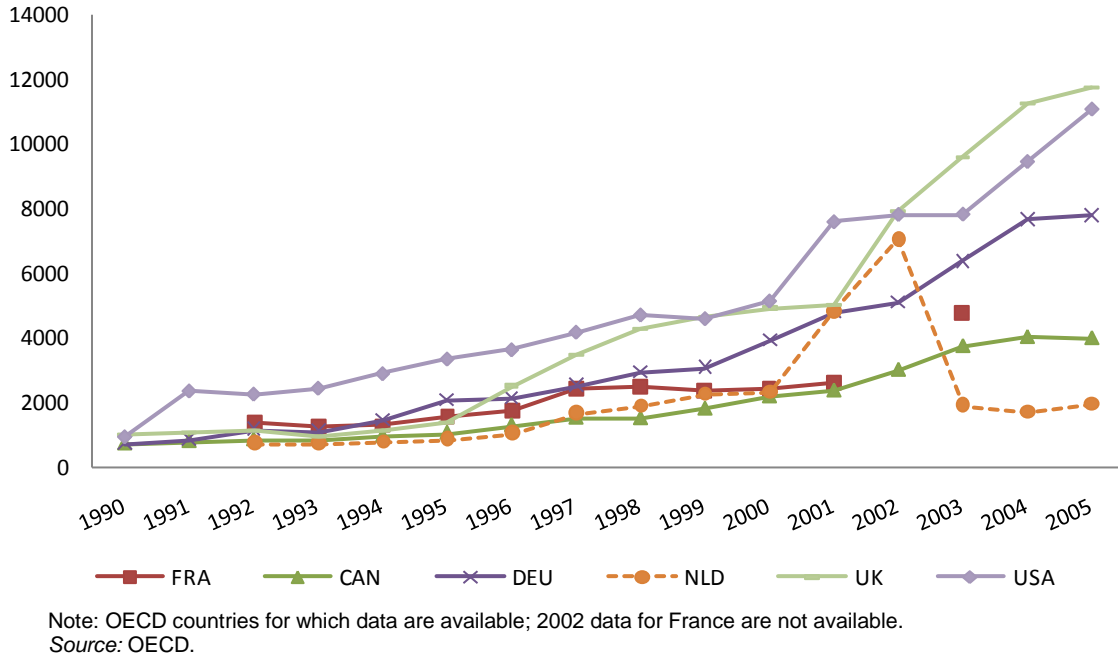
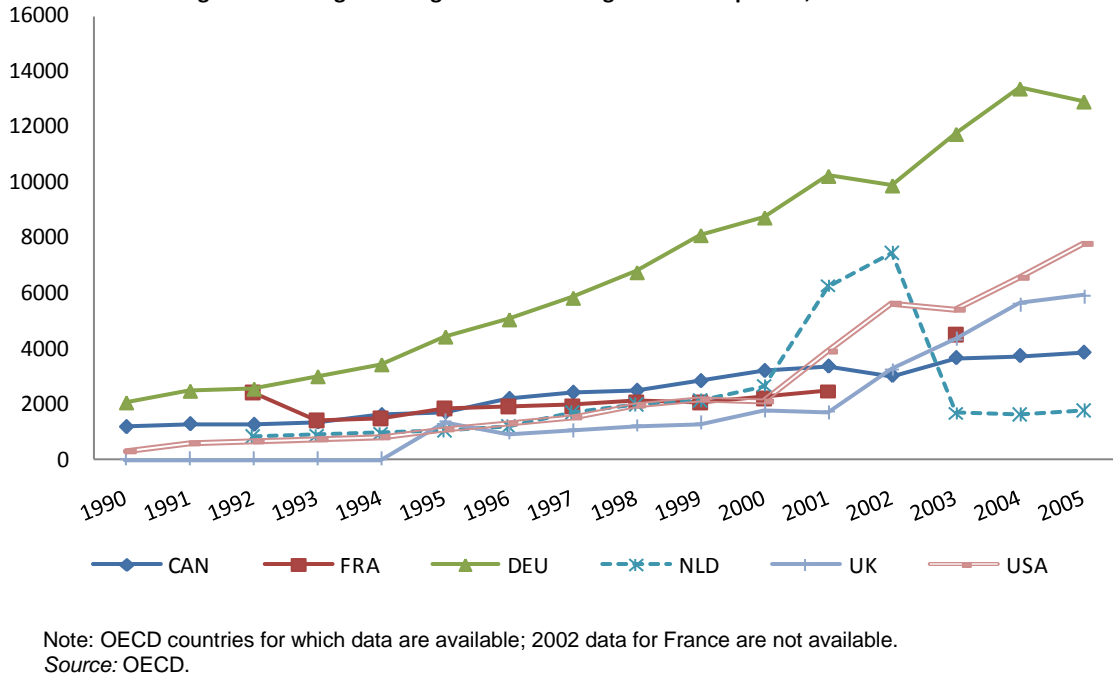


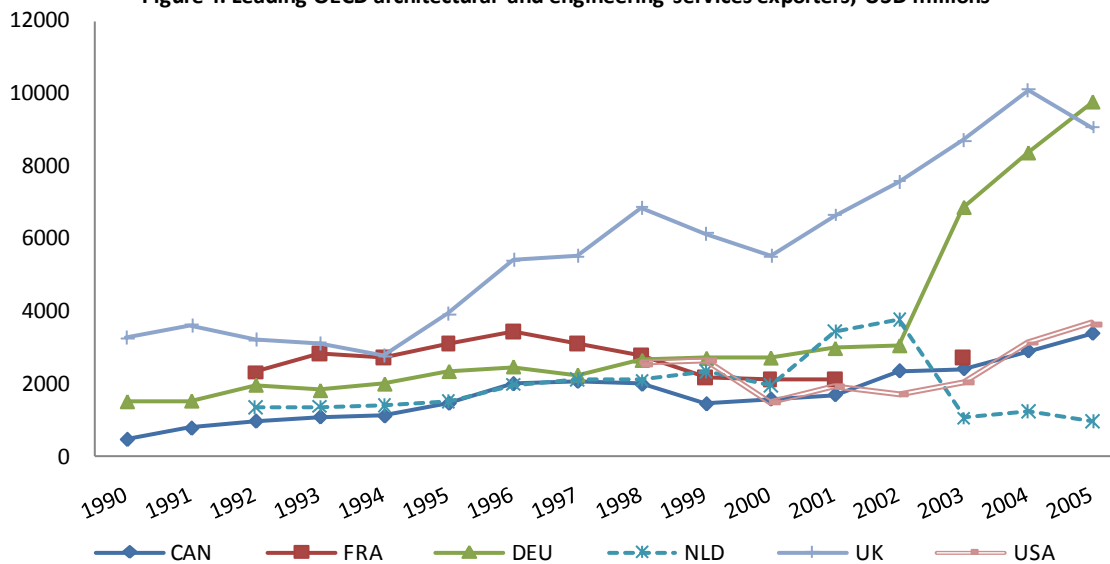
Figure 3. Leading OECD legal and accounting services importers, USD millions



17. Figures 4 and 5 show that the largest exporters and importers of architectural and engineering services are Germany and the UK. Trade in these services as a share of total services trade has also been on the rise in leading OECD countries. In Germany, for example, exports of architectural and engineering services accounted for around 4% of total services exports in 2005 (up from 2% in 1995), while imports represented around 7% of total services imports during the same year (up from 3% in 1995).

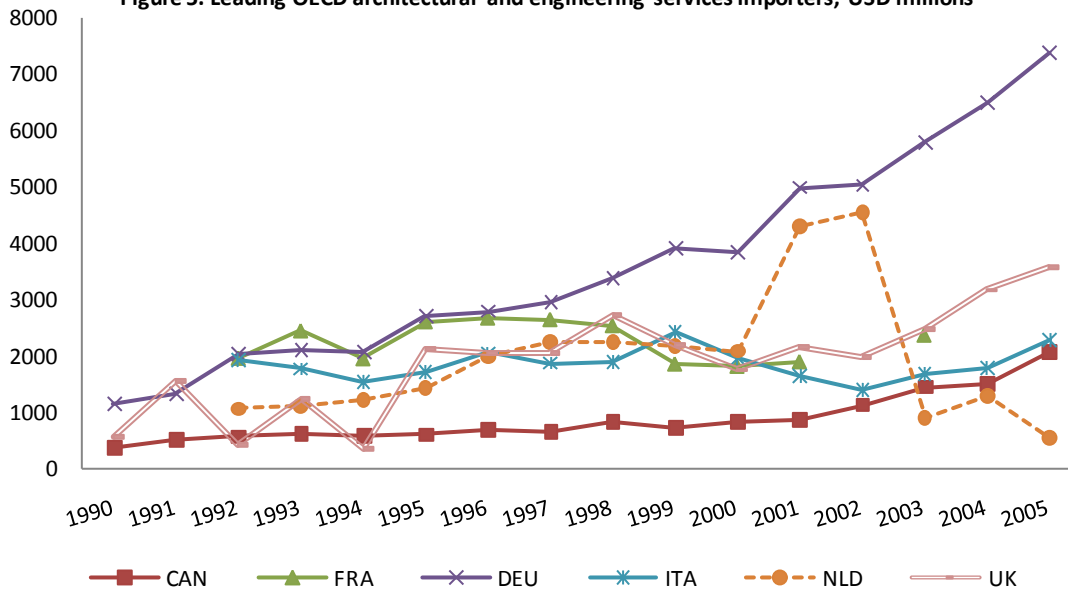
18. The pattern of trade in these services over time in the largest markets appears to have been less regular than trade in legal and accounting services. A possible explanation for this is the relationship between these services and cycles in the construction sector. It is also interesting to note that the US is only about the third largest exporter of architectural and engineering services and does not appear to be one of the leading importers.

Figure 4. Leading OECD architectural and engineering services exporters, USD millions



Note: OECD countries for which data are available; 2002 data for France are not available.
Source: OECD.

Figure 5. Leading OECD architectural and engineering services importers, USD millions

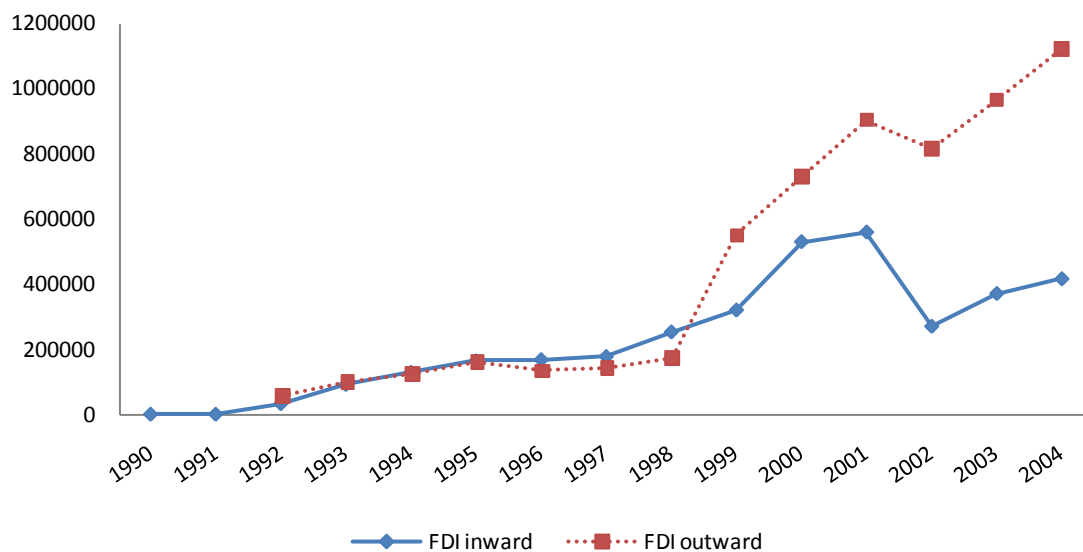


Note: OECD countries for which data are available; 2002 data for France are not available.
Source: OECD.

The OECD FDI database

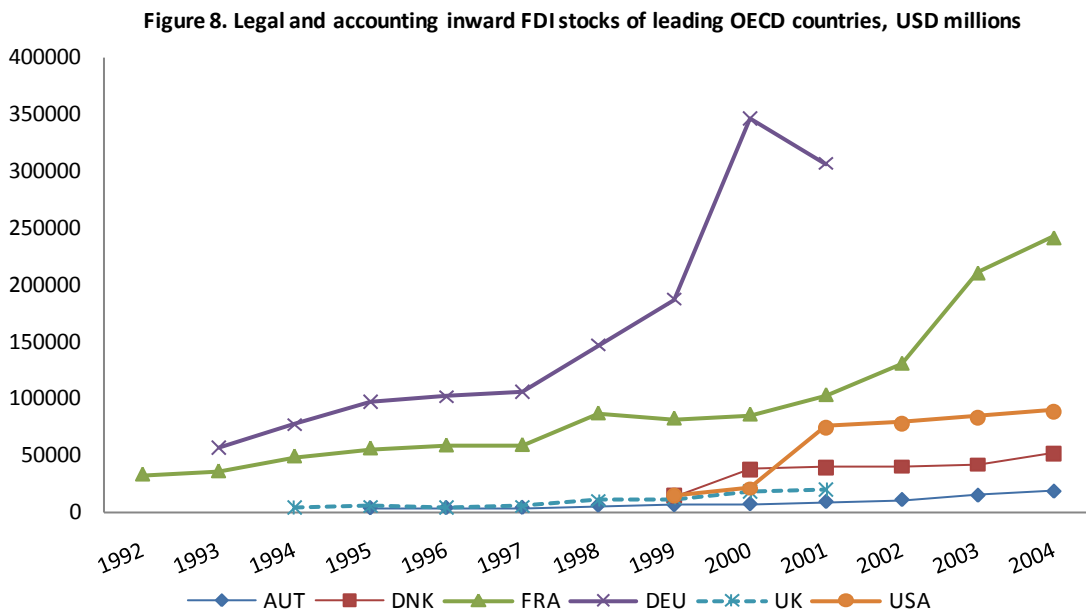
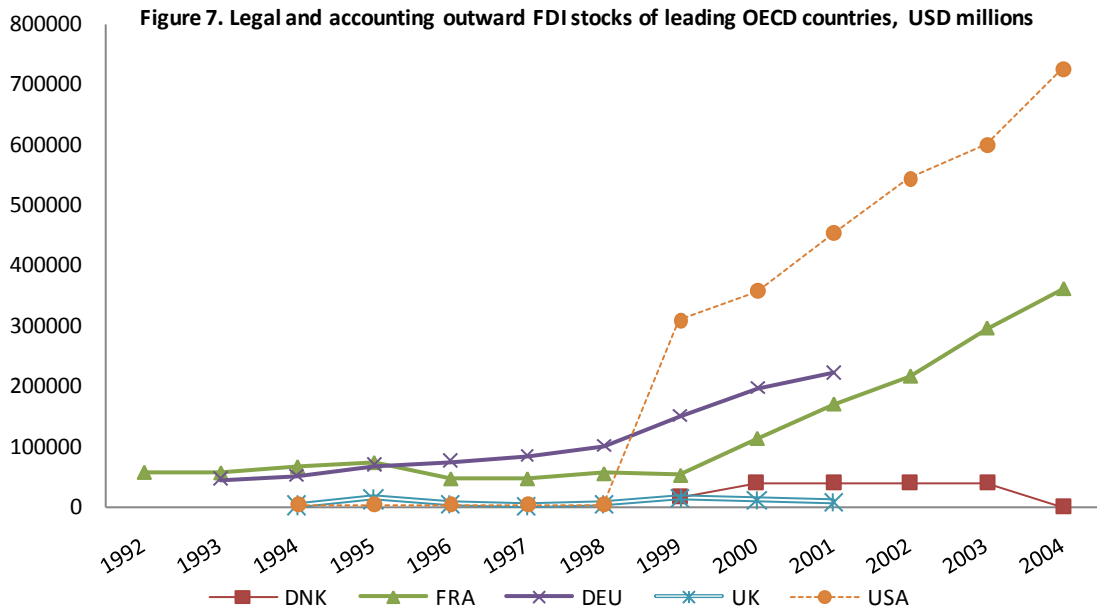
19. Figure 6 presents total FDI stocks of legal and accounting services (ISIC 74.1) for OECD countries for which data are available. The data indicate that FDI in these services has increased rapidly during the last decade or so too, especially outward stocks. This could also be related to the growth of international trade and expansion of the fields of practice mentioned above.

Figure 6. OECD FDI stocks in legal and accounting services, USD millions



Note: OECD countries for which data are available.
Source: OECD.

20. Bearing in mind the country coverage of the data, figures 7 and 8 indicate that the US, Germany during years for which data are available, and France have the fastest growth rates in outward FDI stocks. Inward stocks are also highest in these countries, particularly in Germany and France.



IV. Regulation of professional services

A framework for analysing regulations

21. The objective of this section is to identify in an integrated manner the most significant measures affecting trade in professional services and to add information about their nature which could prove useful in constructing the STRI for these services. These regulations can take many forms according to different modes of delivery, making them somewhat difficult to classify. However, there are two distinctions that tend to apply across many types of measures: regulations that apply to establishment of firms versus those affecting their operations; and measures that are discriminatory versus non-discriminatory ones. Table 2 below lists the main types of regulatory measures covered in the analysis.

22. The objective here is to provide a general picture of measures affecting trade in professional services. Some arbitrariness in the choice and classification of regulations is inevitable. Specific issues will, in addition, need to be taken into account in scoring and weighting the regulatory measures by country. These include: federal countries where regulation may vary from state to state; cases where countries impose regulatory requirements on the basis of reciprocity consideration; and the granting of preferences within regional agreements (e.g. nationality requirements applied only to non-EU nationals).

Table 2. Regulatory measures affecting trade in professional services

Restrictions affecting all modes		
	<i>Establishment/entry</i>	<i>Operations</i>
<i>Discriminatory</i>	1. nationality requirements 2. residency and local presence requirements 3. quotas on foreign provision/economic needs tests 4. exclusive rights 5. government procurement restrictions	
<i>Non-discriminatory</i>	1. licensing/qualification requirements	3. restrictions on fee-setting 4. restrictions on advertising
Restrictions to commercial presence and the movement of people		
	<i>Establishment/entry</i>	<i>Operations</i>
<i>Discriminatory</i>	1. FDI/foreign ownership restrictions 2. temporary entry and stay of professionals subject to labour market tests	3. partnerships with locally licensed professionals 4. hiring of local professionals 5. restrictions on foreign firm names 6. temporary entry and stay of professionals subject to labour market tests
<i>Non-discriminatory</i>	1. ownership/control for non-professionals	2. restrictions on incorporation/form 3. restrictions on multidisciplinary partnerships

23. The measures contained in the upper left cell determine whether foreign provision of professional services is permitted, irrespective of the mode of supply (even though they are generally more

difficult to enforce in the case of mode 1 trade). Nationality requirements condition practise on the basis of nationality or citizenship and typically entail a ban on foreign provision. Although they represent an outright discrimination, these restrictions are generally considered as market access measures because they are thought of as being a zero quota on imports.

24. Residency requirements can take several forms. Prior residency confers an advantage to nationals in that by definition they have already been residing in the host country. Permanent residency requires foreign providers to take up residency in the host country, which in the case of natural persons often leads to a loss of the home country residency. Domicile and local presence requirements are less restrictive for modes 3 and 4 since the extra burden to foreign providers of having an address in the host country is limited. Yet, by requiring foreigners to have a commercial presence in order to export cross-border, these measures have been identified as a key restriction to mode 1.

25. Quantitative measures can be discriminatory but often restrict any form of competition in professional services, being from domestic or foreign providers. Economic needs tests include a wide range of criteria for granting foreign providers the right to practice from the perspective of how the local community would benefit (e.g. number of suppliers, level of competition and size of the market). Regulations may further reserve certain activities to the exclusive exercise of the profession (at times locals), effectively granting them a monopoly in these services. For example, accountants may have the exclusive right to perform audit services and local lawyers to undertake host country law.

26. Restrictions may additionally affect government procurement markets for professional services. These may be discriminatory, essentially acting as nationality requirements in these markets. Requirements for in-house provision of professional services have also been identified as one of the obstacles affecting international competition in government procurement, particularly in the engineering and architectural sectors. These restrictions are closely related to the provision of public services and general approaches to privatisation.

27. If foreign provision is permitted, it is typically regulated by licensing and qualifications. Technically, licensing relates to substantive requirements, other than qualification requirements, that need to be satisfied in order to obtain the right to practice. These include registration requirements, membership to a professional body and professional indemnity insurance. Licensing may also be linked to more stringent requirements noted above such as residency. In some instances, it may be used as a facilitating measure to allow practice only to some degree. For example, foreign lawyers may be allowed to practice only home country or international law (limited licensing).

28. From a trade perspective, the main question surrounding these measures relates to whether they are more burdensome than necessary to achieve their objectives. The fundamental impediment here arises from the non-recognition of foreign professional qualifications, training and experience. Foreign qualified professionals may be required to repeat education and training or to pass stringent examinations to practice. In addition to the requirements attached to qualification and licensing, another important aspect relates to the procedural steps needed to acquire them.

29. Prominent regulatory measures affecting ongoing operations of professional firms in principle across all modes of supply include restrictions on fees and advertising. Regulations on fee-setting or prices reduce competition on the basis of prices usually through binding or recommended set prices. Advertising and marketing by professionals may be regulated or prohibited altogether.

30. The second set of measures primarily restrict trade through modes 3 and 4. Restrictions on foreign ownership or equity are often not sector specific but may apply to professional services as part of the general investment legislation. More sector specific limitations on ownership and control of local firms

may be put in place for non-professional investors. These measures require owners of professional firms to be locally licensed or qualified and, although non-discriminatory, they are generally viewed to weigh more heavily on the ability of foreign firms to compete for a national market.

31. Restrictions on incorporation range from a total prohibition to incorporate to limitations on the legal form of establishment. Only some business structures may be allowed, especially those that are not viewed to shield against professional liability. These restrictions often apply equally to both domestic and foreign providers, but they have the effect of restricting the ability to practice through the preferred mode of supply and may thus penalise those foreign service providers accustomed in their home countries to deliver services through a commercial presence.

32. Limitations to enter into partnerships with or hire locally qualified professionals can be particularly restrictive in the most regulated professions. For example, it is common for foreign law firms and lawyers to enter into partnership with or hire locals as a means to expand into the practice of host country law without the need to obtain a local license. This is viewed as important for modern law firms as their international clients increasingly demand multijurisdictional advice and an integrated service covering all aspects of a transaction. By preventing such partnerships, these regulatory measures may effectively act as an entry barrier.

33. Other important restrictions on the temporary movement of professionals are labour market tests, which are sometimes referred to as economic needs tests, though they focus on the likely impact of foreign service suppliers on the local labour force. These measures may be horizontal and constitute an integral part of countries' immigration policies. Depending on the category of professionals concerned, these restrictions may also have a significant impact on trade through mode 3. In particular, easing limitations on the movement of intra-corporate transferees is seen as a way to facilitate businesses' operations and increase their overall efficiency.

Regulation in OECD countries

34. Research aimed at obtaining a comprehensive and up-to-date picture of the regulatory landscape of professional services faces data and methodological challenges. There exist several sources of information and as seen a wide range of measures potentially affecting trade in these services. Creating and updating the STRI over time requires a reliable and periodic survey of the main trade restrictions put in place by member countries. The OECD Economics Department Product Market Regulation (PMR) survey is the obvious candidate for this purpose.

35. Although not specifically designed for trade-related measures, the PMR questionnaire includes many of the measures identified earlier as the most significant restrictions to trade in professional services (see below). Some additional regulatory measures will be added through an extension of the PMR questionnaire, which is expected to be released towards the end of this year. Furthermore, a survey with the remaining few measures is being undertaken in preparation for the 2008 OECD Services Experts Meeting on Business Services. Hence, data for 2007/2008 should become available on most restrictions to trade in professional services.

36. Other sources of information on regulatory measures affecting trade in professional services developed within and outside OECD include the following:

- The OECD FDI Regulatory Restrictiveness Index
- The 1996 OECD Inventory of Measures Affecting Trade in Professional Services

- WTO Commitments

37. These three sources are reviewed in depth below along with the PMR indicators in an effort to present and analyse available information on regulation by OECD country in the four professional services. The discussion is organised according to the framework developed in Table 2. Below are additional surveys and information sources on regulations in these services, which although not currently available or complete enough to be reviewed in detail here, may prove useful to complement existing data for the construction of the STRI:

- **The 1999 DAFFE Roundtable on Competition in Professional Services (OECD, 1999); and the 2007 Roundtable on Competitive Restrictions in Legal Professions (OECD 2007c).** The Roundtables include member countries' submissions describing their regulations in a range of professional services (legal, accounting, architectural, engineering and medical services), but since the focus is on restrictions affecting competition they generally do not go beyond what is covered in the PMR indicators. Nonetheless, particularly the Roundtable on legal services has gathered up-to-date information on competitive restrictions in the legal profession which may be useful at a later stage, including in order to extend the coverage of the STRI to non-members. In addition to 18 OECD countries (and the EC), submissions have been put forward by Brazil, Indonesia, Lithuania, Romania, South Africa and Chinese Taipei. Restrictions are classified according to the same framework of the PMR, i.e. entry versus conduct regulations, and the coverage of types of measures is also very similar.
- **The OECD Economic Surveys.** The surveys identify the main economic challenges faced by the country and examine policy options to meet them. They include a discussion of product market regulation or competition, which covers services and could thus be a complement to the PMR for some countries. The reports are released about every two years for each OECD country and Brazil, Chile, China and Russia, so that several data points can be available (although the years are not the same for all countries). However, the focus is on reforms in network services and material on professional services is rather limited.
- **The WTO Trade Policy Reviews (TPRs).** The TPRs contain a significant body of detailed information on *actual* regulation in a wide range of services sectors well beyond OECD membership and over time. The information collected during the reviews is coupled with data from other sources such as international organisations and academic research papers and its factual accuracy has been checked by the country under review. The TPRs could be particularly valuable for extending the STRI to non-OECD member countries in the future. One limitation of the reports is that, although the countries are reviewed periodically, the years differ between them. In addition, like the OECD Economic Surveys, professional services are not thoroughly covered. Only the TPRs of five OECD countries (Canada, Japan, Mexico, Switzerland and the US) present information on professional services and there are differences in the depth of treatment in different countries.
- **The APEC Directory on Professional Services.** Provides information on regulations affecting accounting, architectural and engineering services in APEC economies, particularly on qualifications and licensing requirements; but it is not publicly available. Information on professional services regulations of some OECD member countries and beyond may nevertheless be gathered in the context of the APEC Directory. A list of contact points for various professional services in the different APEC economies has been provided by the APEC Secretariat (APEC, 2007).

38. The OECD PMR database includes indicators of regulatory conditions in professional services. The dataset is compiled using information from official government responses to the OECD Regulatory Indicators Questionnaire. The indicators cover entry and conduct regulation for legal, accounting, engineering and architectural services as defined in ISIC Rev.3 and have been estimated for 1996 and 2003. They have been calculated employing the methodology developed by Paterson *et al.* (2003) and extend the country coverage of that work to all OECD member countries.

39. This methodology involves several steps (see Conway and Nicoletti, 2006). The country answer to each question is coded and ordered in a scale ranging from 0 to 6, with lower scores corresponding to more liberal regimes. Scores to individual regulatory items are aggregated into low-level indicators, mid-level indicators and broader sectoral aggregates. The indicators for professional services cover six sub-domains, three and four for entry and conduct regulation, respectively (see Table 3).

Table 3. OECD questionnaire for low-level indicators in professional services

Entry regulation		Conduct regulation	
Licensing		Regulation on form of business	
Q 4.1.1	How many services does the profession have an exclusive or shared exclusive right to provide?	Q 4.4.1	Is the legal form of business restricted to a particular type?
Education requirements		Regulations on prices and fees	
Q 4.2.1	What is the duration of special education/university/or other higher degree?	Q 4.4.2	Are the fees or prices that a profession charges regulated in any way (by government or self-regulated)?
Q 4.2.1	What is the duration of compulsory practice necessary to become a full member of the profession?	Regulations on advertising	
Q 4.2.1	Are there professional exams that must be passed to become a full member of the profession?	Q 4.4.3	Is advertising and marketing by the profession regulated in any way?
Quotas and economic needs tests		Inter-professional cooperation	
Q 4.3.1	Is the number of foreign professionals/firms permitted to practice restricted by quotas or economic needs tests?	Q 4.4.4	Is cooperation between professionals restricted?

Source: OECD International Regulation Database.

40. Table A-1 presents the PMR low-level indicators for professional services³, which are analysed in detail in Conway and Nicoletti (2006). Legal services are the most heavily regulated followed by accounting services. Architectural and engineering services are the professions where the fewest regulatory hurdles are found. In general, there has been only minor progress in easing restrictions to professional services between 1996 and 2003. Nevertheless, some liberalisation has been achieved in specific areas such as quotas and economic needs tests, and restrictions on prices and fees.

³ Table A-1 is organised according to the framework developed in Table 2. It should be noted, though, that the PMR is not designed to cover explicitly measures affecting mode 1 trade, since its focus is on regulations relating to competition in general.

The OECD FDI Regulatory Restrictiveness Index

41. DAFPE, in cooperation with ECO, has developed indexes of FDI restrictiveness for OECD countries (Golub, 2003; and Koyama and Golub, 2006). The analysis includes professional services (legal, accounting, architectural and engineering services) and is based on the OECD Code of Liberalisation of Capital Movements. The information on regulatory measures contained in the Code is complemented by additional sources, including GATS commitments, the Australian Productivity Commission's sectoral studies and the Investment Reports developed in the APEC context.

42. The methodology used for creating the indexes of restrictiveness is a variant of the one employed by Hardin and Holmes (1997). Restrictiveness is measured on a 0 to 1 scale, with the former representing full openness and the latter a prohibition of FDI. Ownership restrictions receive a substantial weight in light of their perceived importance. The following FDI regulatory measures are included in the restrictiveness indicators:

- *Foreign Direct Equity Investment Limits* (from 0 to 99%).
- *Screening and Approval* (subject to proving economic benefits, approval unless contrary to national interest or notification).
- *Restrictions on Board of Directors/Managers* (Nationality, residency or licensing requirements).
- *Restrictions on the Movement of People* (from no entry to three to four years).
- *Input and Operational Restrictions* (domestic content of more than 50% or other).

43. Regulatory data on specific FDI measures are not publicly available. Nonetheless, composite indicators for each of the four professional services covered are included in Golub (2003) for the period 1998/2000 and in Koyama and Golub (2006) for 2005/2006. Table A-2 largely confirms the pattern observed from the PMR indicators, with higher levels of regulation in the legal and accounting sectors. Limited progress has been achieved in lifting restrictions during the period covered by the two studies, although some more headway has been made in liberalising architectural and engineering services.

The OECD Inventory of Measures Affecting Trade in Professional Services

44. In 1996, DAFPE developed the OECD Inventory of Measures Affecting Trade in Professional Services (hereafter the "OECD Inventory") based on a major survey in OECD countries, which represents to date the best endeavour to collect in a comprehensive manner information on trade-related regulations in these services. The OECD Inventory covers legal, accounting, architectural and engineering services generally as defined in the GATS sectoral classification (W/120), which is in turn based on the Provisional UN Central Product Classification (Provisional CPC). 20 out of the then 25 OECD members participated actively in the survey.

45. For each sector, regulations are presented in three parts, according to whether they are primarily relevant to commercial presence (Part A), to natural persons (Part B) or to both (Part C). Within each part, the survey identifies six or seven categories of measures, covering fully (at times even going beyond) the array of regulatory restrictions identified in Table 2. The results of the OECD Inventory according to the analytical framework on which this paper relies are shown in Table A-3.

46. In line with ECO's PMR and with the FDI restrictiveness indices, the survey shows that in 1996 legal and accounting services were the most regulated sectors, followed by architectural and engineering services. Some discriminatory measures not covered in past versions of the PMR that have been identified as particularly restrictive in the literature were not infrequent in all four professions. These include nationality and residency requirements as well as restrictions on FDI/ownership, labour market tests and discriminatory government procurement policies. Other limitations, such as restrictions on working with local professionals and on the use of international or foreign firm names, appeared to concern mostly the legal and accounting services sectors.

WTO commitments

47. WTO commitments resulting from the Uruguay Round provide an additional source of information on regulatory restrictions in professional services by country. The shortcomings of this information for analytical purposes are widely acknowledged. The documents are now quite old and in any event they may have not reflected the regulatory stance of a country even back in 1994 when they were largely compiled. This is because countries may choose to bind at less than the status quo to allow for regulatory flexibility. In addition, lack of restrictions in a particular sector may reflect no commitments in that sector or a related subsector (e.g. host-country law) rather than a liberal regime.

48. Nevertheless, it seems useful to review this information by way of background to get a sense of what member countries have bound in the area of professional services. The analysis does not include regulations which are mostly considered as domestic regulatory measures under the GATS and do not generally need to be scheduled (e.g. licensing and qualification requirements). Some countries have included them in their schedules either for transparency purposes or in the additional commitments column (relating to GATS Article 18). However, since members are not required to do so systematically, these measures are excluded here.

49. Table A-4 shows that nationality and residency requirements are often scheduled in all four professional services, indicating that countries have preferred to maintain flexibility to use these measures. Similarly, FDI/ownership restrictions and labour market tests for natural persons are not infrequent and are generally scheduled as horizontal limitations. For the construction of the STRI, this underlines the need to consider services regulations in a holistic manner. Restrictions on partnerships with and hiring of locals and of firm names are less common, but this may reflect the fact that countries consider these measures as non-discriminatory, which would not need to be scheduled.

Market imperfections and optimal regulatory responses

50. A vast economic literature has shown that free markets for professional services may not produce efficient outcomes (for a fairly comprehensive recent review of these studies see OECD, 2007c). A major source of market failure associated with the provision of these services is asymmetric information. Since the essence of professional services is the high level of technical knowledge of the professional, the level of information available to the provider and the consumer is different. In addition, professional services are often credence goods, the quality of which can almost never be adequately assessed and external quality assurances may thus be required.

51. The quality of professional services has several dimensions (see Plug *et al.*, 2003 for the case of legal services). The first and most straightforward is service quality (e.g. the quality of a given advice). Other aspects relate to integrity (impartiality and trustworthiness) and commercial quality (perceived treatment by consumers). Safeguard mechanisms are often put in place by governments to ensure accountability of the professionals and ethical behaviour.

52. Another concern is that inappropriate performance of contracts between sellers and buyers of professional services will give rise to negative externalities to third parties and society in general. For example, a poorly constructed bridge will jeopardise traffic and public safety. A third source of market failure relates to the so-called “public good” problem. Professional services generate significant positive externalities which are of high value to society in general, e.g. the crucial role played by lawyers in the administration of justice. Governments might enact regulations to guarantee their provision.

53. In some markets for professional services imperfections may be mitigated, however, so that markets may work efficiently. For instance, information problems may be eased when consumers are corporate clients who regularly purchase these services (the “repeat purchase mechanism”). It also seems likely that corporate clients, particularly large ones, are sophisticated consumers who are generally capable of protecting themselves effectively through their own means, such as contractual arrangements (insurance and dispute resolution). This is of particular relevance to international trade in professional services since the demand for trade in these services overwhelmingly involves businesses.

Rationale for restrictions on professional services

54. The arguments underlying the application of specific types of regulatory measures on professional services stemming from the market failures noted above have been the subject of significant work in the past decade or so. In particular, these motivations were discussed in the series of workshops on professional services organised by DAFWE at the end of the 90s (OECD, 1996; and OECD, 1997) and follow up work in the context of the Competition Committee (OECD, 1999; and OECD, 2007c). Additional insights were provided at the Sixth OECD-World Bank Services Experts Meeting on Domestic Regulation in Professional Services. The following objectives emerge from this work:⁴

- **Nationality requirements:** Ensure enforcement of standards of practice and ethics and knowledge of local rules and conditions (local language, culture, and customs).
- **Residency/commercial presence requirements:** Ensure consumer redress in the event of malpractice, knowledge of local rules and proximity to consumers.
- **Incorporation and legal form:** Limit company structures that may reduce personal liability of service suppliers vis-à-vis their clients and thus their accountability in the event of malpractice.
- **Investment in professional services firms by non-professionals:** Ensure service quality and the independence of professionals vis-à-vis enterprises which may use their influence as shareholders to create market advantages for themselves.
- **Restrictions on partnerships with and hiring of locally qualified professionals:** Stem from the refusal to recognise the degrees of foreign professionals and are covered by the general prohibition to practice with non-qualified professionals. The aim is to guarantee service quality and the independence of professionals.
- **Licensing and qualifications requirements:** Ensure standards of competence, performance and accountability.

⁴ The focus is on sector-specific measures generally put in place to achieve non-economic objectives.

- **Regulations on fee-setting:** Help consumers to judge the quality of professional services not just on the basis of prices (which may drive out of the market high-quality providers) and inform consumers of the average fees to be paid for certain services.
- **Regulations on advertising:** Prevent consumers from making choices that they are not qualified to make and rogue providers from obtaining business.

Alternative regulatory approaches

55. Discussions at the OECD also addressed ways to advance regulatory reform. This included a search for alternative, less burdensome approaches to trade and investment restrictions in professional services. In many instances, discussions were inspired (in addition to theory) by comparisons across the four professional fields considered; and by the positive experiences of those OECD member countries which maintain more open markets for professional services while addressing adequately consumer protection and public interest concerns.⁵ Table 4 presents these alternative approaches by measure.

Table 4. Simplification of regulatory requirements

Nationality requirements	<ul style="list-style-type: none"> – Objective, competency-based testing – Membership in local professional associations – Requirement to collaborate with locals
Residency/local presence requirements	<ul style="list-style-type: none"> – Appointment of a representative agent – Bonding requirements – Liability insurance
Incorporation/legal form	<ul style="list-style-type: none"> – Allow partnerships not implying dilution of liability, e.g. "professional corporations"
Investment in professional service firms by non-professionals and partnerships with and hiring of locals	<ul style="list-style-type: none"> – Require that the board of directors (or a majority of them) are professionals – Allow at least minority of equity participation on non-professionals in firms – Require membership of professional associations – Acceptance of the host country rules of professional conduct and discipline – Ensure locals undertake all domestic work (e.g. host country law) on behalf of foreign firms
Licensing and qualification requirements	<ul style="list-style-type: none"> – Promote recognition of foreign qualifications and standards – Allow for limited licensing – Streamline procedures
Restrictions on advertising	<ul style="list-style-type: none"> – Strengthen rules on prohibition of deception
Restrictions on fee-setting	<ul style="list-style-type: none"> – Promote recommended fee schedules

⁵ The alternative approaches developed in the context of the DAFFE workshops on FDI-related measures were subsequently adopted by the OECD Council (see OECD, 2003).

V. The relationship between regulation and trade in professional services

56. This section applies econometric techniques in order to explore the linkages between regulation and bilateral trade by mode of supply in professional services, focusing on modes 1 and 3 in light of current data availability (see Section III). The interest in this study is primarily on finding answers to the following three questions:

- To what extent do particular types of regulation promote or inhibit trade?
- Do entry restrictions and regulations governing ongoing business activities have different impacts on trade?
- To what extent do regulatory impacts differ across modes?

57. The tool employed is the gravity model, the work horse model for analysing the impact of trade costs on trade flows. The model explains bilateral flows as a function of the market size of trading partners, the distance between them and other geographical and institutional variables. Although primarily used in relation to goods trade, a number of recent papers have applied the gravity methodology to services trade, as is done here (Walsh, 2006; Kox and Nordås, 2007; and Schwellnus, 2007).

58. Much progress has been made in the past and now the gravity model rests on more solid theoretical foundations. A range of estimation techniques have in parallel been proposed to address some of the weaknesses identified in the model as was commonly used. In particular, the focus has been on how to take proper account of the impact of relative costs on trade flows; and on how best to deal with zero trade flows among country pairs, which is closely related to the issue of separating out the effects of trade costs on the probability to enter the market (trade propensity) and on trade flows. Annex 1 proposes a methodology for addressing these issues in the context of this study, which is applied to the estimations.

59. Since the latest version of the PMR indicators has yet to be released, the policy data employed in the analysis are the PMR indicators estimated in previous years (i.e. 1996 and 2003).⁶ The entry variables are indicators of the level of entry restrictions in the exporter and importer countries respectively, while the two conduct variables capture the extent to which ongoing activities are restricted in both countries.⁷ For now, the focus of the analysis is on non-discriminatory regulations since the previous PMR indicators cover measures affecting competition in general. To more fully capture the potential importance of regional trade preferences, an indicator variable is constructed which is equal to one only if the exporting and importing countries both belong either to the EU, NAFTA or ANZCERTA.

⁶ The PMR sector classifications broadly correspond to the trade data in the case of legal and accounting services. However, architectural and engineering services are aggregated together in the trade data. Therefore, the simple average of the PMR indicators for these sectors is taken here. In addition, all PMR variables are converted to logarithms after adding 0.001, in order to retain observations for which the indicator equals zero (i.e. fully liberal).

⁷ Policy indicators for both countries are included because it is likely that both demand- and supply-side measures have an impact on trade in services: exporters often have to comply with regulations at home and abroad, thus incurring the costs associated with both. This is in contrast to the situation for goods trade, where tariffs that the exporting country imposes on imports do not have a first-order effect on the export decisions of domestic firms.

60. Mode 1 bilateral trade data are from the OECD services trade database, which includes legal, accounting, and architectural and engineering services combined (see Section III). These data are, like the PMR indicators, available for 1996 and 2003. However, the effective estimation sample is nearly doubled if 2005 data are used in place of 2003 data. Although such an approach necessarily involves an approximation, it seems desirable in this case in order to benefit from such a greatly increased sample (also considering that regulatory measures in these services are relatively constant over time).

61. Data on mode 3 trade in professional services are not readily available on a cross-country basis. The closest proxy available for a sufficient number of countries and years is inward foreign direct investment, estimated using the OECD FDI database. However, as seen in Section III, these data represent stocks of investment and not sales by foreign affiliates. Moreover, they are not yet available at the same level of sectoral detail as the mode 1 data used above, but cover the aggregate sector of “other business services” (see Table 1).

62. GDP data are from the World Bank World Development Indicators. The model specification assumes unitary income elasticity and includes the GDP terms on left-hand side. Data for distance and other geographical and historical variables are from the Centre d’Etudes Prospectives et d’Informations Internationales (CEPII).⁸

The effects of regulation on mode 1 trade

63. Results of regressions for each professional services subsector are shown in Table 5. The first column of each block summarises the outcome (trade flow) equation and the second summarises the selection (trade propensity) equation. Entry restrictions are not included as explanatory variables in the trade flow equation because fixed costs of this type are assumed not to affect the decision of how much to sell in a given market, once the decision has been made to enter it (see Annex 1 for the details).

⁸ See <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>.

Table 5. Estimation results for mode 1 by sector (1996 and 2005)

	Legal		Accounting		Architecture/Engineering	
	Outcome	Selection	Outcome	Selection	Outcome	Selection
PMR Entry (exp.)		-0.289 [0.771]		-0.493 [0.470]		-0.777*** [0.291]
PMR Entry (imp.)		-0.677 [0.792]		0.167 [0.229]		-0.451 [0.356]
PMR Conduct (exp.)	-1.548 [1.344]	0.544 [1.021]	-0.895 [0.635]	-0.441 [0.280]	-0.323 [0.214]	0.671*** [0.152]
PMR Conduct (imp.)	-0.147 [1.341]	0.303 [0.983]	-2.153*** [0.685]	-0.247 [0.230]	-0.536** [0.269]	0.703*** [0.163]
Distance	0.119 [0.196]	-0.103 [0.138]	-0.744*** [0.226]	-0.156* [0.091]	-0.208** [0.088]	0.111* [0.060]
Contiguity	1.12 [1.102]	0.268 [0.555]	1.725 [1.570]	1.062* [0.555]	1.178** [0.594]	-0.471 [0.602]
Common Language	-0.276 [0.840]	-0.175 [0.609]	-0.654 [1.732]	-0.158 [0.611]	0.298 [0.587]	0.950* [0.494]
Colony	0.907 [0.827]	1.800*** [0.671]	-0.241 [2.049]	-1.582** [0.708]	0.469 [0.551]	0.566 [0.511]
RTA	1.34 [0.900]	1.582*** [0.548]	2.500* [1.318]	1.410*** [0.449]	1.686** [0.847]	2.943*** [1.044]
Constant	-38.515*** [0.341]	1.010*** [0.180]	-41.867*** [0.614]	0.189 [0.184]	-38.204*** [0.178]	1.796*** [0.237]
Observations	252	252	235	235	389	389
H0: Rho = 0		4.14**		28.84***		3.53*
H0: [Outcome] Entry = 0		2.34		1.07		1.87

Robust standard errors corrected for country-pair clustering in brackets. Statistical significance indicated as follows: *** (1%), ** (5%), and * (10%). Estimation is by maximum likelihood (Heckman sample selection model). H0: Rho = 0 is a Wald test of the null hypothesis that the selection and outcome equations are uncorrelated. H0: [Outcome] Entry = 0 is a Wald test of the null hypothesis that the two entry variables have coefficients equal to zero in the outcome equation, based on estimation of a full model in which the same set of variables is used in both equations.

64. A number of coefficients are imprecisely estimated from a statistical point of view and some of them are not intuitively signed. Given the relatively small samples available, as well as possible econometric difficulties arising from the policy variables used, these results should be considered as work in progress and are presented primarily in order to stimulate the discussion. As more data and information become available, the robustness of these findings will be further tested.

65. With this in mind, several patterns emerge from Table 5. First, as expected the data suggest that entry restrictions generally have some negative impact on trade propensity. However, this effect is only statistically significant for regulation at home in architecture and engineering, while it is insignificant in all sectors for regulation abroad. Second, restrictions to ongoing business operations exert a generally negative impact on trade flows. This effect is statistically significant in two of the three sectors, namely accounting and architecture and engineering. One question here which will need to be investigated with additional analytical instruments, relates to whether regulations negatively affect mode 1 trade only once the decision to establish abroad has been made. If this were to be confirmed, it would provide an indication of complementarity between modes.

66. Third, it is not just policy measures in the importing country that affect trade performance, but also those in the exporting country. For instance, entry restrictions in the exporting country have a negative and statistically significant impact on trade propensity in the architectural and engineering sectors. Finally, RTAs can play a significant role in boosting both trade propensity and conditional trade flows. The results indicate that in all sectors, membership of an RTA is associated with one or both of increased trade propensity and trade flows.

The effects of regulation on mode 3 trade

67. Table 6 presents the aggregate sectoral results for mode 3. In addition to the same difficulties encountered in the case of mode 1, as previously indicated limited data availability makes it impossible here to conduct an empirical analysis for mode 3 trade as such. Since data on FDI stocks are used, and they are subject to measurement error and aggregation bias, it is important to interpret the following results with caution. As before, they are presented at this stage only to stimulate discussion on these questions and will require further investigation.

**Table 6. Aggregate estimation results for mode 3
(1996 and 2003)**

	FDI	
	Outcome	Selection
PMR Entry (exp.)		2.252** [0.903]
PMR Entry (imp.)		0.775 [0.857]
PMR Conduct (exp.)	-6.554 [4.852]	-1.088 [1.283]
PMR Conduct (imp.)	2.194 [5.233]	-3.807** [1.582]
Distance	-1.164*** [0.246]	-0.421*** [0.072]
Contiguity	0.42 [1.146]	-0.519** [0.254]
Common Language	-0.137 [0.990]	0.048 [0.243]
Colony	0.145 [1.154]	0.106 [0.294]
RTA	0.981 [0.785]	-0.034 [0.215]
Constant	-53.009*** [0.271]	0.364*** [0.060]
Observations	804	804
H0: Rho = 0		90.70***
H0: [Outcome] Entry = 0		0.61

Robust standard errors corrected for country-pair clustering in brackets. Statistical significance indicated as follows: *** (1%), ** (5%), and * (10%). Estimation is by maximum likelihood (Heckman sample selection model). H0: Rho = 0 is a Wald test of the null hypothesis that the selection and outcome equations are uncorrelated. H0: [Outcome] Entry = 0 is a Wald test of the null hypothesis that the two entry variables have coefficients equal to zero in the outcome equation, based on estimation of a full model in which the same set of variables is used in both equations.

68. The first result immediately apparent from Table 6 is that entry regulations do not seem to have a negative impact on mode 3 trade propensity. This could be in part due to the fact that the PMR indicators used here do not fully capture the extent of policy restrictions impacting investment abroad (see Table 3). Another reason, at least in the accounting sector, could relate to the organisation of the large accounting entities in networks of independent firms, which are typically for all purposes domestic firms (see Section II). An additional question that would need to be explored is the positive and significant coefficient on entry restrictions in the exporting country. Some explanations are possible for this, including the fact that tight entry restrictions in the domestic market may induce local providers to invest abroad instead; self-selection effects could also lead to only the most productive firms (i.e. those most likely to engage in FDI) surviving in the domestic market. However, as mentioned above these issues will require further analysis.

69. There is also some evidence that regulations affecting ongoing business operations impact negatively on mode 3 trade. In the case of such regulations in the importing country the effect on the probability to enter the market is statistically significant. The effect of regional integration would appear to be considerably weaker in the case of mode 3 than for mode 1: the dummy variable is statistically insignificant in both columns of Table 6. This is another result that requires further research as more information becomes available. One explanation could be that the RTA dummy currently used does not adequately capture FDI preferences between trading partners.

VI. Conclusions and next steps

70. Trade in professional services is an increasingly important feature of the international economic landscape. This paper shows that the sector has undergone solid expansion in recent years, and seems well placed to take advantage of future reforms to lower trade costs within the framework of unilateral, regional, and multilateral initiatives.

71. The study has sought to prepare the ground for the construction of the STRI for professional services, as the new regulatory data become available. Professional services represent a good pilot sector in that, although it would appear that mode 3 is the preferred mode of supply at least in the legal and accounting sectors, they can be provided through different modes. Trade in these services is also affected by a wide range of regulatory measures, which can have a different impact on business strategies and operations, and according to the mode of service delivery used.

72. The empirical analysis carried out, although still preliminary in light of data limitations, makes initial progress in identifying how regulations affect trade in professional services. Although they have some negative impact on mode 1 trade propensity in architectural and engineering services, entry restrictions are not generally associated with lower trade in professional services. In the case of mode 3, the issue will need further investigation, but the limited negative impact of these measures may be related to the nature of the regulations covered in the analysis and at least in some subsectors with the modern organisation of professional firms.

73. Restrictions to ongoing operations in the importing country have a generally negative impact on trade in professional services, a result that is fairly consistent in both modes 1 and 3. One question, which will need to be investigated in the future, is a possible complementarity between modes of supply, whereby there is little impact of regulation on cross-border trade without prior establishment. Finally, there is evidence in the case of mode 1 that regional preferences can significantly boost trade in these services among members.

74. On a technical level, the econometric approach applied in this study can provide one avenue to advance discussions surrounding the development of the STRI. Estimates from the type of model employed here could be used to construct direct, quantitative measures of inward and outward multilateral

resistance. Thanks to the approximation introduced by Baier and Bergstrand (2007), this process can become tractable once the gravity model has been estimated. As Anderson and Van Wincoop (2003, 2004) show, the multilateral resistance terms represent one type of ideal aggregation of trade barriers, and as such would be a useful basis for measuring restrictions to services trade in a rigorous way.

75. However, the empirical results presented in this paper highlight the fact that data availability and quality will continue to represent significant challenges moving forward. The following next steps are envisaged towards the creation of the STRI for professional services:

- Further work to improve the estimation results as more services trade data and information on regulation become available. On the latter, addition of two aspects will be particularly important: information on a wider range of discriminatory measures; and on the extent to which applied policies vary across trading partners.
- Collect the additional required regulatory information, including the new version of the PMR to be released later this year and the survey undertaken in the context of the forthcoming OECD Experts Meeting on Business Services. This information will be complemented as needed with the sources identified in Section IV. In the end, it would be ideal to have information on the range of regulatory measures contained particularly in Table 2, but also in Table 4, and for more than one data point.
- The actual construction of the STRI will then be carried out by transforming the qualitative information on regulation mentioned above into quantitative indexes of restrictiveness, using scoring and weighting methods. The recommendations on the restrictiveness and effects of different types of measures from the final econometric analysis could provide some initial guidance for the quantification process.
- Scores and weights will be assigned by employing both statistical methods and expert judgement. The latter is expected to be provided at the 2008 OECD Experts Meeting on Business Services. Information on some of the regulatory best practices contained in Table 4 could be used to assign lower (less restrictive) scores to a particular measure.

Questions for further discussion:

- What are the sectoral and modal priority areas for improving the collection of professional services trade data?
- Is the framework for analysing regulations affecting trade in professional services presented in Table 2 appropriate? Are some of the measures listed no longer relevant for OECD countries?
- To what extent do the alternative regulatory approaches presented in Table 4 represent possible avenues to simplify regulatory requirements for professional services? Would it be appropriate to use them to assign lower scores to the STRI for these services?
- Are there information sources, in addition to those presented in this paper, which could be used to assemble data on professional services regulations in OECD countries?
- How valid is the econometric approach employed here for rigorously measure restrictions to services trade?

- What is the best way to incorporate regional preferences into the STRI? Would it be appropriate to construct a bilateral STRI?
- If it is confirmed by further research that modes of supply in professional services are complements, what should be the modal focus of trade restrictiveness?

ANNEX 1. METHODOLOGY FOR ESTIMATING THE GRAVITY MODEL

The gravity model used in this paper is the one developed by Baier and Bergstrand (2007). This model is based on the now standard gravity equation derived by Anderson and Van Wincoop (2003, 2004), the only difference being the introduction of a Taylor series approximation for the nonlinear multilateral resistance terms in the standard model. Those terms capture the fact that it is relative policy restrictiveness that matters for trade flows. The Baier and Bergstrand (2007) approach is particularly useful in this context, because it allows estimating the impact of policies that are measured on an MFN basis, and for which the data do not, therefore, vary across partner countries. Those variables would have to be dropped from the estimating equation (or transformed) in other common approaches, such as fixed effects regression. This is an important point because the indicators of sectoral regulations used here fall into that category. The basic estimating equation therefore takes the following reduced form:

$$\log\left(\frac{X_{ijt}}{Y_{it}Y_{jt}}\right) = b_0 + b_1 \log(\text{entry}_{it}^*) + b_2 \log(\text{entry}_{jt}^*) + b_3 \log(\text{conduct}_{it}^*) + b_3 \log(\text{conduct}_{jt}^*) + b_4 \log(\text{dist}_{ij}^*) + \dots \\ \dots + b_5 \text{contig}_{ij}^* + b_6 \text{comlang}_{ij}^* + b_7 \text{colony}_{ij}^* + b_8 \text{RTA}_{ij}^* + e_{ijt}$$

X_{ijt} refers to exports from country i to country j in time period t , while Y_{it} and Y_{jt} refer to their respective GDP. The variable *entry* contains policy indicators relating to entry restrictions, while *conduct* refers to those measures which primarily affect ongoing operations rather than *entry*. *Dist*, *contig*, *comlang*, and *colony* are geographical variables commonly used in gravity regressions. They capture respectively bilateral distance, geographical contiguity, a common official language, and a past colonial connection. *RTA* is a dummy variable equal to unity only if exporting and importing country belong to the same regional trading arrangement. Due to incomplete data on the provisions in such arrangements affecting professional services, *RTA* at this stage only captures joint membership in the EU, NAFTA, or ANZCERTA.

Each of the starred trade cost variables indicates a transformation of the original series, for instance entry barriers in the importing country, to include both the original data plus a measure of that variable's contribution to the two multilateral resistance terms identified by Anderson and Van Wincoop (2003, 2004). Following Baier and Bergstrand, the starred variables are defined as follows:

$$\log(\text{entry}_{ij}^*) = \log(\text{entry}_{it}) - \left[\frac{1}{N_x} \sum_{i=1}^{N_x} \log(\text{entry}_{ij}) + \frac{1}{N_M} \sum_{j=1}^{N_M} \log(\text{entry}_{ij}) + \frac{1}{N_x} \frac{1}{N_M} \sum_{i=1}^{N_x} \sum_{j=1}^{N_M} \log(\text{entry}_{ij}) \right]$$

In the common case where an empirical sample contains pairs of countries that do not trade, it is necessary to use appropriate econometric methods in order to avoid introducing sample selection bias into the results. The analysis here follows Helpman et al. (2008) in estimating the above model using the Heckman (1979) methodology, in which a selection equation examines the impact of the variables of interest on the probability that two countries engage in trade, and a linked outcome equation represents their impact on countries that already trade. The two equations are estimated simultaneously, but allowing

for correlation between them makes it possible to control for the bias that first-stage selection could otherwise introduce. The distinction between trade propensity and trade flows is particularly important in the services context, since some sectoral regulations can act primarily as entry restrictions, while others deal with ongoing firm operations. The Heckman (1979) methodology can help distinguish between these two effects, and thereby add value to existing empirical work which aggregates entry and conduct regulations together into a single measure (cf. Schweltnus, 2007).

The model is over-identified at this stage by assuming that entry restrictions only impact export propensity, and do not impact the level of exports conditional on the existence of a trading relationship. The data do not at this stage reject this assumption: tests of statistical significance of entry restrictions in the outcome equation do not reject the null hypothesis. Attempts to employ other over-identifying restrictions will be made in the future.

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TABLE A-1. OECD PMR LOW-LEVEL INDICATORS FOR PROFESSIONAL SERVICES

Discriminatory restrictions affecting all modes

		AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA
Legal services																															
Quotas/economic needs tests	1996	6.0	0.0	0.0	0.0	..	0.0	0.0	0.0	6.0	0.0	..	..	0.0	0.0	0.0	..	0.0	6.0	0.0	6.0	0.0	..	0.0	..	0.0	0.0	6.0	3.2	0.0	6.0
	2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Accounting services																															
Quotas/economic needs tests	1996	6.0	0.0	0.0	0.0	..	0.0	0.0	0.0	6.0	0.0	..	..	0.0	0.0	0.0	..	0.0	6.0	0.0	6.0	0.0	..	0.0	..	0.0	0.0	6.0	6.0	0.0	6.0
	2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural services																															
Quotas/economic needs tests	1996	0.0	6.0	0.0	0.0	..	0.0	0.0	0.0	6.0	..	..	..	0.0	0.0	0.0	..	0.0	6.0	0.0	0.0	6.0	..	0.0	..	0.0	0.0	6.0	0.0	0.0	0.0
	2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Engineering services																															
Quotas/economic needs tests	1996	0.0	6.0	0.0	0.0	..	0.0	0.0	0.0	6.0	..	..	..	0.0	0.0	0.0	..	0.0	6.0	0.0	6.0	6.0	..	0.0	..	0.0	0.0	6.0	0.0	0.0	6.0
	2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Restrictions to commercial presence and the movement of people

		AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA
Legal services																															
Business form and inter-professional cooperation	1996	1.0	4.0	1.5	4.8	..	3.3	0.0	3.3	4.8	6.0	..	..	6.0	4.0	4.0	..	4.0	1.0	3.3	3.0	3.0	..	2.5	..	5.5	4.0	2.5	4.8	0.0	2.0
	2003	0.0	2.5	4.8	4.8	6.0	2.5	0.0	2.5	2.3	4.0	1.0	1.0	3.0	1.0	2.5	3.0	4.0	0.0	2.5	6.0	3.0	2.5	3.3	3.0	5.5	1.0	3.0	5.3	1.0	1.0
Accounting services																															
Business form and inter-professional cooperation	1996	3.3	3.3	4.0	5.5	..	3.3	2.3	4.0	3.3	0.0	..	..	1.0	3.3	3.3	..	3.3	0.0	3.3	2.5	2.3	..	..	..	3.3	3.3	0.0	0.0	0.0	0.0
	2003	0.0	0.0	3.3	5.5	2.3	0.0	2.5	2.5	2.3	0.0	0.0	0.0	0.0	3.0	4.0	2.5	2.5	0.0	2.5	0.0	0.0	2.3	..	0.0	2.5	2.5	0.0	2.3	0.0	0.0
Architectural services																															
Business form and inter-professional cooperation	1996	0.0	3.3	0.0	4.8	..	0.0	0.0	3.3	3.3	..	..	..	0.0	4.8	0.0	..	2.3	0.0	0.0	0.0	0.0	..	2.5	..	2.5	0.0	0.0	0.0	0.0	..
	2003	0.0	0.0	2.3	3.3	0.0	0.0	0.0	2.5	2.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Engineering services																															
Business form and inter-professional cooperation	1996	0.0	3.3	0.0	0.0	..	0.0	0.0	0.0	3.3	..	..	..	0.0	4.8	0.0	..	3.3	0.0	0.0	0.0	0.0	..	2.5	..	2.5	0.0	0.0	0.0	0.0	0.0
	2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	2.5	0.0	2.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6

Source: OECD International Regulation Database.

TABLE A-2. OECD FDI REGULATORY RESTRICTIVENESS INDEX

Composite sectoral indicators

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA
Legal services														
1998/2000	0.200	0.225	0.025	0.225	0.125	0.125	0.110	0.036	0.025	0.025	0.100	0.325	0.025	0.025
2005/2006	0.250	0.348	0.022	0.200	0.125	1.000	0.550	0.233	0.022	0.462	0.100	0.266	0.022	0.022
Accounting services														
1998/2000	0.200	0.575	0.025	0.225	0.450	0.125	0.110	0.036	0.025	0.069	0.100	0.325	0.025	0.025
2005/2006	0.250	0.348	0.022	0.200	0.375	0.562	0.550	0.033	0.022	0.506	0.100	0.266	0.022	0.022
Architectural services														
1998/2000	0.200	0.175	0.025	0.225	0.150	0.025	0.110	0.036	0.025	0.025	0.100	0.325	0.025	0.025
2005/2006	0.200	0.348	0.022	0.150	0.050	0.022	0.110	0.033	0.022	0.462	0.100	0.266	0.022	0.022
Engineering services														
1998/2000	0.200	0.225	0.025	0.225	0.150	0.025	0.110	0.036	0.025	0.025	0.100	0.325	0.025	0.025
2005/2006	0.200	0.348	0.022	0.150	0.050	0.022	0.110	0.033	0.022	0.462	0.100	0.266	0.022	0.022

	JPN	KOR	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA
Legal services															
1998/2000	0.250	0.100	0.525	0.025	0.125	0.119	0.225	0.075	n.a.	0.125	0.119	0.100	0.250	0.025	0.050
2005/2006	0.100	0.075	0.150	0.011	0.125	0.405	0.225	0.022	0.075	0.512	0.556	0.175	0.250	0.017	0.075
Accounting services															
1998/2000	0.250	0.275	0.400	0.025	0.125	0.119	0.175	0.119	n.a.	0.119	0.119	0.075	1.000	0.025	0.050
2005/2006	0.100	0.075	0.425	0.011	0.125	0.405	0.175	0.066	0.375	0.066	0.292	0.100	0.150	0.017	0.025
Architectural services															
1998/2000	0.250	0.075	0.225	0.025	0.125	0.069	0.075	0.075	n.a.	0.075	0.069	0.075	0.150	0.025	0.050
2005/2006	0.025	0.050	0.125	0.011	0.125	0.055	0.075	0.022	0.075	0.022	0.066	0.100	0.100	0.017	0.025
Engineering services															
1998/2000	0.250	0.075	0.225	0.025	0.125	0.069	0.075	0.075	n.a.	0.075	0.069	0.075	0.150	0.025	0.050
2005/2006	0.025	0.050	0.125	0.011	0.125	0.055	0.075	0.022	0.075	0.022	0.066	0.100	0.100	0.017	0.025

Source: Golub, 2003; and Koyama and Golub, 2006.

TABLE A-3. OECD INVENTORY OF MEASURES AFFECTING TRADE IN PROFESSIONAL SERVICES

Discriminatory restrictions affecting all modes

	AUS	AUT	BEL	CAN	DNK	FIN	FRA	DEU	GRC	ISL	IRL	ITA	JPN	LUX	MEX	NLD	NZL	NOR	PRT	ESP	SWE	CHE	TUR	GBR	USA
Legal services																									
Nationality requirements		X	X			X			X	X		X			X					X	X	√	X		
Residency requirements		na	X	√		X		X					X		X		X		X	X	X				√
Quotas/economic needs tests	X	na						X	na						X		X					X	na		X
Discriminatory government procurement policies		na			X				na						X					X	X		X		
Accounting services																									
Nationality requirements		X				X			X			X		X	X					X			X		
Residency requirements	X	X		√	X	X		X	X	X		X	X	X	X			X	X	X	X	X	X		√
Quotas/economic needs tests	X	na						X	na						X		X			na		X	X		X
Discriminatory government procurement policies		X			na				na			X			X					X			X		√
Architectural services																									
Nationality requirements		X							X						X				X				X		
Residency requirements		X	X	√		X			X			X	X		X		X		X	X			X		√
Quotas/economic needs tests		X		X				X							X		X					X	X		X
Discriminatory government procurement policies				√											X		X			X					√
Engineering services																									
Nationality requirements		X							X						X								X		
Residency requirements		X		√		X			X			X	X		X		X		X	X			X		√
Quotas/economic needs tests		X						X							X		X					X			X
Discriminatory government procurement policies				√											X					X			X		√

Non-discriminatory restrictions affecting all modes

	AUS	AUT	BEL	CAN	DNK	FIN	FRA	DEU	GRC	ISL	IRL	ITA	JPN	LUX	MEX	NLD	NZL	NOR	PRT	ESP	SWE	CHE	TUR	GBR	USA
Legal services																									
No account of foreign qualifications for fully integrated lawyers		na	X			na		X	na	na		na	X								na	X	na		√
No account of foreign qualifications for restricted practice				√	X		na		X			X							X				na		
Full local examination		na	na			na		na	na			na	X		na		X			X	na	na	na		X
Local training requirements	√	na	na			na		na	na				X		na				X		na	na	na		√
Restrictions on fee-setting	X	X	X					X					X					X	X	X		X	X		
Restrictions on advertising	X	X	X		X		X	X					X		X		X	X	X	X	X		X	X	
Accounting services																									
Accreditation/licensing requirements for professionals authorised to practice at home	X	na	X	X	X	X	X	X	na	X	X	√	X	X	X	X	X	X	X	na	X	X	na	X	X
No account of foreign qualifications		na				X			na				X							na			na		
Full local examination		na						X	na				na					X			na		na		X
Local training requirements		na						X	na				na				X			na	X		na		X
Restrictions on fee-setting	X	X			X		X	X				X								X		X	X	X	
Restrictions on advertising		X	X				X	X			X		X	X	X	X			X	X			X	X	
Architectural services																									
Accreditation/licensing requirements for professionals authorised to practice at home	X	na	X	X			X	X	na				X		X	X	X		na	X		√	X	X	X
No account of foreign qualifications		na							na											na					
Full local examination		na							na						√		X			na					
Local training requirements		na							na						X					na		√			X
Restrictions on fee-setting		X	X					X					X							X			X		
Restrictions on advertising			X												X					X					
Engineering services																									
Accreditation/licensing requirements for professionals authorised to practice at home		X		X				X	na				X		X		X			X		√			X
No account of foreign qualifications									na																
Full local examination				X					na						√										√
Local training requirements									na						X							√			√
Restrictions on fee-setting			X					X	X			X	X						X	X			X		
Restrictions on advertising								X							X										

Restrictions to commercial presence and the movement of people

	AUS	AUT	BEL	CAN	DNK	FIN	FRA	DEU	GRC	ISL	IRL	ITA	JPN	LUX	MEX	NLD	NZL	NOR	PRT	ESP	SWE	CHE	TUR	GBR	USA
Legal services																									
FDI/ownership restrictions	X	na		X	X	X	X	X				X		X		X	X	X	X	X	X		X		
Restrictions on incorporation/legal form	X	Xp		√p	X		X	Xp				Xp		X					Xp	Xp	Xp	Xp	Xp		X
Restrictions on partnerships with locals	√	X		X	X	X	X					X		X	X	X	X				X		X	X	
Restrictions on hiring of locals	X	X					X					X		X									X	X	
Restrictions on international/foreign firm names	X	X			X			X				X						X	X				X		
Entry and stay of ICTs subject to labour market tests		na			X	X		na			X	na					X						X		
Accounting services																									
FDI/ownership restrictions	X	X	X	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X
Restrictions on incorporation/legal form	X	X	X	√p	X		X	X			Xp	X	X	X		X	Xp		Xp	X	X		X		X
Restrictions on partnerships with locals	X	na	X	√	X	X	X		na			X						X			X				
Restrictions on hiring of locals		na										na													
Restrictions on international/foreign firm names			X					X				X		X									X		
Entry and stay of ICTs subject to labour market tests		na				X		na			X	na					X			na			X		
Architectural services																									
FDI/ownership restrictions	X	X		X		X	X										X		X		X	X	X	X	X
Restrictions on incorporation/legal form		X		Xp			X					Xp							Xp	Xp			X		X
Restrictions on partnerships with locals		X		√		X	X														X		X		
Restrictions on hiring of locals		X																							
Restrictions on international/foreign firm names																									
Entry and stay of ICTs subject to labour market tests	X					X											X			X			X		
Engineering services																									
FDI/ownership restrictions	X	X		X		X		√									X		X		X	X	X	X	X
Restrictions on incorporation/legal form		X										Xp							Xp	X			X		X
Restrictions on partnerships with locals		X		√		X															X		X		
Restrictions on hiring of locals		X																							
Restrictions on international/foreign firm names					X			√																	
Entry and stay of ICTs subject to labour market tests						X											X			X			X		

Note: X indicates that a measure exists; √ a measure is applied only in some states or province within a country with a federal system; p incorporation is prohibited altogether.

Source: OECD Inventory of Measures Affecting Trade in Professional Services.

TABLE A-4. OECD COUNTRIES' GATS COMMITMENTS IN PROFESSIONAL SERVICES

Restrictions affecting all modes

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA
Legal services																														
Nationality requirements				√H		X						X									H	X			X	√H				X
Residency requirements	√	H	√H			XH						XH			X									H		HX	H	X		√
Quotas/economic needs tests																														
Exclusive rights								X	X			X			X															√
Accounting services																														
Nationality requirements				√H	X	X	X		X					X							H	X			X		H	X		√
Residency requirements	X	XH	√H		X	XH					X	XH		X	X						XH		X	H		HX	XH	X		√
Quotas/economic needs tests																														
Exclusive rights	X	X			X	X		X								X														
Architectural services																														
Nationality requirements				√H	X		X		X												H		X	X			H			
Residency requirements		XH		√H	X		H			X	X	H		X	X	X					XH		X	XH		H	H			
Quotas/economic needs tests																														
Exclusive rights																														
Engineering services																														
Nationality requirements				√H	X					X											H			X			XH			√
Residency requirements		XH		√H	X		H			X	X	H		X						X			X	XH		H	H			√
Quotas/economic needs tests																												H	H	X
Exclusive rights																														

Restrictions to commercial presence and the movement of people

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA	
Legal services																															
FDI/ownership restrictions							H	H												H			H		H			H			
Restrictions on incorporation/legal form		H		X				X	X		XH				X						X	H					X				
Restrictions on partnerships with locals	√																				X										
Restrictions on hiring of locals	X														X																
Restrictions on international/foreign firm names		X																													
Entry and stay of natural persons subject to labour market tests	H						H													H		H								H	
Accounting services																															
FDI/ownership restrictions		X			X		H	H								H		X		H			H	X	H			H			
Restrictions on incorporation/legal form	X	H	X	X				X			H		X	X	X	X						H	X				X			X	
Restrictions on partnerships with locals																															
Restrictions on hiring of locals																															
Restrictions on international/foreign firm names																		X										X			
Entry and stay of natural persons subject to labour market tests	H						H													H		H								H	
Architectural services																															
FDI/ownership restrictions							H	H								H		X		H			H		H			H			
Restrictions on incorporation/legal form		XH		X				X			H			X									X								
Restrictions on partnerships with locals																															
Restrictions on hiring of locals																															
Restrictions on international/foreign firm names			X	√				X	X																						
Entry and stay of natural persons subject to labour market tests	H						H													H										H	
Engineering services																															
FDI/ownership restrictions							H	H								H		X		H			H		H			H			
Restrictions on incorporation/legal form		XH									H			X									H	X							
Restrictions on partnerships with locals																															
Restrictions on hiring of locals																															
Restrictions on international/foreign firm names			X						X																						
Entry and stay of natural persons subject to labour market tests	H						H													H		H								H	

Note: X indicates that a sectoral measure exists; √ a sectoral measure is applied only in some states or province within a country with a federal system; H a horizontal measure exists.

Source: OECD based on GATS schedules.

