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Intra-EEA STRI Database: Methodology and Results

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INTRA-EEA STRI DATABASE: METHODOLOGY AND RESULTS

Sebastian Benz and Frédéric Gonzales (OECD)

This paper presents new data on regulatory barriers affecting services trade within the European Economic Area (EEA), covering 25 EEA countries, 22 sectors and five years (2014-2018). Following the methodology of the OECD Services Trade Restrictiveness Index (STRI), qualitative information is scored and weighted to produce binary composite indices. The resulting intra-EEA STRIs reveal that services trade restrictiveness within the Single Market is considerably lower than the applied MFN regime of those EEA members. Moreover, they show that EEA members have achieved significant regulatory harmonisation through their integration process.

Key words: Trade in services, trade policy, trade liberalisation, services trade restrictions, composite indicators

JEL Codes: F13, F15, F55, F68

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Executive Summary

The OECD Services Trade Restrictiveness Index (STRI) provides information on services regulation in 22 sectors across 45 countries between 2014 and the present (2018). It follows the principle of the most-favoured nation (MFN), documenting applied regimes with respect to countries that do not benefit from preferential treatment. Complementing existing information, this note describes the methodology and results of the new data on regulatory barriers affecting services trade within the European Economic Area (EEA), or the intra-EEA STRI database. Based on 25 EEA member countries, it records restrictions to services trade within the Single Market of the EEA. This database and resulting indices facilitate additional analytical work and provide information on the liberalisation process within the EEA.

The intra-EEA STRI database draws on sources at the European level, including the Treaty on the Functioning of the European Union, as well as a high number of Regulations and Directives. Moreover, it relies on information concerning domestic regulation and trade barriers behind the border from each country's STRI database.

The resulting indices reveal that remaining services trade restrictions within the EEA are considerably lower than barriers towards third countries. STRI indices take the value from 0 to 1, where 0 is completely open and 1 is completely closed. Across all sectors, the average intra-EEA STRI is 0.06 for the 25 countries covered in the database, meaning that Single Market rules have reduced the STRI by 0.16 in comparison to each country's MFN applied policies. The difference between the MFN STRI and the intra-EEA STRI is largest in air transport and the professional services sectors, especially legal services, and smallest in distribution services.

In addition, the intra-EEA STRI shows that integration within the EEA has led to considerable regulatory harmonisation among its members. In a hypothetical situation where the Single Market did not exist, average regulatory heterogeneity between the 25 countries was 0.22, while regulatory heterogeneity based on actual Single Market policies is only 0.06. Road freight transport, air transport and maritime transport are examples for sectors with homogeneous regulatory regimes across the EEA. At the other extreme, regulation of logistics cargo-handling, commercial banking, and telecommunications services remains significantly more diverse than in other sectors.

1. Introduction

Launched in 2014, the OECD Services Trade Restrictiveness Index (STRI) database presents an up-to-date snapshot of services regulatory regimes in 22 sectors across 45 countries. It stands in the tradition of earlier efforts to establish a catalogue and comparable indicators of information on services trade restrictions, such as those by the Australian Productivity Commission (Findlay and Warren, 2000^[1]) and the World Bank (Borchert, Gootiiz and Mattoo, 2012^[2]). Unlike its predecessors, timeliness of information in the OECD STRI database is ensured by undertaking annual updates, building a panel of information available to policy makers, businesspeople and researchers.

Since services can be traded via several modes (GATS, 1994^[3]) relevant barriers are related to foreign direct investment, the movement of people, as well as several aspects of domestic regulation. Aspects of domestic regulation include competition policy, particularly pertinent in network industries such as telecommunications or rail transport, but also regulatory transparency. Restrictions to foreign direct investment and the movement of people typically constitute barriers to market access and national treatment, as defined in the General Agreement on Trade in Services (GATS). The OECD STRI methodology follows the principle of the most-favoured nation (MFN), recording applied regimes with respect to countries that do not benefit from preferential treatment.

Considering patterns of global trade in services, it becomes clear that a large share of trade flows takes place between countries with a preferential trade agreement (PTA) in force. In the sample of countries covered in the OECD STRI, around 50% of their cross-border services trade is with PTA partners. The share is highest for member countries of the EEA, which usually export more than 70% of their services to PTA partners. Obviously, most of these exports go to other EEA members.

Nonetheless, excluding PTAs from the STRI database is justified by the fact that most PTAs do not liberalise services trade beyond the levels of the applied regimes. More frequently PTAs serve to bind existing liberalisation measures, preventing participants from introducing additional services trade barriers in the future. Based on a selection of 95 PTAs, Lamprecht and Miroudot (2018^[4]) find that the commitments in PTAs do usually not even fully bind the applied regime. Nevertheless, the additional certainty for businesses contributes to a significant increase of services trade.

The European Economic Area (EEA), however, constitutes a common market for goods and services which is not captured by the STRIs for EEA members. Against this backdrop, this report presents background information on the methodology and results for an extension of the OECD STRI database, recording restrictions to services trade within the Single Market of the EEA for 25 countries. The report shows that services trade within the EEA is substantially more liberal than the multilateral policies applied by EEA member countries towards non-members. However, a certain level of restrictiveness remains within the Single Market, demonstrating that there is potential for further market integration.

Measuring restrictions to services trade within the EEA offers a wide range of possible applications. First of all, the resulting indices can be used for analytical work addressing the impact of services trade restrictions on a wide range of economic outcomes with increasing robustness. Second, it can be used to assess the progress of liberalisation within the EEA and identify areas where EEA markets are still not fully integrated. As mentioned above, services trade restrictions remain in many sectors and many EEA member countries. Third, it allows for an ex ante analysis of policy options when countries join or leave the EEA, making the resulting outcome more predictable.

2. Methodology

The construction of the intra-EEA STRI follows the methodology established for the existing STRIs.¹ However, due to the particular legislation relevant for the European Union, several additional aspects need to be properly addressed. This section provides additional clarification on some of these aspects.

Principles

The intra-EEA STRI database is built on two principles. All information contained therein (1) is comparable with existing information in the STRI database; (2) covers EU law as well as national legislation. As a consequence, it follows that the resulting indices differ across EEA member countries, reflecting differences in national legislation.

Comparability with existing OECD STRI

The STRI for services trade within the EEA is based on the same set of measures used for all existing STRIs. Using an identical set of measures implies that differences in services trade restrictiveness cannot only be identified from the aggregate indices but also tracked down to individual measures, identifying specific policies which provide for a more liberal services trade framework within the Single Market, compared to multilateral policies. Each measure is classified by policy area, allowing for rapid identification of the main sources of regulatory differences between the Single Market and multilateral trade barriers.

Also the methodology for the scoring of measures and the calculation of indices is identical for the intra-EEA STRI and the existing indices. This includes the weighting of policy areas, as well as the application of hierarchies and bundles of measures. One example of such hierarchies are foreign equity restrictions. In the air transport sector, where investment from third countries in Community air carriers is limited to 49%, the relatively more liberal investment regime within the Single Market implies that the intra-EEA STRI is considerably lower than each country's MFN STRI.

The creation and update of the intra-EEA STRI follows the same principles which are already applied. The information is published after verification by the European Commission, EEA member countries, as well as peer review by other OECD members and other economies covered in the STRI. Annual updates will take place in line with the regular update cycle of the STRI in order to monitor developments over time.

Coverage of EU law as well as national legislation

The intra-EEA STRI database systematically collects information on services trade restrictions within the Single Market for 25 countries. For this purpose, it contains information from three different sources:

Legislation at the EU-level, representing the legal framework for the free movement of persons, goods, services and capital within the Single Market. Most importantly, this includes EU Regulations, EU Directives, and the Treaty on the Functioning of the European

¹ The methodology of the OECD STRI is described in various sector specific publications and an overview document on the weighting and scoring mechanism (Geloso Grosso et al., 2014^[4]; Geloso Grosso et al., 2014^[5]; Geloso Grosso et al., 2014^[7]; Geloso Grosso et al., 2015^[6]; Nordås et al., 2014^[10]; Nordås et al., 2014^[11]; Nordås et al., 2014^[9]; Rouzet et al., 2014^[13]; Ueno et al., 2014^[14]).

Union. While the legal framework is established by the bodies of the EU, the Single Market does not only include EU member countries, but also those member states of the European Free Trade Area (EFTA), which are party to the EEA Agreement (Iceland, Liechtenstein and Norway, of which Liechtenstein is not included in the STRI database). These countries must adopt most EU legislation concerning the Single Market, with the exceptions of agriculture and fisheries.²

Such EU legislation is already used for the existing STRIs to the extent to which it opens the European market to non-EEA services providers, simplifying the data collection for the intra-EEA STRI database. Data from additional sources only has to be collected for the intra-EEA STRI in order to cover preferential treatment within the Single Market for suppliers from EEA member countries.

Information from national STRI databases is used for those measures focusing on aspects of non-discriminatory domestic regulation, which are not covered by EU legislation. This information is also used when no preferential treatment for suppliers from EEA members exists. The availability of information in the existing STRI databases is crucial in order to facilitate the collection of data.

Additional information from national legislation is used in cases where preferential access is not directly mandated by EU legislation, but member countries do treat suppliers from EEA countries differently than suppliers from third countries. Such additional collection of information is only necessary for a very limited set of measures.

Due to the importance of national measures, it is not meaningful to compute one single intra-EEA STRI but separate indices are calculated for each of the 25 EEA members covered by the STRI. Put differently, these 25 countries will be characterised by two distinct STRIs: the traditional STRI, indicating the level of restrictiveness on MFN basis towards third countries, and the intra-EEA STRI, indicating the level of restrictiveness towards EEA members.

2.2. EU Regulations

An EU Regulation is a binding legal act, to be directly enforced in all member states. Consequently, EU Regulations need to be taken into account for the intra-EEA STRI. In cases where EU Regulations apply to services trade with third countries, such Regulations have already been taken into account for the STRI in the past. Regulations achieve the highest level of homogeneity across the EEA and once a measure is governed by an EU Regulation, there is little room for individual arrangements within member states. As any other EU legal instrument, Regulations do not always liberalise services trade within the EEA. For example in the air transport sector, an EU Regulation exempts air carrier alliance from competition law (Table 1).³

² According to Article 8 of the EEA Agreement, the provisions of this Agreement only apply to products falling within Chapters 25 to 97 of the Harmonized Commodity Description and Coding System.

³ Similar Regulations exist for rail, road and maritime transport.

Table 1. EU Regulations: Restrictive policies

Examples for intra-EEA services trade barriers resulting from EU Regulations

Measure	Exemption of air carrier alliances from competition law (air transport)
Regulation	Regulation (EC) No 1008/2008 on common rules for the operation of air services in the Community, OJ L 293, p. 3, adopted on 24 September 2008, Article 15(4)
Text of Regulation	<i>4. When operating intra-Community air services, a Community air carrier shall be permitted to combine air services and to enter into code share arrangements, without prejudice to the Community competition rules applicable to undertakings.(..)</i>

Source: OECD intra-EEA STRI Database, Regulation (EC) No 1008/2008

However, such trade restricting policies are relatively rare. Most of the EU legal instruments on the Single Market invoke a liberalising policy. One example for such a Regulation is the Council Regulation (EEC) No 3577/92 on maritime cabotage, see Table 2.

Table 2. EU Regulations: Liberal policies

Examples for intra-EEA services trade liberalisation resulting from EU Regulations

Measure	Cargo reservations or preferences (maritime transport)
Regulation	Council Regulation (EEC) No 3577/92 of 7 December 1992 applying the principle of freedom to provide services to maritime transport within Member States (maritime cabotage), Article 1
Text of Regulation	<i>1. As from 1 January 1993, freedom to provide maritime transport services within a Member State (maritime cabotage) shall apply to Community shipowners who have their ships registered in, and flying the flag of a Member State, provided that these ships comply with all conditions for carrying out cabotage in that Member State, including ships registered in Euros, once that Register is approved by the Council.</i>

Source: OECD intra-EEA STRI Database, Council Regulation (EEC) No 3577/92

2.3. EU Directives

In contrast to EU Regulations, Directives set out a goal that member countries must achieve, leaving it up to the individual countries to devise their own laws on how to achieve these goals. Nevertheless, in the current version of the intra-EEA STRI, specific provisions of Directives are treated as evidence for the commitment towards services trade liberalisation in situations where these provisions are sufficiently clear with respect to these commitments. In general, this criterion will be fulfilled if relevant provisions in Directives are phrased in a way to create binding obligations with little to no room for divergent transposition.⁴

This principle is applied to make the data collection process more time efficient, but also because EU Directives entail a legally binding obligation for member states to pass appropriate legislation in order to achieve specified goals. While it is acknowledged that EU Directives are not applied directly, using Directives as source constitutes an appropriate

⁴ It must be acknowledged that additional work considering differences in national transposition across member states could potentially create an even more precise picture of services trade restrictiveness within the Single Market. The current approach was chosen for its balance between precision and complexity of data collection.

reflection of services trade liberalisation available to EEA services providers.⁵ One shortcoming of this strategy is a certain degree of imprecision with respect to the timing of liberalisation. In particular, the recording of liberalisation in the STRI may precede the implementation in national laws, since EU Directives are included in the database when entering into force while national governments are granted a certain time for transposition into national law, which is specified in the text of the Directive.

Table 3. EU Directives: Mandated liberalisation policies

Examples for intra-EEA services trade liberalisation resulting from EU Directives

Measure	Arbitration structures are in place to deal with commercial disagreements between rights holders and collective rights managers (motion pictures and sound recording).
Directive	Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market, Article 34
Text of Directive	<p>2. Member States shall ensure, for the purposes of Title III, that the following disputes relating to a collective management organisation established in their territory which grants or offers to grant multi-territorial licences for online rights in musical works can be submitted to an independent and impartial alternative dispute resolution procedure:</p> <p>(a) disputes with an actual or potential online service provider regarding the application of Articles 16, 25, 26 and 27;</p> <p>(b) disputes with one or more rightholders regarding the application of Articles 25, 26, 27, 28, 29, 30 and 31;</p> <p>(c) disputes with another collective management organisation regarding the application of Articles 25, 26, 27, 28, 29 and 30.</p>
Measure	Early repayment conditions and fees are regulated (commercial banking)
Directive	Directive 2008/48/EC of the European Parliament and of the Council of 23 April 2008 on credit agreements for consumers and repealing Council Directive 87/102/EEC, Article 16
Text of Directive	<p><i>Early repayment</i></p> <p>1. The consumer shall be entitled at any time to discharge fully or partially his obligations under a credit agreement. In such cases, he shall be entitled to a reduction in the total cost of the credit, such reduction consisting of the interest and the costs for the remaining duration of the contract.</p> <p>2. In the event of early repayment of credit the creditor shall be entitled to fair and objectively justified compensation for possible costs directly linked to early repayment of credit provided that the early repayment falls within a period for which the borrowing rate is fixed.</p> <p>Such compensation may not exceed 1 % of the amount of credit repaid early, if the period of time between the early repayment and the agreed termination of the credit agreement exceeds one year. If the period does not exceed one year, the compensation may not exceed 0,5 % of the amount of credit repaid early.</p>

Source: OECD intra-EEA STRI Database, Directive 2014/26/EU, Directive 2008/48/EC

Measures for which specific policies must be implemented

Several measures in this group are answered based on EU Directives which explicitly foster services trade integration by requiring member states to implement a specific policy in their national law. After the transposition deadline, services providers must be able to rely on the existence of these policies in all countries within the Single Market. In many cases, these measures are not related to market access or national treatment, but rather deal with different aspects of domestic regulation in order to provide a transparent and reliable framework for services trade. Some examples for scoring of measures based are given in the following table.

⁵ Even if Directives are not binding before being transposed into national law, the European Court of Justice ruled a de facto “direct effect” doctrine on Directives. Member states failing to transpose a Directive can be held liable for damages incurred by companies due to incorrect transposition.

Measures for which specific policies are prohibited

For a second group of measures, scoring is determined by EU Directives which explicitly prohibit a certain policy or ban a certain requirement on services providers. A high number of measures fall under this category. They can be related to public procurement, licensing, recognition of qualifications and many other aspects.

Table 4. EU Directives: Prohibited policies
Examples for intra-EEA services trade liberalisation
resulting from prohibition of restrictive policies in EU Directives

Measure	Public procurement: Explicit preferences for local suppliers (several sectors)
Directive	Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC, Article 18 and Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC, Article 36
Text of Directive	<i>Principles of procurement</i> <i>1. Contracting authorities shall treat economic operators equally and without discrimination and shall act in a transparent and proportionate manner.</i>
Measure	Foreign providers have to completely re-do the university degree, practice and exam in the domestic country (accounting/auditing services)
Directive	Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC, Article 14
Text of Directive	<i>Approval of statutory auditors from other Member States</i> <i>The competent authorities of the Member States shall establish procedures for the approval of statutory auditors who have been approved in other Member States. Those procedures shall not go beyond a requirement to pass an aptitude test in accordance with Article 4 of Council Directive 89/48/EEC of 21 December 1988 on a general system for the recognition of higher-education diplomas awarded on completion of professional education and training of at least three years' duration.</i>

Source: OECD intra-EEA STRI Database, Directive 2014/24/EU, Directive 2006/43/EC

2.4. Recognition of qualifications in professional services

The OECD STRI covers four professional services sectors: architecture, auditing and accounting, engineering, and legal services. Transparent processes for the recognition of foreign qualifications in these fields are crucial to facilitate the entry of foreign providers. Even within the European Union, recognition processes may differ, depending on the country where qualifications have been obtained. The STRI focuses on the availability of transparent recognition processes and certain requirements (e.g. local examination, local practice) imposed on foreign professionals.

While such transparent recognition processes usually exist, the structure of the intra-EEA STRI makes it impossible to capture details of the recognition process for professionals moving between all possible combinations of countries. In particular, it is not possible to include different requirements depending on the country of origin. For example, Directive 2005/36/EC on the recognition of professional qualifications, Article 13, imposes a requirement on professionals from a country which does not regulate a certain profession, of having pursued a profession “on a full-time basis for two years during the previous 10 years” in order to obtain recognition of their qualifications in member states where this profession is regulated. However, since this requirement only applies to professionals from very few EEA members, it is not recorded in the STRI database.

3. Results

This section describes the most important results on services trade restrictiveness within the Single Market for 25 EEA member countries. After providing an overview on the patterns of restrictiveness in all sectors in the first subsection, the second subsection dives deeper into selected sectors, explaining in detail the remaining barriers to services trade. The third subsection explains the resulting patterns of regulatory heterogeneity between member countries of the EEA. The full set of results by sector and by country is reported in the Annex.

3.1. Sector profiles

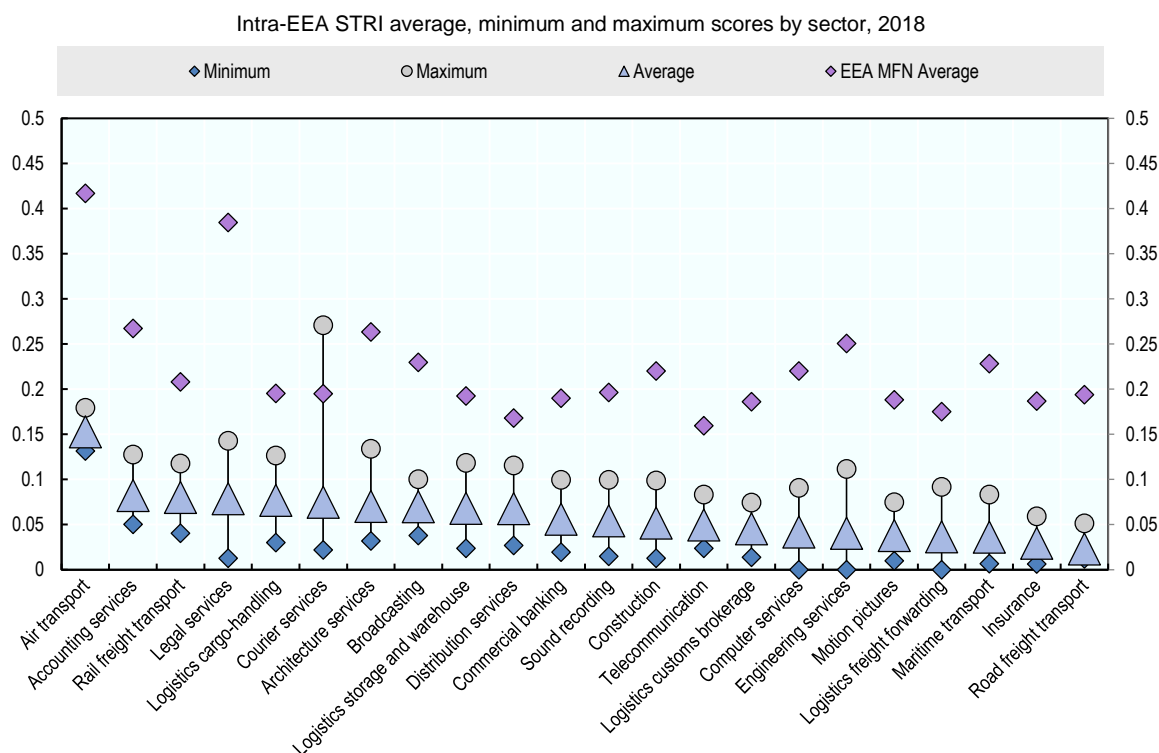
Figure 1 shows the resulting indicators. On average, air transport is the most restrictive sector, with an average score of 0.15, and indeed it is the only sector with an average restrictiveness larger than 0.10. In contrast, road freight transport is the most liberal sector with an average score of 0.02 and it is part of a group of nine sectors characterised by most advanced liberalisation with an average restrictiveness up to 0.05 and a maximum restrictiveness that usually remains below 0.10.

More important than heterogeneity across sectors, however, is heterogeneity across countries. The average difference between the most restrictive and the most liberal country in each sector is 0.09. In some sectors, such as courier services, this spread is even larger, while it is lowest in air transport and road freight transport services. This is also a symptom for imbalances in services trade restrictiveness within the Single Market, indicating that one country's services exports to another country may be subject to a very different regime than the second country's services exports to the first country. It also hints at significant levels of regulatory heterogeneity, which will be further discussed below.

Three sectors feature at least one country with a score of zero, indicating the absence of restrictions to services trade within the framework of the STRI. It is worth noting that this does not necessarily imply the absence of restrictions in general. Sectors for which at least one such score exists are computer services, engineering and freight forwarding services.

In contrast, remaining restrictions are high in air transport. However, the high level of restrictiveness in air transport has to be seen in light of the limited scope of the STRI in this sector. Market access for cross-border air transport is currently not taken into account for the STRI, because information on the content bilateral agreements is not always available. However, liberalisation of such international air transport between member countries has been one of the main features of the European Single Aviation Market. Other relatively restrictive sectors are auditing/accounting services and legal services, as well as rail freight transport, cargo handling and courier services.

In all sectors, intra-EEA restrictiveness is substantially lower than services trade restrictiveness of EEA members towards third countries, indicated by diamonds in Figure 1. On average for all 25 countries, Single Market rules imply a reduction of services trade barriers by 0.16, compared with each country's MFN applied policies.

Figure 1. Intra-EEA STRI sector profiles


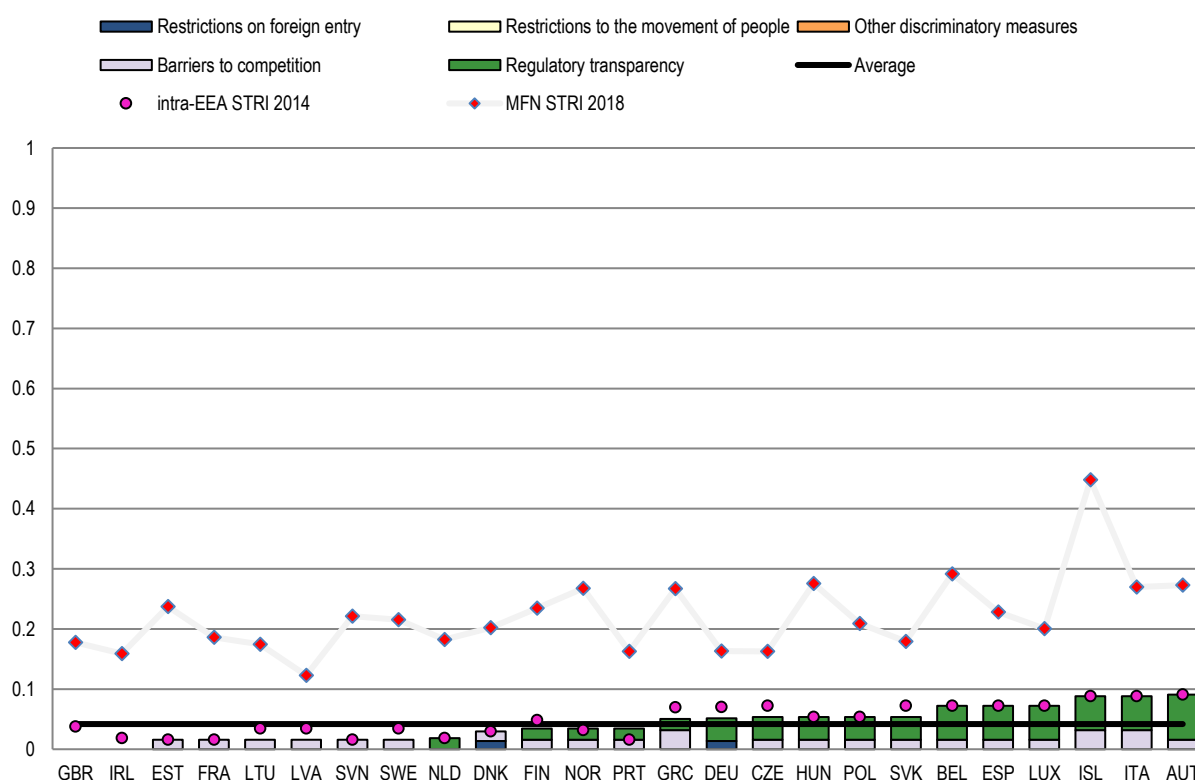
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

3.2. Sector indices

The 22 STRI sectors do not only differ with respect to their average levels of restrictiveness, but also with respect to the policy areas for which restrictions remain. In general, services trade restrictions are most persistent in the policy areas of *barriers to competition* and *regulatory transparency*. However, in the professional services sectors, also *restrictions on foreign entry* and *restrictions to the movement of people* have retained some importance. *Restrictions on foreign entry* still exist in the air transport sector. *Other discriminatory measures* are of negligible importance for intra-EEA services trade restrictiveness.

The level of intra-EEA services trade barriers in computer services reflects a core group of measures that can also be found in the other sectors. Consequently, it is an indicator for horizontal restrictiveness across all 22 sectors in the 25 EEA countries. Figure 2 shows that the United Kingdom and Ireland boast a score of zero in this sector. Some of the other countries require that a certain amount of capital must be deposited in order to register a business, recorded as restriction in the *barriers to competition* policy area. Belgium, Iceland and Luxembourg have not set up a legal obligation to communicate regulations to the public within a reasonable time prior to entry into force. Some of the more restrictive countries possess barriers to starting a new business, covered under *regulatory transparency* area, measured by the cost, time, and number of documents required to register a company. On average for all 25 countries, in this sector the Single Market implies a reduction of services trade barriers by 0.18, very similar to the average liberalisation effect across all sectors.

Figure 2. Computer services, 2018



Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Legal services are a regulated profession for which licensed professionals have exclusive rights to provide services in 22 out of 25 countries. Hence it is no surprise that the three countries, which do not require a licence to practice domestic law, are those with the lowest level of intra-EEA trade restrictiveness (Finland, Latvia and Sweden), as shown in Figure 3.

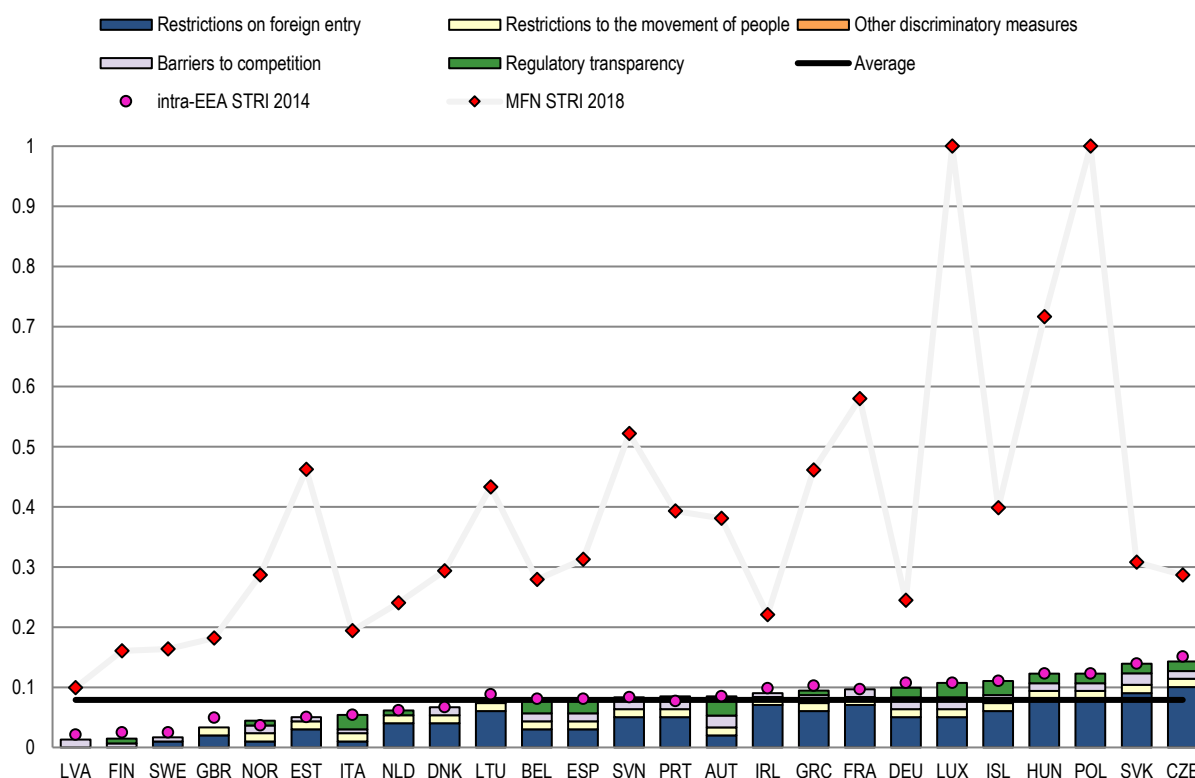
Measures contributing most to the overall index relate to *foreign entry*, concerning the licencing regime and regulated at the domestic level:

- Equity restrictions applying to not licensed individuals or firms (100, <50, >50, 0);
- Legal form: corporation is prohibited; legal form: partnership is prohibited;
- Commercial association is prohibited between locally and not locally licensed lawyers; between lawyers and other professionals;
- Board of directors: majority and/or at least one must be licensed professional;
- Manager must be a licensed professional.

In all countries with a licencing regime, foreign professionals may be required to practice locally for at least one year before becoming fully qualified as locally licensed lawyers, recorded under *restrictions to the movement of people*. In *barriers to competition*, fee-setting is regulated in seven countries (Austria, Czech Republic, Denmark, Germany, Luxembourg, Slovak Republic and Slovenia) and advertising is restricted in 15 countries. In summary, lawyers from EEA members face barriers to offering services in other EEA

members that are considerably lower than those faced by lawyers from third countries. On average, the difference between intra-EEA services trade restrictiveness and third country restrictiveness is 0.29. This implies that legal services are the sector where the Single Market has contributed most to services trade liberalisation, based on the 25 EEA members included in this analysis. In particular, this is true for countries, which are highly restrictive towards legal services imports from third countries, such as Luxembourg, Hungary and Poland.

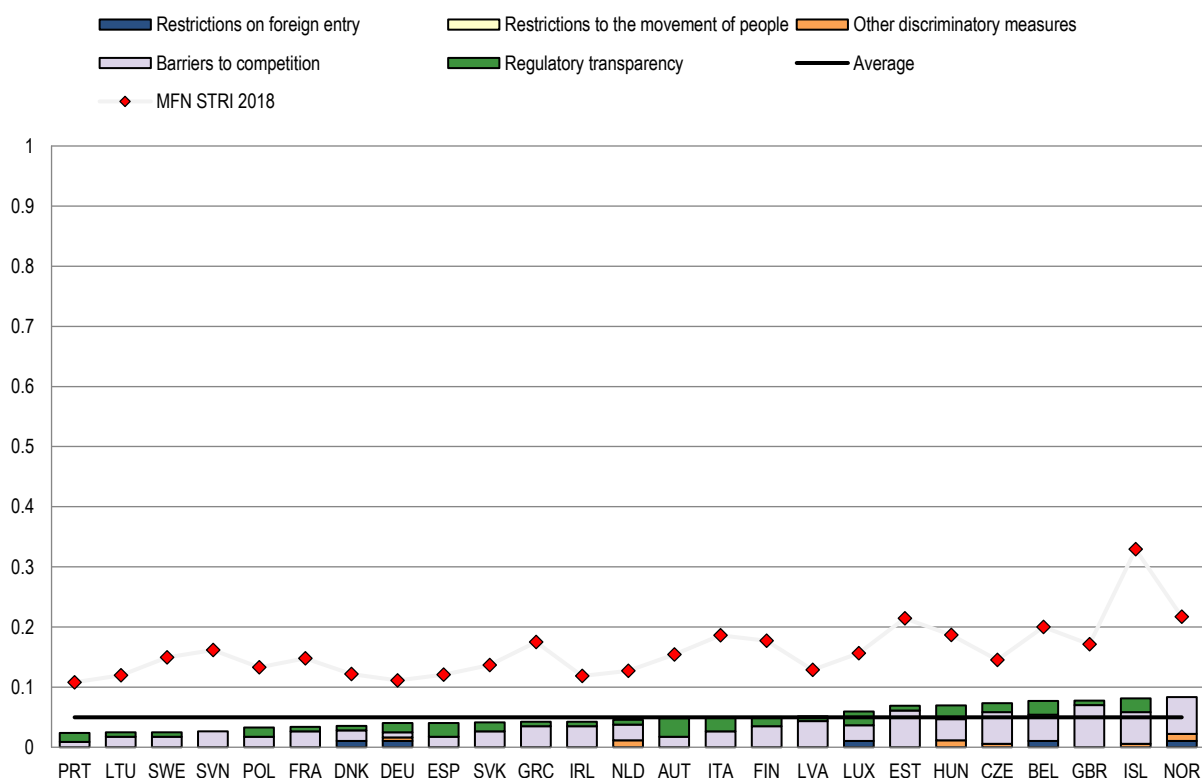
Figure 3. Legal services, 2018



Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

In contrast, telecommunications services is one of the sectors where the Single Market has least contributed to services trade liberalisation. As can be seen in Figure 4, the difference between the intra-EEA STRI and the MFN STRI is relatively small for 25 EEA members, averaging only 0.11. Predominantly, this is due to remaining *barriers to competition*. While the EU encourages competition in the sector through several Regulations and Directives, national governments and regulators have much autonomy in this field. As a consequence, *barriers to competition* in telecommunications services have only been brought down moderately by European integration. The remaining barriers usually indicate inadequate pro-competitive regulation and state ownership. In a network industry like telecommunications, these may constitute a serious entry barrier because difficulties to access essential facilities and switching costs may favour incumbent firms.

Figure 4. Telecommunications services, 2018

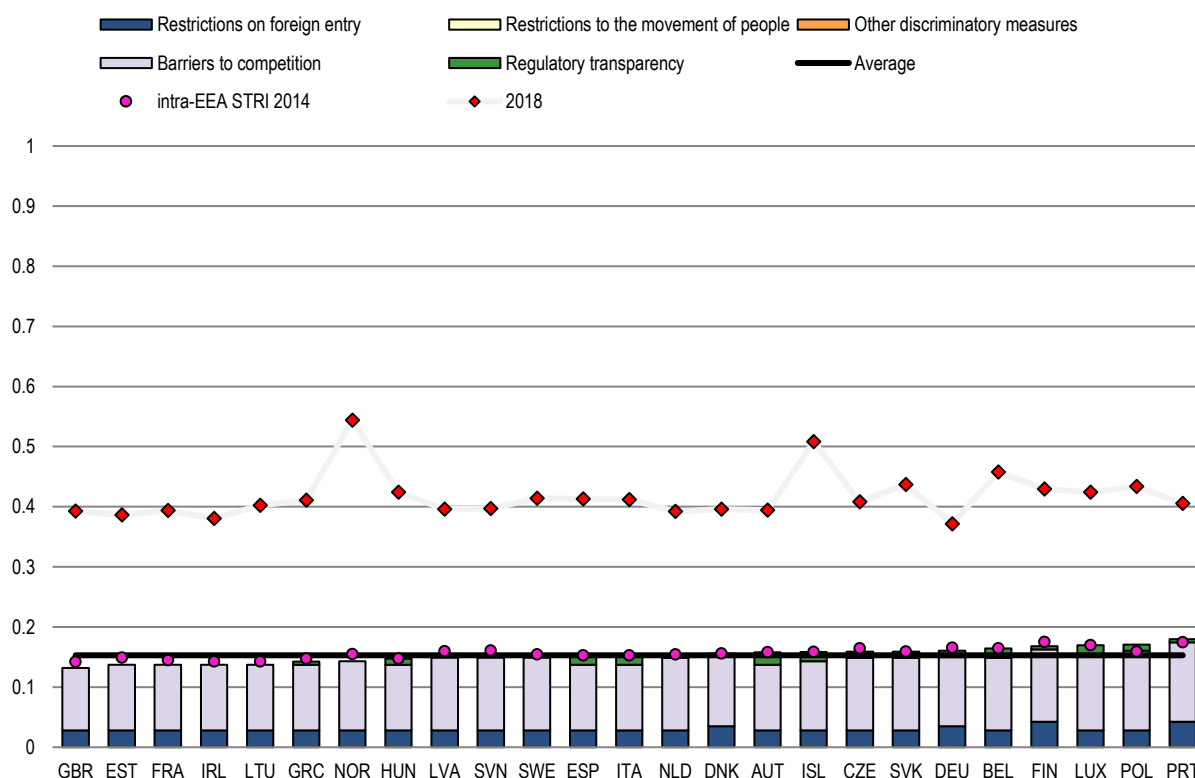


Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Figure 5 reveals that air transport services are characterised by a homogenous and relatively high restrictiveness for intra-EEA services trade across the 25 EEA countries. This homogeneous pattern is very similar to the results found for the MFN-based STRI, indicating restrictiveness towards third countries, even though on a lower level of restrictiveness. In this sector, the remaining restrictions within the Single Market are of two types:

- On *foreign entry*, an authorisation is required for lease of aircraft in all EEA countries and the investment in publicly-controlled firms is limited in Finland and Portugal.
- In *barriers to competition*, air carriers are allowed to retain allocated slots from one season to the next and air carrier alliances are exempt from competition law in all EEA countries. Moreover, restrictive schedules for airport use exist at major airports in ten countries.

Nevertheless, trade in air transport services within the Single Market is substantially more liberal than the applied regime of EEA members towards third countries. On average, the difference between the intra-EEA STRI and the MFN STRI of countries in this group is 0.26. Among other things, this difference stems from a foreign equity threshold applying to foreign investors from third countries, which can only hold 49% equity in Community air carriers.

Figure 5. Air transport services, 2018


Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

3.3. Regulatory heterogeneity in the EEA

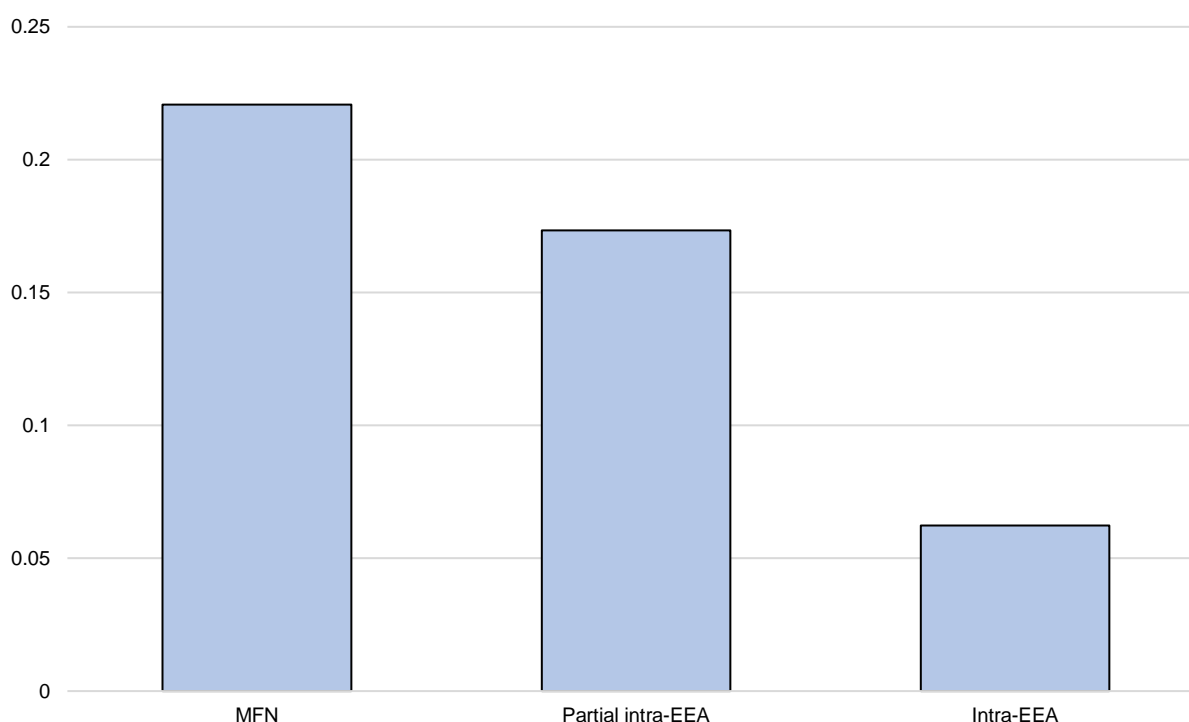
The STRI database provides information not only on the level of restrictions in force in each country, but also on the extent to which regulatory systems in different markets resemble each other. Indices of regulatory heterogeneity are constructed by pairwise comparison of countries, measure by measure and sector by sector. For each measure, the country pair has a score of zero if both countries have the same answer (similar regulation) and a score of one if they have different answers (diverging regulation), the so-called answer-based regulatory heterogeneity. The scores are aggregated using the same weights as for the STRI indices. The resulting STRI regulatory heterogeneity indices capture differences in the set of regulatory requirements by country pair and sector.⁶

These indices show that Single Market policies have not only led to a reduction of services trade barriers within the EEA, but also to a reduction of regulatory heterogeneity among its members. Figure 6 compares average intra-EEA regulatory heterogeneity across all sectors and country pairs with a hypothetical situation in which the Single Market did not exist, so that all EEA members applied MFN policies towards each other. While average regulatory heterogeneity between the 25 countries in this hypothetical situation was 0.22, regulatory heterogeneity based on actual Single Market policies is only 0.06.

⁶ The methodology for these indicators of heterogeneity in services trade regulations is described in more detail by Nordås (2016_[4]).

A simple decomposition approach in Figure 6 highlights the beneficial effect of EEA membership on regulatory heterogeneity. The intermediate liberalisation scenario in that figure indicates bilateral regulatory heterogeneity for EEA country pairs, assuming that one country applies its intra-EEA policies towards the other country, while the second country still applies its MFN regime towards the first country. The resulting index of 0.18 is based on the average heterogeneity across all sectors and all country pairs. Starting off from a hypothetical situation with MFN rules between EEA members, this decomposition shows that unilateral application of intra-EEA policies only has a marginal effect on regulatory harmonisation within this group of countries. A substantial reduction of regulatory heterogeneity can only be achieved when two countries mutually agree on the application of EEA rules.

Figure 6. Intra-EEA regulatory harmonisation



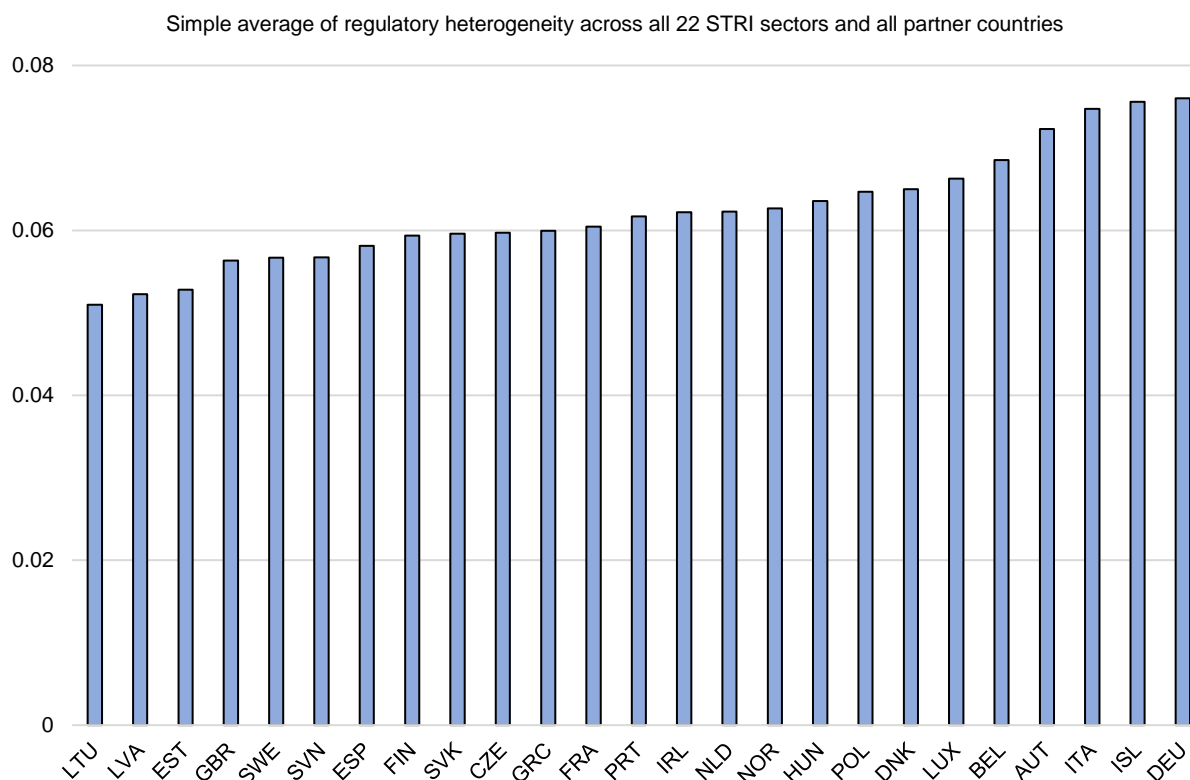
Note: The indices take values between zero and one, zero meaning absolute regulatory harmonisation and one meaning absolute regulatory heterogeneity. They are calculated on the basis of the intra-EEA STRI regulatory database.

Diving deeper into the characteristics of regulatory heterogeneity within the Single Market, Figure 7 shows average heterogeneity indices by country, across all sectors and all 25 partner countries. This indicator is lower, the more similar a country's regulatory regime is to the regulatory regimes of all other EEA members. The resulting indices lie in a range between 0.05 and 0.08. As mentioned above, these numbers reveal considerably lower levels of regulatory heterogeneity compared to a hypothetical situation where countries apply MFN policies, indicating the tremendous impact of the Single Market towards regulatory harmonisation.

While the resulting indices are extremely similar for all countries, three countries (Lithuania, Latvia and Estonia) seem to perform slightly better than the remaining 22 EEA members in this analysis, indicating that their policies are more similar to average policies

within the EEA. Countries that diverge most from the average of the 25 EEA members are Germany, Iceland and Italy, due to the impact of specific horizontal restrictions, which do not exist in other countries.

Figure 7. Regulatory heterogeneity by country



Note: The indices take values between zero and one, zero meaning absolute regulatory harmonisation and one meaning absolute regulatory heterogeneity. They are calculated on the basis of the intra-EEA STRI regulatory database.

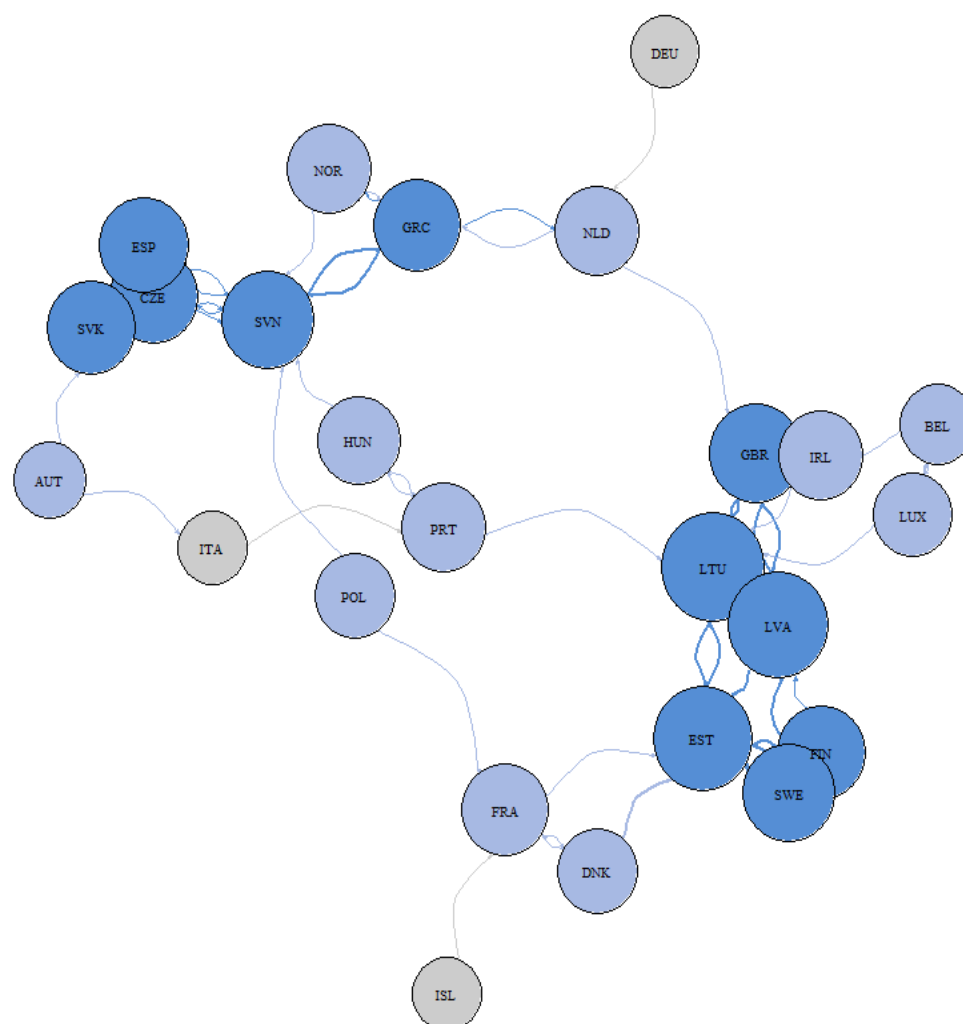
In addition to the representation as bar charts, regulatory heterogeneity can be visualised in network graphs. The network graphs presented in Figure 8 show connections between countries with most similar regulation, based on average STRI heterogeneity for the 22 sectors. The size of each country node is derived from its similarity to all other countries, the so-called centrality. The centrality of countries is also indicated by the colour of the node, with more central countries shown in darker shades of blue and less central countries shown in grey. Arrows point towards the most similar countries from the perspective of the country from which the arrow originates. The thickness of the lines indicates the degree of bilateral similarity. All countries are assigned at least one arrow to the most similar country. Beyond that, the number of arrows is determined by the centrality of each country.

As already shown above, services regulation in Germany, Iceland and Italy differs most strongly from regulation in other EEA members. The network graph reveals that the three countries are located at different ends of the network, with regulation in Portugal being most similar to Italy's regime, regulation in France being most similar to Iceland's regime and Germany being located close to the Netherlands. In general, there is a tendency that regulatory similarity is related to regional proximity. In addition to the cluster of Baltic countries in the centre of the network, this can be seen from strong linkages between

Finland and Sweden; between Belgium and Luxemburg; the United Kingdom and Ireland, or between the Czech Republic, Slovakia, and Slovenia.

Figure 8. Bilateral regulatory heterogeneity

Simple average of regulatory heterogeneity across all 22 STRI sectors visualised as network graph

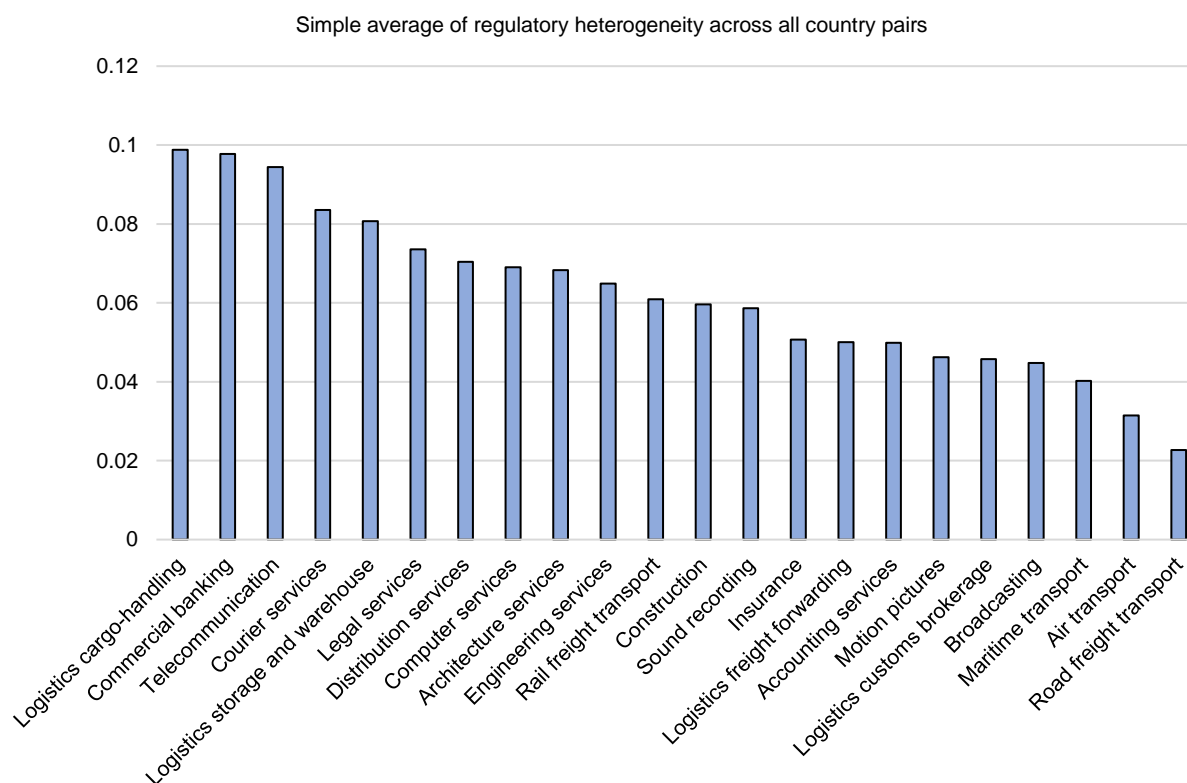


Note: Size and colour of each country node indicate centrality towards other countries, with more central countries in darker shades of blue and less central countries in grey. Connecting arrows indicate bilateral similarity. All countries are assigned at least one arrow to the most similar country.

Figure 9 presents average regulatory heterogeneity by sector. The figure reveals that some sectors are subject to homogeneous regulatory regimes across the EEA, resulting in substantial regulatory harmonisation. Road freight transport, air transport and maritime transport are examples for such sectors, characterised by very low levels of regulatory heterogeneity. At the other extreme, regulation of logistics cargo-handling, commercial banking, and telecommunications services remains significantly more diverse than in other sectors. All three sectors are characterised by major state-owned companies in roughly half of the countries. In addition, a high importance of regulatory transparency measures contributes to regulatory heterogeneity in cargo-handling and commercial banking services. High levels of regulatory heterogeneity in telecommunications show the impact

of different market structures and country-specific regulatory decision-making in the sector. However, it is also due to the fact that this sector is large governed by EU Directives rather than Regulations, which are not directly enforceable and often are less ambitious in their effort towards harmonisation.

Figure 9. Regulatory heterogeneity by sector



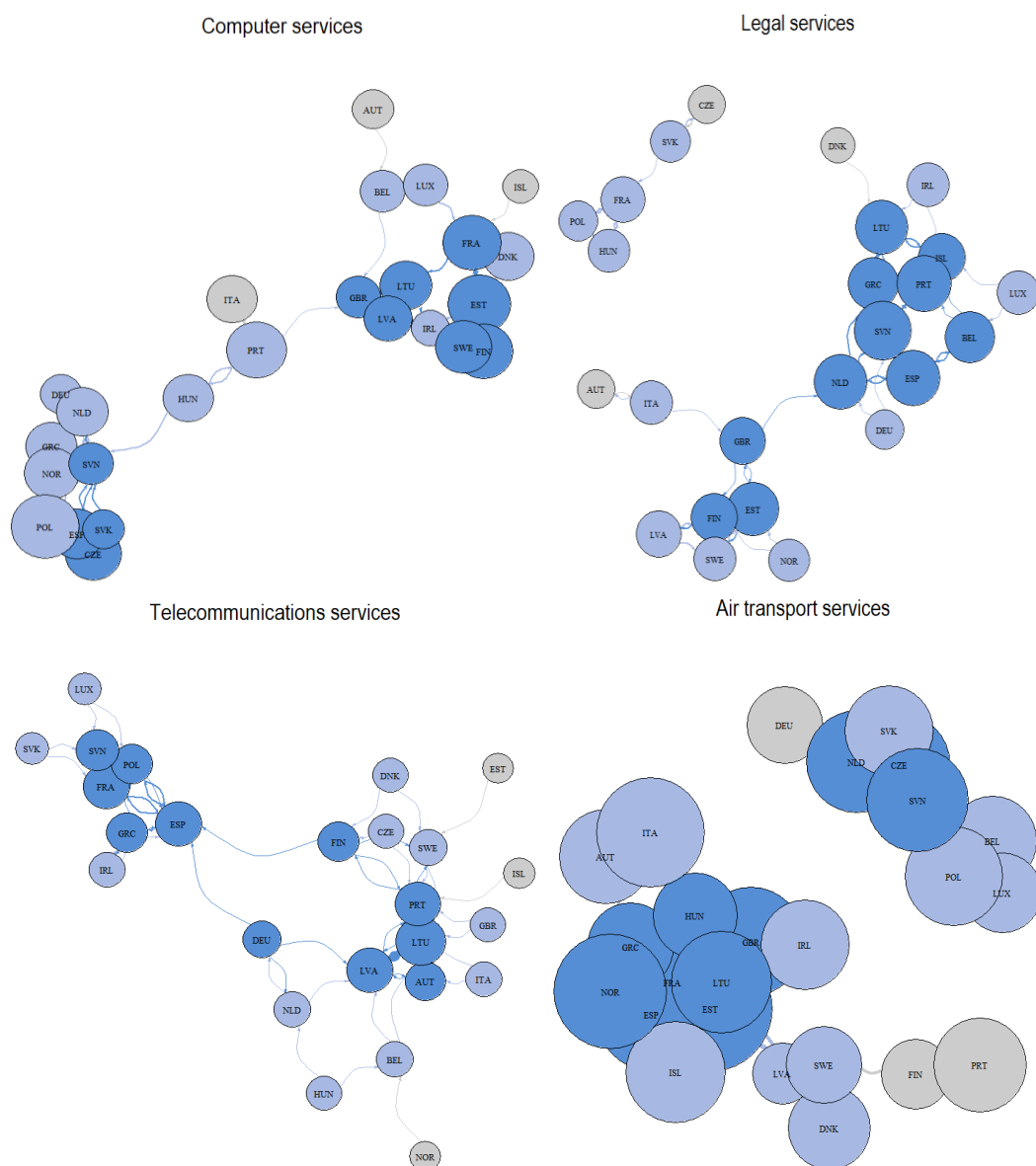
Note: The indices take values between zero and one, zero meaning absolute regulatory harmonisation and one meaning absolute regulatory heterogeneity. They are calculated on the basis of the intra-EEA STRI regulatory database.

Figure 10 uses network graphs to illustrate diversity of regulatory heterogeneity for computer services, legal services, telecommunications services and air transport. As shown in Figure 9, computer services and legal services exhibit similar average levels of regulatory heterogeneity. This similarity is reflected by a comparable size of bubbles in the two panels in Figure 10. In computer services, Austria, Iceland and Italy can be identified as countries with regulation that diverges most from the average, while this is the case for the Czech Republic, Denmark and Austria in legal services.

Striking is the difference between telecommunications and air transport services, with respect to the size of bubbles and the distance between countries in the graph. In a very homogeneous sector such as air transport, bubbles are of larger size and located much closer to each other. EEA members seem to be split into two groups of countries, even though regulatory heterogeneity is very low also across the two groups. In contrast, high levels of regulatory heterogeneity in telecommunications services imply a small size of the bubbles and nodes that are only loosely connected by thin lines.

Figure 10. Bilateral regulatory heterogeneity by sector

Regulatory heterogeneity visualised as network graph



Note: Size and colour of each country node indicate centrality towards other countries, with more central countries in darker shades of blue and less central countries in grey. Connecting arrows indicate bilateral similarity. All countries are assigned at least one arrow to the most similar country.

4. Conclusion

This note describes the methodology and results of the intra-EEA STRI database. This database complements the existing OECD STRI, a regulatory database and up-to-date snapshot of services regulatory regimes in 22 sectors across 45 countries between 2014 and 2018. Based on 25 EEA members included in the database, the resulting indices reveal that services trade restrictiveness within the Single Market of the EEA is considerably lower than the applied MFN regime of EEA member countries.

Across all sectors, average remaining services trade barriers within the Single Market are 0.06, meaning that Single Market rules have reduced the STRI by 0.16, compared with each country's MFN applied policies. Comparing intra-EEA restrictions with barriers toward third countries by sector, it becomes clear that legal services and air transport are the sectors in which European integration has most strongly contributed to liberalisation of services trade. By contrast, the difference between restrictions towards third countries and restrictions towards EEA members is much smaller in telecommunications and distribution services.

In addition, the intra-EEA STRI shows that integration within the EEA has led to considerable regulatory harmonisation among its members. In a hypothetical situation where the Single Market did not exist, average regulatory heterogeneity between the 25 countries was 0.22, while regulatory heterogeneity based on actual Single Market policies is only 0.06. Cross-country homogeneity of Single Market regulations is highest for road freight transport services, whereas logistics cargo-handling regulation exhibits substantial differences across EEA members.

The intra-EEA STRI database complements existing OECD STRI databases and tools. The databases and resulting indices facilitate additional analytical work and provide information on the liberalisation process within the EEA.

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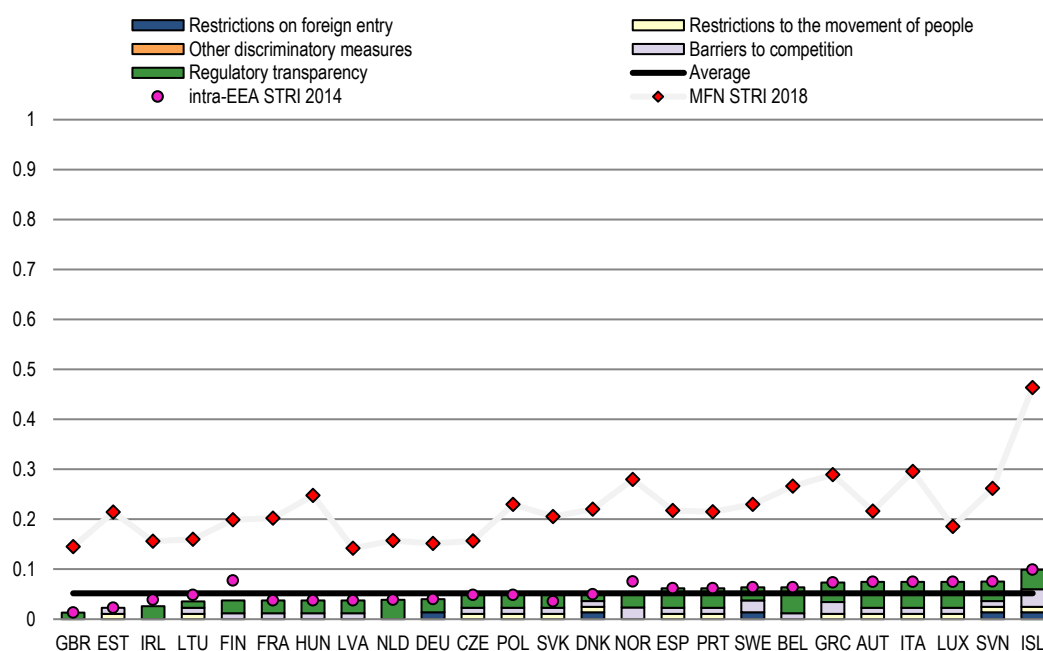
Annex A.

Annex sector indices

Annex Table 1. Intra-EEA STRI scores, 2018

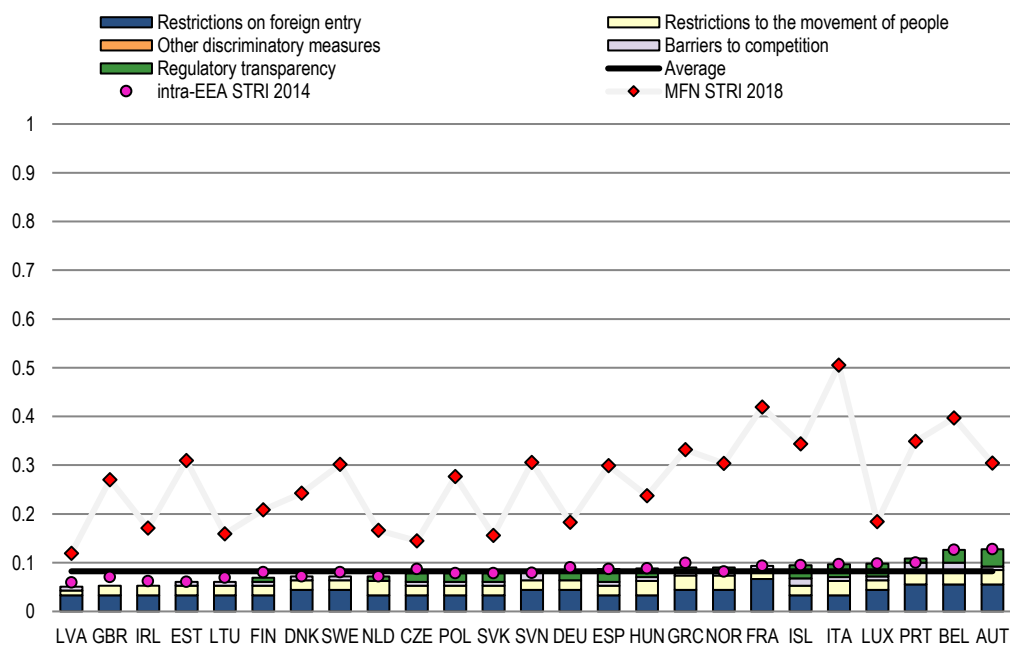
Sector	AUT	BEL	CZE	DEU	DNK	ESP	EST	FIN	FRA	GBR	GRC	HUN	IRL	ISL	ITA	LTU	LUX	LVA	NLD	NOR	POL	PRT	SVK	SVN	SWE
Computer services	0.09	0.07	0.05	0.05	0.03	0.07	0.02	0.03	0.02	0.00	0.05	0.05	0.00	0.09	0.09	0.02	0.07	0.02	0.02	0.03	0.05	0.03	0.05	0.02	0.02
Telecommunication	0.05	0.08	0.07	0.04	0.04	0.04	0.07	0.05	0.03	0.08	0.04	0.07	0.04	0.08	0.05	0.03	0.06	0.05	0.05	0.08	0.03	0.02	0.04	0.03	0.03
Broadcasting	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.06	0.07	0.06	0.07	0.09	0.06	0.10	0.08	0.05	0.05	0.07	0.04	0.07	0.06	0.07	0.07	0.07	0.06
Motion pictures	0.06	0.05	0.04	0.05	0.03	0.05	0.03	0.03	0.04	0.03	0.03	0.05	0.01	0.05	0.07	0.03	0.05	0.03	0.02	0.02	0.04	0.03	0.05	0.03	0.02
Sound recording	0.00	0.10	0.08	0.05	0.04	0.07	0.03	0.06	0.03	0.02	0.05	0.06	0.02	0.09	0.10	0.03	0.09	0.03	0.03	0.05	0.06	0.05	0.06	0.03	0.03
Air transport	0.16	0.16	0.16	0.16	0.16	0.15	0.14	0.17	0.14	0.13	0.14	0.15	0.14	0.16	0.15	0.14	0.17	0.15	0.15	0.14	0.17	0.18	0.16	0.15	0.15
Maritime transport		0.04		0.04	0.04	0.05	0.02	0.03	0.01	0.01	0.04		0.03	0.05	0.07	0.01		0.01	0.02	0.03	0.05	0.03		0.08	0.07
Road freight transport	0.04	0.02	0.02	0.05	0.03	0.02	0.01	0.05	0.02	0.01	0.02	0.02	0.02	0.03	0.02	0.01	0.02	0.01	0.02	0.05	0.03	0.02	0.02	0.01	0.01
Rail freight transport	0.12	0.08	0.10	0.10	0.06	0.09	0.06	0.08	0.09	0.06	0.07	0.10	0.06		0.11	0.06	0.09	0.09	0.04	0.07	0.11	0.06	0.10	0.09	0.07
Courier services	0.10	0.10	0.07	0.06	0.09	0.09	0.06	0.07	0.03	0.07	0.04	0.08	0.05	0.27	0.11	0.04	0.07	0.06	0.02	0.08	0.08	0.06	0.07	0.05	0.06
Distribution services	0.07	0.09	0.06	0.07	0.07	0.06	0.03	0.08	0.10	0.04	0.09	0.05	0.06	0.12	0.09	0.04	0.07	0.03	0.06	0.08	0.08	0.09	0.04	0.06	0.08
Logistics cargo-handling	0.08	0.09	0.08	0.07	0.06	0.08	0.07	0.12	0.09	0.04	0.07	0.10	0.05	0.11	0.13	0.03	0.07	0.05	0.06	0.05	0.09	0.06	0.04	0.12	0.11
Logistics storage and warehouse	0.12	0.07	0.07	0.07	0.06	0.08	0.02	0.10	0.09	0.03	0.05	0.09	0.03	0.11	0.10	0.02	0.11	0.03	0.05	0.03	0.07	0.06	0.06	0.10	0.05
Logistics freight forwarding	0.09	0.05	0.05	0.05	0.03	0.08	0.01	0.05	0.03	0.00	0.03	0.05	0.00	0.06	0.07	0.01	0.06	0.01	0.01	0.01	0.04	0.04	0.04	0.03	0.01
Logistics customs brokerage	0.07	0.06	0.06	0.05	0.04	0.07	0.03	0.04	0.04	0.01	0.04	0.06	0.01	0.07	0.07	0.03	0.06	0.03	0.03	0.04	0.05	0.06	0.05	0.04	0.03
Legal services	0.08	0.08	0.14	0.10	0.07	0.08	0.05	0.01	0.10	0.03	0.09	0.12	0.09	0.11	0.05	0.08	0.11	0.01	0.06	0.04	0.12	0.08	0.14	0.08	0.02
Accounting services	0.13	0.13	0.08	0.08	0.07	0.09	0.06	0.07	0.09	0.05	0.09	0.09	0.05	0.09	0.10	0.06	0.10	0.05	0.07	0.09	0.08	0.11	0.08	0.08	0.07
Commercial banking	0.08	0.08	0.05	0.08	0.04	0.05	0.04	0.03	0.06	0.04	0.06	0.06	0.04	0.10	0.07	0.03	0.10	0.02	0.04	0.05	0.09	0.08	0.06	0.04	0.03
Insurance	0.04	0.04	0.03	0.03	0.03	0.05	0.01	0.02	0.02	0.01	0.03	0.03	0.01	0.06	0.04	0.01	0.04	0.01	0.03	0.04	0.05	0.03	0.03	0.04	0.02
Construction	0.07	0.06	0.05	0.04	0.05	0.06	0.02	0.04	0.04	0.01	0.07	0.04	0.03	0.10	0.07	0.04	0.07	0.04	0.04	0.05	0.05	0.06	0.05	0.08	0.06
Architecture services	0.13	0.13	0.07	0.11	0.04	0.11	0.05	0.05	0.07	0.04	0.06	0.08	0.04	0.08	0.10	0.06	0.10	0.05	0.04	0.03	0.08	0.06	0.11	0.05	0.03
Engineering services	0.11	0.05	0.05	0.08	0.02	0.09	0.01	0.02	0.01	0.00	0.04	0.06	0.00	0.06	0.08	0.01	0.08	0.02	0.01	0.01	0.05	0.04	0.09	0.02	0.01

Annex Figure 1. Construction services, 2018



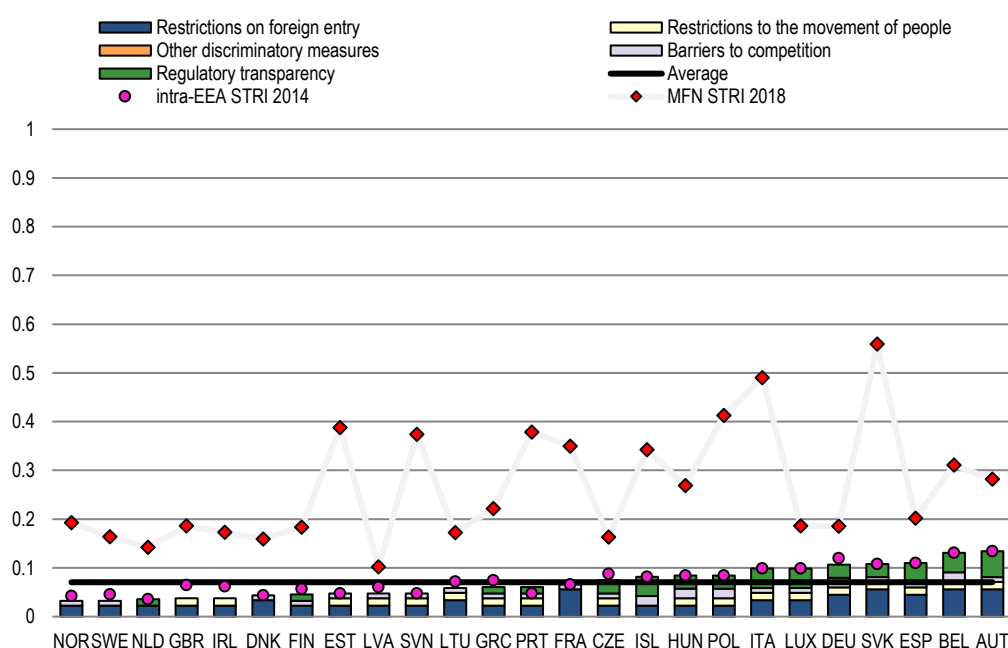
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 2. Accounting services, 2018



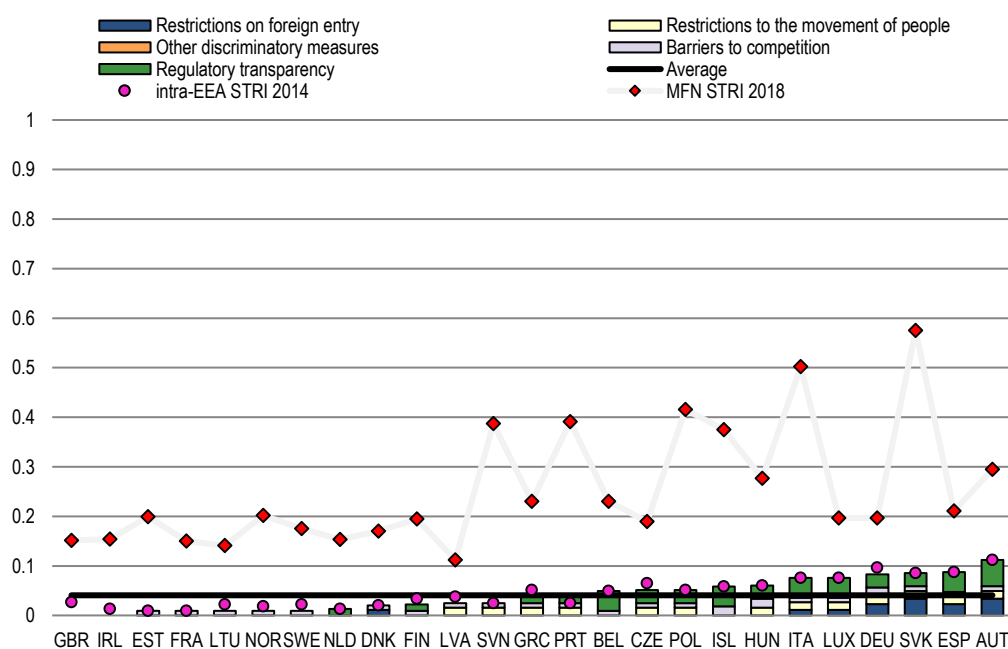
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 3. Architecture services, 2018



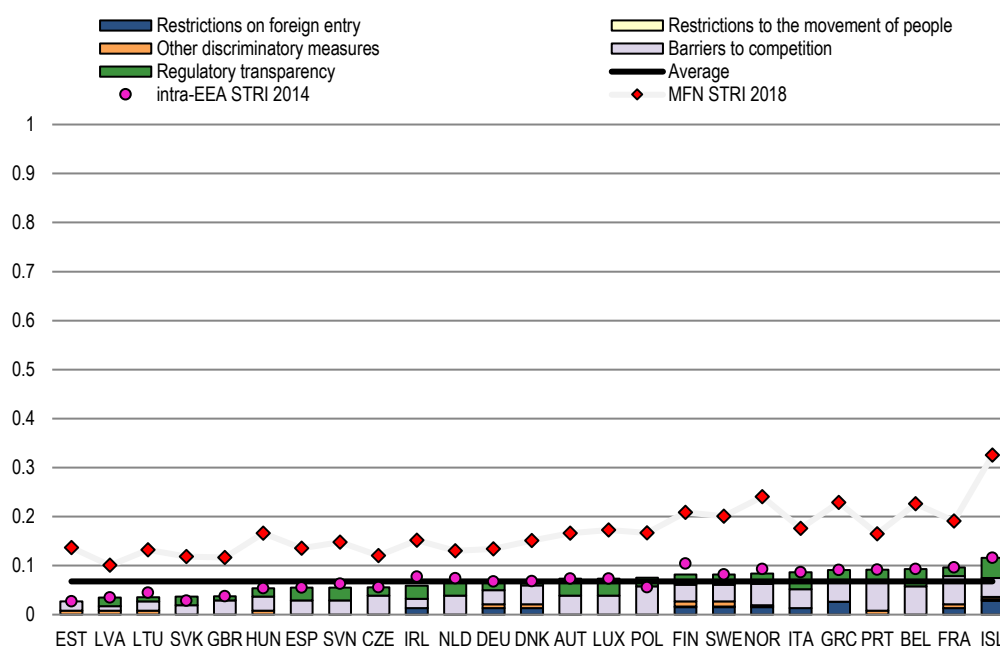
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 4. Engineering services, 2018



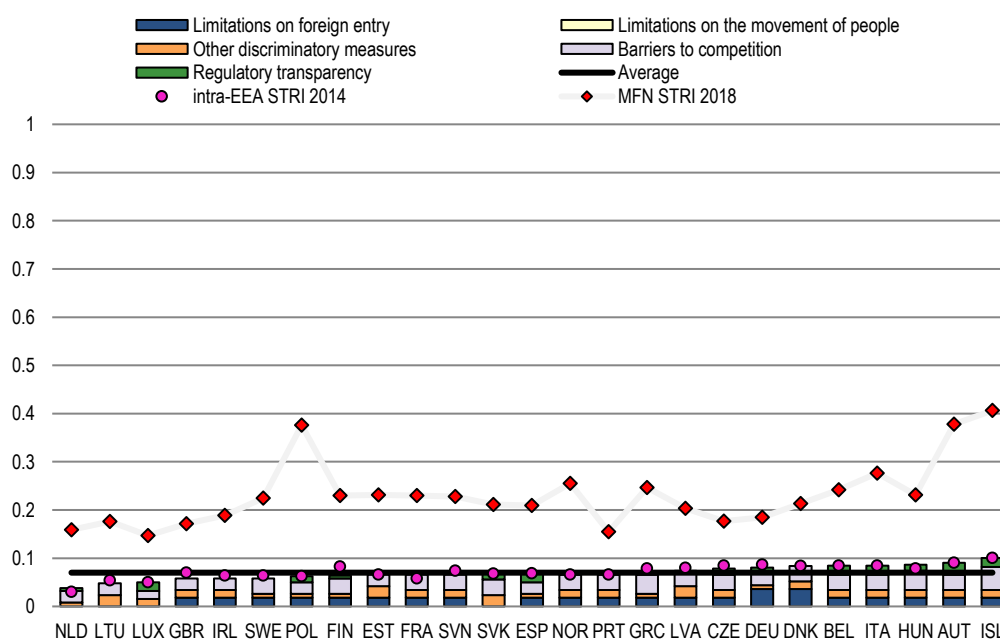
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 5. Distribution services, 2018



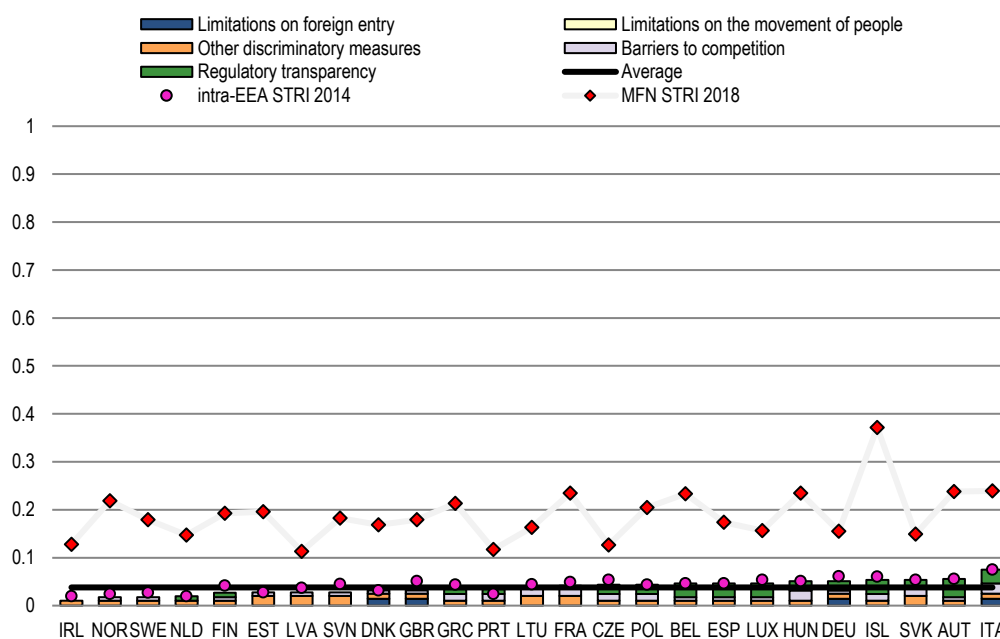
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 6. Broadcasting services, 2018



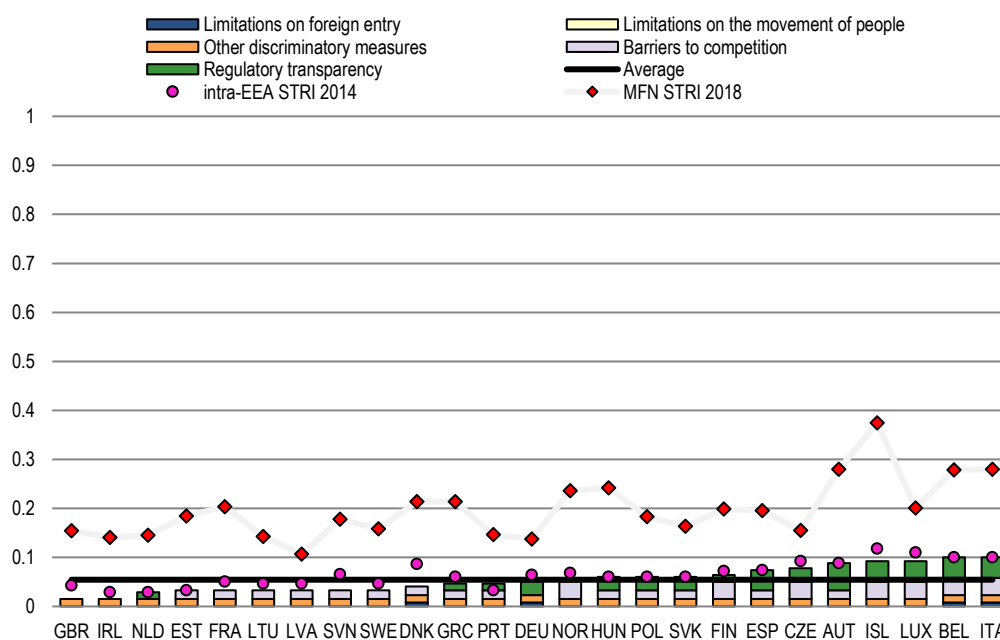
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 7. Motion picture services, 2018



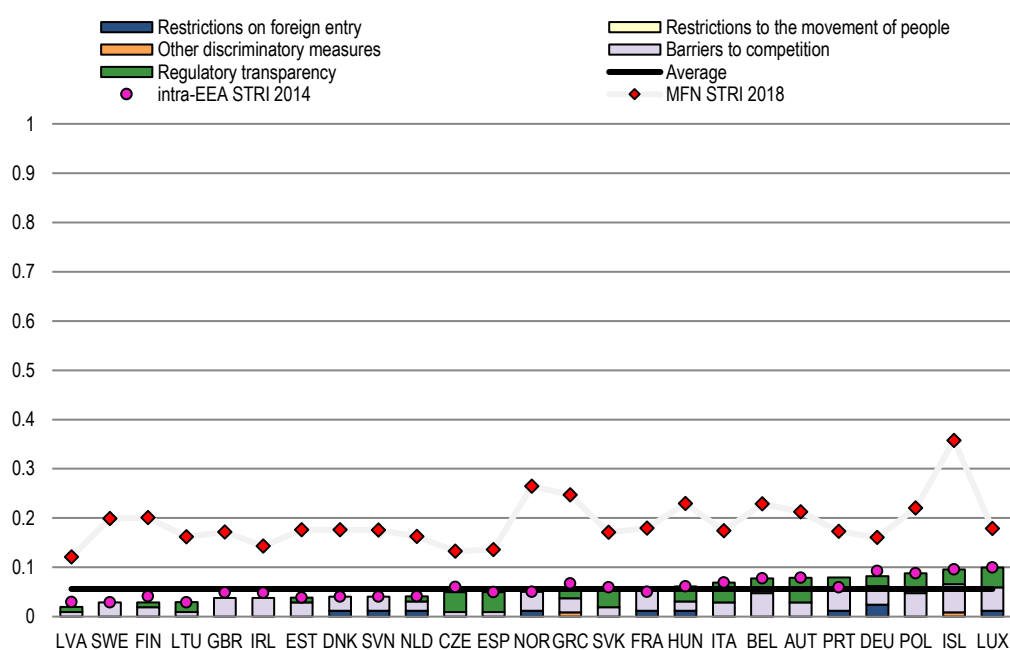
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 8. Sound recording services, 2018



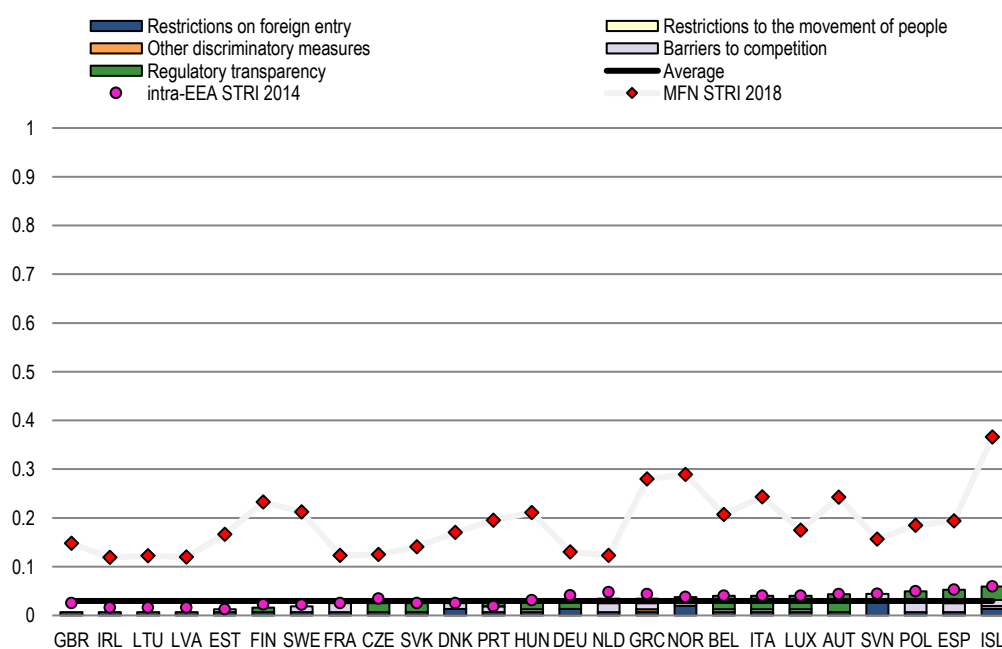
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 9. Commercial banking services, 2018



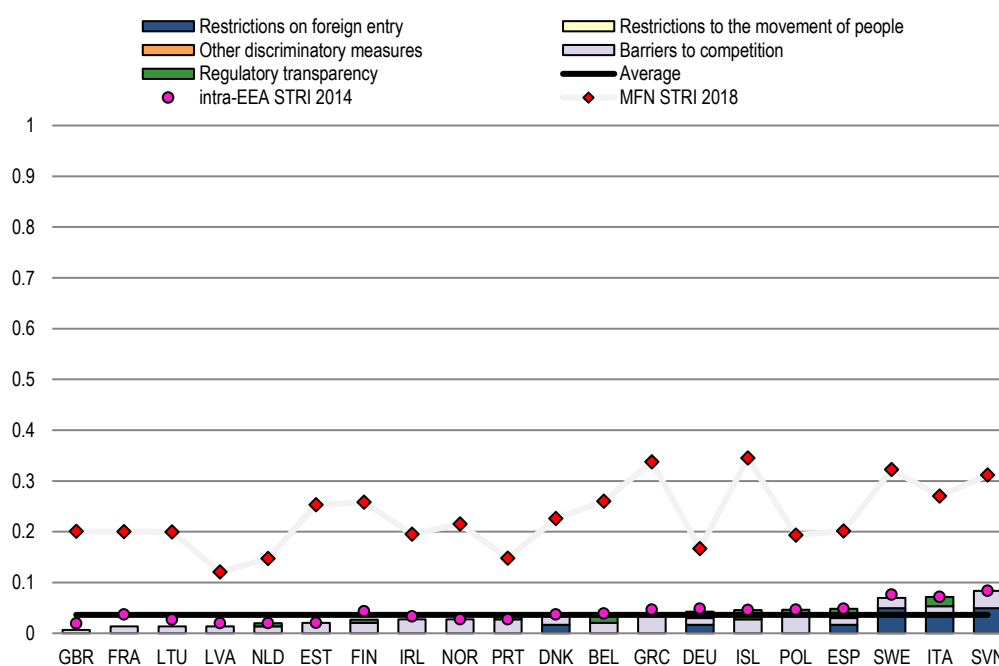
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 10. Insurance services, 2018



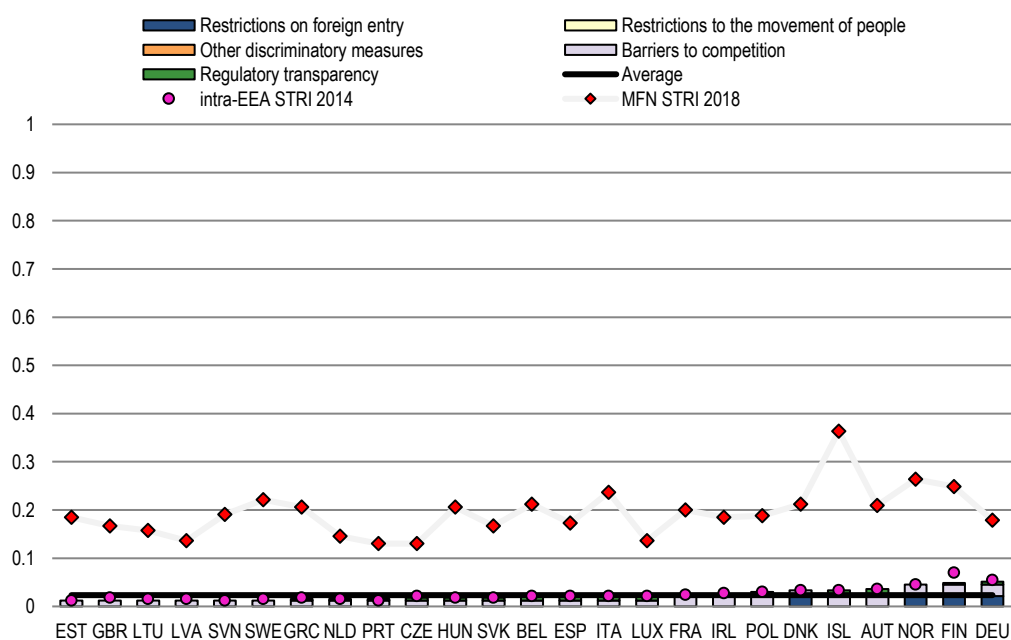
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 11. Maritime transport services, 2018



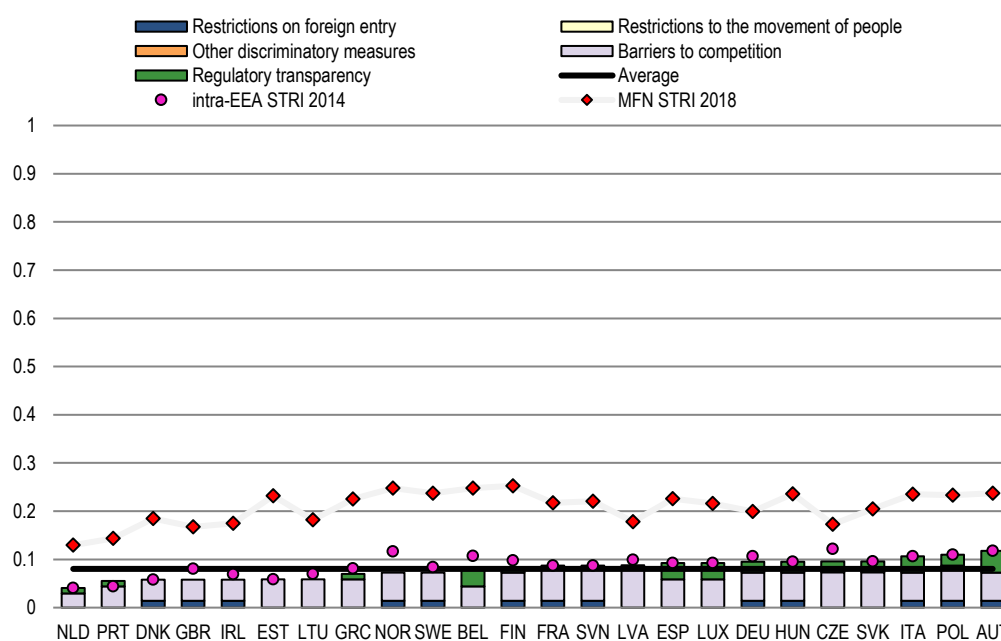
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 12. Road freight transport services, 2018



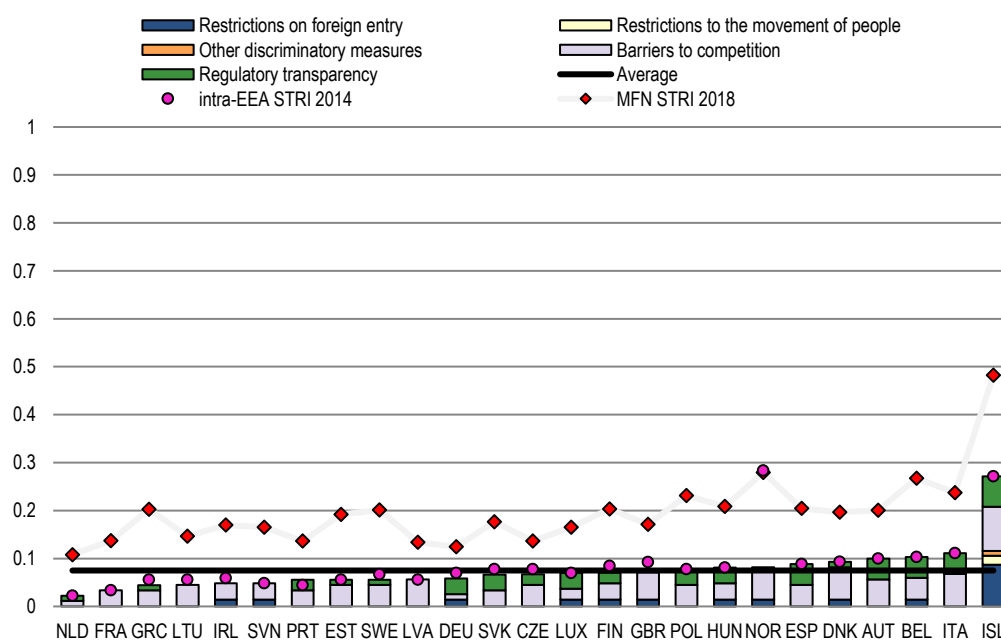
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 13. Rail freight transport, 2018



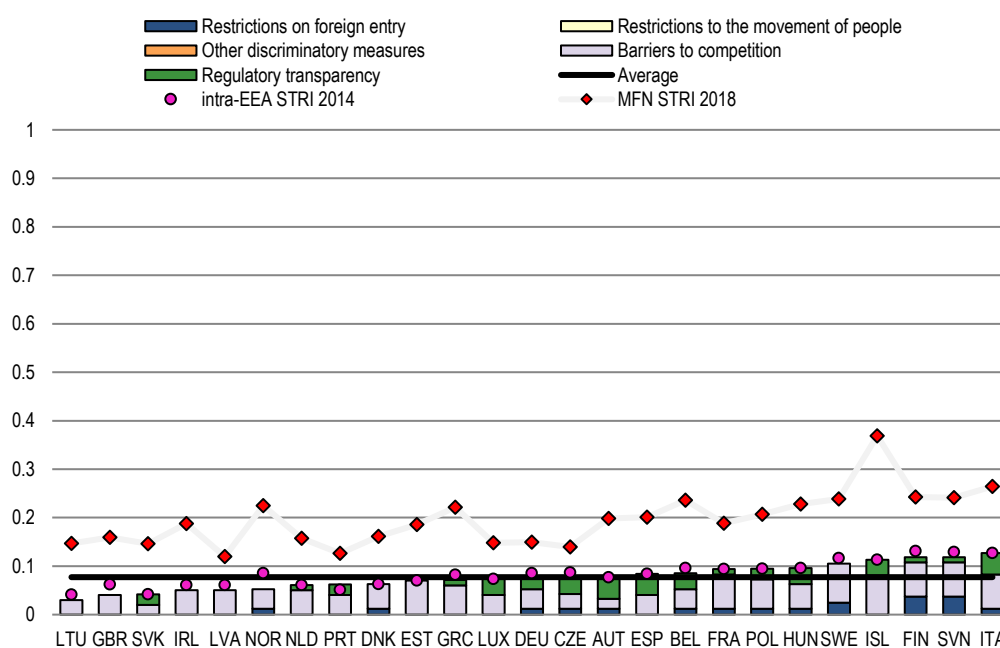
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 14. Courier services, 2018



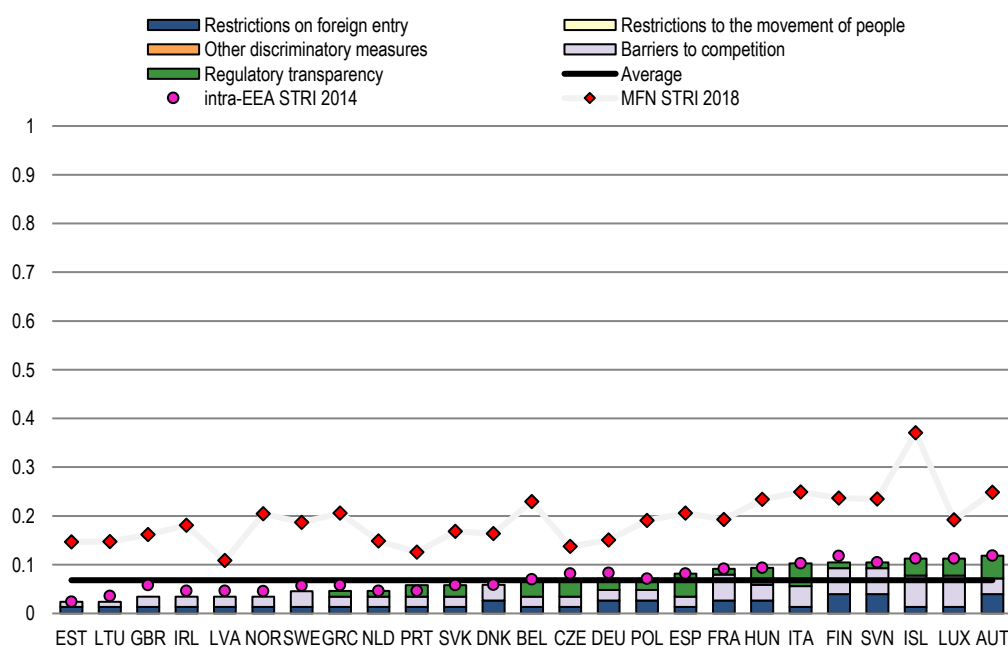
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 15. Logistics cargo-handling services, 2018



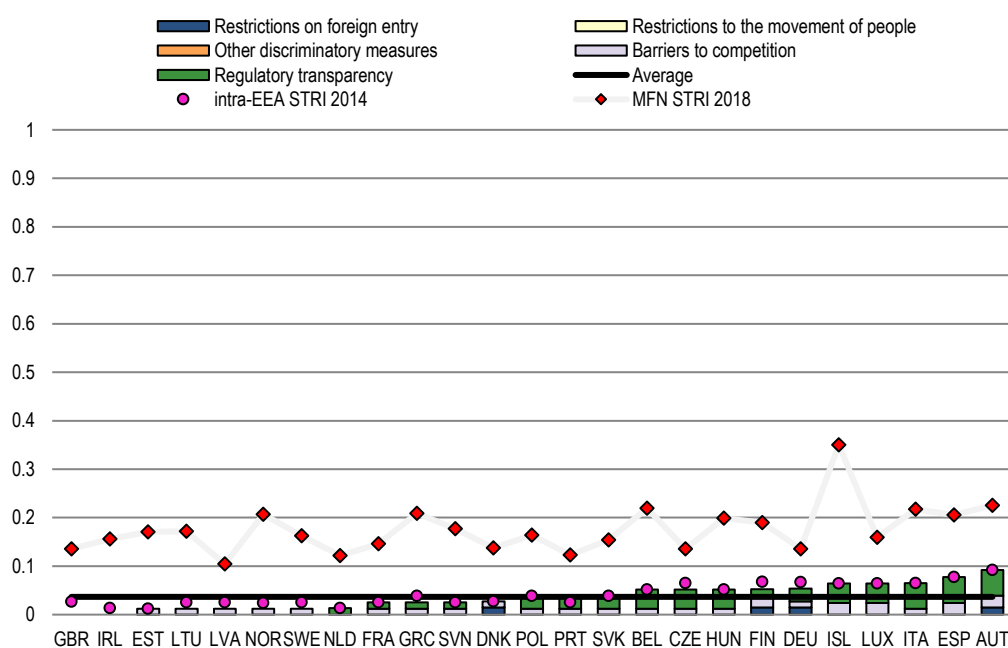
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 16. Logistics storage and warehouse services, 2018



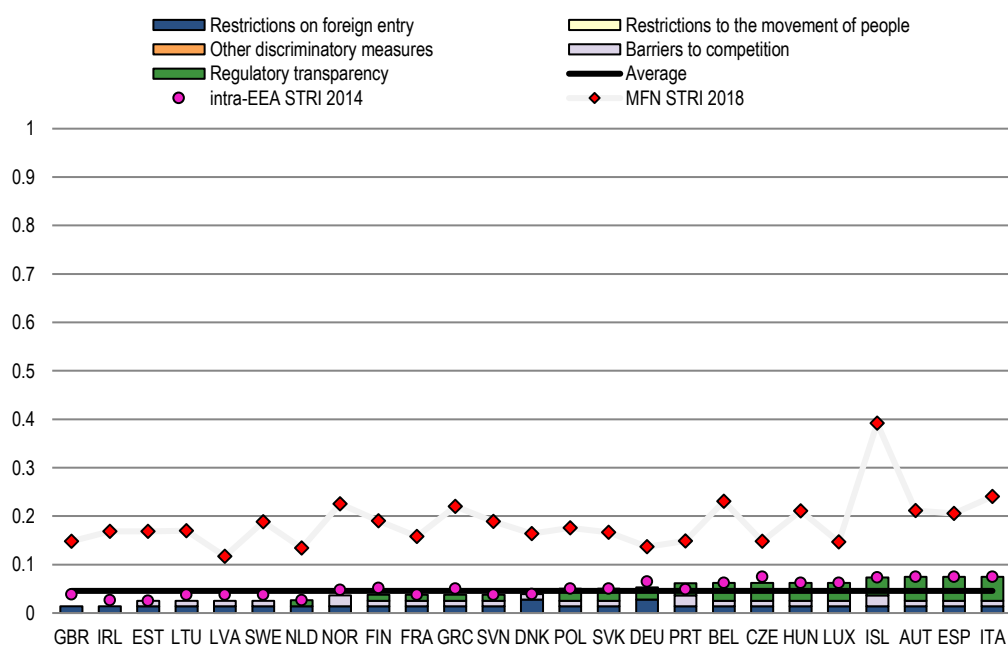
Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 17. Logistics freight-forwarding services, 2018



Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.

Annex Figure 18. Logistics customs brokerage services, 2018



Note: The indices take values between zero and one, one being the most restrictive. They are calculated on the basis of the intra-EEA STRI regulatory database.