



PRODUCT MARKET REGULATION

A detailed explanation of the Methodology used to build the OECD PMR Indicators



ECONOMICS DEPARTMENT

A detailed explanation of the methodology used to build the OECD PMR indicators]

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This note explains in some details the approach used by the OECD to build the latest vintage of the PMR Economy-wide and Sector indicators.

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A detailed explanation of the methodology used to build the OECD PMR indicators

1. In 1998 the OECD developed a set of indicators of product market regulation (PMR) in order to measure a country's regulatory barriers to competition and to track reform progress over time. This set included an economy-wide PMR indicator and a group of indicators that measures regulation at the sector level, which are referred to as PMR sector indicators. The PMR indicators have been updated every 5 years since then.
2. Over time, the PMR indicators have become an essential element of the OECD's policy analysis toolkit, as they enhance the knowledge of regulatory practices in individual countries and permits to investigate their link with economic performance. The PMR indicators form an integral part of the Going for Growth exercise and OECD Economic Surveys, where they are used to formulate recommendations for policy reforms. These indicators and their underlying database are also widely used by national governments, other international organisations (e.g. IMF, WB, and European Union), and international forums, such as the G20 and APEC, to determine areas for regulatory change. Academics and research institutions also employ largely the PMR indicators, as it is the most extensive quantitative measure of the state of regulation in the markets for goods and services currently available.
3. This note provides a detailed explanation of the methodology used to build the PMR indicators. It refers to the methodology used to build the PMR indicators for the 2018 update. This methodology is different from the one used to build previous vintages. After twenty years in which the PMR indicators had only been subject to small changes, the OECD considered that a review of their content and structure was necessary, to ensure that they maintain their relevance in the context of evolving insights from economic theory, modifications in the economic and business environment, and changes in the practice of regulation.

The PMR indicators

4. The PMR indicators are based on an extensive database, which is prepared by the OECD relying on the answers to a questionnaire compiled by national authorities.
5. The information included in the database is used to build two sets of indicators: an economy-wide indicator, which provides a general quantitative measure of a country's regulatory stance, and a group of sector indicators that focus on regulation at the level of specific network and service sectors.
6. To calculate the indicators, this qualitative information is transformed into quantitative information by assigning a numerical value to each answer. The coding is based on accepted international best practices, which are summarised in the 2018 PMR Schematas (available on the PMR webpage). The coded information is normalised over a zero to six scale, where a lower value reflects a more competition-friendly regulatory stance. This information is then incorporated through a bottom-up approach into the two sets of indicators. This bottom-up approach allows tracing indicator scores back to individual policies.
7. The information refers to laws and regulations in force in the countries surveyed at a specific point in time. For most of the countries included in the 2018 vintage, the information refers to the 1 January 2018. However, for some countries, where the data

collection was undertaken at a later stage, the information refers to a later date. The database available on the OECD webpage shows the date the information refer to.

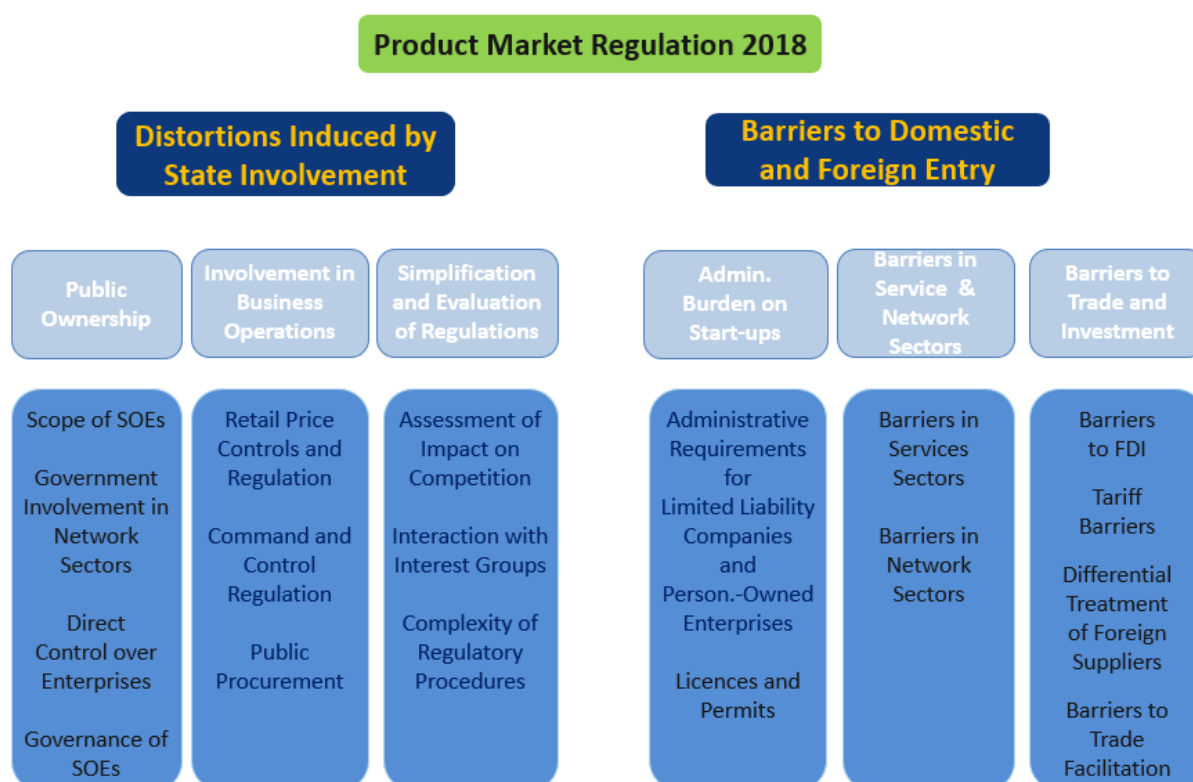
8. The information only captures the ‘de jure’ policy settings. This means that the answers are not based on ‘subjective’ assessments by market participants, as in opinion surveys, and that they do not reflect the actual enforcement of the laws. These two aspects of the data make the indicators’ comparability across countries more reliable by insulating them from context-specific assessments and by allowing the OECD to verify the reliability and precision of the answer. However, this entails that the extent and manner in which laws and regulations are applied is hardly reflected in the indicators, hence a country that has laws “in the books” that are competition-friendly, but does not enforce them, would still obtain a favourable score.

The economy wide PMR indicator

9. The structure of the PMR indicators reflects its content. The economy wide indicator is composed of two high-level indicator that focus on the two major areas that influence how markets for goods and services are regulated: state involvement in the economy, and barriers to entry and expansion faced by domestic and foreign firms.

10. Each of this high-level indicator is composed of three medium-level indicators. Each medium level indicator is composed of low-level indicators that focus on specific regulatory domains (Figure 1).

Figure 1. The structure and content of the economy-wide PMR indicator (2018 update)



Distortions Induced by State Involvement

11. The first high-level component of the economy-wide PMR indicator, ***Distortions Induced by State Involvement***, captures the distortions that can be caused by the involvement of the state in the economy through ownership and control of firms, and other

forms of controls and obligations imposed on private firms. It also captures the way in which new and existing regulations are evaluated to minimize the impact on competition, and the nature of rules that discipline the public procurement of goods, services and public works.

12. Its three mid-level components focus on:

1. Extent of the presence of state-owned enterprises in the economy and their governance (*Public Ownership*),
2. Controls and obligations imposed on private firms (e.g. price regulation) including the rules regulating public procurement (*Involvement in Business Operations*), and
3. Rules in place to evaluate new and existing regulations in order to minimize negative impacts on competition, regulation of interaction between interest groups and policymakers, and efforts in simplifying the administrative burden on firms of interacting with the government (*Simplification and Evaluation of Regulations*).

13. The 10 low-level indicators (marked in blue) focus each on a specific regulatory area, more specifically:

- *Scope of state-owned enterprises (SOEs)*: measures whether the government controls at least one firm in a number of business sectors, with a higher weight given to the key network sectors on which the PMR exercise focuses.
- *Direct control over business enterprises*: measures the existence of special voting rights by the government in privately owned firms and constraints to the sale of government stakes in publicly controlled firms (based on same sectors and weights as the indicator above).
- *Government involvement in network sectors*: measures the size of the government's stake in the largest firm in key network sectors.
- *Governance of state-owned enterprises*: measures the degree of insulation of state-owned enterprises from market discipline and degree of political interference in the management these firms. This indicator is aligned with the key requirements of the 2015 OECD Guidelines on Corporate Governance of State-Owned Enterprises¹.
- *Retail Price Controls*: measures the extent and type of retail price controls in the key network and service sectors.
- *Command and control regulation*: measures the extent to which the government uses coercive (as opposed to incentive-based) regulations across key network and service sectors.
- *Public procurement*: measures the degree to which procurement rules ensure a level playing field in access to public contracts for the provision of goods, services and public works.
- *Assessment of Impact on Competition*: measures the level of assessment of the impact of new and existing regulations on competition to ensure minimization of distortions to competition. This indicator partially relies on the regulatory policy and governance (iREG) database developed by the OECD Directorate for Public Governance.
- *Interaction with Interest Groups*: measures the existence of rules for engaging stakeholders in the design of new regulation to reduce unnecessary restrictions to competition and for ensuring transparency in lobbying activities. This indicator

¹ The 2015 OECD Guidelines on Corporate Governance of State-Owned Enterprises can be found at: <https://www.oecd.org/corporate/guidelines-corporate-governance-soes.htm>

partially relies on the regulatory policy and governance (iREG) database developed by the OECD Directorate for Public Governance.

- *Communication and simplification of rules and procedures*: measures the government's efforts in reducing and simplifying the administrative burden on firms of interacting with the government.

14. For more information on the use of other indicators and databases in the computation of the PMR indicators, please refer to Appendix A.

Barriers to Domestic and Foreign Entry

15. The second high-level component of the economy-wide PMR indicator, ***Barriers to Domestic and Foreign Entry***, includes information on the level of the barriers to entry and expansion of domestic and foreign firms in various sectors of the economy.

16. Its three mid-level components focus on:

1. The administrative burden that new firms have to face to start their business (*Administrative Burden on Start-ups*),
2. The qualitative and quantitative barriers firms face when entering and operating in specific key economic sectors (*Barriers in Service and Network Sectors*),
3. The barriers that could limit the access to domestic markets of foreign firms and foreign investors (*Barriers to Trade and Investment*).

17. The 8 low-level indicators focus each on a specific regulatory area, more specifically:

- *Administrative requirements limited liability companies and personally owned enterprises*: measures the administrative requirements necessary to set up new enterprises, including the number of private and public bodies that need to be contacted and the costs of complying with this requirements, with a focus on two specific legal forms: limited liability companies and personally owned enterprises.
- *Licences and permits*: measures the existence of initiatives to simplify licensing procedures, such as 'one-stop-shops' for informing business about licences and notifications and for issuing/accepting them, 'silence is consent' rule and programs to review and reduce number of licences.
- *Barriers in services sectors*: measures the extent of the qualitative and quantitative barriers to competition arising from existing regulation in key service sectors.
- *Barriers in network sectors*: measures the extent the qualitative and quantitative barriers to competition arising from existing regulation in network sectors.
- *Differential treatment of foreign suppliers*: measures the level of discrimination that foreign firms may experience when participating in public procurement processes, and the barriers to entry that foreign firms may experience sectors relative to domestic firms in key network and service.
- *Barriers to Foreign Direct Investment (FDI)*: measures the restrictiveness of a country's FDI rules in 22 sectors in terms of foreign equity limitations, screening or approval mechanisms, restrictions on the employment of foreigners as key personnel and operational restrictions. This indicator reflects the value of the FDI Restrictiveness Index developed by the OECD Directorate for Financial and Enterprise Affairs.
- *Tariff barriers*: reflect the value of a cross-product average of effectively applied tariffs. The source of the relevant information is the UNCTAD Trade Analysis Information System database.

- *Barriers to trade facilitation*: measures the level of complexity of the technical and legal procedures for international trade, ranging from border procedures to the simplification and harmonisation of trade documents. This indicator reflects the value of the average of a subset of the Trade Facilitation Indicators developed by the OECD Trade and Agricultural Department.

18. For more information on the use of other indicators and databases in the computation of the PMR indicators, please refer to Appendix B.

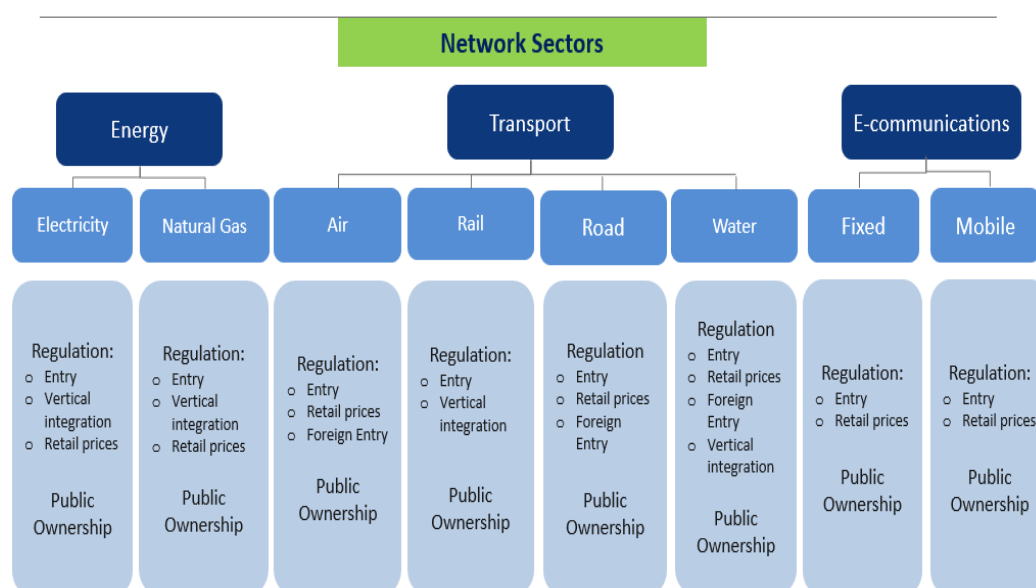
The sector PMR indicators

19. The sector PMR indicators summarize information by sector, and not by regulatory domain, as in the economy-wide indicator. These indicators cover three broad sectors: network industries, professional services and retail distribution.

20. The indicators for network industries assess eight sectors: electricity, natural gas, air transport, rail transport, road transport, water transport, as well as fixed and mobile e-communications. Each of these indicators is composed of information on how entry and conduct in the relevant sector is regulated, and on the level of public ownership.

21. These eight indicators are then aggregated into three indicators, one for each industry (energy, transport and e-communications), and in a single overall indicator for all network industries (Figure 2). It is important to stress that this latter indicator is an average of the eight disaggregated sector indicators (and not of the three industry ones). This ensures that each of the eight sectors has the same weight in the overall indicator.

Figure 2. Structure of the PMR indicators for Network Sectors (2018 update)



22. The services sector indicators cover six professions (accountants, architects, civil engineers, estate agents, lawyers, and notaries), as well as two sectors in retail distribution (general retail trade and retail sales of medicines).

23. The professional services indicators cover information on entry requirements and conduct constraints (Figure 3), whereas the retail trade indicators covers a broad set of regulatory issues, ranging from shop opening hours to retail price regulation, and licensing (Figure 4).

24. There is no aggregate indicator covering all eight sectors given the very different nature of the sectors covered. In addition, there is no single indicator on the regulation of all professional services, because some professions do not exist in all countries and a single average would distort comparisons.

Figure 3. Structure of the 2018 PMR indicators for Professional Services

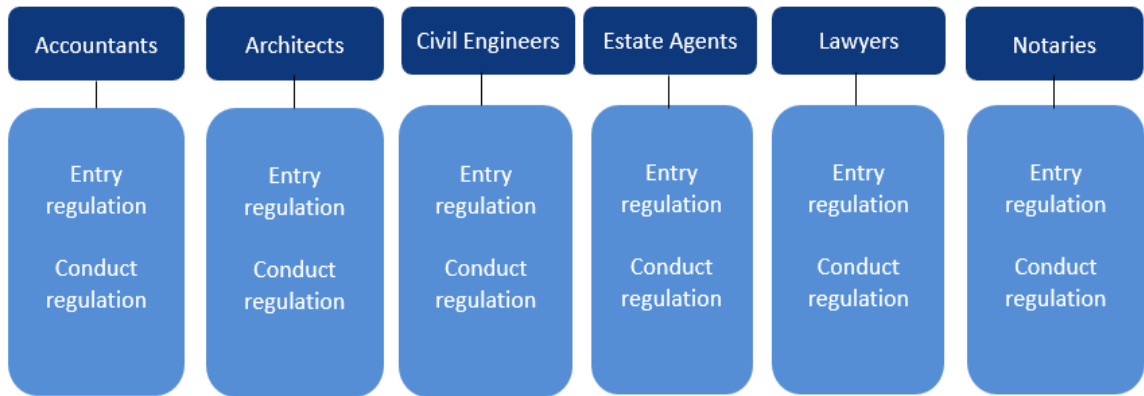
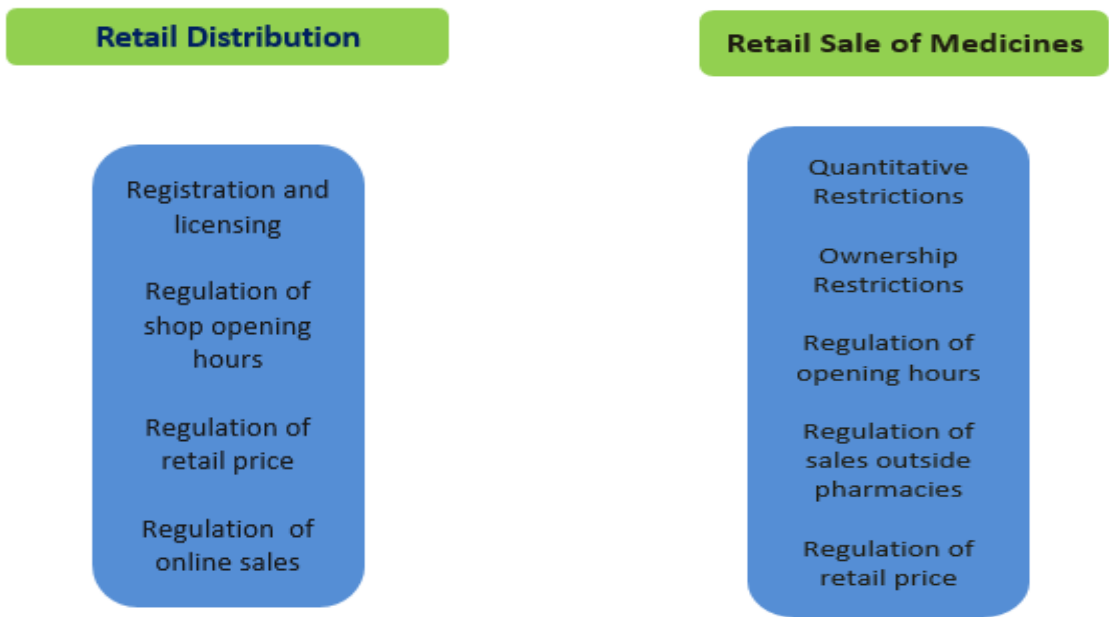


Figure 4. The structure of the PMR indicators for Retail Distribution (2018 update)

Panel A: General Retail Trade

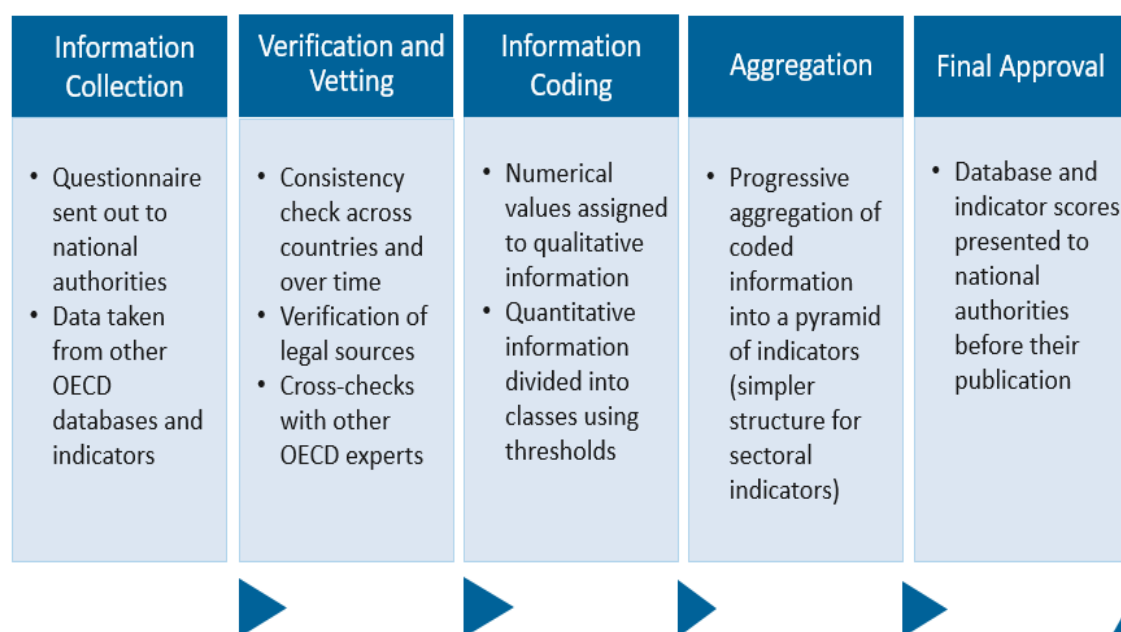
Panel B: Retail Sales of Medicines



Calculating the PMR Indicators

25. The PMR indicators are calculated through of a process articulated in many phases (Figure 5).

Figure 5. Process followed to calculate the PMR indicators



How the information is collected²

26. The information is collected using a large questionnaire. More details on this questionnaire can be found in Appendix A.

27. Each of the countries surveyed appoints a contact person, usually in the Ministry of Economy or Ministry of Finance. This person is in charge of identifying the relevant bodies within his/her country that have the competences to answer to the questionnaire and of coordinating the information collection.

28. Once the national authorities have completed the questionnaire, the OECD PMR team proceed to the verification of the answers. This process is essential to ensure that questions have been correctly interpreted, that the answers are consistent across countries and, where relevant, over time, and that the information provided is in line with similar information held by the OECD (e.g. information collected through other projects). Without these checks the OECD could not guarantee the comparability of the information across countries and, where applicable, over time.

29. To facilitate the verification process, the questionnaire ask national authorities to provide legal references and other supporting information for each of the answers they provide. In addition, where relevant, the OECD team involves experts from other OECD directorates to exploit their country and sectoral knowledge.

30. When doubts or uncertainties about specific answers arise or when answers are missing, the OECD team requires the relevant country's authorities to provide clarifications or further information. If the authorities does not respond, the OECD team tries to fill them using other reliable sources or leaves them as missing answers.

31. However, in order to limit the burden imposed on national authorities, in some cases the PMR database directly draws on other OECD indicators and databases. Further, in one

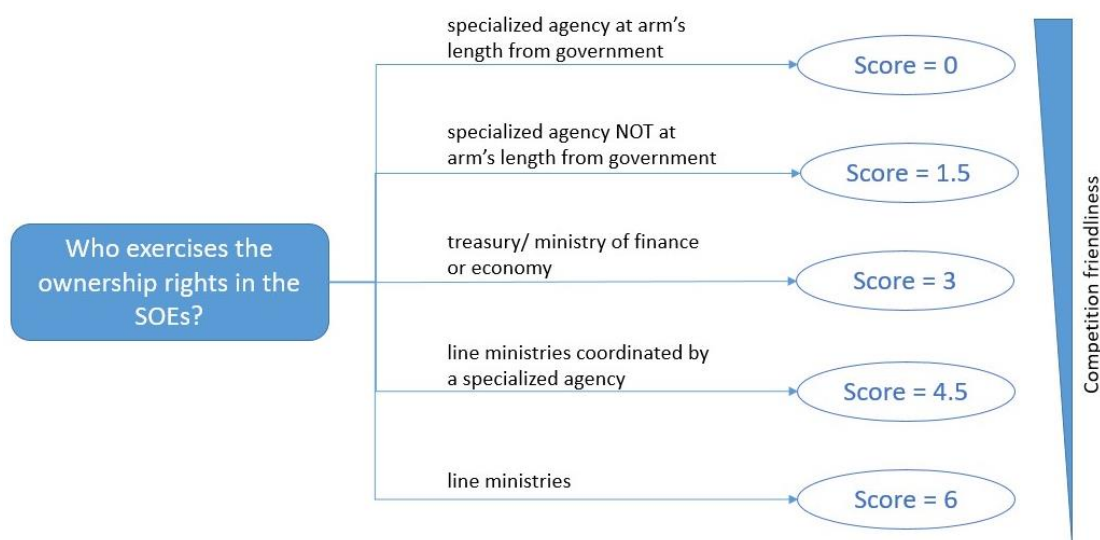
² The approach herein described refers to the OECD PMR indicators. The data collection and verification that leads to the computation of the OECD-WBG PMR indicators, which are the outcome of a joint programme of work between the OECD and the World Bank Group, follows a slightly different process. However, the methodology for calculating the indicators is the same.

specific area, tariff barriers to trade, the OECD relies on an external dataset: UNCTAD Trade Analysis Information System database (see Appendix B for more details).

How the information is coded

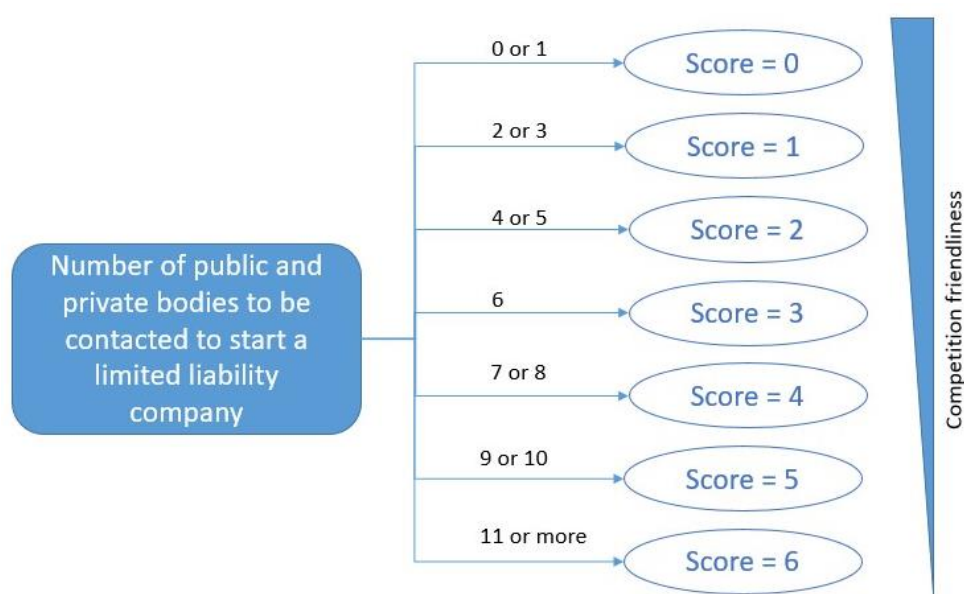
32. When the verification is completed, the OECD team assigning quantitative values to the answers collected (Figure 7). The values range on a zero to six scale, where a lower value reflects a more competition-friendly answer. Zero represents the international best practice.

Figure 7. Example of how an answer providing qualitative information is scored



33. Some questions require the respondent to answer by giving a numerical value, rather than a qualitative information. In this case, the possible answers are grouped into classes according to a set of thresholds, and the 0 to 6 values are applied to these classes (Figure 8).

Figure 8. Example of an answer providing quantitative information is scored



34. The PMR Schematas, available on the PMR dedicated webpage, explain in detail how each answer is scored.

35. If more than 20% of the data points that are necessary to calculate a low-level indicator are missing, the OECD does not calculate that low-level indicator because it considers the information not sufficient to provide a reliable score. If one low-level indicator is missing, the OECD cannot compute the economy-wide aggregate PMR indicator. Similarly, if more than 20% of the data points that are necessary to calculate a sector indicator are missing, the OECD does not calculate that indicator.

The PMR schematas

36. The PMR Schematas are two files that explain the methodology used to score the information collected and to aggregate it into the economy-wide and sector PMR indicators.

37. The PMR Schemata for the economy-wide indicator is composed of 18 tables, one for each low-level indicator, while the PMR Schemata for the sector indicators is composed of 16 tables, one for each sector indicator.

38. Figure 9 below provides an example of the structure of the tables in the PMR Schematas.

Figure 9. Schemata table for the low-level indicator *Direct Control over Business Enterprises*

Weight decomposition			Final weight w_i	Coding of answers	
Topic weight	Sector weight	Data point weight			
1/2		General constraints			
		National, state, regional or provincial governments control at least one firm and a legislative action is necessary for the government to sell its stakes in these firms partially or entirely		yes	no/not applicable
		Network sectors¹:			
	1/9	Gas	0.0556	6	0
	1/9	Electricity	0.0556	6	0
	1/9	Water	0.0556	6	0
	1/9	E-communications	0.0556	6	0
	1/9	Water Transport	0.0556	6	0
	1/9	Rail Transport	0.0556	6	0
	1/9	Air Transport	0.0556	6	0
	1/9	Road Transport	0.0556	6	0
	1/9	Other Sectors:			
	1/18	Manufacture of tobacco products	0.0031	6	0
	1/18	Manufacture of refined petroleum products	0.0031	6	0
	1/18	Manufacture of basic metals	0.0031	6	0
	1/18	Manufacture of fabricated metal products, machinery and equipment	0.0031	6	0
	1/18	Building and repairing of ships and boats	0.0031	6	0
	1/18	Manufacture of railway and tramway locomotives and rolling stock	0.0031	6	0
	1/18	Manufacture of aircraft and spacecraft	0.0031	6	0
	1/18	Construction	0.0031	6	0
	1/18	Wholesale trade, incl. of motor vehicles	0.0031	6	0
	1/18	Accommodation, food and beverage service activities	0.0031	6	0
	1/18	Other urban, suburban and interurban passenger transport	0.0031	6	0
	1/18	Financial service activities, except central banking, insurance and pension funding	0.0031	6	0
	1/18	Motion picture distribution and projection	0.0031	6	0
	1/18	Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.0031	6	0
	1/18	Manufacture of chemicals and chemical products	0.0031	6	0
	1/18	Manufacture of computer, electronic and optical products	0.0031	6	0
	1/18	Manufacture of motor vehicles and their parts and accessories	0.0031	6	0
	1/18	Gambling and betting activities	0.0031	6	0
Country scores (0-6)				$\sum w_i \text{ answer}_i$	

Source: OECD 2018 Economy-wide PMR Schemata

39. The first columns, collectively titled weight decomposition, give the weights relative to the topic, the sector and the data point. Not all indicators have 3 set of weights, the columns under weights decomposition can be 3, 2 or even 1 (Figure 5).

40. The central column shows the questions. This column is followed by the column with the final weights attributed to each data point, which is the product of the topic, sector and data point weights. The last columns show all the possible answer options and their scores, with the relevant score listed under each of the possible answer options.

Figure 10. Schemata table for the low-level indicator *Governance of SOEs*

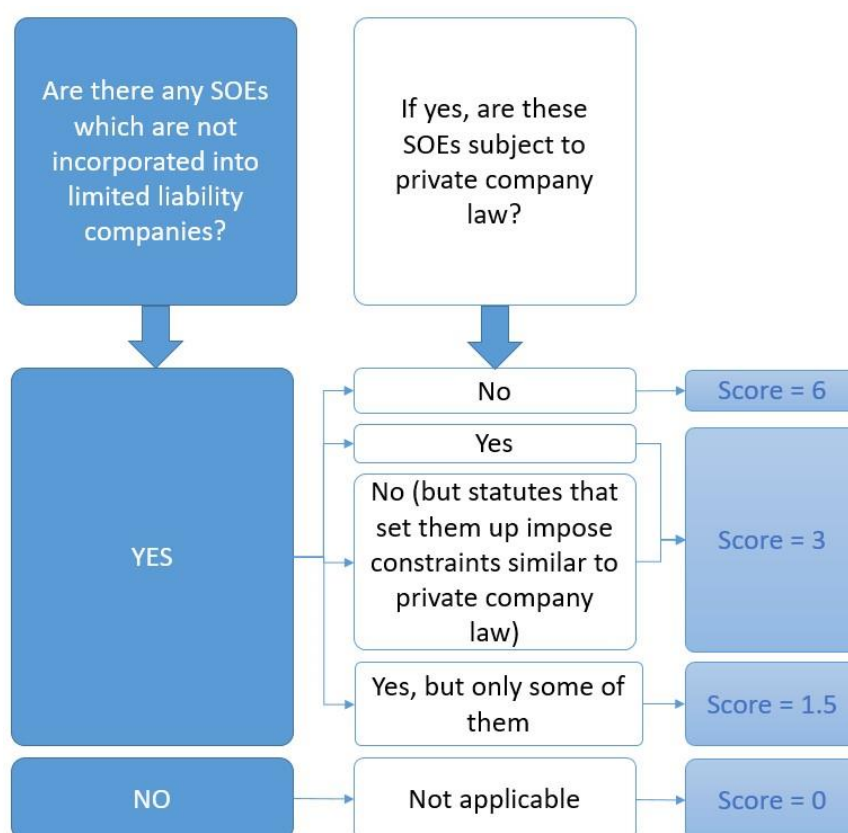
Data point weight		Final weight w_i	Coding of answers				
	Degree of insulation from market discipline						
	Are there any SOEs which are not incorporated into limited liability companies?		yes	yes	yes	yes	no
	If yes, are these SOEs subject to private company law?		no	yes	yes, but only some of them	no (but statutes that sets them up impose constraints similar to private company law)	not applicable
1/10		0.10	6	3	1.5	3	0
			yes (in all sectors)		yes (only in some sectors)		no
1/10	Can SOEs have access to finance at conditions that are better than those available to private firms?	0.10	6		3		0
1/10	Can SOEs benefit from other favorable treatments that are not available to private firms?	0.10	6		3		0
1/10	Are SOEs exempt from the application of at least some specific laws and regulations (excluding competition law) which apply to private firms?	0.10	6		3		0
1/10	Are SOEs subject to an exclusion/exemption, either complete or partial, from the application of the competition law in specific sectors (from which privately owned firms do not benefit) when performing commercial activities in competition or potentially in competition with private firms?	0.10	6		3		0
1/10	If an SOE performs one or more non-competitive activities and one or more potentially competitive activities, is there a requirement for this firm to separate the non-competitive activities from the potentially competitive ones?	0.10	0		3		6
	Degree of political interference						
1/10	Who exercises the ownership rights in the SOEs?	0.10	specialized agency at arm's length from government	specialized agency NOT at arm's length from government	treasury/ ministry of finance or economy	line ministries coordinated by a specialized agency	line ministries
			0	1.5	3	4.5	6
1/10	Is the public body who exercises the ownership rights in SOEs different from the public body or bodies that regulate the sector in which the firm operates?	0.10	yes	yes (but not in all sectors)			no
			0		3		6
1/10	Who appoints the Chief Executive Officer (CEO) in SOEs?	0.10	board of the firm	combination of board and public authorities		public authorities/organisation exercising ownership rights	
			0		3		6
1/10	Do mergers, equity issues and/or restructuring plans of any SOEs have to be reviewed or cleared in advance by national, state, regional or provincial governments?	0.10	yes	yes, but only for some of them		no	
			6		3		0
Country scores (0-6)			$\sum w_i \text{ answer}_i$				

Source: OECD 2018 Economy-wide PMR Schemata

41. If more than one answer option have the same score, the two options are listed together. For example in Figure 10 the two answer options *treasury/ ministry of finance or economy* (circled in yellow) both lead to a score of 3.

42. Sometimes the answers to two questions can be scored jointly. An example can be seen in Figure 11 below and relates to the two questions: "Are there any SOEs which are not incorporated into limited liability companies?", and "If yes, are these SOEs subject to private company law?". In this case, the scores are attributed to a combination of the answers to the two questions.

Figure 11. Example of a score attributed to a combination of the answers

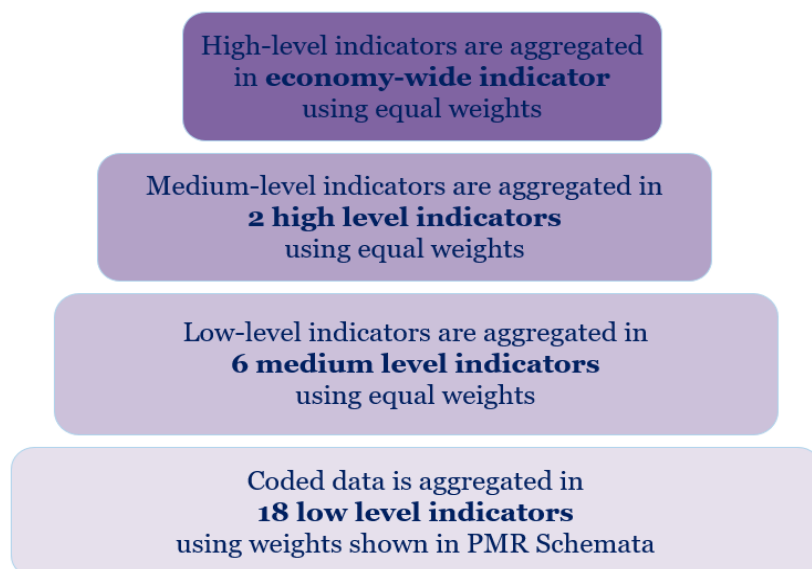


How the information is aggregated

43. These scores are then aggregated into the 18 low-level indicators using the weights that are shown in the relevant tables of the PMR Schematas. These low-level indicators are then aggregated into six mid-level indicators, which are in turn aggregated into two high-level indicators. The overall economy-wide indicator is the average of these two high-level indicators.

44. At each step of aggregation, the composite indicators are calculated as a simple average of their components (Figure 12).

Figure 12. Aggregation process for the PMR economy-wide indicator



45. A similar approach is used for the sector indicators, though the aggregation involves less steps.

46. The weights shown in the Schematas are the ones that are used when all data points for a sub-indicator are available. In case one or more data point are missing, either because the answer was not provided or the relevant sector does not exist, the final weights applied to these data points becomes 0 and the final weights attributed to the other data point contained in the same low-level indicator/sector indicator are rebalanced.

47. For instance, the low-level indicator Governance of SOEs, whose schemata is shown in Figure 12 above, is composed of 10 data point, each with a final weight of 1/10. In case the answer to one of the questions contributing to the low-level indicator is missing, the data points would become nine and the final weight for each would become 1/9.

48. The rebalancing is not always as easy as in the example just given, since there could be more than one set of weights, whose product gives the final weight; hence, the rebalancing of the weights is done using the statistical program Stata.

Appendix A. Other sources of information

49. As discussed above the PMR indicators relies on the information collected into the PMR database. This database mostly contains information provided by the national authorities of the countries surveyed. However, in order to limit the burden imposed on national authorities, who have to fill in the questionnaires that fed into this database, in some cases the PMR database directly draws on other OECD indicators and databases. Only in one case, the OECD relies on an external dataset: UNCTAD Trade Analysis Information System database.

Services Trade Restrictiveness Index (STRI)

The answers to some of the questions scattered in the database come from the database underlying the OECD Services Trade Restrictiveness Index (STRI)³ developed by the OECD Trade and Agricultural Directorate. The STRI measures to what extent national regulations creates obstacle to international trade in 22 service sectors, such as e-communication, transport and retail trade.

The STRI database covers all the OECD countries and a few other important world economies. When STRI database does not include a country, the national authorities are asked to answer the relevant questions.

Indicators of Regulatory Policy and Governance (iREG)

The Regulatory Policy and Governance (iREG)⁴ indicators have been developed by the OECD Public Governance Directorate to measure regulatory performance to in three regulatory areas - stakeholder engagement, Regulatory Impact Assessment (RIA) and ex post evaluation - and provide a baseline measurement to track countries' progress over time.

Some information is taken from the iREG database to fill questions into three low-level components of the PMR economy-wide indicator: *Assessment of Impact on Competition, Interaction with Interest Groups*, and *Complexity of Regulatory Procedures*, all contributing to the *Simplification and Evaluation of Regulation* component.

At present, the iREG database covers all the OECD countries, the 5 EU member states that are not in the OECD, and a few other countries. When the iREG database does not include a country, the national authorities are asked to answer the relevant questions.

When the iREG database does not include a country that is covered in the PMR one, the national authorities are then asked to answer the relevant questions.

Foreign Direct Investment Regulatory Restrictiveness Index (FDI index)

The FDI Index⁵, developed by the Directorate for Financial Affairs, measures statutory restrictions on foreign direct investment across 22 economic sectors. It assesses four main types of restrictions on FDI: 1) foreign equity limitations; 2) discriminatory screening or approval mechanisms; 3) restrictions on the employment of foreigners as key personnel and 4) other operational restrictions, e.g. restrictions on branching and on capital repatriation or on land ownership by foreign-owned enterprises. Restrictions are

³ <http://www.oecd.org/trade/topics/services-trade/>

⁴ <http://www.oecd.org/gov/regulatory-policy/indicators-regulatory-policy-and-governance.htm>

⁵ <http://www.oecd.org/investment/fdiindex.htm>

evaluated on a 0 to 1 scale, from more to less open. The overall restrictiveness index is the average of 22 sectoral scores.

The FDI Index is used to calculate the low-level indicator of the economy-wide PMR *Barriers to FDI*. The value of this low-level indicator is set equal to the value of the FDI index, adjusted to 0 to 6 scale (as explained in Box A.1).

Box A.1.: Adjusting the value of FDI Index

The FDI index between 0 and 1, where 0 designates a situation in which there are no restrictions to FDI, and 1 designates a situation in which restrictions are very high. In order to adjust the FDI index to 0 to 6 scale used in the PMR indicators, the following formula is used: *Barriers to FDI* = *FDI index* * 6

The FDI index is calculated for all OECD countries and an increasing number of other countries. However, if the FDI index is not available for a country that is included in the PMR database, the following approach is used:

- If the country is a European Union member, the average of the FDI indexes for all the EU member states for which such an index is available is used as a proxy
- If the country is neither a member of the OECD nor of the EU, the average of the FDI index for all the non-OECD countries for which such an index is available is used as a proxy.

Trade Facilitation Indicators (TFIs)

The TFIs⁶, developed by the OECD Trade and Agricultural Directorate, measure the full spectrum of trade border procedures. 11 TFIs are calculated, each one is composed of several specific, precise and fact-based variables measuring existing trade-related policies and regulations and their implementation.

The low-level indicator of the economy-wide PMR *Barriers to Trade Facilitation* is calculated as the simple average of the 8 TFIs (A to H), adjusted to reflect the PMR scale (as explained in Box A.2).

Box A.2.: Adjusting the value of the TFIs

The TFIs range from 0 to 2, where 2 designates the best performance that can be achieved. Hence, not only is the scale different, but also the highest and the lowest value have the opposite interpretation for the PMR indicators.

Hence in order to adapt the TFIs to PMR, the following formula has been used:

$$\text{Barriers to Trade Facilitations} = \left(1 - \frac{\text{average of TFIs A to H}}{2}\right) * 6$$

The OECD TFIs are updated every two years. Their methodology was updated in the 2017 vintage by inserting additional variables in various of the 11 indicators. As a result, the 2017 vintage includes two sets of TFIs: the first set calculated using the new methodology, and the second set calculated using previous one. The latter set has been used in the calculation of PMR 2018.

⁶ <http://www.oecd.org/trade/topics/trade-facilitation/>

The TFIs are calculated for 160 countries. In those rare cases in which the TFIs are not available for a country that is included in the PMR database, the following approach is used:

- If the country is an OECD member, the average of the relevant TFIs for all the OECD member states for which such indexes are available is used as a proxy
- If the country is not an OECD member, the average of the relevant TFIs for all the non-OECD countries for which such indexes is available is used as a proxy.

UNCTAD Trade Analysis Information System database

The UNCTAD Trade Analysis Information System (TRAINS) is a computerized database that collects data on trade control measures, including: (i) tariffs, (ii) para-tariffs, (iii) non-tariff measures, and (iv) imports by suppliers. It includes data on 150 countries.

The OECD takes from this database the average value of the tariff rates effectively applied in a country for total trade with the World as the partner country. This average value is broken down in classes to which the 0 to 6 PMR scale is applied. This value feeds into the *Tariff Barriers* low-level indicator in the PMR economy-wide indicator.