



OECD Economics Department Working Papers No. 357

Measures Of Restrictions  
on Inward Foreign Direct  
Investment for OECD  
Countries

**Stephen S. Golub**

<https://dx.doi.org/10.1787/335043060125>

**Unclassified**

**ECO/WKP(2003)11**



Organisation de Coopération et de Développement Economiques  
Organisation for Economic Co-operation and Development

**02-Jun-2003**

**English text only**

**ECONOMICS DEPARTMENT**

**ECO/WKP(2003)11**  
**Unclassified**

**MEASURES OF RESTRICTIONS ON INWARD FOREIGN DIRECT INVESTMENT FOR OECD COUNTRIES**

**ECONOMICS DEPARTMENT WORKING PAPERS No. 357**

by  
**Stephen S. Golub**

All Economics Department Working Papers are now available through OECD's Internet Web site at  
<http://www.oecd.org/eco>

**JT00145291**

Document complet disponible sur OLIS dans son format d'origine  
Complete document available on OLIS in its original format

**English text only**

## ABSTRACT/RESUMÉ

### Measures of restrictions on inward foreign direct investment for OECD countries

This paper provides new measures of restrictions on inward foreign direct investment (FDI) for OECD countries. Several different types of restrictions are considered: limitations on foreign ownership, screening or notification procedures, and management and operational restrictions. These restrictions are computed for nine sectors and eleven sub-sectors, most of which are in services, and then aggregated into a single measure for the economy as a whole. According to the aggregate indicators, the last two decades, and especially the 1990s, have witnessed dramatic liberalisation in FDI restrictions. OECD countries are now generally open to inward FDI, although there remain substantial differences between countries and across industries. The most open countries are now in Europe, at least as far as statutory restrictions are concerned. The preponderance of remaining restrictions is in services, with almost no overt restrictions in manufacturing.

*JEL classifications:* F23, F21

*Keywords:* foreign direct investment, FDI restrictions, capital flows.

\*\*\*\*\*

### Mesures de restrictions envers les flux des investissements directs étrangers orientés vers l'intérieur pour les pays de l'OCDE

Ce document présente des nouvelles mesures de restrictions envers les flux des investissements directs étrangers (IDE) orientés vers l'intérieur, pour les pays de l'OCDE. Différentes sortes de restrictions sont considérées : les limites sur le contrôle du capital, les procédures d'examen sélectif et de notification, et les restrictions concernant la gestion et les opérations des entreprises. Ces restrictions sont calculées pour neuf secteurs et onze sous-secteurs, dont la plupart sont des services. Ces données sont ensuite agrégées dans une mesure composite pour l'économie dans son ensemble. Selon ces indicateurs agrégés, les deux dernières décennies, plus particulièrement les années 90, ont marqué une forte libéralisation des restrictions sur l'IDE. Les pays de l'OCDE sont dès lors généralement ouverts aux IDE. Toutefois, il reste des différences importantes selon les pays et par secteurs. Les pays les plus ouverts sont à présent européens, au moins en ce qui concerne les restrictions statutaires. La majorité des restrictions restantes se trouve dans les services. Il n'y a presque plus de restrictions légales dans le secteur manufacturier.

*Classification JEL :* F23, F21

*Mots-clefs :* investissement direct étranger, restrictions sur l'IDE, flux de capitaux.

Copyright OECD, 2003

Applications for permission to reproduce or translate all, or part of, this material should be made to:  
Head of Publications Service, OECD, 2, rue André Pascal, 75775 Paris Cédex 16, France.

## TABLE OF CONTENTS

|   |   |    |
|---|---|----|
| 1.  | Introduction .....                          | 4  |
| 2.  | Method of quantifying restrictiveness ..... | 7  |
| 3.  | Data sources .....                          | 10 |
| 4.  | Results .....                               | 11 |
| 4.1.  | Cross-section results .....                 | 12 |
| 4.2.  | Time series results .....                   | 22 |
| 5.  | Conclusions .....                           | 24 |
| Annex 1. Comparisons with Hardin and Holmes (1997) Findings ..... |   | 25 |
| Annex 2. Sensitivity analysis to changes in assumptions .....     |   | 29 |
| References .....  |   | 31 |

### Boxes

|    |   |   |
|----|---|---|
| 1. | International investment agreements ..... | 6 |
|----|---|---|

### Tables

|     |  |    |
|-----|--|----|
| 1.  | Coefficients on FDI restrictions .....   | 9  |
| 2.  | Correspondence between OECD FDI project, GATS and Australian productivity<br>commission studies in the service sectors ..... | 10 |
| 3.  | Indices of FDI restrictions, 1998-2000 .....   | 13 |
| 4.  | Indices of FDI restrictions over time .....  | 22 |
| A1. | Hardin and Holmes coefficients on FDI restrictions .....   | 25 |
| A2. | Sector weights .....   | 26 |
| A3. | Comparison of baseline results with findings of the Australian productivity<br>commission studies .....                      | 28 |

### Figures

|     |  |    |
|-----|--|----|
| 1.  | FDI restrictions in OECD countries, 1998-2000 .....                                | 15 |
| 2.  | Effects of removing intra-European preferences on FDI restrictions .....           | 17 |
| 3.  | Cross-sectoral patterns of FDI restrictions, 1998-2000 .....                       | 18 |
| 4.  | Cross-sectoral patterns of FDI restrictions, 1998-2000 .....                       | 19 |
| 5.  | FDI restrictions in OECD countries, 1998-2000 .....                                | 21 |
| 6.  | FDI restrictions in OECD countries, 1980-2000 .....                                | 23 |
| 7.  | FDI restrictions over time in selected sectors, 1981-1998 .....                    | 24 |
| A1. | Effects of removing intra-European preferences on FDI restrictions 1998/2000 ..... | 29 |
| A2. | FDI restrictions measures under alternative weighting methods .....                | 30 |

## MEASURES OF RESTRICTIONS ON INWARD FOREIGN DIRECT INVESTMENT FOR OECD COUNTRIES

Stephen S. Golub<sup>1</sup>

### 1. Introduction

1. Attitudes and policies towards liberalisation of international capital flows in general and foreign direct investment (FDI) in particular have been subject to considerable controversy and flux.<sup>2</sup> Recognition of the economic benefits afforded by freedom of capital movements sometimes clash with concerns about loss of national sovereignty and other possible adverse consequences. FDI, even more than other types of capital flows, has historically given rise to these conflicting views, because FDI involves a controlling stake by often large multinational corporations (MNCs) over which domestic governments, it is feared, have little power.<sup>3</sup> The controversies have mostly focused on inward FDI, due to sensitivity about foreign control over domestic industry.<sup>4</sup> Countries facing increased inflows of FDI have often experienced unease. Many developing countries have until recently been wary of inward FDI. Even in the United States, the surge of Japanese FDI in the 1980s led to widespread concerns about excessive foreign control and adverse effects on national security, as expressed in the popular press, and in legislative action.<sup>5</sup>

- 
1. Consultant, OECD Economics Department and Professor of Economics, Swarthmore College USA (email [sgolub1@swarthmore.edu](mailto:sgolub1@swarthmore.edu)). The author thanks the following OECD colleagues for comments and encouragement: Guiseppe Nicoletti, Michael Feiner, Jørgen Elmeskov, Sven Blondal, Peter Jarrett, Andrew Dean, Eva Thiel, Hans Christiansen, Paul Schieder, Pierre Sauvé, Dana Hajkova, Kwang-Yeol Yoo, Daniel Mirza, Michael Freudenberg, and Michael Gestrin. I also benefited from discussions at the WTO with Bijit Bora and at UNCTAD with Zbigniew Zimny, James Zhan, Torbjorn Fredriksson and Abraham Negash, and from correspondence with Edward Graham of the Institute for International Economics. Martine Levasseur and Janice Gabela provided efficient help in putting the paper together. The opinions expressed in this paper are personal and do not engage the OECD or its Member Countries.
  2. See OECD (2002a) for an overview of policies towards international capital mobility, with a focus on the experience of OECD countries.
  3. Recently, however, FDI has been seen increasingly as advantageous relative to portfolio flows, due to the instability of the latter.
  4. In the last few years, however, outward FDI from OECD countries to developing countries has been the focus of criticism by NGOs and others who view such FDI as a cause of depressed labour and environmental standards. For an effective rebuttal of such criticisms of FDI, see Graham (2000).
  5. A number of bills were considered by the U.S. Congress but the more restrictive measures did not pass, reflecting the still-strong support for openness to foreign investment in the United States. The Exon-Florio Provision of the 1988 Omnibus Trade Act gave the President the authority to restrict foreign investment for national security reasons. This provision gave rise to considerable alarm, but the grounds for restricting FDI are narrow and specific and it has almost never been invoked. See OECD (1992, p. 22) for a discussion.

2. Critics of inward FDI argue that there are adverse economic and political effects on the host country. The alleged economic effects include balance of payments deficits, reduced domestic research and development, diminished competition, crowding-out of domestic firms and lower employment. Economic analysis has shown that most of the alleged economic drawbacks of FDI are of little merit (Graham and Krugman 1995). Instead, most studies suggest that the benefits of inward FDI are substantial, especially in developing countries where foreign technology and managerial expertise are sought. The political concerns relating to threats to national security and excessive political influence exerted by foreign firms are of possibly greater validity, although Graham and Krugman (1995) argue that these too are sometimes exaggerated.

3. Notwithstanding the remaining concerns about the adverse effects of FDI, there can be little doubt that the general trend has been towards liberalisation, especially in the past two decades. Throughout the world, policymakers have increasingly been persuaded of the merits of inward FDI in terms of employment, capital and especially transfer of technology. Consequently, many countries have reduced restrictions on FDI and adopted incentives to encourage FDI (UNCTAD 1996). Still, some restrictions remain in place even in countries that generally welcome FDI.

4. This paper focuses on the extent of these restrictions in OECD countries and attempts to classify and quantify these restrictions. There are several important reasons for such a study. First, there is little comprehensive information on national policies towards FDI. In contrast to tariff, and even non-tariff barriers to trade, there have been very few studies quantifying restrictions on FDI. The existing literature is discussed below.

5. Second, and relatedly, information on the extant barriers to FDI could be helpful for international negotiations of investment rules. There have been a number of recent initiatives aimed at formulating international investment agreements (Box 1), although these suffered a blow with the failure of the Multilateral Agreement on Investment (MAI) at the OECD in 1998. According to Graham (2000, p. 187), greater knowledge of the costs and benefits of liberalisation of investment would be conducive to the success of such negotiations. Of course, the nature and magnitude of the restrictions in force is a starting point for any such calculations of costs and benefits.

6. Third, restrictions on FDI are identified as a key variable in the recent theoretical knowledge-capital model of the multinational corporation (Markusen and Maskus 2001). In this literature, as in previous models of the MNC, firms choose where to produce according to the costs and benefits of alternative locations. Barriers to FDI raise the costs of foreign investment. In empirical applications of the knowledge-capital model, researchers have resorted to rather crude measures based on surveys of investor opinion reported in the *World Competitiveness Report*. This paper is part of a larger OECD project on the determinants of FDI (Nicoletti *et al.* 2003). The effects of the computed restrictions on FDI patterns are studied in Nicoletti *et al* but are not discussed in this paper.

7. FDI restrictions are but one of a set of policies that discriminate between foreign and domestic investors. Corporate taxes have been the focus of considerable research and a comprehensive study for OECD countries is presented in Yoo (2003). It would also be highly desirable to assemble information about specific FDI incentives, but such information is even more difficult to obtain than for FDI restrictions and falls beyond the scope of the present study.

8. A serious drawback is that the present study is limited to overt restrictions on FDI, mostly ignoring non-policy institutional restrictions, such as the nature of corporate governance, as well as policies that indirectly impinge on FDI, notably economic and social regulation. Despite these limitations, the present study is the most comprehensive to date in terms of country, time and sectoral coverage of FDI restrictions.

### Box 1. International investment agreements

Formal international agreements on foreign direct investment are far less extensive than on international trade, despite the importance of FDI in the world economy. However, the 1990s have seen a substantial rise in the number of bilateral investment protection treaties, and regional and bilateral trade agreements in which investment disciplines figure prominently. These agreements include NAFTA, the recent agreements concluded by Singapore with EFTA, Japan and Australia and the Association Agreement between the European Community and Chile. The European Union had already completely liberalised intra-EU capital movements in the late 1980s.

The OECD has been an important actor in international discussions and agreements on FDI.<sup>1</sup> At present the OECD Code of Liberalisation of Capital Movements forms the only multilateral framework in force on international capital flows, including FDI. Under the Code, countries bind themselves to agreed measures liberalising capital movements. Moreover, under the OECD Declaration on International Investment and Multinational Enterprises, the 30 OECD countries and 7 non-OECD adhering countries are committed to accord national treatment to foreign enterprises operating in their territories and to encourage their multinational enterprises to engage in responsible business conduct in a variety of areas.

There are several investment-related provisions in the agreements related to the World Trade Organisation. The Uruguay Round led to an agreement on Trade Related Investment Measures (TRIMS) that restricts *inter alia* domestic-content requirements. The General Agreement on Trade in Services (GATS) covers all modes of service delivery, including “commercial presence” which is closely related to FDI. The GATS commitments, however, apply only to industries where countries have explicitly agreed to open their markets to foreign providers. In 1996, the WTO also created the Working Group on the Relationship Between Trade and Investment, a forum for discussion among WTO countries. At the Doha Ministerial Conference in November 2001, the WTO members agreed on the principle of undertaking negotiations on a multilateral framework after the 2003 WTO ministerial meeting at Cancun (see OECD, 2002b).

---

1. Further discussion of OECD experience with investment rules and multilateral initiatives concerning FDI can be found at [www.oecd.org/daf/investment](http://www.oecd.org/daf/investment) and in Graham (2000), Robertson (2002) and Sauvé and Wilkie (2000).

## 2. Method of quantifying restrictiveness

9. In this section the method of quantifying restrictions is discussed. There are several issues involved in computing the restriction scores. A classification of various types of restrictions and a system of weighting are needed. These tasks are greatly complicated by the disparate nature of restrictions across countries and the inconsistent reporting of these restrictions. Sometimes it is difficult to determine the exact nature and incidence of a particular restriction without detailed knowledge of a country's productive structure and regulatory environment. Given the difficulties in classifying and ranking the various restrictions, some studies such as Sauvé and Steinfatt (in progress) and Hoekman (1995) are limited to counting the number of restrictions. While this has the advantages of simplicity and lack of arbitrariness, some restrictions are more important than others. For example, a ban on foreign ownership is much more restrictive than a screening or reporting requirement. It therefore seems preferable to attempt to weight different restrictions according to their significance, even though such a procedure surely entails some arbitrary judgements and errors.

10. This study adopts a variant of the methodology of the Australian Productivity Commission (APC) which carried out a similar study for the APEC countries, Service Trade and Foreign Direct Investment (Hardin and Holmes 1997, 2002, referred to hereafter as HH, available at <http://www.pc.gov.au/ic/research/information/servtrad/index.html>). In the HH study, indices for FDI restrictions were calculated for 15 APEC countries for 11 service sectors, as classified by the GATS.

11. There have also been a number of other studies of restrictions on trade in services, mostly also by the APC, for particular service sectors (for example Nguyen-Hong 2000, Kalirajan 2000, a number of studies in Findlay and Warren 2000, and the survey by McGuire 2002). Most APC and other studies present two sets of measures of restrictions: 1) *domestic*, i.e., limitations on market access for all firms and 2) *foreign*, i.e., discrimination against foreign firms in the form of limitations on national treatment or most favoured nation (MFN). Here, however, the focus is limited to the latter. Non-discriminatory policies that affect market access and operations for both domestic and foreign firms are not barriers to FDI *per se*. Also, these domestic barriers are incorporated in the other policies considered in the quantitative analysis of FDI for which these calculations were undertaken, and would duplicate these other indicators. An exception, however, was made for state-owned monopolies, which by their very nature preclude foreign ownership, and were considered to be tantamount to a ban on foreign investment.

12. Restrictions on foreign ownership are the most obvious barriers to inward FDI. They typically take the form of limiting the share of companies' equity capital in a target sector that non-residents are allowed to hold, *e.g.* to less than 50 per cent, or even prohibit any foreign ownership. Examples of majority domestic ownership requirements include airlines in the European Union and North American countries, telecommunications in Japan, and coastal and freshwater shipping in the United States. Exclusive domestic ownership is also often applied to natural resource sectors with the aim of giving citizens access to the associated rents. For example, foreign ownership is banned in the fishing and energy sectors in Iceland, and in the oil sector in Mexico.

13. Obligatory screening and approval procedures can also be used to limit FDI though their constraining effects depend on the implementation of such practices. Stipulations that foreign investors must show economic benefits can increase the cost of entry and therefore may discourage the inflow of foreign capital. Such provisions apply, for instance, for a few industries in Japan and for the acquisition of more than 49 per cent of any existing enterprise in Mexico. Prior approval of FDI, such as mandated for all FDI projects in a few OECD countries, could also limit foreign capital inflow if it is taken as a sign of an ambivalent attitude towards free FDI, even though it may not be vigorously enforced. Simple pre- or post-notification (as required in *e.g.* Japan) is, however, unlikely to have much impact on capital inflows.



14. Other formal restrictions that can discourage FDI inflows include constraints on the ability of foreign nationals either to manage or to work in affiliates of foreign companies and other operational controls on these businesses. Stipulations that nationals or residents must form a majority of the board of directors, as in insurance companies in member countries of the European Union, in financial services industries in Canada and in transport industries in Japan, may undermine foreign owners' control over their holdings and hence make them more hesitant to invest under such circumstances. Similarly, if regulations restrict the employment of foreign nationals (as *e.g.* in Turkey), investors may judge that they cannot make use of the necessary expertise to make their investment worthwhile. Also, operational requirements, such as the restrictions *vis-à-vis* non-members on cabotage in most European Union countries for maritime transport may limit profits of foreign-owned corporations, and hence the amount of funds foreign investors are willing to commit.

15. Apart from the formal barriers discussed above, FDI flows can be held back by opaque informal public or private measures. Indeed, claims abound that such practices are used systematically to limit foreign ownership of domestic businesses. Thus, the US Special Trade Representative (2003) has frequently stated that the system of corporate control in Japan has hampered investment by US companies and that regulatory practices in telecommunications in the European Union work as *de facto* FDI restraining measures. Similarly, the Japanese Ministry of Economy, Trade, and Industry (2003) claims that FDI in financial services in the United States is restricted by the diverse and complex set of regulations at the state level and that barriers relating to interconnections hamper foreign entry into telecommunications in the European Union. Also, the European Union cites the continuing role of administrative guidance to firms in Japan by government officials as a practice that hampers foreign ownership of Japanese enterprises.

16. Table 1 presents the scoring system used to calculate the overall restrictiveness indicators for each industry and country based on regulations in each of the three areas: equity, screening, and other restrictions. The total score ranges between 0 and 1. The methodology and weighting scheme are broadly similar to those used by HH, in particular the high weight given to equity restrictions. The latter are weighted highly in view of the fact that foreign ownership is a necessary and essential condition for FDI. Screening and limitations on management are generally less important. Also, non-linearities are built into the scoring system to reflect the idea that a total ban on foreign ownership is significantly more restrictive than allowing a small foreign equity stake. Restrictiveness is calculated at the industry level and then a weighted-average national average is obtained using FDI and trade weights. OECD and EU average restrictions are simple averages of country scores. Annex 1 discusses the methodology and choices of weights in more detail.

**Table 1. Coefficients on FDI restrictions**  
(maximum 1.0)

| Type of restriction                           | Scores          |
|---|-----------------|
| <i>Foreign equity limits</i>                  |                 |
| No foreign equity allowed                     | 1               |
| 1 to 19 % foreign equity allowed              | 0.6             |
| 20-34% foreign equity allowed                 | 0.4             |
| 35-49 % foreign equity allowed                | 0.3             |
| 50-74% foreign equity allowed                 | 0.2             |
| 75-99% foreign equity allowed                 | 0.1             |
| no restriction but unbound                    | 0.05            |
| <i>Screening and Approval</i>                 |                 |
| Investor must show economic benefits          | 0.2             |
| Approval unless contrary to national interest | 0.1             |
| Notification (pre or post)                    | 0.05            |
| <i>Other Restrictions</i>                     |                 |
| Board of directors/Managers                   |                 |
| majority must be nationals or residents       | 0.1             |
| at least 1 must be national or resident       | 0.05            |
| must be locally licensed                      | 0.025           |
| Movement of people                            |                 |
| no entry                                      | 0.1             |
| less than one year                            | 0.075           |
| one to two years                              | 0.05            |
| three to four years                           | 0.025           |
| Input and Operational Restrictions            |                 |
| domestic content must be more than 50%        | 0.1             |
| other   | 0.05            |
| <i>Total</i> <sup>a</sup>                     | Between 0 and 1 |

a) If foreign equity is banned, then the other criteria become irrelevant, so that the index is at 1.0. It is possible that various scores sum to slightly more than 1.0 when foreign equity is not totally banned, and in such cases, the index is capped at 1.0.

Source: OECD, adapted from Hardin and Holmes (1997).

### 3. Data sources

17. *GATS Commitments.*<sup>6</sup> HH and most other studies of restrictions on trade in services use the GATS commitments as their primary database, supplemented by other sources. The GATS schedules (WTO, 2002) are well organised, easy to understand, and authoritative. There is a close connection between the GATS classification of services and those used in this project (Table 2). As HH and others note, a limitation of the GATS commitments is that they are mostly “positive” in nature, i.e., they are commitments to open markets. This is in contrast to “negative” lists of exceptions to liberalisation. A problem with the GATS positive lists is that the absence of a positive commitment in some sector cannot necessarily be construed as a restriction. A country may simply have failed to list this sector in its schedule. Or, if the sector is restricted, GATS may be silent on the nature of the restriction. These concerns, however, appear somewhat exaggerated when applied to OECD countries. A perusal of the GATS schedules suggests that most OECD countries make some kind of commitment in most sectors, and it seems unlikely that they would fail to list sectors where they are open. Moreover, restrictions are frequently noted. Nonetheless, a case can be made for supplementing the GATS schedules with other data sources showing “negative” restrictions directly. HH use various APEC investment reports to this end. A more obvious limitation of the GATS schedules is that they only cover the service sectors. While services are undoubtedly the most highly restricted sectors, there are some restrictions in other sectors too.

Table 2. Correspondence between OECD FDI project, GATS and Australian Productivity Commission studies in the service sectors

| <i>OECD FDI Project</i>  | <i>GATS and Hardin-Holmes</i>    | <i>Australian Productivity Commission Studies<sup>a</sup></i> |
|--|----------------------------------|---|
| Real estate and business                                       | Business services                | Accounting, Architectural, Legal, Engineering                 |
| Post and telecommunication                                     | Communication services           | Telecommunications  |
| Construction   | Construction                     | NA  |
| Wholesale and retail trade, repairs                            | Distribution (wholesale, retail) | Distribution  |
| Financial intermediation                                       | Finance                          | Banking   |
| Transport and storage  | Transport                        | Maritime transport  |
| Hotels and restaurants   | Tourism                          | NA  |
| <b>Memo : Other GATS and Hardin-Holmes sectors<sup>b</sup></b> |                                  |   |
| Education  |                                  |   |
| Environmental  |                                  |   |
| Health and Social Services                                     |                                  |   |
| Recreation, Culture and Sporting                               |                                  |   |
| Other (repairs)  |                                  |   |

a) Covers all countries in OECD FDI project except for the Czech Republic, Hungary, Iceland and Poland.

NA indicates no study is available.

b) Hardin and Holmes’s study covered all GATS sectors except for “Other”.

Source: OECD, GATS and Australian Productivity Commission studies in the service sectors.

6. The GATS schedules reflect commitments as of January 2000. Subsequent policy changes are not incorporated.

18. *OECD Code of Liberalisation and related OECD documents.*<sup>7</sup> The OECD Code of Liberalisation of capital movements contains a succinct list of “reservations” for FDI (item I-A in the Code). This Code has the advantage it is “negative”, i.e., any non-listed sectors can be assumed free of restrictions, and are thus not subject to the ambiguity of interpretation as in the GATS. Also, the Code covers all sectors, not just services. A further major advantage of the Code is that it is possible to construct a time series of restrictions as the Code goes back to the 1960s. The major drawback of the Code is that it sometimes provides little detail on the nature of the restriction, sub-sector disaggregation, and there is no accompanying explanation or discussion. Often, a country’s FDI section in the Code reservations covers a page or even less of text. The OECD Directorate on Financial and Fiscal Affairs (DAFFE) has however published several related documents about policies towards FDI. These include country volumes (OECD, various years) as well as periodic studies on OECD-wide policies (OECD 1992, 1987, 1982). The latter were the foundation for the time series computations of FDI conducted here. In addition, the results were cross-checked against reservations submitted by member countries in the course of the negotiations for the Multilateral Agreement on Investment (MAI).

19. *Other sources.* The United States Special Trade Representative (USTR), Japanese Ministry of Economy, Trade and Industry (METI), and the European Union (EU) issue analyses of barriers to trade and FDI in their major partners and these are available on the internet (see references). An additional source is a CD from Price-Waterhouse-Coopers (2001) that Wei (2000) has used in his research on FDI. This CD analyses the investment climate in almost all OECD countries and each country’s section includes a chapter on policies towards foreign investment. An advantage of these other sources is that they are not self-reported, and may therefore be more forthcoming in pointing out *de facto* restrictions.

20. *Australian Productivity Commission sectoral studies.* APC has made available on its website a comprehensive tabulation of all of its sector-specific findings for a large group of countries, which includes almost all OECD countries.<sup>8</sup> It is possible to use the APC sectoral studies’ indices of barriers to “foreign” providers for those sectors for which such studies are available (see Table 2 for a list of such sectors). In contrast to HH, these other studies do not focus on FDI *per se* but rather on all possible modes of service delivery including 1) cross-border supply, 2) consumption abroad, 3) commercial presence, i.e. foreign establishment, and 4) presence of natural persons. Only 3) directly pertain to FDI, with 4) possibly also relevant. Also these studies use somewhat different criteria and weights for each industry. The comparability of the findings across sectors and for the countries not covered, therefore, is questionable. On the other hand, these sector-specific studies may be more accurate in measuring within-sector differences between countries than studies spanning multiple sectors.

#### 4. Results.

21. It should be again acknowledged that despite efforts to rely on multiple sources and objective reports, there is inevitably an arbitrary and subjective aspect to some dimensions of the scoring. In particular, hidden institutional or behavioural barriers to FDI are very difficult to ascertain and quantify and the scoring reported here mostly ignores such barriers. A case in point is the allegation that the Japanese market is difficult to enter due to covert collusion between government and *kereitsu* business groups. Some attempt to include such hidden barriers was made, if such arguments are noted and documented in the USTR, METI or EU reports, but these received relatively little weight in relation to the

---

7. See OECD (2002) for further discussion of the Code.

8. The OECD countries covered by this FDI study but not included in the APC studies are the Czech Republic, Hungary, Poland, and Iceland.

statutory barriers, given the difficulties of quantifying these allegations.<sup>9</sup> Also, the extent of enforcement of statutory restrictions is difficult to determine and was not factored into the calculations. The stringency of screening requirements could be particularly variable across countries.

22. It is possible that some countries are more forthcoming than others in self-reporting their restrictions. It could then be that more transparent countries receive higher scores, not because they are in fact more restrictive, but because they are more complete in their reporting.

23. Finally, reported restrictions are not standardised and there are difficulties in evaluating idiosyncratic restrictions in individual countries and putting them into context. For example, the United States does not have a direct limitation on foreign investment in telecommunications but instead has equity restrictions on companies holding broadcast and common carrier radio licenses. According to several sources (the European Union, PriceWaterhouseCoopers), this is an important *de facto* restriction on foreign investment in U.S. telecoms, particularly for mobile telephony. There are numerous such instances requiring judgements about the relative severity of restrictions, given that this study covers 28 countries, 9 sectors, and 11 sub-sectors.

24. FDI restrictions can be either across-the-board, applying to all sectors, or sector-specific. The limitations on foreign equity levels are usually specified on an industry-by-industry basis, whereas notification and authorisation requirements are usually across-the-board.

25. The sectoral scores were aggregated with a combination of import and FDI weights, as noted earlier (the “adjusted FDI” weights in Annex Table A.2). See Annex 1 for more detail and a comparison to value-added weights.

#### **4.1. Cross-section results.**

26. A full set of FDI restrictions measures for 28 OECD countries were computed for the period 1998-2000. Table 3 presents the detailed results and Figure 1 provides an overview. Panel A of Figure 1 presents the baseline results, while Panel B excludes the effect of screening as an alternate measure, in view of the difficulties of assessing the impact of screening. There have been important changes in some countries since 2000 that are not reflected in the results. In the transition countries in particular, restrictions have been substantially eased or even eliminated in sectors such as telecommunications in the last few years.

---

9. For example, the USTR alleges “exclusionary practices” in Japan in some sectors. Similarly, METI cites “procedural delays” in the issuance of operating licenses in telecommunications in the United States. In such cases, restriction scores were increased by 0.1.

Table 3. Indices of FDI restrictions, 1998/2000

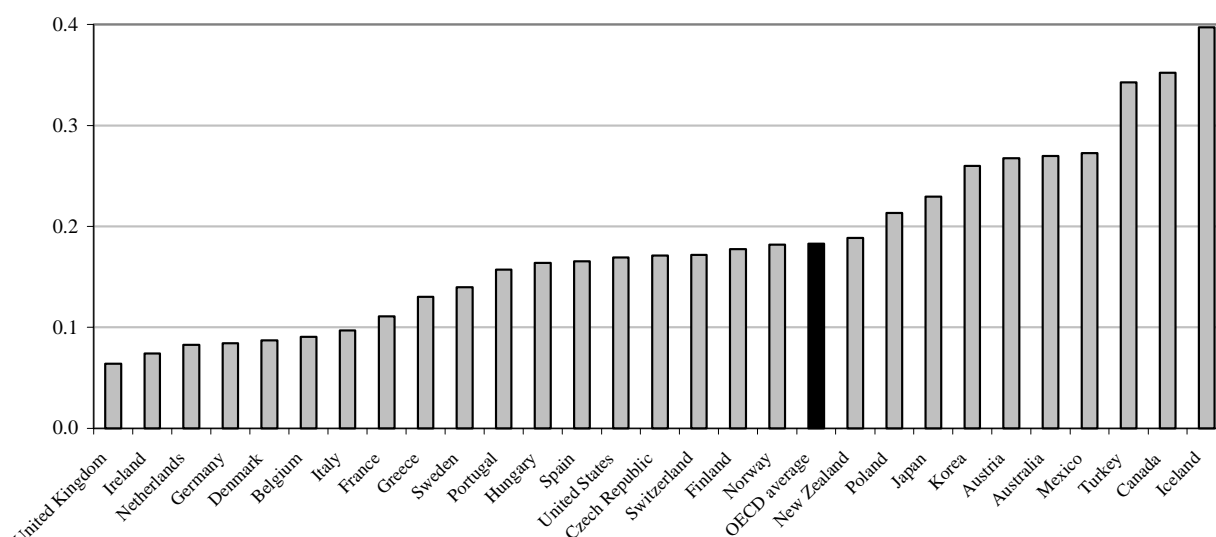
|                               | Australia | Austria | Belgium | Canada | Czech Republic | Denmark | Finland | France | Germany | Greece | Hungary | Iceland | Ireland | Italy |
|-------------------------------|-----------|---------|---------|--------|----------------|---------|---------|--------|---------|--------|---------|---------|---------|-------|
| <b>Business services</b>      |           |         |         |        |                |         |         |        |         |        |         |         |         |       |
| Legal                         | 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 |
| Accounting                    | 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 |
| Architecture                  | 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 |
| Engineering                   | 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 |
| Total                         | 0.200     | 0.300   | 0.025   | 0.225  | 0.219          | 0.075   | 0.110   | 0.036  | 0.025   | 0.036  | 0.100   | 0.325   | 0.025   | 0.025 |
| <b>Telecommunications</b>     |           |         |         |        |                |         |         |        |         |        |         |         |         |       |
| Fixed                         | 0.492     | 0.375   | 0.375   | 0.625  | 0.550          | 0.075   | 0.290   | 0.251  | 0.275   | 0.425  | 0.400   | 1.000   | 0.125   | 0.075 |
| Mobile                        | 0.200     | 0.225   | 0.075   | 0.225  | 0.550          | 0.075   | 0.110   | 0.251  | 0.075   | 0.125  | 0.100   | 0.325   | 0.125   | 0.075 |
| Total                         | 0.419     | 0.338   | 0.300   | 0.525  | 0.550          | 0.075   | 0.245   | 0.251  | 0.225   | 0.350  | 0.325   | 0.831   | 0.125   | 0.075 |
| <b>Construction</b>           | 0.200     | 0.175   | 0.025   | 0.225  | 0.100          | 0.025   | 0.110   | 0.025  | 0.025   | 0.025  | 0.100   | 0.325   | 0.025   | 0.025 |
| <b>Distribution</b>           | 0.200     | 0.258   | 0.092   | 0.225  | 0.050          | 0.092   | 0.160   | 0.125  | 0.092   | 0.125  | 0.117   | 0.392   | 0.075   | 0.092 |
| <b>Finance</b>                |           |         |         |        |                |         |         |        |         |        |         |         |         |       |
| Insurance                     | 0.200     | 0.275   | 0.075   | 0.275  | 0.150          | 0.075   | 0.330   | 0.119  | 0.119   | 0.119  | 0.150   | 0.765   | 0.119   | 0.119 |
| Banking                       | 0.300     | 0.175   | 0.075   | 0.575  | 0.150          | 0.075   | 0.110   | 0.075  | 0.075   | 0.119  | 0.100   | 0.325   | 0.075   | 0.175 |
| Total                         | 0.277     | 0.198   | 0.075   | 0.506  | 0.150          | 0.075   | 0.161   | 0.085  | 0.085   | 0.119  | 0.112   | 0.427   | 0.085   | 0.162 |
| <b>Hotels and restaurants</b> | 0.200     | 0.175   | 0.025   | 0.225  | 0.050          | 0.025   | 0.110   | 0.025  | 0.025   | 0.025  | 0.100   | 0.325   | 0.025   | 0.025 |
| <b>Transports</b>             |           |         |         |        |                |         |         |        |         |        |         |         |         |       |
| Air                           | 0.500     | 0.615   | 0.425   | 0.625  | 0.350          | 0.157   | 0.242   | 0.201  | 0.207   | 0.257  | 0.400   | 0.457   | 0.157   | 0.201 |
| Maritime                      | 0.500     | 0.307   | 0.157   | 0.375  | 0.200          | 0.157   | 0.454   | 0.369  | 0.207   | 0.257  | 0.400   | 0.325   | 0.069   | 0.157 |
| Road                          | 0.200     | 0.414   | 0.130   | 1.000  | 0.200          | 0.163   | 0.154   | 0.072  | 0.080   | 0.503  | 0.188   | 0.380   | 0.069   | 0.122 |
| Total                         | 0.437     | 0.432   | 0.240   | 0.590  | 0.250          | 0.158   | 0.320   | 0.250  | 0.180   | 0.309  | 0.355   | 0.381   | 0.098   | 0.164 |
| <b>Electricity</b>            | 0.700     | 0.615   | 0.275   | 0.725  | 1.000          | 0.775   | 0.860   | 1.000  | 0.525   | 1.000  | 0.600   | 1.000   | 1.000   | 1.000 |
| <b>Manufacturing</b>          | 0.200     | 0.175   | 0.025   | 0.225  | 0.050          | 0.025   | 0.110   | 0.025  | 0.025   | 0.025  | 0.100   | 0.325   | 0.025   | 0.025 |
| <b>TOTAL</b>                  | 0.270     | 0.268   | 0.091   | 0.352  | 0.171          | 0.087   | 0.177   | 0.111  | 0.084   | 0.130  | 0.164   | 0.390   | 0.074   | 0.097 |

Source: See Section 3 of the text.

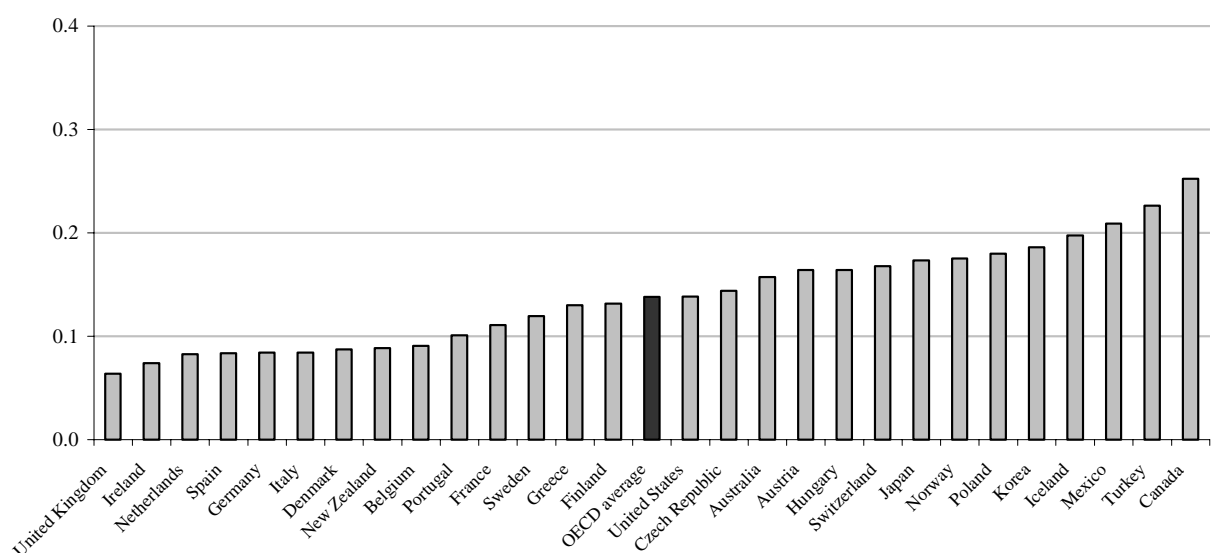
Table 3. Indices of FDI restrictions, 1998/2000 (cont.)

|                               | Japan | Korea | Mexico | Netherlands | New Zealand | Norway | Poland | Portugal | Spain | Sweden | Switzerland | Turkey | United Kingdom | United States |
|-------------------------------|-------|-------|--------|-------------|-------------|--------|--------|----------|-------|--------|-------------|--------|----------------|---------------|
| <b>Business services</b>      |       |       |        |             |             |        |        |          |       |        |             |        |                |               |
| Legal                         | 0.250 | 0.100 | 0.525  | 0.025       | 0.125       | 0.119  | 0.225  | 0.075    | 0.125 | 0.119  | 0.100       | 0.250  | 0.025          | 0.050         |
| Accounting                    | 0.250 | 0.275 | 0.400  | 0.025       | 0.125       | 0.119  | 0.175  | 0.119    | 0.119 | 0.119  | 0.075       | 1.000  | 0.025          | 0.050         |
| Architecture                  | 0.250 | 0.075 | 0.225  | 0.025       | 0.125       | 0.069  | 0.075  | 0.075    | 0.075 | 0.069  | 0.075       | 0.150  | 0.025          | 0.050         |
| Engineering                   | 0.250 | 0.075 | 0.225  | 0.025       | 0.125       | 0.069  | 0.075  | 0.075    | 0.075 | 0.069  | 0.075       | 0.150  | 0.025          | 0.050         |
| <i>Total</i>                  | 0.250 | 0.131 | 0.344  | 0.025       | 0.125       | 0.094  | 0.138  | 0.086    | 0.099 | 0.094  | 0.081       | 0.425  | 0.025          | 0.050         |
| <b>Telecommunications</b>     |       |       |        |             |             |        |        |          |       |        |             |        |                |               |
| Fixed                         | 0.750 | 0.525 | 0.425  | 0.185       | 0.525       | 0.469  | 0.675  | 0.351    | 0.275 | 0.469  | 0.375       | 1.000  | 0.025          | 0.350         |
| Mobile                        | 0.250 | 0.525 | 0.325  | 0.025       | 0.125       | 0.069  | 0.675  | 0.351    | 0.275 | 0.169  | 0.075       | 0.450  | 0.025          | 0.550         |
| <i>Total</i>                  | 0.625 | 0.525 | 0.400  | 0.145       | 0.425       | 0.369  | 0.675  | 0.351    | 0.275 | 0.394  | 0.300       | 0.863  | 0.025          | 0.400         |
| <b>Construction</b>           | 0.150 | 0.075 | 0.325  | 0.025       | 0.125       | 0.069  | 0.075  | 0.075    | 0.075 | 0.069  | 0.075       | 0.250  | 0.025          | 0.050         |
| <b>Distribution</b>           | 0.150 | 0.325 | 0.242  | 0.025       | 0.125       | 0.119  | 0.175  | 0.142    | 0.125 | 0.069  | 0.092       | 0.350  | 0.092          | 0.050         |
| <b>Finance</b>                |       |       |        |             |             |        |        |          |       |        |             |        |                |               |
| Insurance                     | 0.150 | 0.375 | 0.325  | 0.119       | 0.125       | 0.119  | 0.100  | 0.169    | 0.207 | 0.119  | 0.125       | 0.250  | 0.119          | 0.150         |
| Banking                       | 0.200 | 0.475 | 0.325  | 0.075       | 0.125       | 0.119  | 0.325  | 0.175    | 0.163 | 0.119  | 0.125       | 0.250  | 0.075          | 0.150         |
| <i>Total</i>                  | 0.188 | 0.452 | 0.325  | 0.085       | 0.125       | 0.119  | 0.273  | 0.174    | 0.173 | 0.119  | 0.125       | 0.250  | 0.085          | 0.150         |
| <b>Hotels and restaurants</b> | 0.150 | 0.075 | 0.375  | 0.025       | 0.125       | 0.069  | 0.075  | 0.075    | 0.075 | 0.069  | 0.075       | 0.150  | 0.025          | 0.050         |
| <b>Transport</b>              |       |       |        |             |             |        |        |          |       |        |             |        |                |               |
| Air                           | 0.650 | 0.475 | 0.500  | 0.257       | 0.625       | 0.569  | 0.375  | 0.307    | 0.501 | 0.301  | 0.475       | 0.450  | 0.201          | 0.550         |
| Maritime                      | 0.250 | 0.425 | 0.525  | 0.157       | 0.225       | 0.469  | 0.375  | 0.307    | 0.401 | 0.301  | 0.525       | 0.550  | 0.201          | 0.650         |
| Road                          | 0.150 | 0.225 | 0.372  | 0.080       | 0.125       | 0.407  | 0.175  | 0.138    | 0.075 | 0.219  | 0.175       | 0.342  | 0.025          | 0.280         |
| <i>Total</i>                  | 0.362 | 0.399 | 0.484  | 0.174       | 0.337       | 0.489  | 0.333  | 0.271    | 0.365 | 0.284  | 0.434       | 0.473  | 0.164          | 0.539         |
| <b>Electricity</b>            | 0.150 | 1.000 | 1.000  | 1.000       | 1.000       | 0.819  | 1.000  | 0.825    | 0.575 | 0.569  | 1.000       | 1.000  | 0.025          | 0.500         |
| <b>Manufacturing</b>          | 0.150 | 0.075 | 0.025  | 0.025       | 0.125       | 0.069  | 0.075  | 0.075    | 0.075 | 0.069  | 0.075       | 0.150  | 0.025          | 0.050         |
| <b>TOTAL</b>                  | 0.230 | 0.260 | 0.273  | 0.083       | 0.189       | 0.182  | 0.213  | 0.157    | 0.165 | 0.140  | 0.172       | 0.338  | 0.064          | 0.169         |

Source: See Section 3 of the text.

Figure 1. FDI restrictions in OECD countries, 1998/2000<sup>1</sup>Panel A. Baseline FDI restrictions<sup>2</sup>

## Panel B. FDI restrictions (excluding screening requirements)



1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).

2. Includes limits of foreign ownership, restrictions on foreign personnel and operational freedom, screening requirements.

Source: See Section 3 of the text.



27. The most basic observation is that on the whole the OECD countries are now quite open to foreign direct investment inflows. No country has an overall index above 0.4 and most are well below. There are, however, significant differences between countries and across sectors.

28. *Overall scores.* The most open countries are in Europe. Since the late 1980s, intra-EU FDI flows are almost completely unrestricted and the EEA has also liberalised intra-bloc investment to some extent. In addition, a number of European countries have minimal overt restrictions on inflows from non-EU and non-EEA countries. The countries with the highest levels of overall restrictions are Iceland, Canada, Turkey, Mexico, Australia, Austria and Korea, with restriction scores above 0.25. The United States is a bit below the OECD mean, and Japan is above the OECD mean. The U.S. score may seem surprising. But it should be remembered that the coefficients here do not represent all barriers to doing business but rather discriminatory barriers against foreign firms. The United States may have relatively unregulated markets on the whole but it does have discriminatory barriers to FDI in several sectors.<sup>10</sup>

29. Within Europe, there are some important differences in restrictions. Even the European Union is not a completely unified bloc in terms of policies towards inward FDI. Substantial harmonisation and intra-EU liberalisation has occurred, however. Countries with the lowest levels of restrictions include the United Kingdom, Ireland, the Netherlands, Germany, Denmark, Belgium, and Italy. Norway, Finland and Spain have among the highest restrictions in Europe, with Iceland having the highest of all countries. Overall, however, restrictions in most European countries are well below the OECD average, as further shown in Figure 2 (baseline case). An important reason for this is that the calculations adjust for preferences granted to intra-EU or intra-EEA investment. These adjustments consisted of scaling down European country scores in cases where such intra-European preferences were granted.<sup>11</sup> Figure 2 shows the effect of alternatively including or excluding this adjustment, which could be viewed as understating Europe's restrictions. It could be argued that the European Union should be considered an individual country for these purposes — just as it would be inappropriate to consider the absence of intra-State restrictions in the United States as an indication of freedom of international investment flows. Even after excluding the adjustment, European restrictions are on average below the OECD mean, and several EU countries remain the least restricted in the OECD. Under the alternative scenario of disregarding intra-EU preferences, average EU restrictions now exceed those of the United States, but remain below Japan's. There are substantial differences in the effect of excluding this adjustment on individual European countries, as shown in Annex 2, although the ranking of countries within Europe by degree of restrictiveness is not greatly altered.

30. Excluding screening requirements (Figure 1, panel B) has little effect on the ordering. New Zealand, and to a lesser extent Australia and Spain become relatively more open.

31. *Sectoral scores.* It can be seen from Table 3 and Figures 3 and 4 that services are far more restricted than manufacturing. FDI inflows into manufacturing are almost completely unrestricted, aside from economy-wide measures such as screening. In fact, many countries seek to encourage foreign investment in manufacturing.<sup>12</sup> Construction and hotels and restaurants are also relatively lightly restricted. Some "sensitive sectors", notably telecoms, transport, electricity, and finance are often highly or

---

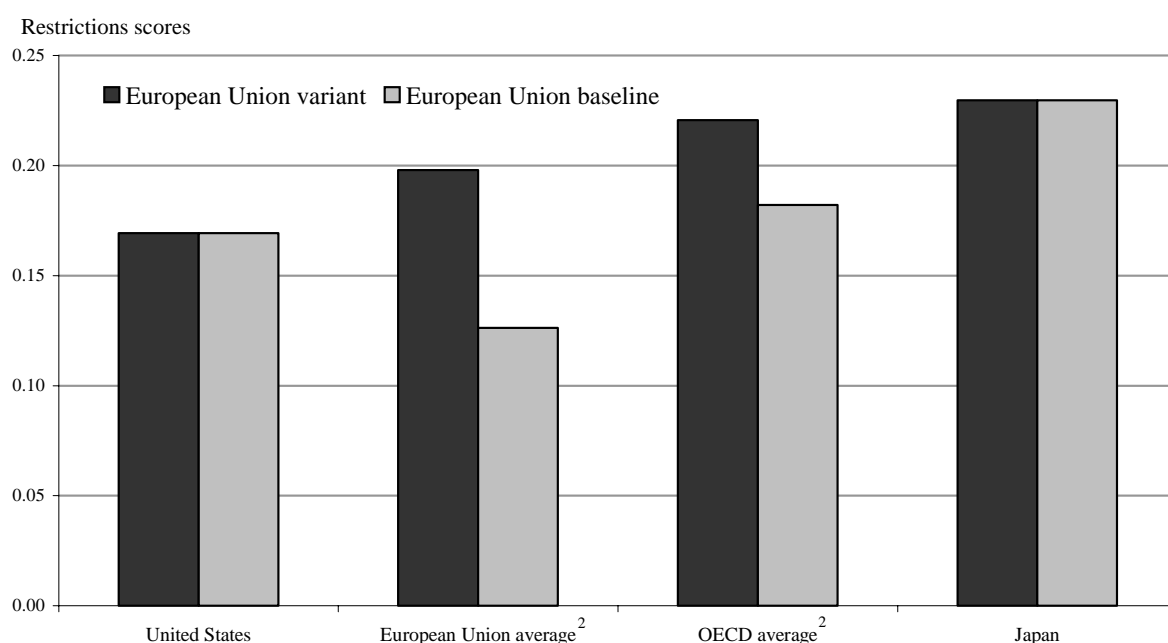
10. Switching to value-added weights, however, significantly lowers the U.S. score, as discussed below.

11. Where restrictions on intra-European investments are waived, the restriction is weighted by 0.44, reflecting the fact that 56 per cent of FDI inflows into European countries were intra-European in 1998. This could overstate the effect of the waiver to the extent that this waiver endogenously raises the share of intra-European FDI.

12. In manufacturing, social and regulatory policies such as health and safety regulations, environmental standards, and technical standards undoubtedly also can act as indirect restrictions, but these are not considered here.

significantly restricted. Electricity has the highest score, but this derives more from public ownership than overtly discriminatory barriers against foreign investment. Airline transport, fixed line telecommunications, and banking in particular are subject to substantial explicit barriers against FDI in many countries, as shown in Table 3 and Figure 4. Media, such as newspapers and broadcasting, are also highly restricted but were not included in this study. Figure 4 shows the pattern of restrictions for selected countries in comparison to the OECD average pattern, for the service sectors. Most countries share the OECD tendency of relatively restricted electricity, transport, telecommunications and finance. The sectoral variation of restrictions is quite marked in the United States where some sectors are almost completely unrestricted whereas others have relatively high levels of restrictions.

Figure 2. **Effects of removing intra-european preferences on FDI restrictions<sup>1</sup>**

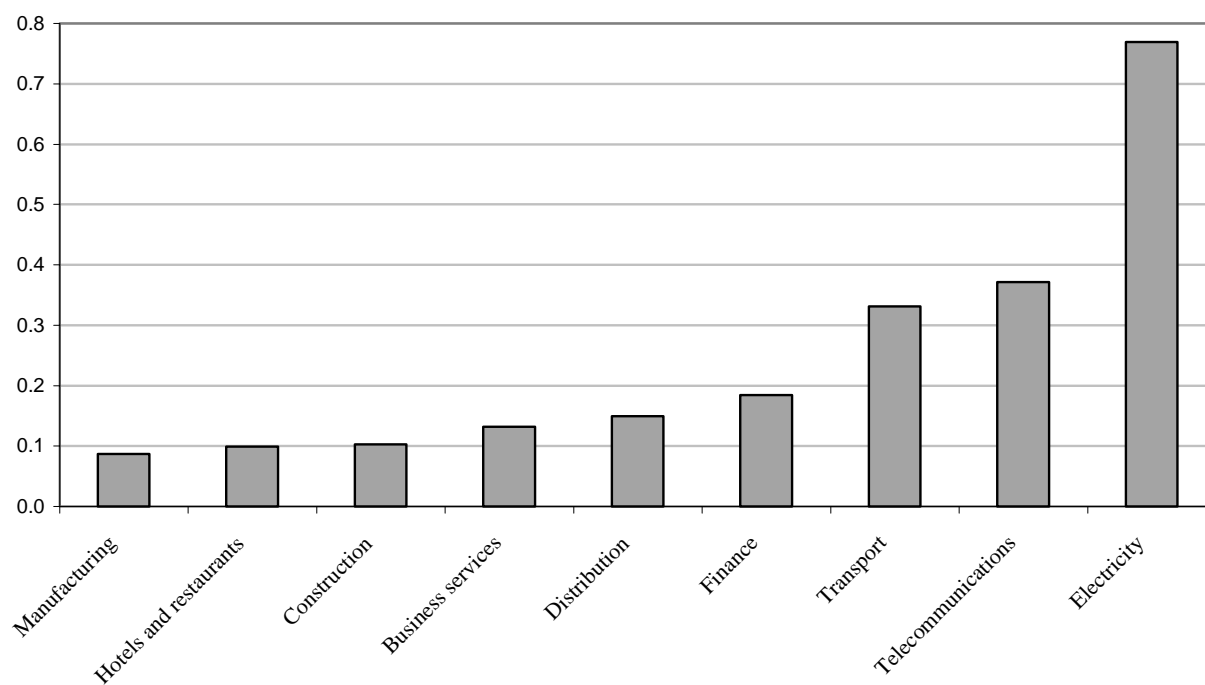


1. The European Union variant ignores intra-European preferences in calculating European restrictions. The European Union baseline incorporates intra-European preferences.

2. Simple average.

Source: See Section 3 of the text.

Figure 3. Cross-sectoral patterns of FDI restrictions, 1998/2000<sup>1</sup>



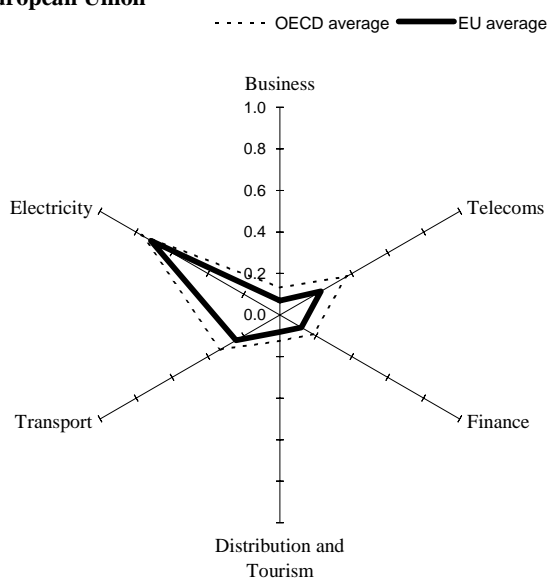
1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).

Source: See Section 3 of the text.

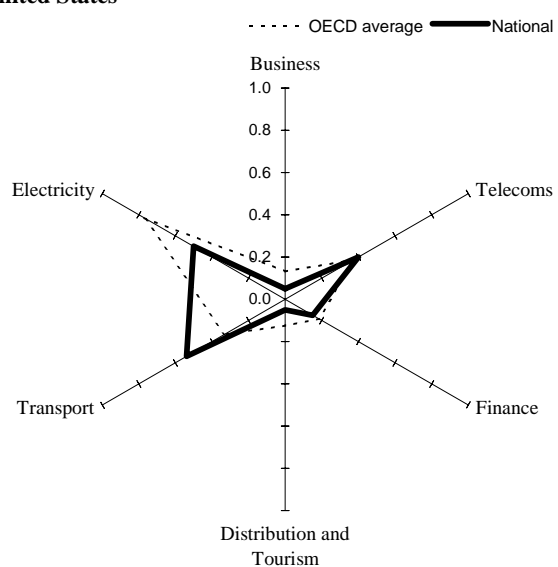
Figure 4. Cross-sectoral patterns of FDI restrictions,<sup>1</sup> 1998-2000

Panel A. The "Quad"

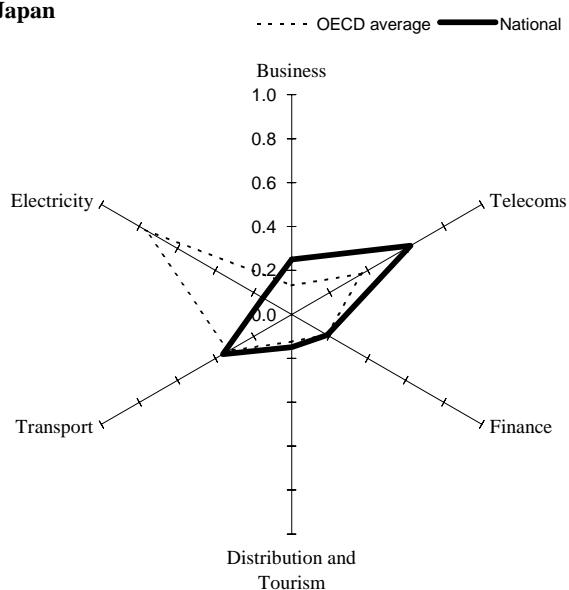
European Union



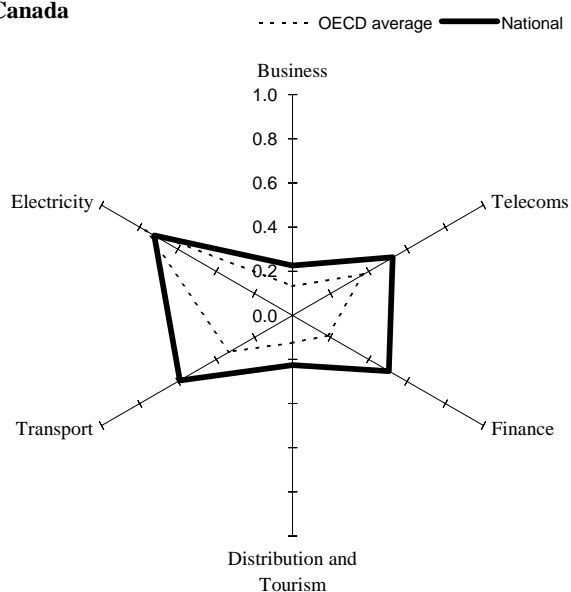
United States



Japan



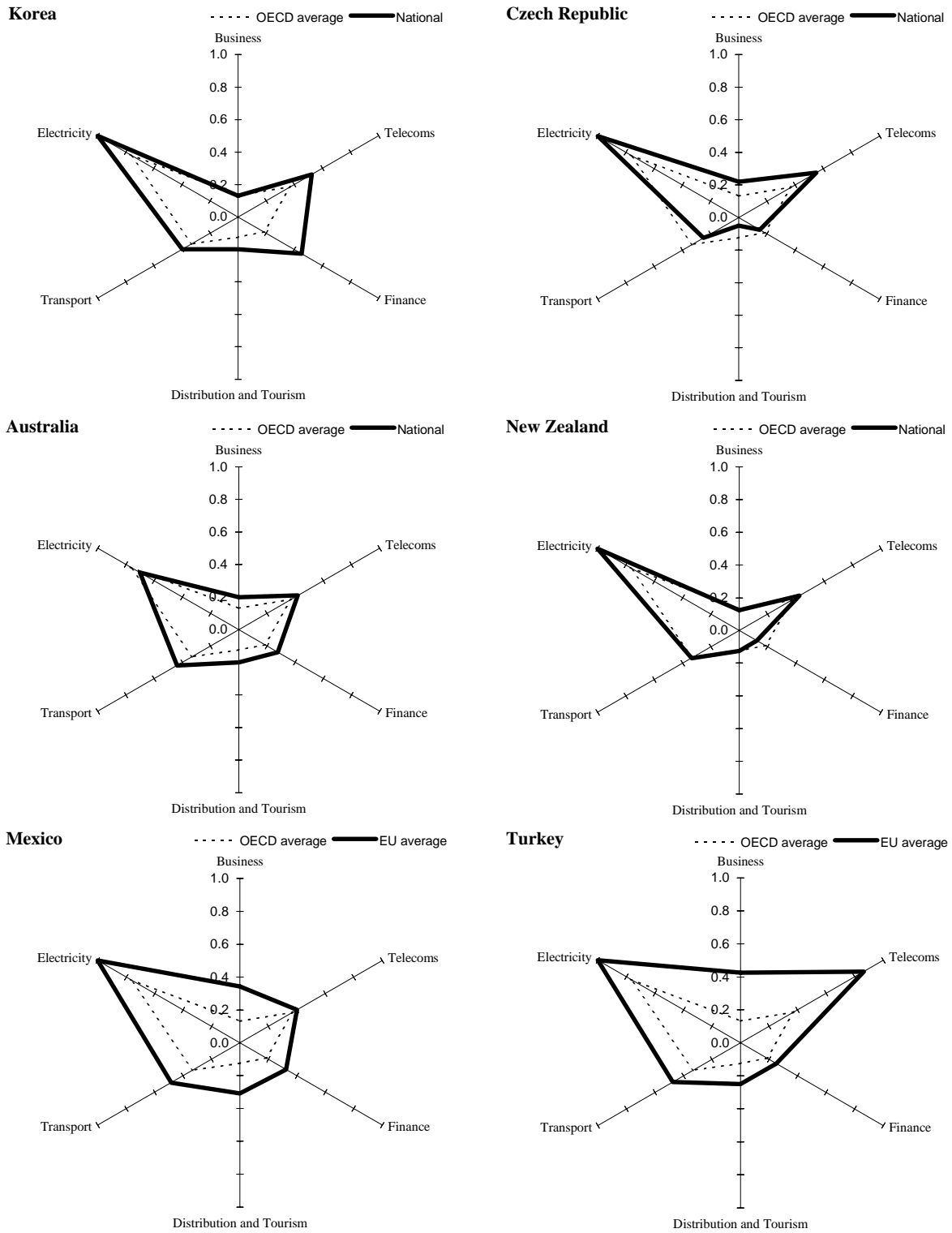
Canada



1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).  
Source: See Section 3 of the text.

Figure 4. Cross-sectoral patterns of FDI restrictions,<sup>1</sup> 1998-2000 (cont.)

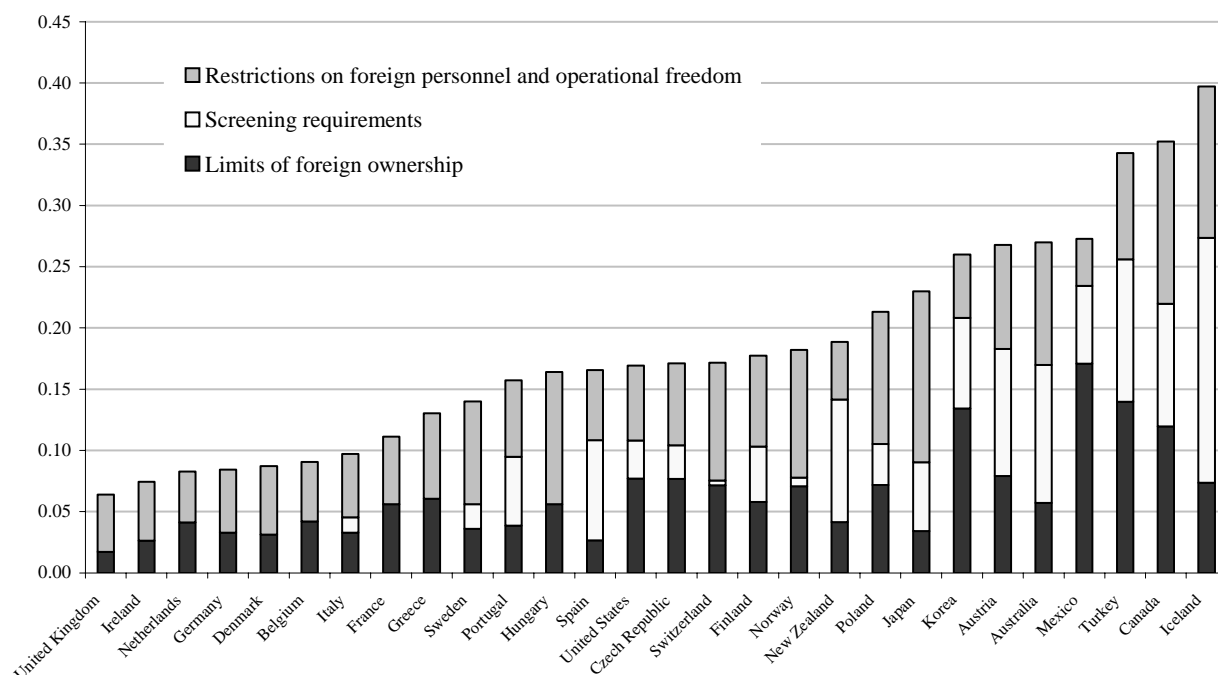
Panel B. Other OECD countries



1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).  
 Source: See Section 3 of the text.

32. *Decomposition by type of restriction.* Figure 5 presents the results for the whole economy by type of restriction: limitations on foreign ownership (equity), screening, and other (management and operational restrictions). The greatest variations are in equity restrictions and screening. The differences in scores between countries reflect both the coverage and severity of these measures.

Figure 5. FDI restrictions in OECD countries, 1998/2000: breakdown by type of restriction<sup>1</sup>



1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).

Source: OECD

33. Some countries, notably in Europe, have no or very limited discriminatory screening of foreign investment. Screening is minor in the United States and Japan. Iceland was deemed to have the most restrictive screening requirement, with Australia, New Zealand, Turkey, Canada, Austria and Spain also having relatively extensive screening.

34. All countries have equity restrictions, but these vary substantially. These equity restrictions are concentrated in a few sensitive sectors, namely transport, telecommunications, finance and electricity. It is these restrictions that account for the bulk of the sectoral variation in OECD average restrictions observed in Figure 3. Almost all countries have some equity restriction in airline and maritime transport, although the severity varies. The NAFTA countries have among the highest level of equity restrictions, and there are no intra-NAFTA waivers of these restrictions. Mexico is one of the few countries where these equity restrictions apply to most service sectors. In the United States equity restrictions are confined to a few sectors, but are relatively high in these instances. Turkey and Korea also had relatively stringent equity restrictions in 1998, although some of these have been liberalised since then or are scheduled to be. European equity restrictions are usually but not always waived for investors from other EU or EEA countries, which largely explains the low equity scores in Europe. Also, some of these countries, such as Ireland, the Netherlands, the United Kingdom, Denmark, and Germany, have hardly any such restrictions to begin with.

35. Japan has the highest level of “other” restrictions, partly reflecting the allegations of lack of transparency and procedural delays documented in some sectors in USTR and EU reports. This is one of the instances where intangible barriers to FDI were taken into account in the scoring. Similar allegations by Japan’s METI about the United States were also factored into the United States score.

36. The effect of switching to value-added weights had minimal effects for most countries, with the United States being the major exception. With value added weights, most countries FDI restriction scores fall modestly as value-added weights tend to give greater weight to services that are not heavily restricted such as business services, distribution, and hotels and restaurants. Since United States restrictions are unusually concentrated in a few sectors, the use of value added weights significantly lowers the U.S. restrictions score. A number of European countries, however, still have lower scores than the United States. See Annex 2 for further results.

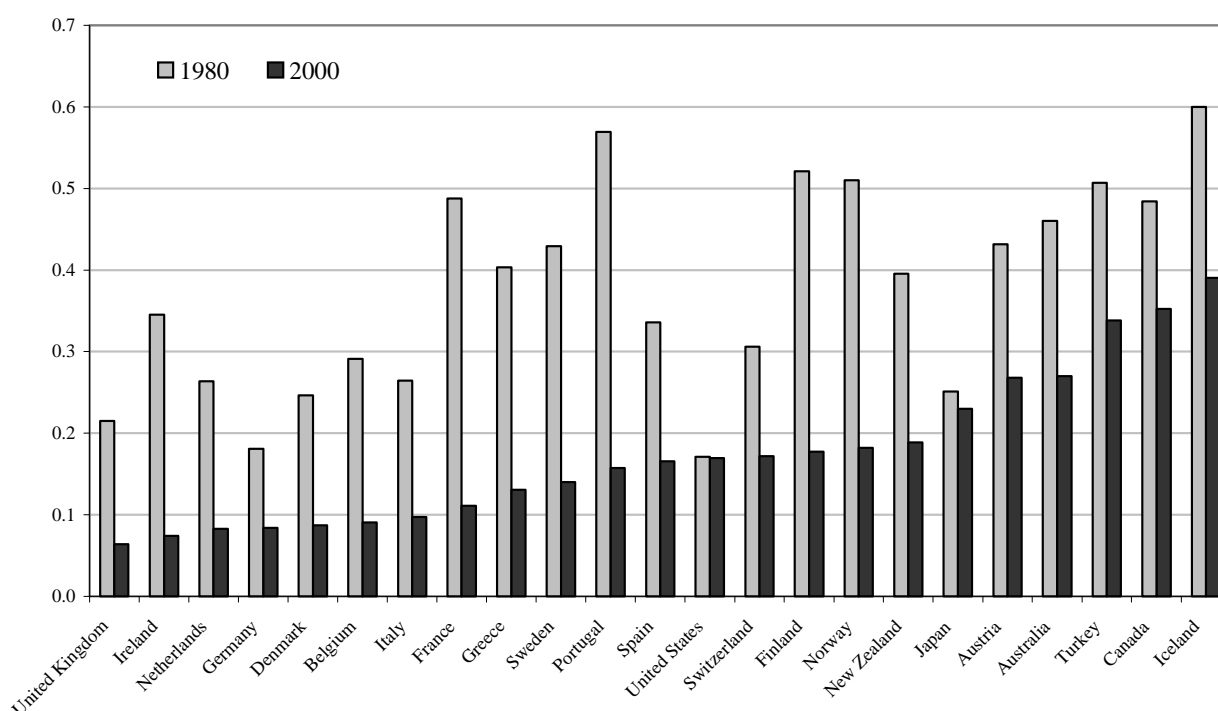
#### 4.2. *Time series results*

37. The cross-section restriction measures were extrapolated backward in time using OECD documents. This could only be done for core OECD countries, however, and the findings should be viewed with greater caution than the cross-section results, due to lesser available information and reliance on a less varied set of sources. The results are found in Table 4 and Figure 6.

Table 4. **Indices of FDI restrictions over time**  
**Total economy**

|                    | 1980  | 1990  | 2000  |
|--------------------|-------|-------|-------|
| Australia          | 0.460 | 0.332 | 0.270 |
| Austria            | 0.432 | 0.432 | 0.268 |
| Belgium            | 0.291 | 0.291 | 0.091 |
| Canada             | 0.484 | 0.379 | 0.352 |
| Denmark            | 0.246 | 0.161 | 0.087 |
| Finland            | 0.521 | 0.463 | 0.177 |
| France             | 0.487 | 0.233 | 0.111 |
| Germany            | 0.181 | 0.174 | 0.084 |
| Greece             | 0.404 | 0.332 | 0.130 |
| Iceland            | 0.600 | 0.481 | 0.390 |
| Ireland            | 0.345 | 0.250 | 0.074 |
| Italy              | 0.264 | 0.264 | 0.097 |
| Japan              | 0.251 | 0.237 | 0.230 |
| Netherlands        | 0.264 | 0.243 | 0.083 |
| New Zealand        | 0.396 | 0.237 | 0.189 |
| Norway             | 0.510 | 0.466 | 0.182 |
| Portugal           | 0.569 | 0.223 | 0.157 |
| Spain              | 0.336 | 0.230 | 0.165 |
| Sweden             | 0.429 | 0.335 | 0.140 |
| Switzerland        | 0.306 | 0.278 | 0.172 |
| Turkey             | 0.507 | 0.391 | 0.338 |
| United Kingdom     | 0.215 | 0.167 | 0.064 |
| United States      | 0.171 | 0.170 | 0.169 |
| Mean               | 0.377 | 0.294 | 0.175 |
| Maximum            | 0.600 | 0.481 | 0.390 |
| Standard deviation | 0.128 | 0.101 | 0.094 |

Source: See Section 3 of the text.

Figure 6. FDI restrictions in OECD countries, 1980-2000<sup>1</sup>

1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).

Source: See Section 3 of the text.

38. It can be observed that restrictions on FDI have decreased markedly over time for most countries. A major exception is the United States, which in the early 1980s was one of the most open countries but was in the middle of the pack by the late 1990s. This reflects the fact that there have been almost no changes in the United States, while most other countries have greatly liberalised access for foreign investors. In the early 1980s, a number of countries had total scores in the 0.4 to 0.6 range. The changes have been particularly dramatic in several European countries, notably Portugal, France, Norway, and Finland.

39. The liberalisation of inward foreign investment reflects a number of trends. First, as noted earlier, the European Union has greatly liberalised intra-EU FDI, and since about half of FDI into the EU is from other EU countries, this is tantamount to a substantial overall liberalisation. Second, most countries have liberalised both their economy-wide and sector-specific restrictions, to varying degrees. Third, the prevalence of public monopoly in sectors such as telecoms, banking and transport has greatly diminished as privatisation has been pursued throughout the OECD.<sup>13</sup> This is one reason why FDI restrictions have changed less in the United States than elsewhere: in the U.S. there was much less to privatise and demopolise to begin with.

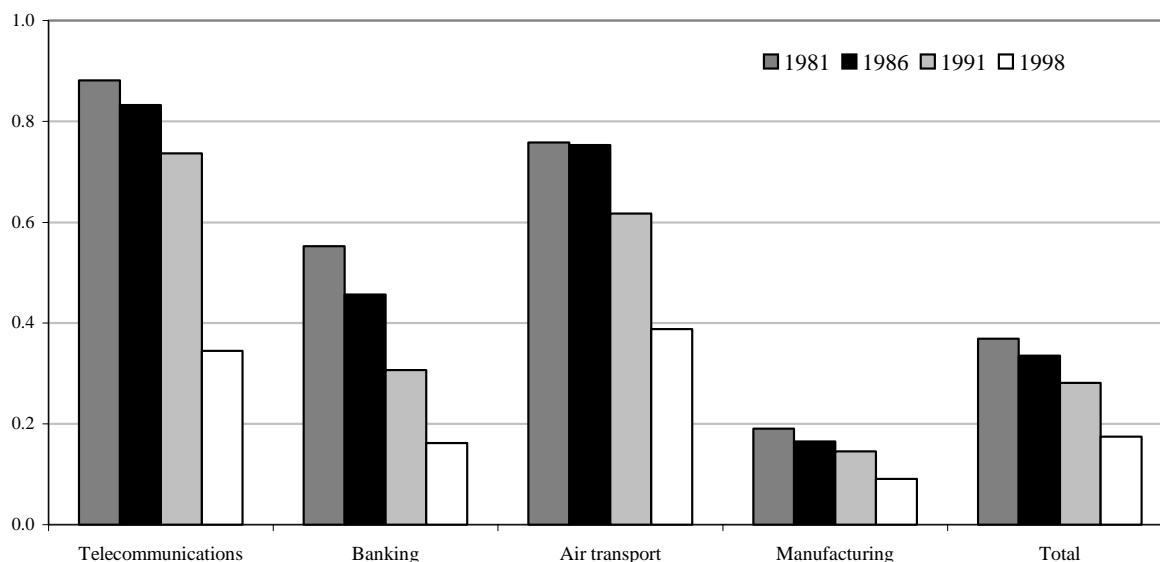
40. Figure 7 shows the time series for selected sectors. Air transport and telecoms were almost completely closed to FDI in the early 1980s and are still more restricted than other sectors, as noted in the previous section. But the change has been even more dramatic in these industries than for the economy as a

13. Electricity, however, has remained under public ownership in many countries.



whole. Figure 7 also shows that while there has been a steady trend towards liberalisation, the pace accelerated in the 1990s.

Figure 7. **FDI restrictions over time in selected sectors, 1981-1998**<sup>1</sup>  
OECD average<sup>2</sup>



1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).

2. Average for 23 OECD countries.

Source: See Section 3 of the text.

## 5. Conclusions.

41. The last two decades, and especially the 1990s, have witnessed significant liberalisation in FDI restrictions. OECD countries are now generally open to inward FDI, although there remain substantial differences between countries and across industries. The most open countries are now in Europe, at least as far as statutory restrictions are concerned. The preponderance of remaining restrictions is in services, with almost no overt restrictions in manufacturing. On the contrary, many countries provide incentives for manufacturing investment, although systematic evidence is lacking.

42. This paper has not evaluated the effects of restrictions, but Nicoletti *et al.* (2003) uses the findings of this paper in an econometric model of FDI, and finds a statistically important effect of the computed restrictions on FDI patterns.

43. The most heavily restricted sectors are those that are highly sensitive to national security or national sovereignty considerations: telecommunications, air and maritime transport, finance, public utilities, and media (the latter not considered in this study). Whether or not these restrictions are justified on social cost-benefit grounds is a difficult issue beyond the scope of this paper, involving tradeoffs between national sovereignty and economic efficiency.

### Annex 1. Comparisons with Hardin and Holmes (1997) Findings

44. This Annex provides more detail on the computation of the FDI Restrictions Indices, in particular comparing the Hardin-Holmes (HH) methodology to the one adopted here. As noted in the text, the weights used here are broadly similar to those of HH, in particular placing a high importance on equity restrictions. The HH weights are shown in Table A.1.

Table A.1. **Hardin and Holmes coefficients on FDI restrictions**  
(maximum 1.0)

| Type of restriction  | Scores |
|--|--------|
| <i>Foreign equity limits on all firms</i>                          |        |
| No foreign equity allowed  | 1      |
| 0-49 % foreign equity allowed                                      | 0.5    |
| 50-99 % foreign equity allowed                                     | 0.25   |
| <i>Foreign equity limits on existing firms, none on Greenfield</i> |        |
| No foreign equity allowed  | 0.5    |
| 0-49 % foreign equity allowed                                      | 0.25   |
| 50-99 % foreign equity allowed                                     | 0.125  |
| <i>Screening and Approval</i>                                      |        |
| Investor required to demonstrate net economic benefits             | 0.1    |
| Approval unless contrary to national interest                      | 0.075  |
| Notification (pre or post)   | 0.05   |
| <i>Control and Management Restrictions</i>                         |        |
| All firms  | 0.2    |
| Existing firms, none for greenfield                                | 0.1    |
| <i>Input and Operational Restrictions</i>                          |        |
| All firms  | 0.2    |
| Existing firms, none for greenfield                                | 0.1    |
| <i>Total</i>   |        |

Source: Hardin and Holmes (1997).

45. The main difference is that HH distinguish between restrictions on all firms from those on existing firms only (mergers and acquisitions). But this distinction is of little consequence as the bulk of FDI in OECD countries concerns existing firms. Also, few OECD countries distinguish between greenfield and mergers and acquisitions in their statutory FDI restrictions.

46. Second, the HH weights on screening seemed a bit low and were therefore raised in some cases. Third, in aggregating sub-sectors HH use simple rather than weighted averages. Instead this study weights by economic importance, using FDI weights for the OECD as a whole. An alternative is to use GDP weights, but some service sectors with relatively large shares of GDP witness very little international exchange, either of trade or FDI. The use of FDI weights, however, raises a problem of endogeneity: highly restricted sectors may experience less FDI and hence receive too low a weight. As shown above, services are much more highly restricted than manufacturing, so any such problem of endogeneity is concentrated in the former. To deal with this problem, for the service sectors, an average of FDI and trade weights was employed. The inclusion of cross-border trade in the weighting scheme may be justified insofar as cross-border trade can substitute for FDI when the latter is restricted. The weights are shown in Table A.2.

Table A.2. **Sector weights**

|                     | <i>FDI</i> | <i>Adjusted FDI<sup>a</sup></i> | <i>Value Added</i> |
|---------------------|------------|---------------------------------|--------------------|
| Business            | 0.18       | 0.18                            | 0.22               |
| Telecommunications  | 0.05       | 0.04                            | 0.04               |
| Construction        | 0.01       | 0.02                            | 0.08               |
| Wholesale, Retail   | 0.13       | 0.09                            | 0.17               |
| Finance             | 0.25       | 0.16                            | 0.07               |
| Hotels, Restaurants | 0.01       | 0.01                            | 0.04               |
| Transport           | 0.01       | 0.14                            | 0.07               |
| Electricity         | 0.02       | 0.02                            | 0.04               |
| Manufacturing       | 0.35       | 0.35                            | 0.28               |
| Total               | 1.00       | 1.00                            | 1.00               |

a) For the service sectors, an average of FDI and trade weights;  
For manufacturing, FDI weight.

Source: OECD.

47. Fourth, in HH multiple restrictions of the same type are counted only once, which could possibly lead to an underestimate of FDI restrictiveness for countries that apply multiple restrictions, as they note. With a somewhat more detailed breakdown of the types of restrictions here, following other studies of the Australian Productivity Commission, this problem is partially circumvented. These include restrictions on the residency and nationality of board members and duration of permissible stay for expatriate personnel.

48. Finally, this study covers a smaller set of services industries, but includes electricity and manufacturing, a larger group of countries and a richer set of data sources.

49. As noted earlier, there are few studies with which to compare the results reported here. Table A.3 compares the Australian Productivity Commission (APC) sectoral studies to the findings in Table 3 for those sectors where this is possible. To do so, however, it was necessary to re-weight the APC findings. As described earlier, the APC studies measure barriers to all modes of service delivery, not solely FDI. In the case of professional services, in particular, commercial presence receives a small weight in the overall “foreign” index (only 0.05), given that FDI is not the critical issue for delivery of such services. The APC figures shown in Table A.3 therefore are derived from, but not identical, to those reported in their web site.

Even after re-weighting the APC indices, their composition differs from this study. For example, the APC did not consider screening.

50. The bottom row of Table A.3 shows the correlation coefficients between the two set of results, the APC and the “baseline” of the present study. For telecoms, banking, and maritime services the correlation is high at 0.58, 0.57 and 0.56 respectively. For distribution and business services it is lower but still positive (0.28 and 0.10 respectively). The low correlation for professional services is not surprising given that commercial presence plays a minor role in the APC weighting indices and therefore are ill-suited for the purpose of measuring FDI restrictions, even after attempts to re-weight them. In telecoms, the baseline shows greater variation in scores than the APC study. The baseline restrictions scores are considerably higher than the APC scores in Australia, Japan, New Zealand and the United States. In banking, the APC shows identical scores for all EU countries. The largest discrepancy is in the case of Canada, where the baseline score is much higher than the APC score. In distribution, there are discrepancies in both directions. Austria and Canada are higher in the baseline, while Denmark, Greece, Netherlands, Switzerland and the United States show considerably lower scores in the baseline.

Table A.3. Comparison of baseline results with findings of the Australian productivity commission studies

|                         | Business |          | Telecoms |          | Distribution |          | Banking |          | Maritime transport |          |
|-------------------------|----------|----------|----------|----------|--------------|----------|---------|----------|--------------------|----------|
|                         | Aus PC   | Baseline | Aus PC   | Baseline | Aus PC       | Baseline | Aus PC  | Baseline | Aus PC             | Baseline |
| Australia               | 0.074    | 0.200    | 0.100    | 0.419    | 0.183        | 0.200    | 0.244   | 0.300    | 0.320              | 0.500    |
| Austria                 | 0.410    | 0.575    | 0.100    | 0.338    | 0.136        | 0.258    | 0.175   | 0.175    | 0.314              | 0.307    |
| Belgium                 | 0.153    | 0.025    | 0.167    | 0.300    | 0.136        | 0.092    | 0.175   | 0.075    | 0.359              | 0.157    |
| Canada                  | 0.279    | 0.225    | 0.400    | 0.525    | 0.138        | 0.225    | 0.176   | 0.575    | 0.408              | 0.375    |
| Czech Republic          | na       | 0.450    | 0.433    | 0.550    | na           | 0.050    | na      | 0.150    | na                 | 0.200    |
| Denmark                 | 0.249    | 0.125    | 0.100    | 0.075    | 0.250        | 0.092    | 0.175   | 0.075    | 0.366              | 0.157    |
| Finland                 | 0.029    | 0.110    | 0.000    | 0.245    | 0.250        | 0.160    | 0.175   | 0.110    | 0.364              | 0.454    |
| France                  | 0.352    | 0.036    | 0.200    | 0.251    | 0.136        | 0.125    | 0.175   | 0.075    | 0.364              | 0.369    |
| Germany                 | 0.164    | 0.025    | 0.100    | 0.225    | 0.136        | 0.092    | 0.175   | 0.075    | 0.361              | 0.207    |
| Greece                  | 0.299    | 0.069    | 0.400    | 0.350    | 0.336        | 0.125    | 0.175   | 0.119    | 0.270              | 0.257    |
| Hungary                 | na       | 0.100    | 0.467    | 0.325    | na           | 0.117    | na      | 0.100    | na                 | 0.400    |
| Iceland                 | na       | 0.325    | 0.367    | 0.831    | na           | 0.392    | na      | 0.325    | na                 | 0.325    |
| Ireland                 | na       | 0.025    | 0.200    | 0.125    | 0.136        | 0.075    | 0.175   | 0.075    | 0.270              | 0.069    |
| Italy                   | 0.205    | 0.025    | 0.100    | 0.075    | 0.136        | 0.092    | 0.175   | 0.175    | 0.364              | 0.157    |
| Japan                   | 0.068    | 0.250    | 0.100    | 0.625    | 0.191        | 0.150    | 0.156   | 0.200    | 0.458              | 0.250    |
| Korea                   | 0.304    | 0.275    | 0.600    | 0.525    | 0.238        | 0.325    | 0.369   | 0.475    | 0.364              | 0.425    |
| Mexico                  | 0.144    | 0.400    | 0.500    | 0.400    | 0.268        | 0.242    | 0.386   | 0.325    | 0.464              | 0.525    |
| Netherlands             | 0.035    | 0.025    | 0.100    | 0.145    | 0.136        | 0.025    | 0.175   | 0.075    | 0.364              | 0.157    |
| New Zealand             | 0.130    | 0.125    | 0.100    | 0.425    | 0.138        | 0.125    | 0.154   | 0.125    | 0.370              | 0.225    |
| Norway                  | na       | 0.119    | 0.100    | 0.369    | na           | 0.119    | na      | 0.119    | na                 | 0.469    |
| Poland                  | na       | 0.175    | 0.500    | 0.675    | na           | 0.175    | na      | 0.325    | na                 | 0.375    |
| Portugal                | 0.095    | 0.119    | 0.500    | 0.351    | 0.136        | 0.142    | 0.175   | 0.175    | 0.324              | 0.307    |
| Spain                   | 0.156    | 0.119    | 0.333    | 0.275    | 0.136        | 0.125    | 0.175   | 0.163    | 0.364              | 0.401    |
| Sweden                  | 0.669    | 0.119    | 0.100    | 0.394    | 0.136        | 0.069    | 0.175   | 0.119    | 0.464              | 0.301    |
| Switzerland             | 0.086    | 0.075    | 0.100    | 0.300    | 0.220        | 0.092    | 0.166   | 0.125    | 0.493              | 0.525    |
| Turkey                  | 0.132    | 1.000    | 0.600    | 0.863    | 0.204        | 0.350    | 0.323   | 0.250    | 0.596              | 0.550    |
| United Kingdom          | 0.036    | 0.025    | 0.000    | 0.025    | 0.136        | 0.092    | 0.175   | 0.075    | 0.326              | 0.201    |
| United States           | 0.066    | 0.050    | 0.033    | 0.400    | 0.191        | 0.050    | 0.156   | 0.150    | 0.446              | 0.650    |
| Average                 | 0.188    | 0.182    | 0.215    | 0.342    | 0.180        | 0.148    | 0.200   | 0.182    | 0.382              | 0.332    |
| Correlation coefficient | 0.10     |          | 0.58     |          | 0.28         |          | 0.57    |          | 0.56               |          |

1. Aus PC are the adjusted Australian productivity commission results, where the results have been reweighted as described in the text. Baseline are the results obtained in the present study.

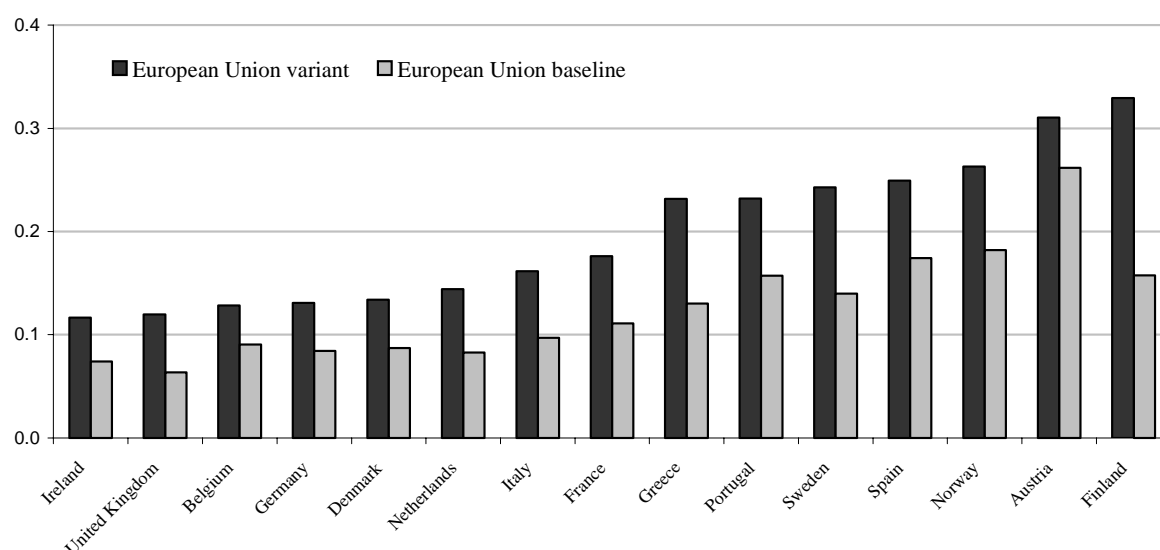
2. The average for the baseline considers only those countries where there are also results for the Australian PC, to ensure comparability.

Source: See Section 3 and Annex 1 of the text.

## Annex 2. Sensitivity analysis to changes in assumptions

51. *Intra-European FDI liberalisation.* Figure A.1 shows the effects of removing of intra-European FDI preferences, as discussed in the text. The effects are substantial, although they vary somewhat by country. For some countries, e.g. the United Kingdom, the Netherlands, Ireland, Sweden, and Greece, removing the effects of FDI preferences roughly doubles the country's restrictions score. Intra-European preferences are weakest in Austria, and also relatively small in Spain and Portugal.

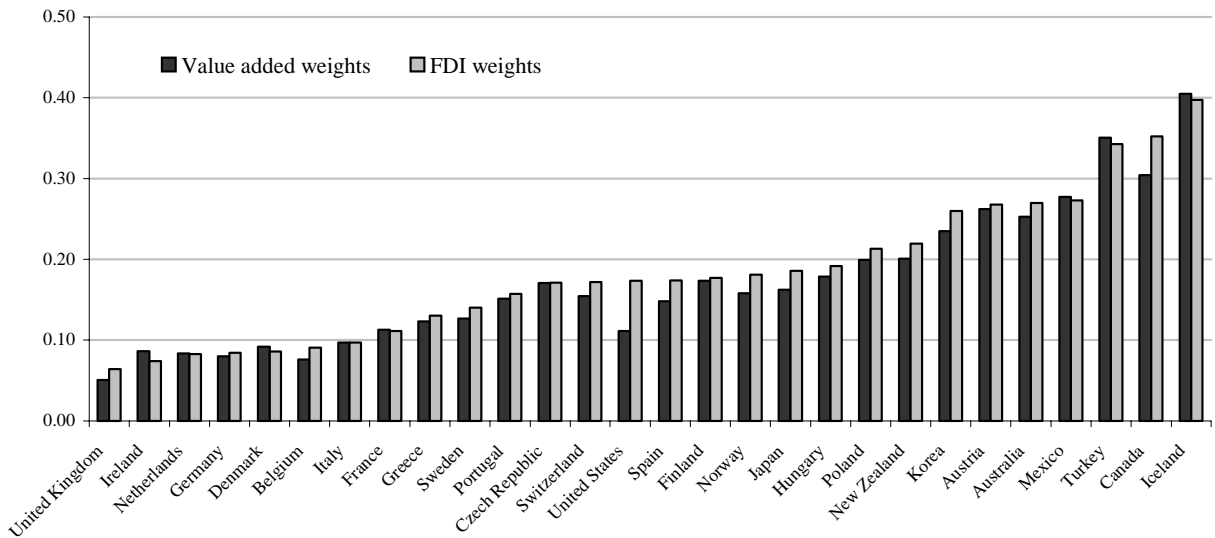
Figure A.1. **Effects of removing intra-european preferences on FDI restrictions 1998/2000<sup>1</sup>**  
European countries



Source: See Section 3 and Annex 2 of the text.

52. *Alternative Sector Weights.* The calculations in the text are based on a mix of FDI and trade weights. A problem with FDI weights is that they could lead to an endogenous downward bias in the aggregate FDI restrictions, since the most restricted sectors may endogenously experience less FDI. Also, one might want to know the average restrictiveness weighted by output rather than FDI. Figure A.2 shows the effects of using value-added weights rather than FDI weights in aggregating the sectoral FDI restrictions measures into an aggregate measure for the economy. As noted in the text, the use of FDI weights tends to slightly lower most countries' restriction scores. The largest effect is on the United States, which has a substantial decline in restrictiveness. Canada also has a moderate decline in its restriction score. In all other countries, the effect is minimal. The large effect on the United States reflects the unusually skewed pattern of restrictions shown in Figure 4.

Figure A.2. **FDI restrictions measures under alternative weighting methods**



1. The European Union variant ignores intra-European preferences in calculating European restrictions.  
 The European Union baseline incorporates intra-European preferences.

Source: See Section 3 and Annex 2 of the text.

## References

- EUROPEAN COMMISSION (2003),  
 “Bilateral Trade Relations with Countries...”, <http://europa.eu.int/comm/trade/bilateral/euta.htm>.
- FINDLAY, C. and T. WARREN (eds.) (2000),  
*Impediments to Trade in Services: Measurement and Policy Implications*, Routledge: New York and London.
- GRAHAM, E.M. (2000),  
*Fighting the Wrong Enemy*, Institute for International Economics, Washington.
- GRAHAM, E.M. and P.R. KRUGMAN (1995),  
*Foreign Direct Investment in the United States*, Institute for International Economics, Washington.
- HOEKMAN, B. (1995),  
 “Assessing the General Agreement on Trade in Services,” In Martin, W. and L.A. Winters (eds.),  
*The Uruguay Round and the Developing Countries*, World Bank Discussion Paper 307.
- HARDIN, A. and L. HOLMES (1997),  
 “Service Trade and Foreign Direct Investment”, Australian Productivity Commission,  
 (<http://www.pc.gov.au/ic/research/information/servtrad/index.html>).
- HARDIN, A. and L. HOLMES (2002),  
 “Measuring and Modelling Barriers to FDI,” in Bora, B. (ed.) *Foreign Direct Investment: Research Issues*, Routledge, London.
- KALIJARAN, K. (2000),  
 “Restrictions on Trade in Distribution Services,” Australian Productivity Commission, August 2000.
- KOULEN, M., M. GESTRIN and P. SAUVÉ (2002),  
 “Trade, Investment and the WTO: Issues and Options”, mimeo, OECD 2002.
- MARKUSEN, J.R. and K. MASKUS (2001),  
 “General Equilibrium Approaches to the Multinational Firm: A Review of Theory and Evidence”,  
*NBER Working Paper* No. 8344, June.
- MINISTRY OF ECONOMY, TRADE, AND INDUSTRY (JAPAN) (2003),  
*Report on the WTO Consistency of Trade Policies by Major Trading Partners*,  
<http://www.meti.go.jp/english/report/index.html>.
- McGUIRE, G. (2002),  
 “Methodologies for Measuring Restrictions on Trade in Services,” paper presented at OECD-World Bank Services Experts Meeting, Paris, March.
- NGUYEN-HONG, D. (2000),  
 “Restrictions on Trade in Professional Services,” Australian Productivity Commission, August.



- NICOLETTI, G., S. GOLUB, D. HAJKOVA, D. MIRZA and K.-Y. YOO (2003),  
“Policy Influences on Foreign Direct Investment”, *OECD Economic Department Working Papers*,  
Paris, (forthcoming).
- OECD (various years),  
*OECD Code of Liberalisation of Capital Movements*, Paris.
- OECD (various countries and dates),  
*OECD Reviews of Foreign Direct Investment*, Paris.
- OECD, (1982),  
*Controls and Impediments Affecting Inward Direct Investment in OECD Member Countries*, Paris.
- OECD, (1987),  
*Controls and Impediments Affecting Inward Direct Investment in OECD Member Countries*, Paris.
- OECD, (1992),  
*International Direct Investment: Policies and Trends in the 1980s*, Paris.
- OECD, (2002a),  
*Forty Years’ Experience with the OECD Code of Liberalisation of Capital Movements*, Paris.
- OECD (2002b), *Foreign Direct Investment and Development: Where Do We Stand?*, Paris..
- PRICE-WATERHOUSE-COOPERS (2001),  
*Doing Business and Investing in Countries World-wide*, CD-ROM.
- ROBERTSON, D. (2002),  
“Multilateral Investment Rules,” in Bora, B. (ed.) *Foreign Direct Investment: Research Issues*,  
Routledge, London.
- SAUVÉ, P. and K. STEINFATT (in progress),  
“Assessing the scope for further investment regime liberalisation: An analysis based on revealed  
liberalisation preferences,” OECD.
- SAUVÉ, P. and C. WILKIE (2000),  
“Investment Liberalisation in GATS” in Sauvé, P. and R.M. Stern (eds.), *GATS 2000: New  
Directions in Services Trade Liberalisation*, Brookings, Washington.
- UNCTAD (1996),  
*World Investment Report*, Geneva.
- UNITED STATES SPECIAL TRADE REPRESENTATIVE (2003),  
*National Trade Estimate Report on Foreign Trade Barriers*,  
<http://www.ustr.gov/reports/index.shtml>.
- WEI, S.J. (2000),  
“Negative Alchemy? Corruption and Composition of Capital Flows,” *OECD Development Centre  
Technical Paper*, No. 165, October.
- WORLD TRADE ORGANISATION (2002),  
WTO Services Database, <http://tsdb.wto.org/wto/WTOHomepublic.htm> .

YOO, K.-Y. (2003) (forthcoming),  
“Corporate Taxation and FDI: Evidence from Estimated Effective Tax Rates and Policy Issues”,  
*OECD Economic Department Working Papers*, Paris.

## RECENT ECONOMICS DEPARTMENT

### WORKING PAPERS

*The full series of Economics Department Working Papers can be consulted at [www.oecd.org/eco/Working\\_Papers/](http://www.oecd.org/eco/Working_Papers/)*

356. *Tax Incentives and House Price Volatility in the Euro Area: Theory and Evidence*  
(May) Paul van den Noord
355. *Structural Policies and Growth: A Non-technical Overview*  
(May) Alain de Serres
354. *Tax Reform in Belgium*  
(May 2003) David Carey
353. *Macroeconomic Policy and Economic Performance*  
(April 2003) Pedro de Lima, Alain de Serres and Mike Kennedy
352. *Regulation and Investment*  
(March 2003) Alberto Alesina, Silvia Ardagna, Giuseppe Nicoletti and Fabio Schiantarelli
351. *Discretionary Fiscal Policy and Elections: The Experience of the Early Years of EMU*  
(March 2003) Marco Buti and Paul van den Noord
350. *The US Health System: An Assessment and Prospective Directions for Reform*  
(February 2003) Elizabeth Docteur, Hannes Suppanz and Jaejoon Woo
349. *The Effectiveness of Public Expenditure in Portugal*  
(February 2003) Chiara Bronchi
348. *Comparative Analysis of Firm Demographics and Survival: Micro-Level Evidence for the OECD Countries*  
(February 2003) Eric Bartelsman, Stefano Scarpetta and Fabiano Schivardi
347. *Regulation, Productivity and Growth: OECD Evidence*  
(January 2003) Giuseppe Nicoletti and Stefano Scarpetta
346. *Public Expenditure Management in Poland*  
(December 2002) Andrew Burns and Kwang-Yeol Yoo
345. *Enhancing the Effectiveness of Public Expenditure in Sweden*  
(December 2002) Deborah Roseveare
344. *The Decline in Private Saving Rates in the 1990s in OECD Countries: How Much Can Be Explained by Non-Wealth Determinants*  
(November 2002) Alain de Serres and Florian Pelgrin
343. *Enhancing the Effectiveness of Public Expenditure in Norway*  
(October 2002) Isabelle Joumard and Wim Suyker
342. *Productivity and Convergence in a Panel of OECD Countries: Do Regulations and Institutions Matter?*  
(September 2002) Stefano Scarpetta and Thierry Tresselt
341. *Managing Public Expenditure: The UK Approach*  
(August 2002) Paul van den Noord
340. *The Brazilian Pension System: Recent Reforms and Challenges Ahead*  
(August 2002) Marcos Bonturi

339. *Challenges in the Mexican Financial Sector*  
(August 2002) Marcos Bonturi
338. *Coping with Population Ageing in Hungary*  
(August 2002) Andrew Burns and Jaromir Cekota
337. *Next Steps for Public Spending in New Zealand: The Pursuit of Effectiveness*  
(July 2002) Dave Rae
336. *Strengthening the Management of Public Spending in Hungary*  
(July 2002) Jaromir Cekota, Rauf Gonenc and Kwang-Yeol Yoo
335. *Automatic Stabilisers and Market Flexibility in EMU: Is There a Trade-Off?*  
(July 2002) Marco Buti, Carlos Martinez-Mongay, Khalid Sekkat and Paul van den Noord
334. *The Economic Consequences of Terrorism*  
(July 2002) Patrick Lenain, Marcos Bonturi and Vincent Koen
333. *Investment in human capital through post-compulsory education and training: Selected efficiency and equity aspects*  
(July 2002) Sveinbjörn Blöndal, Simon Field and Nathalie Girouard
332. *Enhancing the Effectiveness of Public Spending in Switzerland*  
(June 2002) Isabelle Joumard and Claude Giorno
331. *Competition and Efficiency in Publicly Funded Services*  
(June 2002) Jens Lundsgaard
330. *Policy Pre-Commitment and Institutional Design: A Synthetic Indicator Applied to Currency Boards*  
(May 2002) Marie-Thérèse Camilleri Gilson
329. *The Role of Policy and Institutions for Productivity and Firm Dynamics: Evidence from Micro and Industry Data*  
(April 2002) Stefano Scarpetta, Philip Hemmings, Thierry Tresselt and Jaejoon Woo
328. *Improving the Efficiency and Sustainability of Public Expenditure in the Czech Republic*  
(April 2002) Andrew Burns and Kwang-Yeol Yoo
327. *Increases in Business Investment Rates in OECD Countries in the 1990s: How much can be explained by fundamentals?*  
(April 2002) Florian Pelgrin, Sebastian Schich and Alain de Serres
326. *Sectoral Shifts in Europe and the United States: How They Affect Aggregate Labour Shares and the Properties of Wage Equations*  
(April 2002) Alain de Serres, Stefano Scarpetta and Christine de la Maisonneuve
325. *Coping with Population Ageing in the Netherlands*  
(March 2002) David Carey
324. *Public Spending in Italy: Policies to Enhance its Effectiveness*  
(March 2002) Alexandra Bibbee and Alessandro Goglio
323. *Overheating in Small Euro Area Economies : Should Fiscal Policy React?*  
(March 2002) Peter Hoeller, Claude Giorno and Christine de la Maisonneuve