WORKING PAPER

3/2017

What drives trade in services? Lessons from the Nordics

Hildegunn Kyvik Nordås
Economics

What drives trade in services? Lessons from the Nordics

Hildegunn Kyvik Nordås[*],

OECD Trade and Agriculture Directorate, Paris, France
E-mail: Hildegunn.Nordas@oecd.org

and Swedish Business School at Örebro University,
E-mail: Hildegunn.Kyvik-Nordas@oru.se

April 11 2017

Abstract

The contribution of this paper to the literature is to make an empirical assessment of the relative importance of non-actionable institutional and cultural factors and actionable policy measures for services market integration, using the Nordic countries as a case study. It finds that intra-Nordic trade in services is about 2.5 times larger than predicted from the gravity model. This may not be surprising since the Nordics are perceived as a cluster of similar countries, but a detailed analysis of the Nordics' policy framework, trade agreements, institutional and cultural factors concludes that these cannot explain the intra-Nordic bias. An unexplained "Nordicness" factor of this magnitude indicates that integration of services markets may rely on deeper institutional and cultural factors that do not readily lend themselves to trade negotiations. Conversely, trade agreements may yield the largest benefits among countries that share common cultural and institutional features.

Keywords: Services trade, trade barriers, regulation

JEL: F13, F14

I. Introduction

The Nordic countries are often portrayed as a cluster of economic and social success stories with strong institutions, balanced budgets and as "staunch free traders" as a survey by the Economist put it.[1] Likewise, a comprehensive and widely cited study of Denmark, Finland and Sweden entitled "The Nordic Model: Embracing globalization and sharing risks" (Andersen et al., 2007) made the same point. This paper finds that the Nordics can indeed be characterized as a cluster when it comes to trade in services, but not because they are "staunch free traders". Instead they seem to constitute a cluster because of their "Nordicness". Thus, after having controlled for all political, cultural, institutional and geographical commonalities found in the literature to be determinants of bilateral trade, the Nordics still trade about 2.5 times more with each other than predicted by the gravity model.

This study defines the Nordics as Denmark, Finland, Iceland, Norway and Sweden. The intra-Nordic bias may not come as a big surprise given the perception of the Nordics as a cluster of similar countries with free trade amongst themselves. The Nordics also share a common and unique "Nordic" legal origin which is a subset of civil law (La Porta et al., 2008). However, the Nordics are also quite different in many important respects. Denmark, Norway and Sweden are constitutional kingdoms, while Finland and Iceland are republics. Regarding international relations, Finland is the only Nordic member of the Eurozone; Sweden and Denmark are members of the European Union (EU) but have kept their own currencies; Iceland and Norway are members of the European Economic Area (EEA) but not EU. Finally, Denmark, Iceland and Norway are NATO members while Finland and Sweden are not.

To the best of my knowledge the intra-Nordic bias in services trade has not been observed and explained in the literature before. It sheds light on the limits of services trade policy in shaping services trade flows and services market integration. Why, for instance does Finland trade relatively more with fellow Nordic countries outside the Eurozone than with fellow Eurozone countries? By the same token, why does Sweden or Denmark trade relatively more with Norway than their fellow EU members? In general what does it take to fully integrate services markets? Are some countries more

---

[1] "The Nordic countries, the next supermodel", The Economist 02.02.2013.

suitable trading partners than others? These are important questions in the face of a host of new trade agreements at various stages of being negotiated or ratified. Having a better sense of the importance of non-actionable factors in shaping markets allows more realistic assessments of the impact of trade policy and trade agreements.

Services are the new frontier of international trade and trade policy making. Renewed interest in the topic stems from the impetus from recent and ongoing services trade negotiations, including the Trans-Pacific Partnership (TPP) and the Transatlantic Trade and Investment Partnership (TTIP) between the European Union and USA, where services take a centre stage, and a plurilateral trade in services agreement (TiSA) being negotiated between WTO members, but outside the WTO. Services trade negotiations can be difficult both technically and politically because services production and transactions are by their nature relation-specific, and complete contracts are less feasible than what is the case for the exchange of goods. These features imply that services trade agreements must cover a broad range of policy areas to ensure meaningful market access. Services agreements thus typically comprise rules on the establishment of foreign enterprises in the local economy, rules for cross-border movement of people providing services, procedures for licensing and recognition of qualifications, and for some sectors also ex ante pro-competitive regulation. Access regulation imposed on incumbents with significant market power in the telecommunications sector is the most prominent example of the latter.[2]

The contribution of this paper to the literature is to make a first empirical assessment of the relative importance of non-actionable institutional and cultural factors and actionable policy measures for services market integration. Given the high expectation as far as gains from recent and ongoing mega regional trade agreements are concerned, this is an important issue for policy makers to consider when assessing the impact on such agreements and not least when selecting partners for future agreements. The rest of the paper is organised as follows: Section II presents a profile of the Nordic countries' services trade patterns while Section III portrays their services trade policies. An empirical

---

[2] The WTO reference paper on telecommunications addresses access and interconnection regulation and similar, more updated provisions are found in a number of regional trade agreements, for instance the Australia-US free trade agreement.

assessment of the intra-Nordic bias is presented in Section IV, which also provides an estimate of how regulatory similarities contribute to the Nordic bias. Section V summarises and concludes.

II. A profile of the Nordics' services trade

According to the World Development Indicator database, services trade as a share of GDP ranked from 44% in Iceland to 19.9% in Norway compared to an OECD average of 12.9% in 2013. The shares in Denmark, Sweden and Finland were 39.9%, 23.1% and 20.8% respectively. Denmark and Sweden have exhibited overall services trade surpluses since the year 2000, Finland and Norway's services trade are roughly in balance while Iceland saw a switch from deficits to surpluses following the financial crisis in 2008.

Figure 1 shows the Nordics' services trade by trading partner for 2014. Sweden, closely followed by Denmark is the largest services exporter in absolute terms. Intra-Nordic services trade is important for all the Nordic countries, particularly for Sweden where Norway alone accounted for almost 14% of total services exports. Bilateral trade between Denmark and Sweden is also substantial, accounting for about 10% of Denmark's trade in services. Bearing in mind that the Nordic countries combined account for less than 2% of global GDP, the share of intra-Nordic trade is exceptionally high.

Figure 1. Total services trade by trading partner, 2014
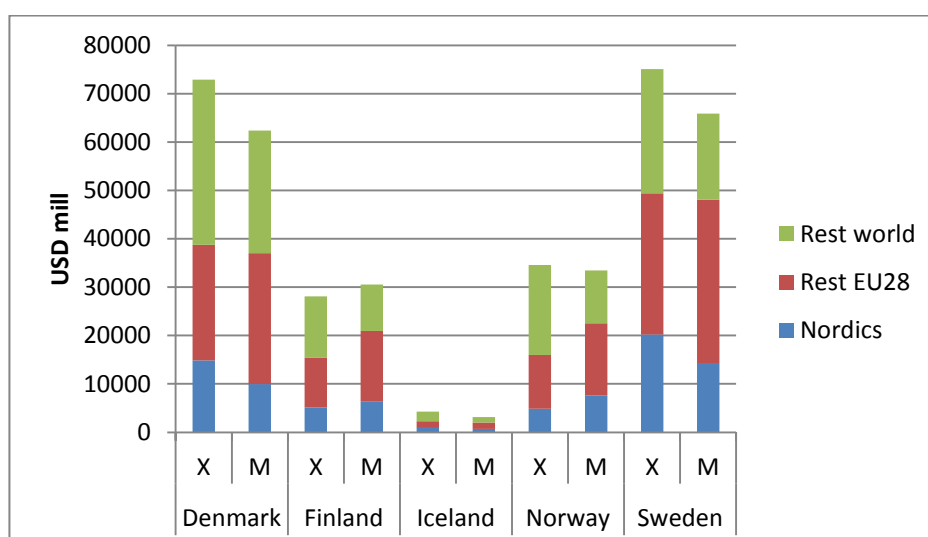
Sources: OECD Trade in Services by Partner Country data base for Denmark, Sweden and Finland; Statistics Norway for Norway and Statistics Iceland for Iceland. For Norway and Iceland figures are converted from local currency to USD using the average annual exchange rate quoted by the central bank in each country. Note: X and M denote exports and imports respectively.

EU is a more important source of services imports than as a destination for exports for all the Nordic countries. This probably has to do with the composition of services trade in the Nordics. Table 1 depicts the five largest services exporting and importing sectors. The table also includes the five largest services exports and imports for EU28 for comparison.

Table 1. Five largest services exports and imports, 2012

Five largest services exports	% of total	Five largest services imports	% of total
Denmark			
Sea transport	50.9	Sea transport	40.9
Personal travel	8.1	Personal travel	12.5
Air transport	5.2	Other transport	5.9
Merchanting	4.6	Air transport	5.3
Road transport	3.9	Road transport	5.3
Finland			
Computer services	20.5	Research and development	14.3
Merchanting	14.3	Sea transport	12.5
Royalties and license fees	11.7	Personal travel	12.4
Personal travel	9.8	Computer services	7.8
Sea transport	5.2	Advertising, market research	6.8
Iceland			
Air transport	42.7	Personal travel	22.4
Personal travel	24.0	Air transport	19.1
Royalties and license fees	4.3	Operational leasing services	12.6
Sea transport	4.2	Sea transport	10.1
Merchanting	3.7	Business travel	5.6
Norway			
Sea transport	29.3	Personal travel	26.0
Personal travel	12.5	Sea transport	10.5
Agricultural, mining and on-site processing services	10.5	Agricultural, mining and on-site processing services	10.4
Other business services n.i.e.	8.2	Business travel	8.7
Other transport	7.9	Other business services n.i.e.	8.4
Sweden			
Merchanting	13.6	Personal travel	20.5
Computer services	11.1	Services between related enterprises	9.0
Services between related enterprises	9.7	Research and development	8.9
Royalties and license fees	9.5	Business travel	7.9
Personal travel	8.8	Sea transport	7.5
EU27			
Personal travel	15.9	Personal travel	16.9
Sea transport	8.3	Sea transport	7.7
Computer services	6.9	Royalties and license fees	7.5
Air transport	6.3	Other transport	6.8
Other transport	5.3	Air transport	6.5
Royalties and license fees	5.3	Computer services	4.0

Source: OECD

Globally transport and travel account for close to 50% of total services trade (WTO, 2014). This is also reflected in the Nordic countries' trade patterns. There are, however, some interesting

features in these profiles. First, services trade, especially exports, are concentrated on a few sectors. Denmark and Iceland in particular have heavily concentrated exports in sea and air transport respectively.

Second, the same services tend to figure among the top five both for imports and exports in each country. In some cases exports and imports seem to be complementary. For instance, Iceland's largest exports are air transport services, which drive import demand for operational leasing services of air craft. By the same token, Finland's high-technology industries engage in extensive international knowledge flows, where royalties and license fees constitute its third largest exports and R&D the largest import category.

Third, the services trade patterns appear to reflect structural features of each country. Finland specialises in high-technology industries, notably communications equipment, and its services trade appear to support and complements this. Sweden hosts a number of large multinational firms which is reflected in the prominence of "Services between related enterprises" on both sides of its balance of payments. Norway is a significant exporter of oil and gas, which explains the prominence of "Agricultural, mining and on-site processing services" in its trade. These services entail oil field services which are both imported and exported. By the same token "Other transport" contains pipeline transport of oil and gas.

Finally, the prominent role of merchanting in all the Nordic countries' except Norway's exports is worth noticing. Merchanting is defined as the purchase of a good by a resident from a non-resident and subsequent resale of the good to another non-resident. During the process the good does not leave or enter the compiling economy. Activities included under this heading are commodity brokers and commission agents dealing in for instance ships and aircraft. With the emergence of on-line trading platforms this somewhat obscure and in the trade literature largely ignored services category has risen to prominence.

To summarize this section, services trade accounts for a large share of GDP in the Nordic countries, but less so in Norway. Intra-Nordic flows constitute a much larger share of this trade than

one would expect from the size of the economies, and each of the Nordic countries specializes in quite different services that reflect their overall industrial structure.

III. A profile of the Nordics' services trade policy

The Nordic countries have chosen different economic relationships to the rest of the world. Denmark was the first Nordic country to join the European Union in 1973, followed by Sweden and Finland in 1995, while Norway and Iceland have remained outside the European Union, but have joined the European Economic Area (EEA). Only Finland has joined the Eurozone. Information on services trade policy draws on the OECD Services Trade Restrictiveness Indices (STRI) and database.[3] The indices reflect de jure services trade restrictions which are catalogued, scored and weighted to produce composite indices taking values between zero and one. Zero represents a fully open sector and one a completely closed market.

The highest average score in the STRI database is found in air transport. This is not surprising since air transport is the only services sector that is outside the scope of the GATS. All countries included in the database have restrictions on foreign investment in the sector. In addition many countries reserve domestic traffic to national air lines. Legal services, accounting and auditing are also relatively restricted sectors. The related professions are regulated in most countries. Furthermore, they are often self-regulated by professional bodies which issue and control the number of licenses and monitor professional conduct. It is also common to reserve the shares in professional services companies for locally licensed professionals.

Among the Nordic countries, Denmark stands out as the least trade restrictive and exhibits a lower score than average in all but two sectors (legal services and insurance). At the other end of the scale is Iceland, which scores above the average in 20 out of 21 sectors. The missing sector in Iceland's STRI profile is railways, since the country does not have a railway network. Finland and Norway score above average in nine out of 22 sectors, and Sweden in three sectors. Thus, contrary to

---

[3] The STRI database, indices, methodology, country notes, sector notes etc. are available at http://oe.cd/stri. It contains information on all the OECD countries and the major emerging economies (Brazil, China, India, Indonesia, Russia and South Africa).

the perceptions in the popular literature, the Nordics, with the exception of Denmark, have relatively high barriers to trade and competition in the services sectors.

Figure 2. The Nordics STRI scores compared to sample max, min and average, selected sectors
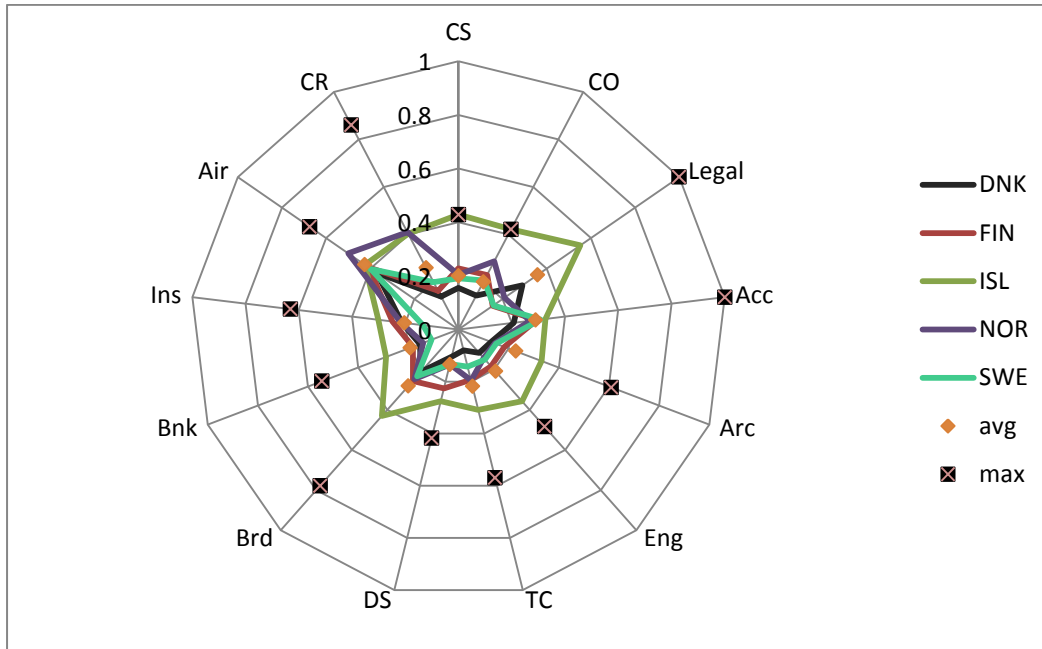
Source: the OECD STRI regulatory database and indices.

Note: Max refers to the country with the highest score for each sector. The sectors are air transport (Air) courier services (CR), computer services (CS), construction (CO), legal services (Legal), accounting and auditing (Acc), architecture (Arc), engineering (Eng), telecommunications (TC), distribution services (DS), broadcasting (Brd), commercial banking (Bnk), insurance (Ins).

The score of the Nordic countries relative to sample average and the sample maximum in selected sectors is illustrated in Figure 2. The dark grey line representing Denmark is well inside the markers signifying the average, except in insurance. Iceland is well above average, notably in broadcasting, courier services, and financial services. Courier services are typically provided by private express delivery firms in competition with the postal services. In Iceland, however, the postal services continue to have a monopoly on letters below 50 grams, which contributes to the high score.[4] Again with the exception of Denmark, all the Nordic countries score above average in distribution services. An important contributor to this is a state monopoly in retail distribution of alcoholic beverages.

---

[4] Norway also had a postal monopoly on letters until the first of January 2016. This is still captured in the indices which are from 2015.

The Nordics tend to have a relatively high level of general horizontal trade restrictive regulations and less sector-specific limitations. For instance, with the exception of Denmark, all the Nordics require that the manager (CEO) and a minimum proportion of board members of corporations are resident in the country, or after having joined the European Union or the European Economic Area (EEA), residency in an EEA country suffices. With the exception of Norway, the Nordics also have restrictions on establishing branches from non-EEA countries.

On the liberal side, the Nordics have in common that they have relatively few regulated professions. According to an EU database the average number of regulated professions is 140 for the Nordics compared to the overall average of 157 (Nordås, 2016a). Among the four professional services included in the STRI database none of the Nordics regulate architecture and engineering, although Iceland protects the architect and engineering titles. Only five other countries in the sample do not regulate architecture (Chile, Ireland, the Netherlands, Switzerland and the UK). Engineering tends to be less regulated across the sample with 11 non-Nordic countries with no licensing requirement for engineers, except for a few narrowly defined engineering functions, for instance the person in charge of a building project. Finland is the only country in the STRI database that does not regulate legal services.

The role of the state in commercial services activities differs widely between the Nordic countries, but as a group they score higher than average. The average number of sectors in which the state controls at least one of the ten largest firms is 6.6 in the sample of 42 countries. The US represents the lowest state involvement as measured by this metrics, with a major state-owned company only in courier services (United States Post Office). China has the largest state involvement with state-owned enterprises among the ten largest firms in 17 out of 22 sectors. With a major state enterprise in 11 out of 22 sectors, Norway is second only to China on this measure, but shares the second place with India, Indonesia and Russia.[5] All the Nordic countries, as well as most of the other countries in the STRI database, have state-owned enterprises in transport, courier (the postal service)

---

[5] The ten sectors with state-owned enterprises in Norway are construction, courier services, air transport, road transport, rail transport, distribution, broadcasting, telecommunications, logistics cargo handling, banking and insurance.

and broadcasting.[6] In the transport sector, state-owned enterprises are most common in rail and air transport. As noted, all the Nordics except Denmark have a state-monopoly in retail distribution of alcoholic beverages. These enterprises are among the ten largest retailers in all four countries. No other OECD country has a state monopoly for distribution of alcohol, although Canada has similar arrangements in some provinces.

A more rigorous measure of regulatory similarities and differences across countries has been constructed from the STRI database as follows: For each sector a matrix where each cell contains the entry of country *i* and country *j* on measure *m* was created. If the country pair entailed in the cell has the same answer to measure *m,* the cell is scored zero. If the two counties have a different answer, the cell is scored one. For each country pair and each sector a heterogeneity index is created by calculating a weighted average of the scores.[7] If two countries have exactly the same regulations in a sector, the heterogeneity index is zero, regardless of the level of trade restrictiveness. If two countries have different entries on all the measures in the database, then the heterogeneity index is one. The average regulatory heterogeneity indices for the Nordics, i.e. the observations where both countries in a country pair are Nordic, are presented and compared to the rest of the sample in Table 2.

Table 2. Regulatory heterogeneity by sector, sample means, selected sectors, 2015

	(1) Nordic	(2) Non-Nordic	Pr((1)>(2))	(3) EU	(4) non-EU	Pr((3)> 4))
Computer services	0.287	0.316	0.111	0.267	0.330	0
Architecture	0.221	0.310	0	0.277	0.318	0
Engineering	0.227	0.297	0.001	0.269	0.304	0
Accounting	0.216	0.290	0	0.232	0.305	0
Legal services	0.274	0.317	0.023	0.289	0.324	0
Distribution services	0.200	0.208	0.286	0.160	0.221	0
Telecommunications	0.226	0.295	0.000	0.194	0.323	0
Courier services	0.235	0.267	0.013	0.185	0.289	0
Insurance	0.194	0.252	0	0.160	0.277	0
Commercial banking	0.214	0.279	0	0.200	0.301	0
Construction	0.276	0.275	0.507	0.220	0.291	0
Air transport	0.254	0.210	0.964	0.101	0.242	0
Maritime transport	0.253	0.292	0.000	0.242	0.301	0

Note: A t-test using the Welch formula is used.

---

[6] Only Greece in the sample has privatized the postal services and only Brazil, Greece, Luxembourg, Slovakia and the US do not have a major government-owned broadcaster.
[7] See Geloso Grosso et al. (2015) and Nordås (2016b) for a description of the methodology for creating the STRI indices and regulatory heterogeneity indices respectively.

It is first noticed that the Nordic countries have a statistically significant lower average heterogeneity than the sample mean for a number of sectors, but not for distribution services, construction and air transport. In fact, for air transport the Nordics are less similar than the sample mean. For comparison the average regulatory heterogeneity indices for EU countries compared to non-EU countries is presented in columns (3) and (4). As one would expect, the internal market has generated a higher degree of regulatory similarity than the average, but EU countries are nevertheless far from fully harmonised. It is also noted that the EU countries are more similar than the Nordic countries in all sectors except the four professional services (accounting, legal services, architecture and engineering).

IV. Is there an intra-Nordic bias?

Figure 1 suggests that the Nordics trade more with each other than what could be expected from their relative market size. But it is well known that countries that share a common border, common language and other institutional, cultural and geographical commonalities tend to trade more with each other. The question explored in this section is whether the Nordic bias remains after these factors have been taken into account.

The gravity model of international trade is the standard theoretical framework for analysing this question. Although developed with merchandise trade in mind, several studies have found that it successfully explains services trade in a similar manner as goods trade (Francois and Hoekman, 2010). Simply put, who trades how much with whom, is determined by relative market size, relative geographical, institutional, cultural and political distance and of course relative trade costs. It is one of the most robust empirical relationships in international economics and can be expressed as follows:

$$X_{ij} = \frac{y_i y_j}{y^w} \left(\frac{\tau_{ij}}{P_i P_j} \right)^{1-\sigma}$$

$$(1)$$

The left-hand side variable represents exports from country i to country j, the first ratio on the right-hand side is the product of the two countries' GDP relative to world GDP, while the second ratio represents bilateral trade costs relative to trade costs with all other potential trading partners. The denominator contains two price indices which are constant elasticity of substitution (CES) aggregates

of all outward and inward trade costs respectively. The gravity equation predicts that bilateral trade between two countries is proportional to their size adjusted for relative trade costs, raised to an exponent that reflects the elasticity of substitution between products from different origins. The bilateral trade cost variable is a composite of several measures that would capture geographical, institutional and cultural impediments to trade.

$$\tau_{ij} = dist_{ij}^{\alpha1} * contig_{ij}^{\alpha2} * lang_{ij}^{\alpha3} * colony_{ij}^{\alpha4} * leg_{ij}^{\alpha5} * samec_{ij}^{\alpha6} * RTA_{ij}^{\alpha7} \qquad (2)$$

The variables from right to left are bilateral geographic distance, whether or not the country pair has a common land border, whether or not the country pair shares a common language, whether or not they share a common colonial past, whether or not they share the same legal origin, whether or not they have ever been parts of the same country and whether or not they are part of the same regional trade agreement. The latter is assumed to reduce trade costs by providing partners preferential treatment and recognition of their home country regulation.

There is a large literature on econometric techniques to obtain unbiased estimates of the parameters. As recommended, I use Poisson pseudo maximum likelihood estimates, which under most circumstances yield unbiased results (Santos Silva and Tenreyro, 2006) to explore the extent to which the Nordic bias depicted in Figure 1 goes beyond what the gravity model predicts. The equation can be estimated either on a cross-section of observations or on a panel covering the same sectors and country pairs over a period of time. From the equation we see that world output in each period does not vary with country pair and can be captured in a constant term. Data on the price indices in the denominator are not readily available, but since these are country specific, it is common to control for them by introducing country fixed effects in cross-section regressions and country-year fixed effects in panel regressions. These also absorb the income or expenditure levels in each country and all unobserved country-specific features, including unilateral or most favoured nation trade policy measures. The baseline regression equation then becomes:

$$X_{ijt} = \exp\{\alpha_0 + \alpha_1 lndist_{ij} + \alpha_2 border_{ij} + \alpha_3 lang_{ij} + \alpha_4 colony + \alpha_5 leg_{ij} + \alpha_6 samec_{ij} +$$

$$\alpha_7 RTA_{ijt} + \gamma_{it} + \delta_{jt} + \varepsilon_{ijt}\} \qquad (3)$$

Table 4 presents the baseline results for total services trade, and the services sectors for which data are available for a sufficiently large sample of countries. These are (EBOPS 2002 categories in brackets): construction services (249), computer services (262), postal and courier services (246) telecommunications (247), financial services (260), insurance (253); and transport services (air (210), maritime freight (208)). Regressions are run for each of these sectors as well as a pooled regression where sector dummies are added.

Aggregate trade in services is well explained by the gravity equation with all explanatory variables taking the expected sign and all except common legal origin being statistically significant. With country-year fixed effect the regression equation explains more than 90% of the variation in services trade. The results suggest that being partners to a common regional trade agreement on average is associated with 90% more trade (the exponential of 0.652 less one). Some services sectors seem, however, to defy gravity to some extent. Distance does not significantly affect trade in courier services, computer services, insurance and maritime transport. Sharing a common border, a common legal origin and being members of the same RTA strongly affects trade in courier services. Trade in computer services and insurance are more sensitive to institutional and policy determined factors, including sharing a colonial past, having ever been the same country and being part of an RTA, while trade in maritime transport services are explained mainly by the country-specific variables captured by the dummies.[8] The only sector for which RTAs appear not to be important is construction services. This is a sector for which international trade is dominated by a few exporting countries and the gravity equation explains less than 60% of the variation.[9]

Having established that the gravity equation explains bilateral trade in services reasonably well at an aggregate level and for some of the individual services sectors, I add a dummy taking the value of unity if both countries are Nordic and zero otherwise. It captures the extent to which the Nordics constitute a distinct group. The results are depicted in Table 5.

---

[8] Maritime freight transport is a truly global sector where ships are commonly registered in countries that may not be the main origin or destination of the freight being transported. See for instance various issues of UNCTAD's Review of Maritime Transport http://unctad.org/en/pages/publications/Review-of-Maritime-Transport-(Series).aspx

[9] According to WTO trade statistics, the 10 largest exporters accounted for about 85% of global exports of construction services in 2013.

Table 4. Gravity regressions of services trade, baseline

	Total services	Construction	Courier	Computer services	Telecommunications	Banking	Insurance	Air transport	Maritime transport	Pooled
Ln distance	-0.328***	-0.495***	0.146	-0.118	-0.568***	-0.227**	-0.129	-0.334***	-0.084	-0.276***
	(0.049)	(0.118)	(0.199)	(0.123)	(0.078)	(0.097)	(0.126)	(0.067)	(0.108)	(0.066)
Contiguous	0.444***	0.105	1.036***	0.16	0.423***	0.134	0.201	0.076	0.164	0.167
	(0.098)	(0.174)	(0.317)	(0.183)	(0.135)	(0.213)	(0.230)	(0.172)	(0.169)	(0.131)
Common language	0.217*	0.810***	-0.065	-0.292	-0.063	0.969***	0.638***	0.12	0.424**	0.482***
	(0.114)	(0.261)	(0.336)	(0.255)	(0.146)	(0.225)	(0.218)	(0.170)	(0.181)	(0.151)
Common colony	0.275**	0.465*	-0.16	0.434**	0.393***	0.109	0.557**	0.745***	0.007	0.453***
	(0.107)	(0.245)	(0.363)	(0.193)	(0.114)	(0.172)	(0.225)	(0.120)	(0.193)	(0.116)
Common legal origin	0.092	0.185	0.819***	0.151	0.220*	-0.346	0.108	0.04	-0.258**	-0.163
	(0.081)	(0.173)	(0.237)	(0.121)	(0.120)	(0.240)	(0.136)	(0.144)	(0.125)	(0.115)
Same country	0.703***	0.957***	0.533	1.064***	0.568**	0.585*	1.683***	0.667***	0.153	0.683***
	(0.181)	(0.254)	(0.392)	(0.211)	(0.225)	(0.342)	(0.321)	(0.197)	(0.365)	(0.205)
RTA	0.652***	0.4	1.426***	1.424***	1.124***	0.524**	1.068***	0.559***	0.782***	0.512***
	(0.132)	(0.287)	(0.545)	(0.233)	(0.206)	(0.228)	(0.265)	(0.161)	(0.246)	(0.159)
Pseudo R^2	0.903	0.593	0.809	0.867	0.841	0.902	0.854	0.862	0.865	0.722
N	19820	14552	10667	14376	11463	15711	14878	13550	11900	128292

Note: The regressions are run using an unbalanced panel with data from 2000-2014, including 30 reporter countries and 63 partner countries. Estimates use Poisson Pseudo Maximum likelihood, using country-time fixed effects for reporters and partners and robust standard errors clustered on country pairs. The pooled regression also entails sector fixed effects. ***, ** and * signify statistical significance of 1, 5 and 10% levels respectively.

Table 5. Gravity regressions of services trade, add Nordics

	Total services	Construction	Courier	Computer services	Telecommunications	Banking	Insurance	Air transport	Maritime transport	Pooled
Ln distance	-0.300***	-0.477***	0.558***	-0.047	-0.454***	-0.215**	-0.109	-0.256***	-0.058	-0.241***
	(0.048)	(0.117)	(0.165)	(0.131)	(0.077)	(0.096)	(0.127)	(0.062)	(0.114)	(0.066)
Contiguous	0.426***	0.097	1.048***	0.173	0.400***	0.103	0.204	0.059	0.176	0.163
	(0.092)	(0.171)	(0.195)	(0.175)	(0.120)	(0.205)	(0.226)	(0.156)	(0.173)	(0.124)
Common language	0.265**	0.802***	0.304	-0.183	0.052	0.998***	0.659***	0.263*	0.456**	0.527***
	(0.112)	(0.259)	(0.294)	(0.246)	(0.143)	(0.223)	(0.216)	(0.142)	(0.184)	(0.147)
Common colony	0.255**	0.446*	-0.559	0.358*	0.309***	0.087	0.539**	0.709***	0	0.427***
	(0.105)	(0.245)	(0.363)	(0.192)	(0.116)	(0.168)	(0.225)	(0.113)	(0.193)	(0.111)
Common legal origin	0.014	0.115	0.173	-0.016	0.03	-0.393	0.07	-0.193**	-0.311**	-0.258**
	(0.078)	(0.183)	(0.197)	(0.122)	(0.114)	(0.244)	(0.137)	(0.096)	(0.140)	(0.115)
Same country	0.749***	0.998***	1.051***	1.191***	0.715***	0.635*	1.710***	0.692***	0.15	0.740***
	(0.179)	(0.258)	(0.346)	(0.215)	(0.223)	(0.344)	(0.322)	(0.184)	(0.375)	(0.206)
RTA	0.680***	0.407	1.469***	1.461***	1.192***	0.531**	1.092***	0.666***	0.823***	0.549***
	(0.130)	(0.286)	(0.402)	(0.234)	(0.201)	(0.225)	(0.266)	(0.154)	(0.242)	(0.157)
Both Nordic	1.153***	0.741**	3.713***	1.436***	1.784***	2.488***	1.659***	3.271***	0.33	1.303***
	(0.206)	(0.351)	(0.441)	(0.315)	(0.303)	(0.382)	(0.384)	(0.318)	(0.337)	(0.249)
Pseudo R^2	0.906	0.594	0.832	0.871	0.848	0.905	0.855	0.88	0.865	0.724
N	19820	14552	10667	14376	11463	15711	14878	13550	11900	128292

Note: The regressions are run using an unbalanced panel with data from 2000-2013, including 28 reporter countries and 55 partner countries. Estimates use Poisson Pseudo Maximum likelihood, using country-time fixed effects for reporters and partners and robust standard errors. The pooled regression also entails sector fixed effects. ***, ** and * signify statistical significance of 1, 5 and 10% respectively.

Table 6. Gravity regressions adding European Economic Area (EEA) dummy

	Total services	Construction	Courier	Computer services	Telecommunications	Banking	Insurance	Air transport	Maritime transport	Pooled
Ln distance	-0.252***	-0.428***	0.497***	-0.034	-0.440***	-0.124	-0.042	-0.250***	-0.114	-0.214***
	(0.051)	(0.113)	(0.177)	(0.155)	(0.079)	(0.118)	(0.148)	(0.065)	(0.117)	(0.070)
Contiguous	0.441***	0.135	1.006***	0.179	0.410***	0.082	0.224	0.064	0.124	0.174
	(0.094)	(0.178)	(0.203)	(0.182)	(0.119)	(0.213)	(0.229)	(0.160)	(0.178)	(0.126)
Common language	0.300***	0.807***	0.288	-0.175	0.061	1.026***	0.712***	0.267*	0.441**	0.536***
	(0.109)	(0.254)	(0.296)	(0.245)	(0.145)	(0.228)	(0.210)	(0.142)	(0.182)	(0.146)
Common colony	0.289***	0.475**	-0.568	0.362*	0.318***	0.177	0.545**	0.715***	-0.043	0.447***
	(0.108)	(0.238)	(0.369)	(0.193)	(0.117)	(0.172)	(0.226)	(0.117)	(0.195)	(0.111)
Common legal origin	-0.009	0.103	0.209	-0.021	0.024	-0.406*	0.053	-0.194**	-0.285**	-0.265**
	(0.078)	(0.186)	(0.199)	(0.127)	(0.115)	(0.231)	(0.138)	(0.095)	(0.135)	(0.113)
Same country	0.744***	1.009***	1.036***	1.197***	0.719***	0.556	1.742***	0.690***	0.183	0.727***
	(0.180)	(0.259)	(0.344)	(0.219)	(0.223)	(0.349)	(0.329)	(0.185)	(0.360)	(0.204)
RTA	0.561***	0.246	1.685***	1.410***	1.137***	0.426*	0.921***	0.646***	1.104***	0.485***
	(0.136)	(0.438)	(0.559)	(0.241)	(0.248)	(0.234)	(0.286)	(0.177)	(0.295)	(0.174)
Both EEA	0.381***	0.404	-0.426	0.125	0.112	0.641*	0.575	0.05	-0.669	0.213
	(0.131)	(0.558)	(0.605)	(0.402)	(0.238)	(0.330)	(0.459)	(0.210)	(0.421)	(0.184)
Both Nordic	1.178***	0.732**	3.630***	1.446***	1.788***	2.574***	1.702***	3.270***	0.3	1.316***
	(0.210)	(0.349)	(0.449)	(0.326)	(0.307)	(0.370)	(0.394)	(0.319)	(0.331)	(0.249)
Pseudo R^2	0.907	0.595	0.832	0.871	0.848	0.907	0.856	0.88	0.866	0.724
N	19820	14552	10667	14376	11463	15711	14878	13550	11900	128292

Note: The regressions are run using an unbalanced panel with data from 2000-2014, including 30 reporter countries and 63 partner countries. Estimates use Poisson Pseudo Maximum likelihood, using country-time fixed effects for reporters and partners and robust standard errors clustered on country pairs. The pooled regression also entails sector fixed effects. ***, ** and * signify statistical significance of 1, 5 and 10% levels respectively.

Table 7. Gravity regressions of services trade, Nordics and additional culture and institutions

	Total services	Construction	Computer services	Telecommunications	Banking	Insurance	Air transport	Maritime transport	Pooled
Ln distance	-0.243***	-0.404***	0.111	-0.372***	-0.165	0.045	-0.158**	-0.04	-0.173**
	(0.050)	(0.121)	(0.104)	(0.083)	(0.125)	(0.149)	(0.076)	(0.115)	(0.078)
Contiguous	0.446***	0.162	0.278	0.426***	0.057	0.308	0.174	0.272*	0.234*
	(0.092)	(0.184)	(0.177)	(0.115)	(0.212)	(0.225)	(0.154)	(0.155)	(0.130)
Common language	0.306***	0.830***	-0.16	-0.036	1.081***	0.684***	0.132	0.286	0.510***
	(0.107)	(0.256)	(0.219)	(0.144)	(0.229)	(0.216)	(0.136)	(0.192)	(0.153)
Common colony	0.269**	0.417	0.339*	0.324***	0.206	0.467**	0.708***	-0.042	0.421***
	(0.106)	(0.271)	(0.189)	(0.105)	(0.176)	(0.224)	(0.118)	(0.198)	(0.110)
Common legal origin	-0.009	0.115	0.014	0.052	-0.385*	0.019	-0.148	-0.143	-0.244**
	(0.077)	(0.213)	(0.116)	(0.112)	(0.234)	(0.144)	(0.092)	(0.117)	(0.115)
Same country	0.742***	1.051***	1.268***	0.686***	0.564	1.857***	0.731***	0.556**	0.774***
	(0.176)	(0.275)	(0.214)	(0.180)	(0.353)	(0.332)	(0.183)	(0.265)	(0.196)
RTA	0.553***	0.191	1.432***	1.205***	0.423*	0.926***	0.702***	1.131***	0.471***
	(0.134)	(0.490)	(0.233)	(0.260)	(0.243)	(0.287)	(0.185)	(0.305)	(0.179)
Both EEA	0.396***	0.566	0.36	0.225	0.603*	0.696	0.164	-0.644	0.256
	(0.126)	(0.580)	(0.305)	(0.238)	(0.359)	(0.441)	(0.224)	(0.455)	(0.198)
Both Nordic	1.209***	0.668*	1.732***	1.762***	2.614***	1.859***	3.302***	0.436	1.360***
	(0.205)	(0.352)	(0.291)	(0.293)	(0.379)	(0.394)	(0.316)	(0.315)	(0.247)
Governance distance	0.012	0.01	0.134***	0.095***	0.002	0.036	0.025	0.041	0.004
	(0.016)	(0.033)	(0.033)	(0.021)	(0.058)	(0.038)	(0.022)	(0.032)	(0.025)
Cultural distance	0.001	-0.009	0.039	-0.119***	0.083	-0.029	-0.025	0.055	0.019
	(0.022)	(0.058)	(0.049)	(0.037)	(0.051)	(0.061)	(0.034)	(0.040)	(0.025)
Pseudo R^2	0.911	0.59	0.892	0.856	0.912	0.854	0.88	0.872	0.724
N	17214	11638	11622	9639	12956	12655	11382	10192	106652

Note: The regressions are run using an unbalanced panel with data from 2000-2013, including 30 reporter countries and 63 partner countries. Estimates use Poisson Pseudo Maximum likelihood, using country-time fixed effects for reporters and partners and robust standard errors. The pooled regression also entails sector fixed effects. ***, ** and * signify statistical significance of 1, 5 and 10% level respectively..

The Nordic dummy is positive and significant in all but one of the regressions. This is remarkable since we have already controlled for having a common border, having ever had a colonial relationship, being members of an RTA and all unobserved country-specific variables that are picked up in the fixed effects. In fact, in most cases the intra-Nordic dummy is substantially larger than the RTA dummy. The regression in the first column reporting the results for total services trade implies that intra-Nordic trade in services is about three times as high as predicted from the gravity equation, while intra-RTA trade is about twice as large. The largest intra-Nordic effect is found for courier services, followed by air transport and banking. In these three sectors intra-Nordic trade is about 40, 25 and 11 times higher than predicted respectively.

Economic integration runs deeper in the European Economic Area than other RTAs and I therefore introduce a dummy taking the value of one if both countries in a country pair are members of the EEA and zero otherwise. A positive and significant value of the Nordic dummy also after controlling for EEA membership means that the Nordics constitute a distinct cluster within EEA. The results are presented in Table 6. All three regional dummies (RTA, EEA and Nordic) are positive and statistically significant in the regression for total services. The result suggest that intra-RTA trade is about 75% higher than trade between countries not parties to the same RTA, intra-EEA trade is about 50% higher on top of this, and intra-Nordic services trade is about 225% more still. It is also interesting to note that for individual sectors, the statistical significance of the EEA dummy falls below accepted thresholds, while the RTA and Nordic dummies remain significant, suggesting that the Nordic cluster may be driving the deeper EEA integration compared to other RTAs.

Perhaps surprisingly, the Nordic factor is very strong in air transport, where the Nordics have relatively high barriers to trade. However, Denmark, Norway and Sweden share a common carrier which used to dominate air transport in Scandinavia. But the by far and away largest Nordic bias is in courier services. One could argue that there is something wrong with the results for this sector, as the coefficient on distance is positive, which clearly is at odds with the gravity model. One may, however, not dismiss the result out of hand, since the coefficient on having a common border is high (countries with a common border trade about 175% more with each other) and the RTA dummy also takes a

high value for this sector. It is plausible that courier services – including express delivery – take place by surface transport over short distances and air transport over long distances, and that the falling off of surface express delivery with distance is compensated by a shift to more expensive air transport with growing distance. The only sector where the Nordic dummy is not statistically significant is in maritime freight transport. This is a global sector and Denmark and Norway are among the largest shipping nations in the world with global operations (UNCTAD, 2014).

Failing to eliminate the intra-Nordic bias by controlling for all the standard explanatory variables of bilateral trade, I now turn to additional measures of institutional and cultural distance that could be important for services trade. Starting with institutional distance I used the Kaufmann and Kraay Worldwide Governance Indicators. These are six sub-indicators from which I calculated an index of institutional distance following the approach by Lankhuizen and de Groot (2016)[10]: $1/K \sum_{k=1}^{K}(I_{i,k} - I_{j,k})^2/V_k$, where K represent the number of indicators, in this case six, k represents the individual indicator, subscripts i and j represent reporter and partner country respectively and V_k represents the variance of indicator k over the entire sample.

Another indicator that has been used to measure cultural distance is the Geert Hofstede dimensions of national culture.[11] Also this indicator takes six dimensions and I applied the same methodology to calculating cultural distance as for the governance indicators. In their recent study Lankhuizen and de Groot (2016) found that cultural distance has a non-linear impact on trade in goods. At low levels of cultural distance there is a positive relationship between cultural distance and trade, which turns negative when cultural distance reaches a threshold level. The results of entering these indicators into the gravity regressions are reported in Table 7. It is noted that the indices do not appear to have a statistically significant impact on trade in services, except in the computer services and telecommunications sectors. In both sectors governance distance is positively associated with trade, while cultural differences are only relevant in the telecommunications sector, where trade is

---

[10] The indicators are available at http://info.worldbank.org/governance/wgi/index.aspx. The six sub-indicators are: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption take values between -2.5 and 2.5, with higher values representing better governance.

[11] The indicators are available at https://geert-hofstede.com/national-culture.html and take six dimensions: Power distance, Individualism, Masculinity, Uncertainty Avoidance, Long-term Orientation and Indulgence. The indices take values between 0 and 100.

estimated to decline with cultural distance. I also explored to what extent each individual component of the Hofstede dimensions of national culture affect services trade. The components that were statistically significantly related to services trade were Long-term Orientation and Indulgence. The former is positively associated with services trade flows and the latter takes a negative sign.[12] But importantly, none of these indicators affect the parameter on the Nordic dummy. Hence the Nordic bias cannot be explained by cultural or institutional factors as measured by available indicators.

Finally, regulatory similarities as measured by the STRI regulatory heterogeneity index could explain the Nordic bias, but as we saw in section III, with the exception of the professional services, the Nordics do not have a significantly more similar regulatory framework than other EEA countries. Trade data for the professional services are poor, but I nevertheless added available trade statistics for legal services and accounting services to the database and introduced the regulatory heterogeneity indices as explanatory variables. The results are reported in Table 8. The indices for regulatory heterogeneity are available only for 2014 and 2015, and trade data are available only up to 2014. The regressions are therefore run for the period 2011-2014, and the results should be interpreted with caution. Nevertheless, the parameters on the Nordic dummy remain robust also after controlling for differences in regulation. The sector in which regulatory differences appear to matter the most is in commercial banking, which is also one of the sectors where the Nordic bias in the trade data is the strongest. The coefficient on the Nordic dummy declines somewhat when controlling for regulatory heterogeneity in the banking sector, but the regression still predicts that the Nordic countries trade about seven times more with each other than other countries all else equal.

---

[12] There are various explanations for why cultural and institutional distance may be positively associated with trade, one being that companies may choose to service foreign markets that are culturally and institutionally close to them through establishing productions facilities there. Going further into this is beyond the scope of this paper.

Table 8. Gravity regression, regulatory heterogeneity, commercial banking

	Construction	Computer services	Telecommunications	Banking	Insurance	Legal	Accounting	Air transport	Maritime transport
Ln distance	-0.551***	-0.047	-0.522***	-0.467***	-0.113	-0.329*	-0.325*	-0.198***	-0.102
	(0.143)	(0.124)	(0.089)	(0.109)	(0.179)	(0.177)	(0.178)	(0.073)	(0.145)
Contiguous	-0.025	0.034	0.234**	-0.142	0.262	0.199	0.366*	0.143	0.311*
	(0.174)	(0.181)	(0.105)	(0.180)	(0.216)	(0.170)	(0.189)	(0.144)	(0.164)
Common language	0.648***	-0.198	0.008	0.371*	0.438**	-0.259	0.065	0.028	0.446**
	(0.228)	(0.198)	(0.135)	(0.193)	(0.217)	(0.162)	(0.229)	(0.144)	(0.213)
Common colony	0.367	0.292	0.221**	-0.222	0.334	0.375***	0.062	0.605***	-0.321
	(0.270)	(0.187)	(0.104)	(0.148)	(0.236)	(0.133)	(0.170)	(0.128)	(0.207)
Common legal origin	0.346**	0.176	0.280***	0.035	0.318**	0.244**	0.057	0.083	-0.208
	(0.156)	(0.115)	(0.104)	(0.174)	(0.159)	(0.124)	(0.156)	(0.091)	(0.155)
Same country	0.958***	1.077***	0.356**	0.498	1.535***	0.393	-0.282	0.519**	0.563**
	(0.272)	(0.205)	(0.178)	(0.305)	(0.349)	(0.258)	(0.484)	(0.221)	(0.278)
RTA	-0.853*	1.002***	0.583**	-0.041	0.531	0.913***	0.429	0.387*	0.107
	(0.514)	(0.266)	(0.292)	(0.223)	(0.328)	(0.220)	(0.362)	(0.202)	(0.296)
Both EEA	1.199**	0.615***	0.528*	0.324	0.931**	0.395**	0.449	0.545**	0.163
	(0.566)	(0.228)	(0.300)	(0.297)	(0.382)	(0.168)	(0.327)	(0.221)	(0.393)
Both Nordic	0.827**	1.162***	1.731***	2.071***	1.693***	1.256***	2.093***	3.263***	0.557
	(0.323)	(0.275)	(0.266)	(0.284)	(0.429)	(0.299)	(0.395)	(0.254)	(0.346)
Regulatory heterogeneity	2.545**	-2.678***	-0.023	-6.533***	3.196	0.433	3.316**	1.462	2.685*
	(1.289)	(0.935)	(0.984)	(1.619)	(2.031)	(0.642)	(1.387)	(0.977)	(1.402)
Pseudo R^2	0.592	0.892	0.869	0.936	0.865	0.924	0.801	0.892	0.869
N	9952	9663	7836	10427	10115	7245	7033	8928	5860

Note: the dependent variable is exports of services. Robust standard errors are presented in brackets.*, ** and *** signify statistical significance at a 10, 5 and 1% level respectively.

From the regression results one can make some inferences about the relative importance of trade policy and non-actionable institutional, cultural and geographical factors. Based on the first regression in Table 6, which reports the result for total services where all the standard variables plus the EEA and Nordic dummies are included, I ran some illustrative simulations, depicted in Figure 3. It shows the predicted bilateral trade flows for total services estimated at the sample mean distance. The benchmark, normalised to one, is a scenario where all the dummy variables reported in the table are zero. The dark grey columns show predicted exports when non-actionable geography, institutional and cultural variables are turned on in the first column, while the subsequent three columns add policy variables representing increasingly deepening integration. The light grey columns keep the non-actionable variables turned off and show predicted bilateral exports for countries that do not have any natural commonalities at different levels of political integration.

Figure 3. Predicted bilateral exports, total services
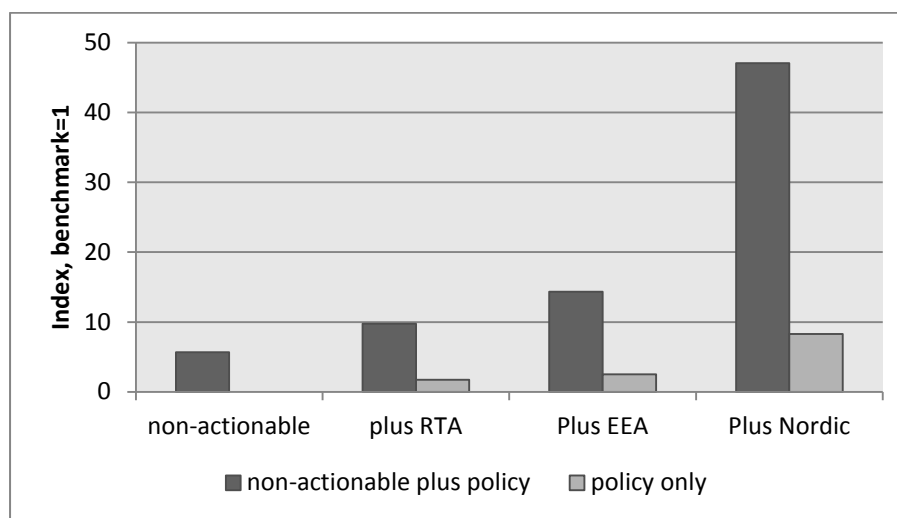
Note: The simulations are made based on the regression for total services presented in Table 6. The benchmark (normalised to one) is a simulation where bilateral distance is set to the mean, and all dummies in the equation (except the fixed effects) are set to zero. All results are significant at the 1% level in the simulations.

Three important insights can be taken from these simulations. First, non-actionable commonalities such as common border, language, legal origin and colonial past are much more important than policy variables as captured by international trade agreements as determinants of services trade. Countries that have all the non-actionable variables in common trade about almost six times more with each other than the benchmark. Second, trade agreements among countries that are natural partners from a geographical, cultural and institutional point of view will have a larger effect

on services trade than similar agreements between countries that have little in common. Third deepening integration appears to have a non-linear impact on bilateral trade.

V. Concluding remarks

Openness to trade has been one of the characteristics of the Nordic model emphasised in the literature, for example Andersen et al. (2007). This study has shown that with the exception of Denmark, the Nordics are not particularly open to trade in services. Nevertheless, they are significant services traders with intra-Nordic trade taking a much more prominent role than predicted by standard trade models. When controlling for geographical, institutional and cultural commonalities as well as regional trade agreements, and unobserved country-specific factors, intra-Nordic trade is still 2.5 times higher than predicted by the gravity model.

Although it proved impossible to explain the intra-Nordic bias, it is unlikely that actionable trade policy measures are the explanation. Three lessons can be taken from this. First, for policy modellers, the practice of benchmarking the impact of introducing or removing services trade barriers towards a fully integrated economy may not be meaningful. Second, policy makers may take note that the rate of natural protection as far as services are concerned is high. Thus, when the objective is deeper integration of services markets, complementary policy reforms such as labour market integration and harmonisation across a number of regulations may be needed.[13] Conversely, services trade liberalisation is unlikely to cause major disruptions in services markets if not accompanied by regulatory harmonisation and labour market integration. Third, trade agreements seem to result in more services market integration when the parties share common geographical, cultural and institutional features.

About the author
Hildegunn Kyvik Nordås is a senior trade policy analyst at the OECD Trade and Agriculture directorate and a visiting professor at the University of Örebro. She holds a Ph.D. in economics from the University of Bergen, Norway.

---

[13] The Nordic countries established a common labour market already in 1954 as the first in the world. See e.g. http://www.norden.org/en/om-samarbejdet-1/nordic-agreements/treaties-and-agreements/labour-market/agreement-concerning-a-common-nordic-labour-market

References

Andersen, T.M, Holmström, B. Honkapohja, S. Korkman, S. Söderström, H.T.and Vartiainen, J.

(2007), "The Nordic model: embracing globalisation and sharing risk" The Research Institute

of the Finnish Economy (ETLA) Publisher: Taloustieto.

EU Commission (2013), "TiSA Trade in Services Agreement European Union Schedule of Specific

Commitments & List of MFN Exemptions",

http://trade.ec.europa.eu/doclib/docs/2014/july/tradoc_152689.pdf

Francois, J. and Hoekman, B. (2010), "Services trade and policy", *Journal of Economic Literature,*

48, 642-692

Geloso-Grosso, M., Gonzales, F., Miroudot, S., Nordås, H.K., Rouzet, D. and Ueno. A. (2015),

"Services Trade Restrictiveness Index (STRI): Scoring and Weighting Methodology", OECD

Trade Policy Paper No 177.

Lankhuizen, M.B.M and de Groot, H.L.F (2014), "Cultural distance and international trade: a non-

linear relationship", *Letters in Spatial and Resources Sciences,* October

La Porta, R., Lopez-De-Silanes, F. and Shleifer, A. (2008), "The economic consequences of legal

origins", *Journal of Economic Literature,* 46: 285-332.

Nordås, H.K. (2016a), "Does mutual recognition of qualifications stimulate services trade? The case

of the European Union", *Applied Economics*, 48: 1852-1865.

Nordås, H.K. (2016b), "Services Trade Restrictiveness Index (STRI): The trade effect of regulatory

differences", OECD Trade Policy Paper No 189

Santos Silva, J.M.C and Tenreyro, S. (2006), "The log of Gravity", *The Review of Economics and*

Statistics 88, 641-658.

UNCTAD (2014), "Review of Maritime Transport 2014", Geneva: UNCTAD.

WTO (2015)，*International Trade Statistics,* Geneva: WTO.