



## The effects of policy heterogeneity on trade and investment in services: empirical analysis for the EU

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### Abstract

The heterogeneity of national regulations increases trade and investment costs of service providers that do business in other countries. After having complied with domestic regulations, service providers doing business in other countries incur additional country-specific fixed costs for complying with local regulations in the destination countries. The heterogeneity of national regulations for service markets operates as a barrier to trade and investment. In our empirical analysis we estimate the quantitative impacts of recent EU proposals on intra-EU service trade and direct investment in services that aim at reducing inter-country heterogeneity of regulation for service markets. We estimate that these measures could increase intra-EU service trade and direct investment in service by 15% to 35%.

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# 1 Introduction

The European Commission recently launched a *Proposal for a Directive of the European Parliament and of the Council on Services in the Internal Market* (EC 2004). Its aim is to boost the EU's Internal Market in Services by reducing regulation-based impediments to trade and investment in the service market. This CPB Communication presents the main results of a quantitative study on the possible impacts of these EU proposals on intra-EU service trade and direct investment in services. If the proposals are fully implemented, we expect an increase for both commercial service trade and the stock of foreign direct investment of about 15% to 35%. It will take at least several years after the implementation before these gains in trade and investment are realized. Full details and backgrounds on methods and data will be available in the underlying CPB Document.<sup>1</sup>

## **The unfinished Single Market**

A cornerstone of the European Union (EU) is the principle that goods, services, capital and labour can move freely between the member states. The internal market for goods seems to function well, after the implementation of the Single Market programme in 1988. That is however not the case for the internal market in services. Service providers often experience obstacles if they want to export their services to other EU member states, or when they want to start a subsidiary company in other EU member states. The EC (2002) concluded that these impediments are to a considerable degree caused by national regulations for service exporters, foreign investors in services, and for the service product itself. Such regulations are mostly made for domestic purposes without much regard for the interests of foreign service providers.

A key element of the recent EC proposals is the 'country of origin' principle. A service has to meet the standards set by regulation of the country of origin, but may no longer be confronted by additional regulation in the EU country where the service is delivered. Moreover the establishment of foreign subsidiaries has to be facilitated by introducing a single point of contact in a country. A single point of contact will be the place where the foreign service providers can fulfil all their administrative and regulatory obligations. Another aim of the directive is to eliminate unnecessary and discriminatory regulation such as nationality and residence restrictions. The proposed directive has potentially strong implications, because of its "horizontal" approach: it applies the same principles to a large part of the EU service sector. The EU directive is intended to become effective from 2010 onwards, and may have large impacts on the European service economy. The proposed measures could boost bilateral service trade between EU member states and also the intra-EU direct investment in the service sector.

<sup>1</sup> The full report (Kox, Lejour and Montizaan, 2004) will appear in October.

Our study investigates how intra-EU cross-border service trade and foreign direct investment in commercial service sectors will change if this directive would be implemented to the full. Our work builds upon recent empirical OECD work about the impact that national differences in regulation intensity have on the pattern of trade and investment.<sup>2</sup> We concentrate on the EU member states, and we refined the OECD method of analysis. Instead of only looking at national differences in the level of regulation we focus on heterogeneity in the form and contents of national regulations for service markets. The heterogeneity of national regulations increases trade and investment costs of service providers that do business in other EU member states. We conclude that the full implementation of the proposed directive may lead to a substantial increase of intra-EU trade in commercial services and intra-EU direct investment in services sector.

## **2 Regulation heterogeneity as a major barrier to intra-EU service trade**

### **2.1 Service trade and regulation**

Service markets have a long history of regulation. Partly, this is due to the externalities that the production of some services may cause for third parties, such as environmental effects of transport, the impact of bank reliability on the overall financial system, or the safety aspects of building design. But there is also a more innate cause for government intervention that may have to do with the very nature of the service product. The production and consumption of the service products often cannot be separated in place and time, making it difficult to standardise a service product. The quality of the product is a priori uncertain for the consumer – more than holds for commodities. In the case of a simple service product such as a haircut, this uncertainty problem is generally manageable. The information problem for the individual service buyer is however more serious in the case of more complex professional and medical services that require the input of specialist knowledge. The buyer of such service products is confronted with a structural information asymmetry as to the quality of the service product, sometimes even after the transaction took place. To repair such structural asymmetries government authorities use sometimes strict regulations for certain professional services.

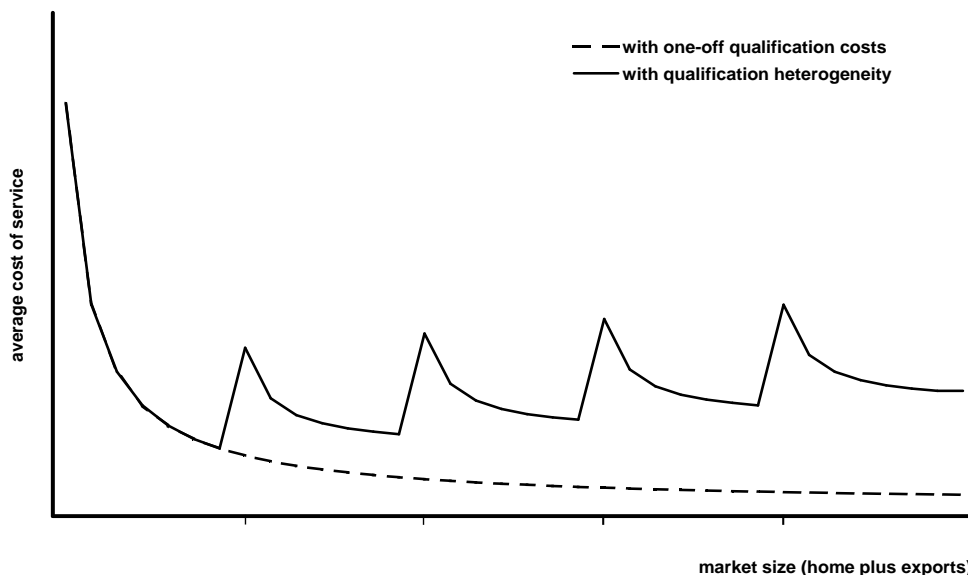
Each authority uses its own system of quality safeguards for domestic consumers and service buyers, also within the European Union. That could perhaps be fine in an autarkic system, but it is certainly a great nuisance in a situation with international trade. Service exporters are confronted with different regulations and requirements in each destination

<sup>2</sup> In particular, Golub and Nicoletti (2004) and Nicoletti *et al.* (2003b). The OECD researchers concluded that a reduction in national regulation to that of the least-regulated country, the United Kingdom, could increase bilateral trade in services in the OECD by about 20%, whereas foreign investment in services stock could increase by 10-20%.

country, and the transaction costs that it creates for export transactions. Barriers result in considerable costs for companies engaging in activities doing business between Member States. These costs can be a prohibitive barrier for entering export markets, in particular for small and medium-sized enterprises.

The real trade burden does *not* result from the mere fact that a national service market is regulated. An important point in this regard is the distinction between regulation intensity and regulation heterogeneity. Suppose that all EU member states have the same type of qualification requirement for providers producing a particular service product. Since qualification costs are mainly fixed costs, it would cost an exporting firm a one-off effort to comply with the qualification criteria. Once having incurred these fixed costs, it could allow the firm to reap economies of scale by expanding its market into additional EU member states. The picture changes when each EU member state has its own qualification criteria, causing additional fixed costs after entering that particular market.<sup>3</sup> Moreover, due to the fact that these fixed qualification costs are specific for that national market, the costs cannot be spread out over production that is destined for other EU markets. The consequence is that the regulation heterogeneity severely restricts intra-European economies of scale in complying with regulations. Figure 1 pictures these effects for a service provider who subsequently enters a number of EU export markets.

**Figure 1 Cost effect of regulation heterogeneity in EU internal market (perspective of exporting firm)**



The presence of national qualification requirements gives rise to country-specific fixed transaction costs for the service exporter. Since qualification requirements and associated costs for legal and other assistance are mostly independent of firm size, these market entry costs deter

<sup>3</sup> We assume that exporters sequentially enter other EU markets, after exploiting the local demand potential of each market.

particularly small and medium-sized firms from entering the service market of another EU member state.<sup>4</sup> Note that small- and medium-sized firms form the large majority of service providers. Implicitly, Figure 1 shows the cost and efficiency gains that can be attained by a system that allows firms to achieve more economies of scale in dealing with regulation requirements.

If EU countries would share a common structure of service regulation, then it is no longer a problem that some member states have a more stern regulation than other member states. The point with a common regulation architecture is that compliance costs made for the more lenient member states are no longer forfeit when entering an export country with tougher regulation (higher regulation intensity). The only thing happening is that some additional compliance costs come on top of it.

Not only service providers are hampered by the heterogeneity in regulatory regimes. An other consequence is that the higher level of average costs will push up the price level of the service, to the detriment of individual consumers and firms purchasing the service. Moreover it restricts the choice possibilities for consumers because it makes foreign service providers refraining from entering the market. Regulation heterogeneity results in a lower level of foreign competition, and it suppresses the influx of foreign service providers with new products and innovative working methods. The result is an upward effect on domestic service prices. In the case of producer services, it leads to higher input prices for EU-based firms.

## **2.2 The proposed EU directive on the Internal Market for Services**

Even if Member States have different preferences for the level of regulation of services industries, they might still adopt a common architecture in service regulation and make more use of mutual recognition of national service regulation. In this way they may benefit from the advantage of broader consumer choice, lower prices and lower costs of inputs. In 2004 the EC has proposed a directive to reduce these impediments for trade in commercial services. The proposed directive has a “horizontal” approach: it applies the same principles to a large part of the EU service sector.<sup>5</sup>

A key element of the directive is the ‘country of origin’ principle. A service has to fulfil the regulation of the country of origin, and may not be hindered by (additional) regulation in the destination country. The introduction of the "country of origin" principle implies that EU Member States apply mutual recognition with regard to domestic regulations of the service exporting country. To strengthen the basis for such mutual recognition, the proposed EU directive includes a number of measures that will stimulate inter-governmental exchange of information on each other's domestic regulations for exported commercial services.

<sup>4</sup> The impact on the establishment of foreign affiliates (FDI, commercial presence) is more or less similar.

<sup>5</sup> Including the commercial service sectors Trade and Distribution, Business Services, Hotels and Restaurants, Personal Services, Construction. Not covered by the proposed Directive are: Banking, Insurance, Transport, and Medical Services.

Since production and consumption of a service often cannot easily be split in time and place, service providers often have to move abroad for delivering the service. The most important channel for providing a service in another country is through setting up a foreign subsidiary (e.g. Karsenty 1999). Some elements of the proposed EU directive target directly at removing barriers for direct investment in the service sector, like the obligation for EU member states to create a single point of contact for foreign firms. A single point of contact will be the place where the foreign service providers can fulfil all their administrative and regulatory obligations. Another element of the directive is a ban on discriminative nationality and residence restrictions for the management of foreign service firms.

### **3 The effects of policy heterogeneity on trade and investment in services: empirical analysis**

We quantify the effect of the proposed EU directive using the regulatory indicators developed by the OECD. We concentrate on product market regulation and restrictions for foreign direct investment (FDI). Based on direct input from member governments the OECD has developed a very detailed database on national product market regulation. We use it to construct a new bilateral indicator of heterogeneity in regulation.

#### **3.1 Regulation heterogeneity indicator**

For a quantitative assessment of the potential effects of reduced policy heterogeneity we needed a numerical measure of policy heterogeneity, and we developed one ourselves. Our measure of inter-country policy heterogeneity builds upon detailed pair-wise comparisons between individual countries for specific aspects of product market regulation. The comparison includes 192 detailed aspects of product market regulation. Data for all these policy aspects could be derived from the OECD Regulation Database. The heterogeneity indicator measures per comparison item whether two countries have identical regulation or not. If it is different then we assign a value of  $1$  to it, and when there is no difference we assign the value of  $0$ . We do this for all 192 items and calculate an average. This yields a numerical indicator for the degree of policy heterogeneity between each pair of individual countries. Based on this procedure we get a matrix of pair-wise indicators for regulation heterogeneity for all EU country combinations. The advantage of using the OECD database was that we can also decompose the policy heterogeneity according to the policy area classification system of the OECD.

Regulation in product markets stretches out over many issues. Not all these issues are covered by the EU directive. However, many regulatory issues in the directive are incorporated in the OECD regulatory indicators and our heterogeneity indicator. Therefore the

implementation of the EU directive can be well represented by changes in our heterogeneity indicator.

Table 1 sketches in which policy domains the EU measures will have their largest impact and how this is likely to affect the different aspects of regulatory heterogeneity in product markets for services. The table is based on a detailed analysis of the concordance between the OECD regulation database and the aspects covered by the proposed EU directive. Because of the uncertainty of the impact of the EU directive on some regulatory items of the OECD regulatory database we use a bandwidth indicating minimum and maximum effects.

**Table 1 Construction of an indicator for the heterogeneity of Product Market Regulation (PMR), based on the OECD Regulation database**

Heterogeneity components and covered policy domains <sup>b)</sup>	Number of comparison items in the database	Weight as % of total number of comparison items for overall PMR heterogeneity indicator	Range of expected Impacts of the EU directive on regulation heterogeneity components <sup>a)</sup>
Regulatory and administrative opacity	13	7.1	reduction 66 – 77 %
Explicit barriers to trade and investment	14	7.7	reduction 73 – 78 %
Other outward barriers	5	2.7	reduction 80 %
Administrative burdens on start-ups	45	24.6	reduction 34 – 46 %
Barriers to competition	61	33.3	reduction 29 – 37 %
State control <sup>c)</sup>	45	24.6	reduction 3- 6 %
<u>Overall PMR heterogeneity indicator</u>	183	100	reduction 31 – 38 %

Notes: a) Based on detailed item-wise consideration of the match between the EU directive and the 183 specific regulation items selected from the OECD database. Annex 2 mentions examples of the various regulatory policy domains. More details will be published in a background report (Kox, Lejour and Montizaan, 2004b) that will appear together with the main document (Kox, Lejour and Montizaan, 2004a).

b) Annex 2 of this report presents examples of regulation elements that are covered by the different policy domains.

c) In the scenario analysis we ignore the small impacts of the EU directive on policy heterogeneity in State control.

### 3.2 Impact of regulation on bilateral service trade

For explaining bilateral commercial service trade<sup>6</sup> between EU member states we use a gravity model<sup>7</sup> as is widely applied for the analysis of bilateral trade patterns. The model explains the bilateral trade from the following variables: the distance and differences in languages between countries (as measure for trade costs), GDP in the countries of origin and destination (as a measure for market size and scale effects), and regulatory barriers. For the latter we investigate both the impact of the level and the heterogeneity of national product market regulations. We

<sup>6</sup> Due to the unavailability of bilateral data on service trade, commercial service trade data includes trade in Trade and Distribution, Business Services, Hotels and Restaurants, Personal Services, Construction, and unfortunately Financial Services. Transport services and travel services are excluded (OECD 2004).

<sup>7</sup> Nahuis (2004) provides an overview of the gravity model and its theoretical foundations.

correct for unobserved variables in both origin and destination country. In the Annex we specify the equation that has been used for the scenario analysis.

The empirical analysis shows that the level and the heterogeneity of regulation between countries has a significant negative effect on bilateral trade in services. Various specifications and estimation methods lead to similar results: the intensity of regulation and its heterogeneity are variables that significantly affect the volume of trade in commercial services:

- A high level of domestic regulation has negative impact on the origin country's services exports and a negative impact on service imports from other EU Member States.
- Heterogeneity in one aspect of product market regulation (namely *Barriers to competition*) has markedly negative impact on trade in commercial services. Heterogeneity in *Administrative barriers for starting-up firms* appear to have a stimulating impact on exports. The reason may be that these barriers make it more difficult for service providers to set up a foreign subsidiary in the other country, thus increasing the relative attractiveness of exporting as a way of delivering services to these markets. Variables for the other components of regulatory heterogeneity have no statistically significant impact on commercial service trade.

### **3.3 Impact of regulation on bilateral direct investment**

For explaining bilateral direct investment stocks we adapted the gravity model with elements of the knowledge-capital model developed by Markusen (2002). The latter model is becoming the standard explanation for direct investment decisions by multinational enterprises. It allows for an integrated treatment of trade and direct investment decisions in international service markets.<sup>8</sup> For explaining bilateral direct investment stocks we use the following variables: the distance and differences in languages between countries (as measure for trade costs), GDP in the country of origin and destination (as a measure for market size and scale effects), the labour productivity level in the service sector of the origin country (as a measure for technological advantage), and regulatory barriers. For the latter we investigate both the level and the heterogeneity of national product market regulations and FDI restrictions. We correct for unobserved variables in origin and destination country. The equation that has been used for scenario analysis in the case of direct investment is specified in the Annex.

The augmented gravity model explains a considerable part of the variation in bilateral FDI stocks in the EU. A strong tendency is that countries with a higher domestic productivity in services tend to invest more in other countries. With regard to the policy variables, we find that:

- Direct investment between EU countries is strongly (and in a negative sense) affected by the regulation level and by inter-country heterogeneity of product-market regulation.

<sup>8</sup> Foreign direct investment is henceforth abbreviated as FDI.



- Countries with the lowest level of *product market regulation* export and invest more abroad than others.<sup>9</sup>
- FDI restrictions in the destination country have a strong negative impact on foreign direct investment.
- Several aspect of the heterogeneity in product market regulation between the origin and destination country have a significant effect on the level of FDI. Heterogeneity in *Barriers to competition* and *State control* have a negative effect on bilateral FDI, while heterogeneity in *Explicit barriers to trade and investment* appears to have a positive effect on direct investment. The reason may be that *Explicit barriers to trade and investment* consists mainly of barriers to exports. Such trade barriers increase the relative attractiveness of direct investment over exports as a channel for providing services to the market of other EU countries.

### 3.4 Impact of the EU proposals: scenario analysis

We used the estimated coefficients from the preferred regressions for bilateral service trade and for bilateral direct investment stocks as the basis for quantifying the potential impact of the EU proposal in the internal market for services. For direct investment, our scenario includes the effect of a lower *level* of national FDI restrictions in the destination countries.<sup>10</sup> We did not account for different implementation stages, but instead we quantified the effects of full implementation of the EU directive, indicating the bandwidth of the resulting maximal effects on service trade and direct investment.

We conclude that the full implementation of the proposed directive could increase commercial service trade by 13 per cent to 35 per cent, while the percentage increase of foreign direct investment in services in the EU is between 16 per cent and 34 per cent.

The bandwidth in outcomes represents the uncertainty in the effect of the EU directive on the reduction in regulatory heterogeneity (cf. Table 1), and the statistical uncertainty with regard to parameter estimates.<sup>11</sup> The increase in trade and FDI is mainly caused by a reduction in the heterogeneity of the *Barriers to competition*. For FDI, also the reduced intensity of FDI restriction is of importance, as shown in Table 2.

<sup>9</sup> It is in line with the Porter hypothesis that countries with open markets become more competitive, and will easier operate in foreign markets.

<sup>10</sup> For the level effect we assume a 30% reduction for investors from other EU member states. This is a conservative estimate, since in our opinion the directive does not aim at abandoning national regulation or lowering national regulation levels. The latter point is widely misunderstood in public debate about the EU directive. The prime aim of the "country of origin" principle is reducing the effects of policy heterogeneity on exporters of services.

<sup>11</sup> We used an interval of plus and minus one standard deviation.

**Table 2 Underlying factors of increase in trade and FDI in commercial services**

	Minimum effects	Maximum effects
<u>Total intra EU trade increase</u>	<b>13</b>	<b>35</b>
of which:		
* Increase due to reduced heterogeneity in Barriers for start ups	-11	-24
* Increase due to reduced heterogeneity in Barriers to competition	24	45
* Increase due to other reductions in heterogeneity	0	15
<u>Total intra EU FDI increase</u>	<b>16</b>	<b>34</b>
of which:		
* Increase due to reduced heterogeneity in Explicit barriers for trade and investment	-5	-11
* Increase due to reduced heterogeneity in Barriers to competition	9	21
* Increase due to less FDI restrictions (level effect) <sup>a)</sup>	12	18
* Increase due to other reductions in heterogeneity	0	5

Note: a) In the scenarios we assume that investors from other EU countries will experience a 30% reduction in the level of FDI restriction of the destination country.

Our analysis concentrated on cumulative direct investment *stocks*, and since the adaptation of FDI stocks occurs mainly through annual FDI flows, the effect on annual direct investment flows will be much higher. To what extent this is the case depends on the length of the adaptation period.

## 4 Conclusions

We derive firm indications that the EU service sector might benefit from the proposed EU directive through a substantial increase in international trade and investment. Assuming full implementation of the proposals, we estimate that bilateral commercial service trade could increase by about 15% to 35%. Commercial service trade forms about 10% of total trade within the EU. This suggest that total trade could increase by 1% to 3%. FDI in services could also increase by about 15% to 35%. The empirical results indicate the presence of substitution effects between trade in services and FDI in services. Less heterogeneity in *Barriers for starting up firms* reduces trade, while less heterogeneity in *Explicit barriers to trade* reduces FDI.

Some caution is warranted in the interpretation of our results. They only indicate an order of magnitude. Moreover, our study focuses only on trade flows and investment stocks. It does not provide a full welfare analysis. Possible domestic (and European) welfare effects may result from price and income effects of the measures, but like the possible effects on innovation and productivity these have not been part of our analysis. Moreover, we did not analyse the trade off between the benefits of regulation and the benefits of extra trade and investment caused by less heterogeneity in regulation.

## References

EC 2002, Report from the Commission to the Council and the European Parliament on the State of the Internal Market for Services, Brussels.

EC 2004, Proposal for a Directive of the European Parliament and of the Council on Services in the Internal Market, SEC(2004) 21, Brussels.

Erkel-Rousse, H., and D. Mirza 2002, Import price elasticities: reconsidering the evidence, *Canadian Journal of Economics* 35, p. 282-306.

Golub, S.S., 2003, Measures of restrictions on inward foreign direct investment for OECD countries, OECD Economic Department Working paper no. 357, Paris.

Karsenty, G., 1999, Just how big are the stakes? An assessment of trade in services by mode of supply, paper presented at Services 2000: New directions in Services Trade Liberalization (Washington DC, June 1-2, 1999).

Kox, H., A. Lejour and R. Montizaan, 2004a, The free movement of services within the EU, CPB Document, The Hague (forthcoming).

Kox, H., A. Lejour and R. Montizaan, 2004b, The intra-EU service market and the proposed EU directive on the Internal Market for services, CPB Research Memorandum, The Hague (forthcoming).

Markusen, J.R., 2002, *Multinational firms and the theory of international trade*, MIT Press, Cambridge MA.

Nahuis, R., 2004, One size fits all? Accession to the internal market, an industry-level assessment of EU enlargement, *Journal of Policy Modelling*, 26, p.p. 571-586.

Nicoletti, G., S. Scarpetta, and O. Boylaud, 2000, Summary indicators of product market regulation with an extension to employment protection legislation, OECD Economic Department Working paper no. 226, Paris.

Nicoletti, G., 2001, Regulation in Services: OECD Patterns and Economic Implications, OECD Economic Department Working paper no. 287, Paris.

Nicoletti, G. and S. Scarpetta, 2003a, Regulation, Productivity and growth: OECD evidence, OECD Economic Department Working paper no. 347, Paris.

Nicoletti, G., S. Golub, D. Hajkova, D. Mirza and K-Y. Yoo, 2003, Policies and international integration: influences on trade and foreign direct investment, OECD Economic Department Working paper no. 359, Paris.

OECD, 2004, OECD Statistics on International Trade in Services; Partner Country Data and Summary Analysis, Paris.

## Annex I Estimation Results

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### Explaining Bilateral trade in commercial services and bilateral direct investment

Estimation method: Transformed least squares with SUR<sup>a</sup>

Dependent variable	Bilateral service exports		Bilateral direct investment	
	Origin country <sup>b)</sup>	Destination country <sup>c)</sup>	Origin country <sup>b)</sup>	Destination country <sup>c)</sup>
<u>Gravity variables</u>				
In GDP Origin	0.85*** (0.033)		0.98*** (0.083)	
In GDP Destination		0.73*** (0.031)		0.68*** (0.075)
In Distance	-0.97*** (0.057)	-0.97*** (0.057)	-1.18*** (0.117)	-1.18*** (0.117)
Language distance	-0.50*** (0.12)	-0.50*** (0.12)	-0.07 (0.131)	-0.07 (0.131)
In( productivity service sector origin country)			0.04*** (0.006)	
<u>Policy variables</u>				
Product market regulation. origin country	-0.48*** (0.066)		-0.92*** (0.156)	
Barriers to entrepreneurship, destination country		-0.02 (0.05)		-0.13 (0.138)
FDI regulation indicator, destination country				-9.33*** (1.435)
Heterogeneity, Barriers for start ups <sup>b)</sup>	0.83*** (0.24)	0.83*** (0.24)	0.84 (0.523)	0.84 (0.523)
Heterogeneity Barriers for competition <sup>b)</sup>	-2.66*** (0.38)	-2.66*** (0.38)	-3.46*** (0.860)	-3.46*** (0.860)
Heterogeneity Regulatory and admin. opacity <sup>b)</sup>	-0.21 (0.19)	-0.21 (0.190)	-0.61 (0.475)	-0.61 (0.475)
Heterogeneity State control <sup>b)</sup>	0.04 (0.36)	0.04 (0.360)	-2.50*** (0.769)	-2.50*** (0.769)
Heterogeneity Barriers to trade and investment <sup>b)</sup>	-0.22 (0.29)	-0.22 (0.29)	1.57*** (0.634)	1.57*** (0.634)
Year dummy 2000	0.008 (0.07)	0.008 (0.07)		
Year dummy 2001	0.006 (0.07)	0.006 (0.07)		
Constant	dummies for destination significant	dummies for origin significant	dummies for destination significant	dummies for origin significant
Number of observations	479	481	246	246
Adjusted R-squared	0.78	0.70	0.69	0.52

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Notes on Annex I:

a) Seemingly Unrelated Regression (SUR) , applying simultaneous estimation of equations for origin and destination countries. All bilateral variables expressed as deviation from the mean. This is done separately from the origin (exporting) country perspective, and from the destination (host) country perspective. Erkel-Rousse and Mirza (2002) impose identical coefficients for distance and language in the equations for origin and destination country. We do the same and also impose identical coefficients for policy heterogeneity for origin and destination country. Absolute value of standard error in brackets. Codes: \*\*\* = significant at 1% level; \*\* = significant at 5% level; \* = significant at 10% level.

b) In case of origin country perspective, we use data expressed as deviations from the mean host (destination) country, thus allowing for estimation of exporter-specific variables.

c) With the destination country perspective, we use data expressed as deviations from the mean exporter (origin) country, thus allowing for estimation of destination-specific variables.

Data source for country regulation data: Nicoletti, Scarpetta and Boylaud (2000); Golub (2003); for bilateral trade data: OECD (2003).

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## Annex II Examples of policy heterogeneity domains based on the OECD Regulation database

Policy heterogeneity domain	More detailed elements of heterogeneity per item
<u>State control</u>	
* Do national, state or provincial government holds equity stakes in business company, in the following sector....	24 different sectors and business activities, like Gas manufacture and distribution, Communication, Insurance, Airlines, Support services for air, land or water transport
* Share or number (in total employment of the business sector) of employees working in publicly-controlled firms with the following types of contracts: ...	Specific types of contracts (e.g. Tenured public employees), 5 answer categories: a=0-0.2; b=0.2-0.4; c=0.4-0.6; d=0.6-0.8; e=d 0.8-1)
<u>Barriers to competition</u>	
* Where laws or regulations restrict the number of competitors allowed to operate a business, which of the following selection procedures are used to ....	Specific items (e.g. assign state concessions), Answer categories: a=license; b= open tendering; c= single tendering; d= selective tendering
* Is it mandatory for suppliers interested in participating in public contracts to register as contractors or be qualified as such?	
* Do national, state or provincial laws or other regulations restrict in at least some markets the number of competitors allowed to operate a business, in the following sector ....	24 different sectors (e.g. Urban, suburban and interurban highway passenger transport, Electricity, Business services, Financial Services, and Motion picture distribution and projection)
* How frequently the following criteria are applied in the awarding of state concessions or franchises: .... ?	Specific items (e.g. allocation to bidder who offers best service at lowest prices), answer categories: B=never; C=sometimes; D=often; E=always
* Are there restrictions (other than capital and technical requirements) on participation in the public tendering procedures?	Answer categories: B=never; C=sometimes; D=often; E=always
* Do these include restrictions based on nationality or residence?	Answer categories: A=Country is not concerned by the question; B=in some sectors; C=never
* Exemption grounds for permitting otherwise illegal mergers	5 specific questions
* Legal condition of entry in ....	Specific domains (e.g. Telecommunications /basic voice/international), answers: A=Open; B= licensed
* Retail distribution: What is the threshold surface limit for (...specific...) laws or regulations to apply?	Specific domains, answer categories: A=under 250m <sup>2</sup> ; B=250-500m <sup>2</sup> ; C=500-1000m <sup>2</sup> ; D = 1000-2000m <sup>2</sup> ; E=above 2000m <sup>2</sup>
* Retail distribution: Are professional bodies or representatives of trade and commercial interests involved in (... specific..) licensing decisions?	Specific items
* Please indicate (if possible) the share of public procurement by central government entities assigned through open tendering procedures :	Specific sectors (e.g. services), Answer categories: A=0-25; B=25-50; C=50-75; D=75-100

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\* Is there an administrative monitoring mechanism checking compliance with public procurement tendering rules at all government levels?

#### Regulatory and administrative opacity

\* Does government policy impose specific requirements in relation to the following aspects of regulatory quality assurance: ..... ?

Specific issues (e.g. Transparency/freedom of information), answer categories: A=government-wide; B= in some sectors; C=No

\* Are there systematic procedures for making regulations known and accessible to affected parties?

\* Do affected parties have the right to appeal against adverse enforcement decisions in individual cases?

Answer categories: A=in all cases; B=in some cases; C=no

\* Are there single contact points for getting information on licenses and notifications ?

#### Explicit barriers to Trade

\* Are there any specific provisions which require that regulations be published to the public at the international level?

\* Are appeal procedures available to foreign parties?

\* When business practices are perceived to restrict competition and hence prevent effective access of foreign firms (foreign owned or controlled) to such markets, can the latter have redress: Through ... ?

4 specific questions (e.g. through competition agencies, through trade policy bodies)

#### Administrative Barriers on Start-ups

\* Retail distribution: Procedures pertaining to the establishment of new outlets for selling food : ...

Specific issues, e.g. Registration in commercial register

\* Road freight : In order to ..... do you need to obtain a license (other than a driving license) or permit from the government or a regulatory agency ?

Specific issues, e.g. operate a national road freight business

\* Retail distribution: Procedures pertaining to the establishment of new outlets for selling food : ...

Specific issues, e.g. Licenses or permits needed for outlet siting

\* Retail distribution : What are the minimum requirements for registration :....

Specific requirements, e.g. Management or professional record/degree

\* Retail distribution : Does the registration office have statutory deadlines for approving and/or confirming registration?

\* Retail distribution : In the case of this hypermarket : How many levels of government would be involved in the application and licensing procedures?

Answer categories: A=0; B=1; C=2-5; D=above 5

\* Enterprise creation : Maximum number of procedures (pre & post): corporation

Answer categories: A=0-5; B=5-10;C=10-20;D=above 20

\* Enterprise creation : direct and indirect cost (minimum ECU): corporation

Answer categories: A=0-1000; B=1000-2000; C=2000-3000;D=above 3000

\* Enterprise creation : minimum capital requirements (minimum ECU): corporation

Answer categories: A=under 10000; B=10000-25000; C=25000-50000; D=50000-75000; E=above 75000

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