

# Barriers to Competition in Product Market Regulation

IN FOCUS



## New Insights on Emerging Market and Developing Economies

Seidu Dauda and Maciej Drożd

FINANCE,  
COMPETITIVENESS  
& INNOVATION

INVESTMENT CLIMATE

© 2020 The World Bank Group

1818 H Street NW  
Washington, DC 20433  
Telephone: 202-473-1000  
Internet: [www.worldbank.org](http://www.worldbank.org)  
All rights reserved.

This volume is a product of the staff of the World Bank Group. The World Bank Group refers to the member institutions of the World Bank Group: The World Bank (International Bank for Reconstruction and Development); International Finance Corporation (IFC); and Multilateral Investment Guarantee Agency (MIGA), which are separate and distinct legal entities each organized under its respective Articles of Agreement. We encourage use for educational and non-commercial purposes.

The findings, interpretations, and conclusions expressed in this volume do not necessarily reflect the views of the Directors or Executive Directors of the respective institutions of the World Bank Group or the governments they represent. The World Bank Group does not guarantee the accuracy of the data included in this work.

### **Rights and Permissions**

The material in this publication is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The World Bank encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly.

All queries on rights and licenses, including subsidiary rights, should be addressed to the Office of the Publisher, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2422; e-mail: [pubrights@worldbank.org](mailto:pubrights@worldbank.org).

Editing: Publications Professionals LLC  
Design and Typesetting: Piotr Ruczyński  
Photo Credit: [stock.adobe.com](http://stock.adobe.com)



# Table of contents

<b>TABLE OF CONTENTS</b>	<b>I</b>
<b>ABSTRACT</b>	<b>III</b>
<b>INTRODUCTION</b>	<b>1</b>
<b>PRODUCT MARKET REGULATION IN AEs AND EMDEs</b>	<b>3</b>
<b>POLICY CONVERGENCE</b>	<b>4</b>
<b>POLICY DIVERGENCE</b>	<b>6</b>
<b>CONCLUSIONS</b>	<b>10</b>
<b>REFERENCES</b>	<b>13</b>
<b>APPENDIX A. OVERVIEW OF PMR METHODOLOGY</b>	<b>15</b>
<b>APPENDIX B. LIST OF COUNTRIES COVERED BY THE PMR INDICATORS</b>	<b>17</b>
<b>APPENDIX C. SUMMARY OF KEY FINDINGS BY HIGH-LEVEL POLICY AREA</b>	<b>19</b>





## Abstract

**R**eforms to foster competition in product markets have been shown to improve productivity and support economic growth in advanced economies (AEs). However, relatively little is known about restrictions to competition in emerging market and developing economies (EMDEs). We fill this gap by comparing product market regulations across 33 AEs and 37 EMDEs using standardized indicators developed by the Organisation for Economic Co-operation and Development and collected jointly with the World Bank Group. Product market regulations are found to be more restrictive and more variable in EMDEs than in AEs. Most variation among countries can be attributed to differences in sector policies. This analysis allows policy makers to identify areas for reform and prompts policy researchers to investigate the links between product market regulation and economic development in EMDEs.

---

Georgiana Pop and Christine Qiang supervised the preparation of the note and provided guidance. The note also benefited from conversations with Graciela Miralles and comments from Peter Kusek, Sylvia Solf (all World Bank), and Cristiana Vitale (Organisation for Economic Co-operation and Development). In addition, Vladana Ajvaz assisted with desk research and data coding.





## Introduction

**P**roductivity growth is essential for accelerating economic transformation and providing better-paid jobs for more people in emerging markets and developing economies (EMDEs). Jobs and economic transformation is a key development agenda embraced by the World Bank Group (WBG) and its member countries. Economic transformation should lead to more, better, and more inclusive jobs. To bring about such jobs, economic transformation requires raising productivity by shifting labor and other production inputs from low-productivity economic activities to high-productivity ones—such as those across firms within the same industry, across industries, or across regions—or from informal sector to formal sector activities (World Bank 2019). Although improving productivity may entail some job losses in the short run, in the medium to long run, productivity growth can generate higher demand for labor. Measures to enhance competition and improve market functioning are among several key policies affecting all channels of productivity growth that lead to jobs and economic transformation.<sup>1</sup>

**However, restrictive regulation of product markets can hamper productivity growth by limiting competition in markets.** Although government interventions in markets are sometimes justified and indeed necessary, poor interventions that limit entry, reinforce dominance, impose undue burdens, facilitate collusion, or distort the playing field harm market contestability. Weaker competition diminishes productivity level and growth by (a) reducing the incentives of firms to innovate and upgrade production (productive efficiency),<sup>2</sup> (b) causing resource misallocation across firms and sectors (allocative efficiency),<sup>3</sup> and (c) limiting the entry of more productive firms and the exit of unproductive ones (market

selection).<sup>4</sup> Removing barriers to competition has been shown to result in significant productivity improvements. In Australia, for instance, the implementation of the National Competition Policy increased gross domestic product (GDP) by at least 2.5 percent in the 1990s (Productivity Commission 2005).<sup>5</sup>

**In addition, restrictions in key input sectors can trickle down and hamper firm performance and job creation in downstream industries.** Several cross-country studies find that anticompetitive regulations in key upstream industries (energy, transport, and communications) and professional services (legal, accounting, architecture, and engineering) have

<sup>1</sup> See Dieppe (2020) for a review of recent productivity trends and Dauda (forthcoming) for a review of the literature on the effects of competition on jobs and economic transformation.

<sup>2</sup> See Aghion et al. (2005); Bloom, Draca, and Van Reenen 2011; and Nickell (1996).

<sup>3</sup> See Bartelsman and Dhrymes (1998) and Olley and Pakes (1996).

<sup>4</sup> See Eslava et al. (2013), Hopenhayn (1992), and Jovanovic (1982).

<sup>5</sup> The estimate of 2.5 percent is conservative and reflects productivity and price changes in key infrastructure sectors.

significantly restricted productivity growth and export performance of manufacturing firms.<sup>6</sup> The effect was stronger in sectors that used the inputs more intensively and that were closer to the productivity frontier. Country-specific evidence also supports the finding that reforms in service sectors have had significant positive effects on the productivity of manufacturing firms.<sup>7</sup>

**Despite the importance of product markets for development, relatively little is known about restrictions to competition in these markets in EMDEs.**

Currently, the Economist Intelligence Unit, the World Economic Forum, and the Bertelsmann Foundation publish indicators of competition across a wide range of EMDEs. However, those indicators rely largely on the perceptions of business executives and do not offer policy makers actionable insights. Other indicators, such as the Services Trade Restrictiveness Index, the FDI Regulatory Restrictiveness Index, and the Doing Business indicators are more policy oriented and capture some restrictions to trade, investment, and entrepreneurship that are also barriers to competition. Yet those indicators do not provide information on critical competition issues, such as distortions caused by state involvement or sector regulation.

**The Product Market Regulation (PMR) indicators shed more light on the extent to which government interventions restrict competition.** The PMR database offers internationally comparable indicators that measure the degree to which regulations on the books foster or limit firm entry and competition in areas of the product market where competition is

viable.<sup>8</sup> Data are collected in five-year intervals. The PMR indicators cover both economywide barriers to competition and barriers in key enabling sectors. The 2013–17 economywide indicators capture barriers to competition in three high-level policy areas: state control, barriers to entrepreneurship, and barriers to trade and investment. Each of those areas is an aggregation of specific policy issues, such as the scope and governance of state-owned enterprises, administrative burdens and rule-making standards, and tariff barriers and restrictions on foreign direct investment. The 2013–17 sectoral indicators cover barriers to competition in selected sectors, including energy (electricity, gas); transport (air, rail, road); communications (telecom, post); professional services (accounting, legal, architecture, engineering); and retail trade. Although the PMR indicators touch on a wide range of topics and sectors, they remain focused on competition and do not cover exhaustively other private sector development issues. Appendix A contains more details about the PMR methodology.

**Together with the Organisation for Economic Co-operation and Development (OECD), the WBG has extended the coverage of the PMR database to 71 countries.** The database covers 33 advanced economies (AEs) and 38 EMDEs shown in Map 1.<sup>9</sup> Jointly, these countries account for 86 percent of global GDP and 71 percent of world population. The OECD collected data for 33 AEs and 14 EMDEs, while the WBG gathered information on the remaining 24 EMDEs. The OECD and the WBG began recently a new wave of data collection, and work is currently under way to include more EMDEs in the sample.<sup>10</sup>

<sup>6</sup> See Barone and Cingano 2011; Bourlès et al. 2013; and Égert and Wanner 2016.

<sup>7</sup> See Arnold et al. (2016) and Bas (2014) for India; Shepotylo and Vakhitov (2015) for Ukraine; Bas and Causa (2013) for China; and Arnold, Javorcik, and Mattoo (2011) for the Czech Republic.

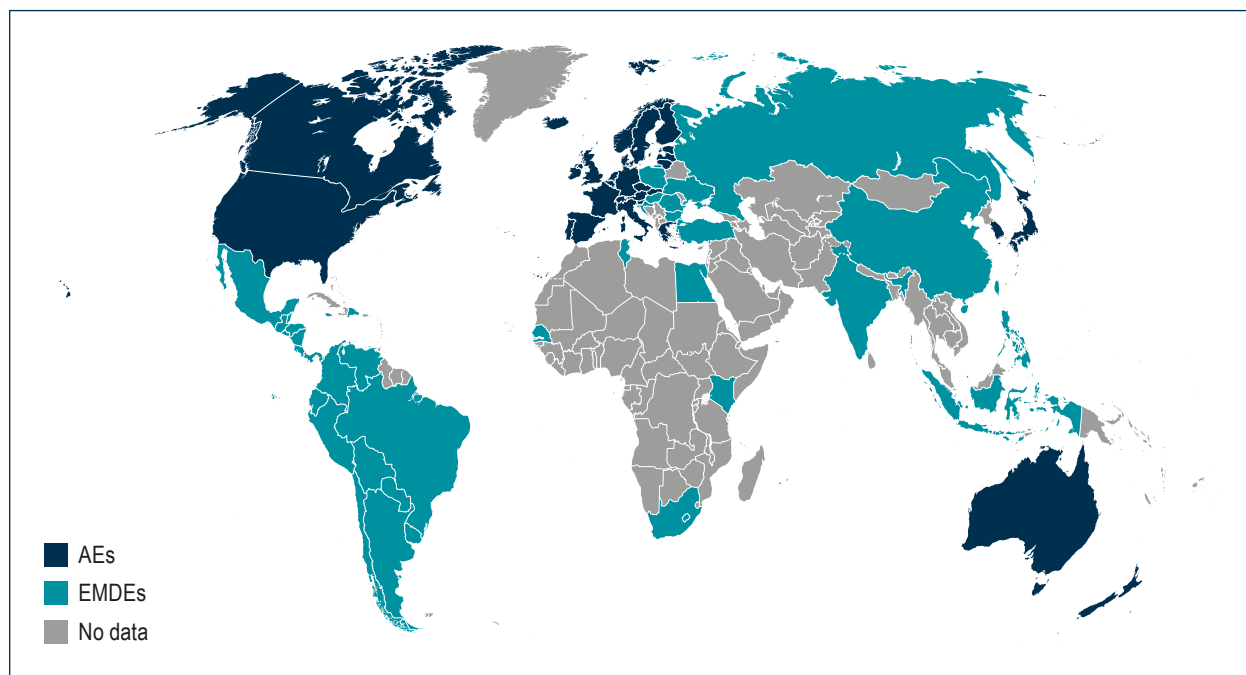
<sup>8</sup> The PMR indicators do not reflect the extent to or manner in which laws and regulations are enforced. Hence, a country that has competition-friendly laws “on the books”, but that does not enforce such laws, would still obtain a favorable score.

<sup>9</sup> The classification of economies into AEs and EMDEs follows the International Monetary Fund (IMF) definition.

<sup>10</sup> Because of differences in the PMR methodology, the 2018 data are not fully comparable to the data collected between 2013 and 2017.



## Map 1. Country Coverage



Source: Authors' analysis based on data from the 2013 OECD PMR database and the 2013–17 WBG–OECD PMR database.

**This note provides a summary of product market restrictions across AEs and EMDEs.** The note summarizes first average PMR scores in AEs and EMDEs.<sup>11</sup> The differences in the variation of PMR scores across and within the two country groups are then reviewed, and the main areas of policy convergence and divergence identified. The analysis is based on the review of more than 800 policy issues captured by the PMR indicators between 2013 and 2017.<sup>12</sup> The note highlights the key overarching findings from the analysis. The list of countries covered and the summary statistics behind these findings are presented in Appendices B and C.

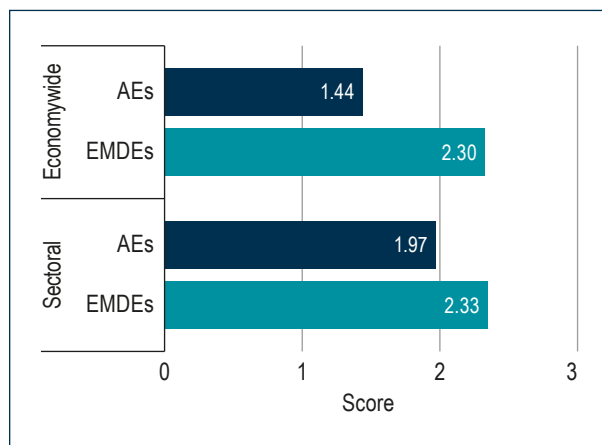
### Product Market Regulation in AEs and EMDEs

**On average, product market regulations are more restrictive in EMDEs than in AEs, but there is significant variation across countries.** There are generally more regulatory barriers to competition in EMDEs (figure 1). However, averages mask significant variation across countries (figure 2). Policies vary among both AEs and EMDEs. In both country groups, the economywide score of the most restrictive country is more than twice as high as the score of the least restrictive country. The range of country

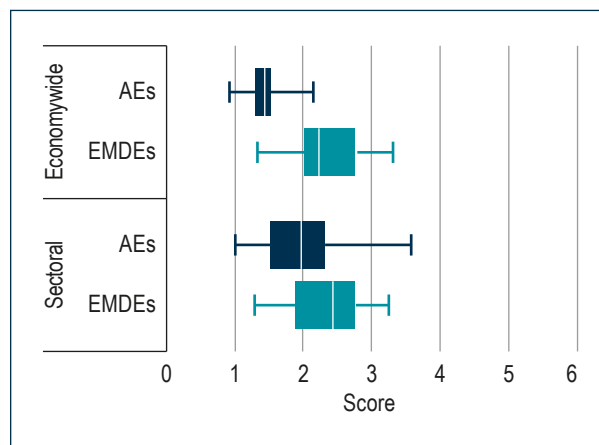
<sup>11</sup> It may be argued that some of the EMDEs resemble more AEs than EMDEs. EMDEs in Europe and Central Asia, for instance, could be hypothesized to be more similar to AEs because membership in or association with the European Union harmonizes product market regulation. Similarly, product market regulation in upper-middle-income countries could more closely resemble product market regulation in AEs than in other EMDEs. Disaggregating the PMR data by region or income group is problematic because of limited coverage. Nevertheless, a sensitivity analysis found that (a) EMDEs in Europe and Central Asia and (b) upper-middle-income countries are more similar to other EMDEs than to AEs.

<sup>12</sup> For each of the countries, the data are available at one point in time between 2013 and 2017 as follows: 47 countries (2013), 9 countries (2014), 2 countries (2015), 6 countries (2016), 5 countries (2017), and 1 country (2018). See Appendix B for more information on specific countries.

**Figure 1. Average PMR Scores**



**Figure 2. Variation in PMR Scores**



Source: Authors' analysis based on data from the 2013 OECD PMR database and the 2013–2017 WBG–OECD PMR database.

Note: Scale for both figures is 0–6, from least to most restrictive. The boxes in figure 2 show the interquartile range corresponding to half of all values. The line in each box marks the median. The left and right whiskers mark minimum and maximum values.

scores is even larger in the case of sectoral indicators. Clear trends also become apparent when analyzing the standard deviation of PMR scores in both country groups and after dividing that statistic into economywide and sectoral components. The standard deviation of economywide scores among EMDEs is more than double the deviation among AEs, which suggests fewer differences among AEs than EMDEs. In the case of sectoral indicators, the standard deviation in scores is more comparable between the two country groups, with EMDEs only slightly more different than AEs.

## Policy Convergence

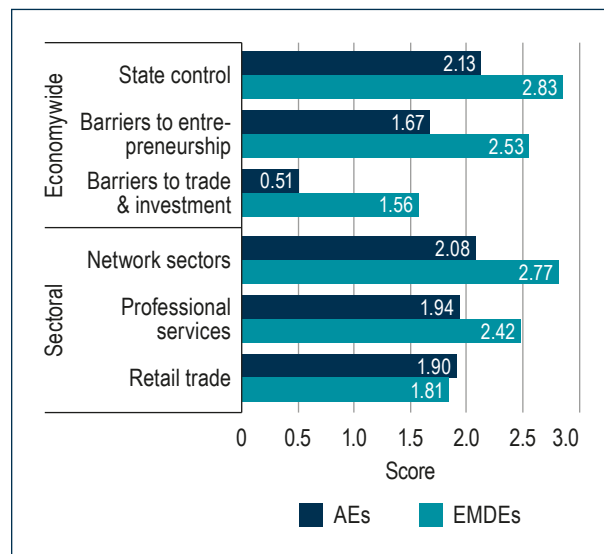
**Economywide policies converge among AEs and, to a lesser extent, among EMDEs.** The restrictiveness of economywide regulations varies less among AEs than among EMDEs.<sup>13</sup> In all three high-level policy areas covered by the PMR indicators, advanced economies adopt similarly pro-competitive regulations (figures 3 and 4). Differences among these countries have diminished over time as governments have reformed their regulations to allow for more competition (Koske et al. 2015). According

to the PMR indicators, the barriers to trade and investment are low across all advanced economies, and the barriers to entrepreneurship are limited in most AEs. Advanced economies also intervene less frequently through direct control of enterprises. In contrast, all three types of barriers are common among emerging and developing economies. Such barriers include cumbersome licensing processes, equity restrictions for foreign investors, price controls, and other forms of protectionist regulation that may shield incumbents from market competition.

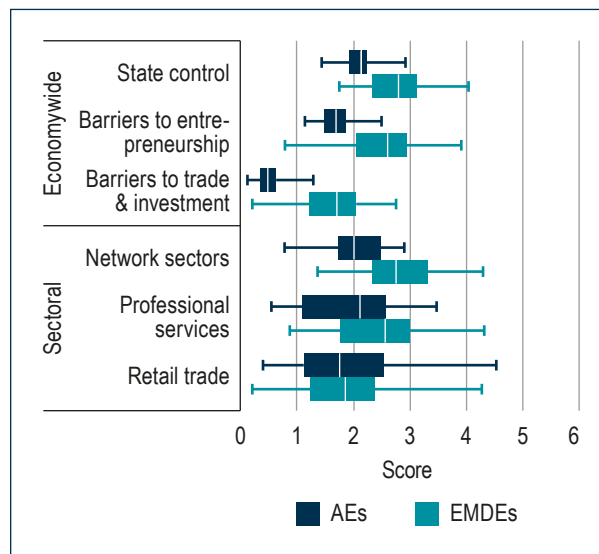
**Sector regulations converge less than economywide policies, but they are slightly more aligned in AEs than in EMDEs.** Sector regulations vary significantly across both AEs and EMDEs, and there are more differences across countries than in the case of economywide policies. However, the differences in policies are generally smaller among AEs than among EMDEs. AEs generally converge on pro-competition policies, but in some cases—such as the regulation of shop opening hours—EMDEs adopt such policies more consistently than AEs (box 1). Convergence among AEs can be partly explained by the creation of the European Single Market and

<sup>13</sup> The average standard deviation of economywide PMR indicators is one-third smaller among AEs than among EMDEs.

**Figure 3. Average PMR Scores by Policy Area**



**Figure 4. Variation in PMR Scores by Policy Area**



Source: Authors' analysis based on data from the 2013 OECD PMR database and the 2013–2017 WBG–OECD PMR database.

Note: Scale for both figures is 0–6, from least to most restrictive. The boxes in figure 4 show the interquartile range corresponding to half of all values. The line in each box marks the median. The left and right whiskers mark minimum and maximum values.

the fact that 26 of the 33 countries belong to the European Economic Area. In network sectors, for instance, advanced economies consistently allow for more competition through limited state participation, lower entry barriers, vertical separation, regulated access to infrastructure, tariff control, and interconnection requirements. Most of those policies are supported under the European Single Market. Within the seven network sectors covered by the PMR indicators, the most homogeneous regulations can be

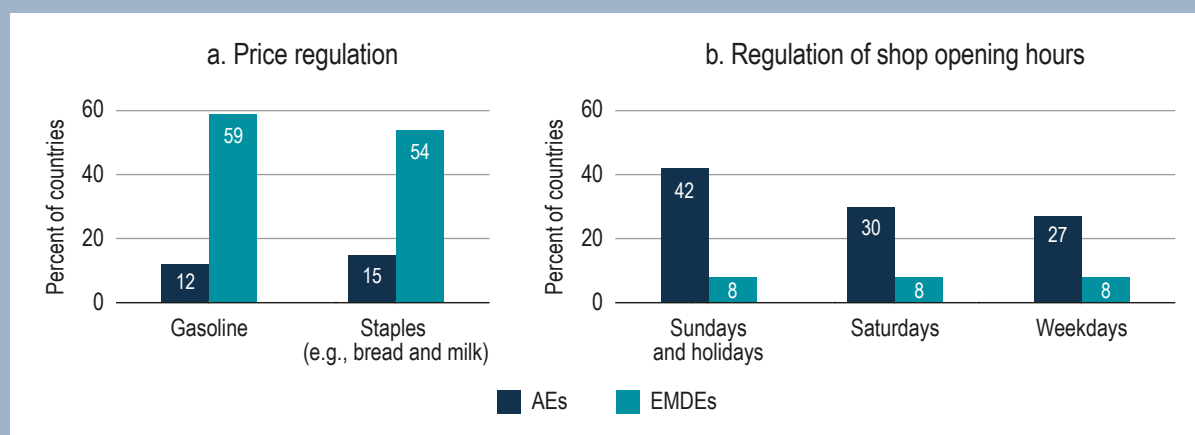
found in telecommunications and road transport. Regarding telecommunications, nearly all AEs mandate mobile interconnection and require operators to publish reference offers, thus leveling the playing field for all operators. Similarly, AEs generally do not have quotas or special authorization procedures for coach and truck businesses, and their regulation on backhauling and cabotage is more liberal than in the rest of the world—particularly among European Union member states.

**Box 1. In retail, AEs rarely control prices, whereas EMDEs allow for more flexible shop opening hours.**

In general, retail regulations are more widely dispersed across countries than are regulations in any other area covered by the PMR indicators (figure 4). Where there are instances of policy convergence, they are generally AEs adopting consistently pro-competition policies. For example, only 12 percent of AEs set the prices of gasoline and 15 percent set the prices of staples, compared with more than half of EMDEs (figure B1.1, panel a). Yet in other aspects of retail trade regulation, EMDEs adopt consistently more flexible sectoral policies. For example, only 8 percent of EMDEs prescribe opening hours on Sundays and holidays, compared with 42 percent of AEs. More flexible regulations allow retailers

to differentiate their services. Hence, it is more likely that consumers in AEs benefit from more price variation, while consumers in EMDEs enjoy better access to shops outside regular working hours. Less prescriptive regulations also create opportunities for more productive firms to win new customers and to improve resource allocation in the economy.

**Figure B1.1. Major Differences in Regulation of Retail among AEs and EMDEs**



Source: Authors' analysis based on data from the 2013 OECD PMR database and the 2013–2017 WBG–OECD PMR database.

## Policy Divergence

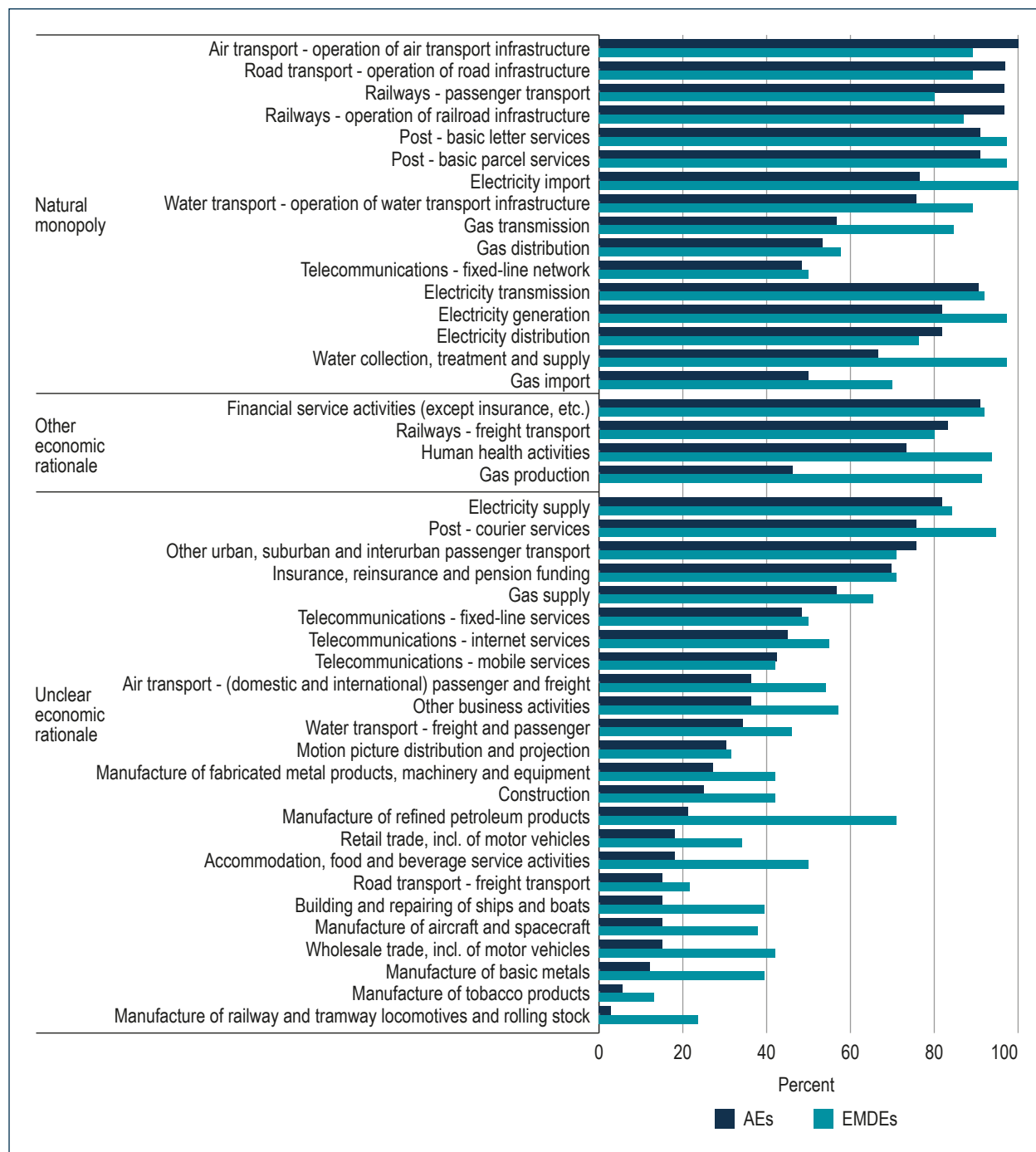
**Generally, two-thirds of cross-country variation in product market restrictions can be attributed to differences in sector regulations.** The sectoral component accounts for 67 percent of total variation.<sup>14</sup> Sectoral variation is more prominent among EMDEs, but it is also high in relative and absolute terms in AEs. Thus, both AEs and EMDEs have highly heterogeneous sector policies, and that heterogeneity drives observed differences in product market regulations across countries.

**The state footprint is bigger and more varied among EMDEs, particularly in sectors where the economic rationale for state involvement is less clear.** State participation in the economy does not need to restrict competition if markets are contestable and if private companies are treated on par

with state-owned enterprises (SOEs). However, the presence of SOEs may also give rise to favorable treatment by governments and create barriers for private sector growth. In general, state ownership is more common among EMDEs, and the standards of SOE governance less developed. The governments of EMDEs are more active in 36 of the 44 sectors covered by the PMR indicators (figure 5). Government ownership is also more widespread in EMDEs. On average, governments of EMDEs own stakes in 26 of 44 sectors, compared with 22 sectors with state participation in AEs. The differences in state presence vary markedly by sector. In sectors that are generally characterized by natural monopoly, there are no significant differences in state involvement among AEs and EMDEs. However, the governments of EMDEs are, on average, more active in sectors where the economic rationale for state ownership is less clear, such as manufacturing or retail.

<sup>14</sup> The economywide and sectoral components of the PMR indicators are equally weighted. This means that the observed difference in variation between the two components is not inherent to the PMR methodology but is attributable to discrepancies among economywide and sectoral policies.

**Figure 5. Share of Countries with at Least One Publicly Owned Company**



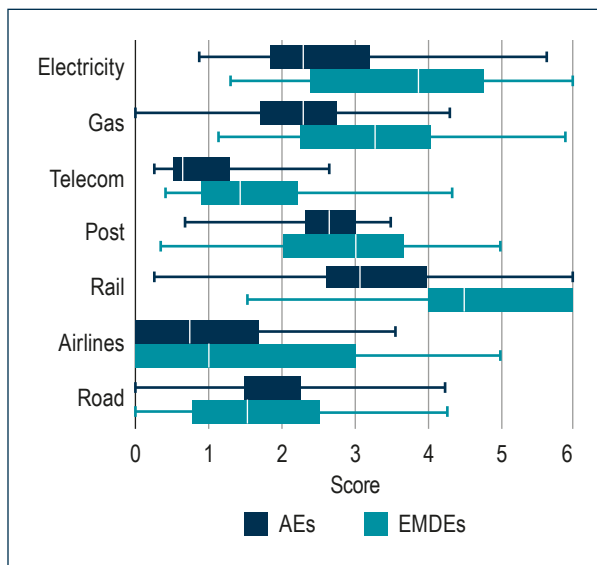
Source: Authors' analysis based on data from the 2013 OECD PMR database and the 2013–2017 WBG–OECD PMR database. Note: The sector definitions are based on the PMR methodology. For instance, gas is assumed to be distributed through a network and not in containers. The sector categorization is indicative. The rationale for SOE presence may vary among countries. For instance, the economic rationale for state ownership in mobile telecommunications is stronger in countries with a wholesale access network because such a network is a natural monopoly. The economic rationale for SOE presence may also be weaker in some subsectors of the sectors shown. For instance, the economic rationale for SOE presence is weaker in the generation of electricity from wind energy, but stronger in the generation of electricity from nuclear energy.

**The regulation of professional services differs significantly within both AEs and EMDEs.** The PMR indicators cover four professional services: legal, accounting, architecture, and engineering. The professionals seeking to provide these services are generally required to prove that they possess the necessary qualifications. Although exams are common, the required length of work experience and level of education vary. The minimum time needed to qualify as an attorney, for instance, ranges among AEs from 4 years and 3 months in New Zealand to 10 years in the Slovak Republic; similar ranges exist in EMDEs. Conduct regulations are also highly heterogeneous among both AEs and EMDEs. Most AEs and EMDEs engage in some form of price regulation in at least one of the four professional service sectors covered by the PMR indicators. Yet the restrictiveness of regulation varies from nonbinding recommendations for some services (in Denmark, for

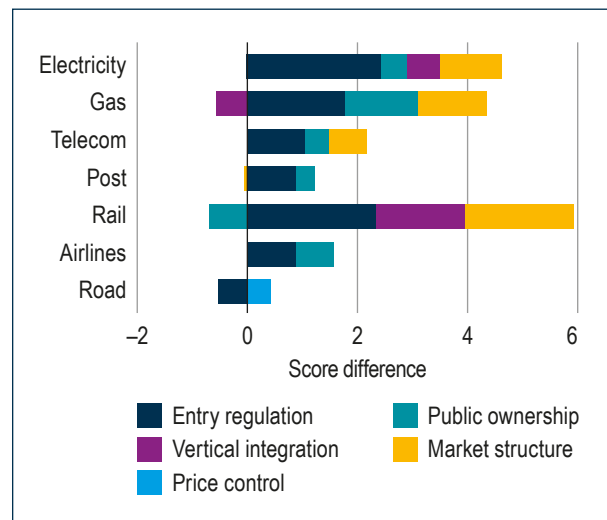
instance) to binding price floors for most (Greece) or all services (Brazil). Excessive qualification requirements and price controls can stifle competition by unduly limiting entry and restricting the ability of service providers to differentiate their offerings.

**In network sectors, product market regulations are more restrictive and variable in EMDEs, mainly because of higher entry barriers and differences in market structure.** As noted in the “Policy Convergence” subsection in this note, AEs have harmonized their regulations in some network sectors, most notably communications and road transport. However, the regulations in those and other network sectors, such as energy, are less aligned in EMDEs (figure 6). On average, most differences among EMDEs and AEs are attributable to entry barriers (figure 7). These barriers are higher in EMDEs and are reinforced by the market structure. In most EMDEs’

**Figure 6. Variation in PMR Scores in Network Sectors**



**Figure 7. Average PMR Score Differences among EMDEs and AEs in Network Sectors**



Source: Authors’ analysis based on data from the 2013 OECD PMR database and the 2013–2017 WBG–OECD PMR database.

Note: Scale for figure 6 is 0–6, from least to most restrictive. The boxes in figure 6 show the interquartile range corresponding to half of all values. The line in each box marks the median. The left and right whiskers mark minimum and maximum values. Higher values in figure 7 indicate bigger differences in the average PMR score among EMDEs and AEs (that is, more restrictive policies in EMDEs than AEs). The score differences have been calculated separately for five policy areas to show their relative importance. The difference between the average PMR score in each of the sectors is equal to the average difference of the PMR scores for each of the policy areas that are measured in this sector.

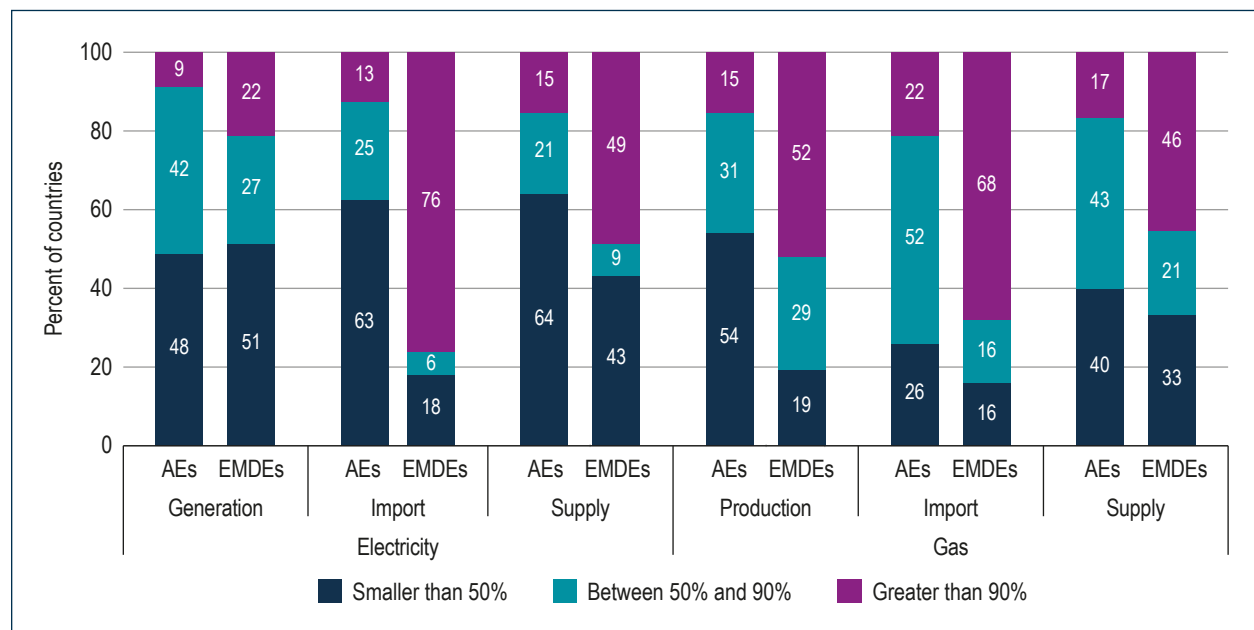
electricity and gas sectors, for instance, the largest firm controls more than half of the market, whereas energy markets in AEs are less concentrated (figure 8). High market shares can translate into dominance and increase the risk of exclusionary practices. Entry barriers are further raised by limited enforcement of competition laws and inadequate market regulation, such as rules around the unbundling of vertically integrated companies and policies to ensure third-party access to essential facilities. In the telecommunications sector, for instance, EMDE regulators rarely control the rates that dominant operators charge their competitors for connecting to their network. The absence of tariff regulation allows the largest firms to set high interconnection rates, thereby encouraging customers to subscribe to their network and thus facilitating an increase in market concentration over time. Eventually, the largest firms amass enough market power to stave off competition and price their services at a premium.

**Heterogeneity also persists among AEs in energy and some transport regulations.** Although more consistent than in EMDEs, the regulation of the

electricity and gas sectors, as well as airlines and rail companies, still diverges noticeably among advanced economies (figure 6). The markets in those sectors are generally more developed in OECD countries, with more players and more flexible entry regulation but different degrees of public ownership and vertical integration. Fewer than 20 percent of advanced economies require ownership or legal separation in electricity distribution, for instance. Similarly, some countries continue to own stakes in each of the infrastructure sectors, whereas others, such as the United Kingdom, have largely privatized their holdings in energy and transport.

**Finally, EMDEs create a wider range of barriers to entrepreneurship, trade, and investment.** Whereas such barriers are consistently low among AEs, they are highly heterogeneous among EMDEs. They include basic restrictions such as cumbersome licensing processes, tariffs, limits on foreign investment, and price controls. It takes an average of 10 procedures and 22 days to register a sole proprietorship in EMDEs, but the time range is significant: from 1 day in the fastest country to 138 days in the

**Figure 8. Market Shares of the Largest Firm in the Energy Sector**



Source: Authors' analysis based on data from the 2013 OECD PMR database and the 2013–2017 WBG–OECD PMR database.

slowest. Similarly, the restrictions on foreign equity and effectively applied tariffs are several times higher in EMDEs than in AEs, but many countries—such as those in Eastern and Central Europe—are more open to trade and investments than advanced economies. Price controls cover a wide range of products and services, from staples (such as milk and bread) to business services (such as road freight transport). Recent research found that government regulation of retail prices is more concentrated among lower-income countries, particularly with regard to energy products (such as petroleum and electricity) and basic foodstuffs (such as cereal products and sugar) (World Bank 2020). Such findings confirm differences in policy approaches among EMDEs. Price controls can have several unintended negative effects on market outcomes: they can steer prices away from equilibrium levels, leading to shortfalls or waste; reduced product differentiation and investment; and, potentially, collusion among suppliers.

## Conclusions

**Removing regulatory barriers to competition in product markets could contribute to jobs and economic transformation in EMDEs, a top development priority in those countries.** Product market regulation is, on average, more restrictive and heterogeneous in EMDEs than in AEs, a fact that implies there is significant scope for reforms. Evidence from AEs shows that reducing the restrictiveness of product market regulation can translate into productivity gains in both upstream and downstream sectors. Although more research is needed, preliminary simulations conducted by World Bank staff using PMR data suggest that EMDEs could also benefit substantially from removing regulatory barriers to competition. In Senegal, all else being equal, reforms in services could increase annual GDP by 0.2 to 0.5 percent (Pop and Corthay 2018). In Argentina, such reforms could bring about 0.1 to 0.6 percent in additional growth (Licetti et al. 2018). Significant gains in productivity have also been found for countries in Southern and Eastern Europe (Van der Marel, Kren, and Iooty 2016). Thus, reforming product market regulation can contribute to jobs and economic transformation.

**Overall, prioritization of reforms of product market regulation depends on country context.** The PMR database lists a wide range of reforms that policy makers in EMDEs could undertake to encourage competition in product markets. This information reflects the strengths and weaknesses of product market regulation in each of the countries included in the database. However, the relevance and feasibility of reforms depend largely on country context. Although the restrictions highlighted in the PMR database are detrimental to competition, their policy rationale and economic impact varies from country to country. The feasibility of policy changes also varies significantly. Sisyphean reforms in some countries can be quick wins elsewhere and may become more realistic over time.

**Policy convergence suggests, however, that some reforms may be less controversial and more feasible to implement than others.** Whereas the PMR data for EMDEs are recent, the data for AEs are available for previous time periods. The analysis of PMR data over time reveals that AEs historically had more stringent regulations in place, and that more restrictions have been removed than introduced (Koske et al. 2015). In some sectors, such as road transport and telecommunications, AEs have converged on low levels of restrictiveness, whereas in other sectors the regulatory stance varies considerably. For instance, many AEs have successfully abolished route approvals for buses and freight sharing among trucks, even though such restrictions were common in OECD countries in the 1970s. The widespread removal of those restrictions in AEs suggests that such barriers could be relatively easily lifted in EMDEs.

**In areas of policy divergence, policy makers can learn from countries at the forefront of reforms.** Most policy areas covered by the PMR data are characterized by varying degrees of policy divergence among countries. The regulation of retail trade and professional services are notable examples. Although such divergence suggests significant underlying differences in country characteristics, it also gives reform-oriented policy makers a point of reference and a learning tool. In all the policy areas covered by the PMR database, there exists at least one country that



has found ways to allow for more competition. Though the policies chosen by the most competition-friendly economies may not apply to all, their example allows other economies to question and investigate their own policy choices. Countries that restrict shop opening hours or limit the sale of pharmaceuticals, for instance, can look to the experiences of countries that have removed such barriers, study the effects of those policies, and draw lessons that apply to their own contexts.

**The increasing availability of PMR data now permits further research on productivity growth and**

**jobs in EMDEs.** Because of better data availability, most of the empirical literature on the economic effects of product market reforms has focused on AEs. With more PMR data available, researchers can now assess whether the link between product market regulation and productivity also holds for EMDEs. Further research on the effects of market regulation on productivity growth and jobs could provide much-needed evidence to advocate for pro-competition reforms in EMDEs. The WBG will continue to support those efforts by collecting PMR data for 10 additional countries between now and 2022.





## References

Aghion, Philippe, Nick Bloom, Richard Blundell, Rachel Griffith, and Peter Howitt. 2005. “Competition and Innovation: An Inverted-U Relationship.” *Quarterly Journal of Economics* 120 (2): 701–28.

Arnold, Jens M., Beata S. Javorcik, and Aaditya Mattoo. 2011. “Does Services Liberalization Benefit Manufacturing Firms?: Evidence from the Czech Republic.” *Journal of International Economics* 85 (1): 136–146.

Arnold, Jens M., Beata S. Javorcik, Molly Lipscomb, Aaditya Mattoo. 2016. “Services Reform and Manufacturing Performance: Evidence from India.” *Economic Journal* 26 (590): 1–39.

Barone, Guglielmo, and Federico Cingano. 2011. “Service Regulation and Growth: Evidence from OECD Countries.” *Economic Journal* 121 (555): 931–57.

Bartelsman, Eric J., and Phoebus J. Dhrymes. 1998. “Productivity Dynamics: U.S. Manufacturing Plants, 1972–1986.” *Journal of Productivity Analysis* 1 (9): 5–33.

Bas, Maria. 2014. “Does Services Liberalization Affect Manufacturing Firms’ Export Performance? Evidence from India.” *Journal of Comparative Economics* 42 (3): 569–89.

Bas, Maria and Orsetta Causa. 2013. “Trade and Product Market Policies in Upstream Sectors and Productivity in Downstream Sectors: Firm-level evidence from China.” *Journal of Comparative Economics* 41 (3): 843–862.

Bloom, Nicholas, Mirko Draca, and John Van Reenen. 2011. “Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity.” NBER Working Paper 16717, National Bureau of Economic Research, Cambridge, MA.

Bourlès, Renaud, Gilbert Cette, Jimmy Lopez, Jacques Mairesse, and Giuseppe Nicoletti. 2013. “Do Product Market Regulations in Upstream Sectors Curb Productivity Growth? Panel Data Evidence for OECD countries.” *Review of Economics and Statistics* 95 (5): 1750–68.

Dauda, Seidu. Forthcoming. “The Effects of Competition on Jobs and Economic Transformation (JET): A Literature Review.” *Equitable Growth, Finance and Institutions Insights*, World Bank, Washington, DC.

Dieppe, Alistair, ed. 2020. *Global Productivity: Trends, Drivers, and Policies*. Washington, DC: World Bank.

- Égert, Balázs, and Isabelle Wanner. 2016. “Regulations in Services Sectors and Their Impact on Downstream Industries: The OECD 2013 Regimpact Indicator.” OECD Economics Department Working Papers 1303, Organisation for Economic Co-operation and Development, Paris.
- Eslava, Marcela, John C. Haltiwanger, Adriana D. Kugler, and Maurice Kugler. 2013. “Trade and Market Selection: Evidence from Manufacturing Plants in Colombia.” *Review of Economic Dynamics* 16 (1): 135–58.
- Hopenhayn, Hugo A. 1992. “Entry, Exit, and Firm Dynamics in Long Run Equilibrium.” *Econometrica* 60 (5): 1127–50.
- Jovanovic, Boyan. 1982. “Selection and the Evolution of Industry.” *Econometrica* 50 (3): 649–70.
- Koske, Isabell, Isabelle Wanner, Rosamaria Bitetti, and Omar Barbiero. 2015. “The 2013 Update of the OECD’s Database on Product Market Regulation: Policy Insights for OECD and Non-OECD Countries.” OECD Economics Department Working Papers 1200, Organisation for Economic Co-operation and Development, Paris.
- Martinez Licetti, Martha, Mariana Iooty, Tanja K. Goodwin, and Jose E. Signoret. 2018. *Strengthening Argentina’s Integration into the Global Economy: Policy Proposals for Trade, Investment, and Competition*. International Development in Focus. Washington, DC: World Bank.
- Nickell, Stephen J. 1996. “Competition and Corporate Performance.” *Journal of Political Economy* 104 (4): 724–46.
- Olley, G. Steven, and Ariel Pakes. 1996. “The Dynamics of Productivity in the Telecommunications Equipment Industry.” *Econometrica* 64 (6): 1263–97.
- Pop, Georgiana, and Laurent Olivier Corthay. 2018. *Senegal: Better Markets for All through Competition Policy*. Washington, DC: World Bank Group.
- Productivity Commission. 2005. *Review of National Competition Policy Reforms*. Inquiry Report No. 33, Government of Australia, Canberra.
- Shepotylo, Oleksandr, and Volodymyr Vakhitov. 2015. “Services Liberalization and Productivity of Manufacturing Firms: Evidence from Ukraine.” *Economics of Transition* 23 (1): 1–44.
- Van der Marel, Erik, Janez Kren, and Mariana Iooty. “Services in the European Union: What Kinds of Regulatory Policies Enhance Productivity?” Policy Research Working Paper 7919, World Bank, Washington, DC.
- World Bank. 2019. “Jobs and Economic Transformation (JET)—Drivers, Policy Implications and World Bank Group Support.” DC2019-0008, September 18.
- World Bank. 2020. *Global Economic Prospects: Slow Growth, Policy Challenges*. Washington, DC.

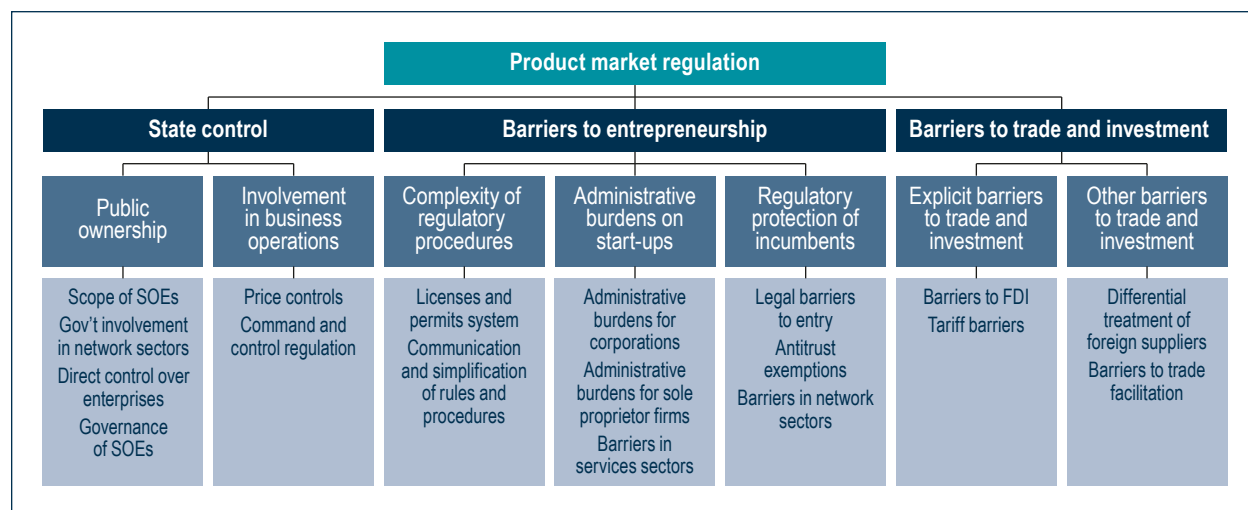


# Appendix A. Overview of PMR methodology

The PMR database contains a very detailed set of internationally comparable indicators that measure the extent to which regulations foster or limit firm entry and competition in areas of the product market where competition is viable. The indicators are derived from answers to more than 800 questions (based on the 2013 questionnaire) that are sent to government officials. Whereas some answers to the questionnaire are quantitative, others are qualitative. To facilitate analysis of qualitative answers, the Organisation for Economic Co-operation and Development converts all responses into numerical scores. The scores range from 0 to 6, with higher scores indicating that regulations are more restrictive of competition. The numerical scores assigned to each of the answers are aggregated into economywide and sectoral scores following a standardized process.

The economywide PMR indicators measure the extent of regulatory barriers to firm entry and rivalry in wide-ranging and important policy areas such as the state's involvement in economic activities, regulatory procedures and administrative burdens that inhibit business formation and growth, and tariff barriers and treatment of foreign suppliers that hamper foreign investment and trade. For the economywide indicators, the scores assigned to each of the answers are aggregated to capture the extent of regulations in 18 low-level policy areas. The low-level indicators are then aggregated into seven mid-level indicators. The seven mid-level indicators are further aggregated into three high-level indicators (state control, barriers to entrepreneurship, and barriers to trade and investment). Finally, the three high-level indicators are aggregated into an overall PMR indicator (figure A1).

**Figure A1. Schema of Economywide PMR Indicators**

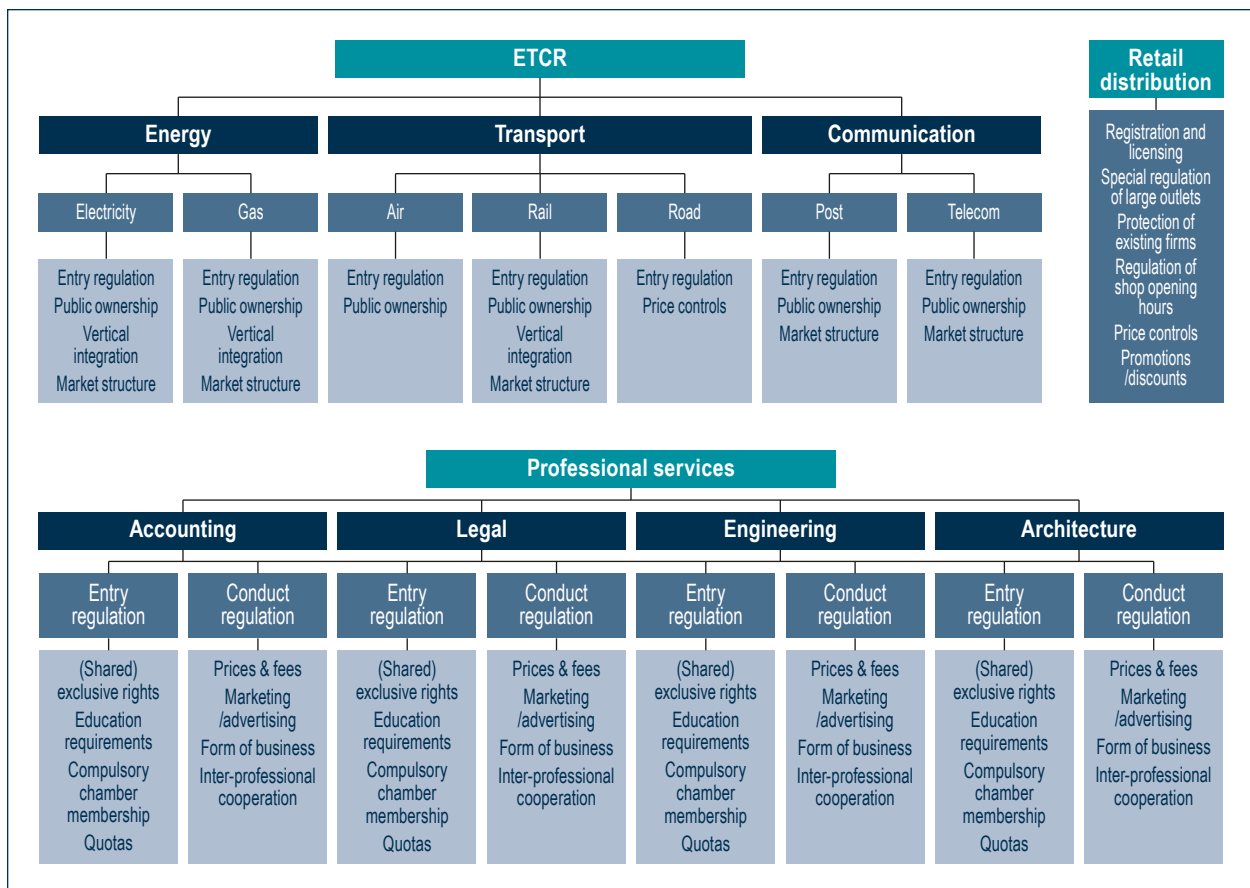


Source: Koske et al. (2015)

The sectoral indicators assess the extent of regulatory barriers to firm entry and competition in key enabling sectors: network sectors (energy, transport, and communications); professional services; and retail distribution (figure A2). These sectors are vital for the entire economy, because their functioning has trickle-down effects for sectors that rely on them for production inputs. For the network sectors, the individual scores are aggregated into 22 low-level indicators, which are then aggregated into seven mid-level indicators: electricity and gas (energy); telecom and post

(communications); and rail, airlines, and roads (transport). The mid-level indicators are finally aggregated in an overall network market regulation indicator. For professional services, the overall indicator is an aggregation of four high-level indicators (accounting, legal, architecture, and engineering). These four high-level indicators are an aggregation of two mid-level indicators relating to entry and conduct regulations. For the retail distribution indicators, the individual scores are aggregated into six high-level indicators and then into an overall retail indicator.

**Figure A2. Schema of Sectoral PMR Indicators**



Source: Koske et al. (2015).



## Appendix B. List of Countries Covered by the PMR Indicators

Advanced economies	Year of coverage	Emerging market and developing economies	Year of coverage
Australia	2013	Argentina	2014
Austria	2013	Bolivia	2016
Belgium	2013	Brazil	2013
Canada	2013	Bulgaria	2013
Cyprus	2013	Chile	2013
Czech Republic	2013	China	2013
Denmark	2013	Colombia	2014
Estonia	2013	Costa Rica	2014
Finland	2013	Croatia	2013
France	2013	Dominican Republic	2014
Germany	2013	Ecuador	2016
Greece	2013	Egypt, Arab Rep.	2017
Iceland	2013	El Salvador	2014
Ireland	2013	Guatemala	2016
Israel	2013	Honduras	2013
Italy	2013	Hungary	2013
Japan	2013	India	2013
Korea, Rep.	2013	Indonesia	2013
Latvia	2013	Jamaica	2014
Lithuania	2013	Kenya	2014
Luxembourg	2013	Kuwait	2018
Malta	2013	Mexico	2013
Netherlands	2013	Nicaragua	2014
New Zealand	2013	Panama	2016
Norway	2013	Paraguay	2016
Portugal	2013	Peru	2014
Slovak Republic	2013	Philippines	2017

Advanced economies	Year of coverage	Emerging market and developing economies	Year of coverage
Slovenia	2013	Poland	2013
Spain	2013	Romania	2013
Sweden	2013	Russian Federation	2013
Switzerland	2013	Rwanda	2015
United Kingdom	2013	Senegal	2017
United States	2013	South Africa	2017
		Turkey	2013
		Ukraine	2017
		Uruguay	2015
		Venezuela, RB	2016

Note: Country classification is based on the IMF World Economic Outlook 2019. The PMR indicators for Egypt, Arab Rep., Kuwait, and Venezuela RB are not publicly available.





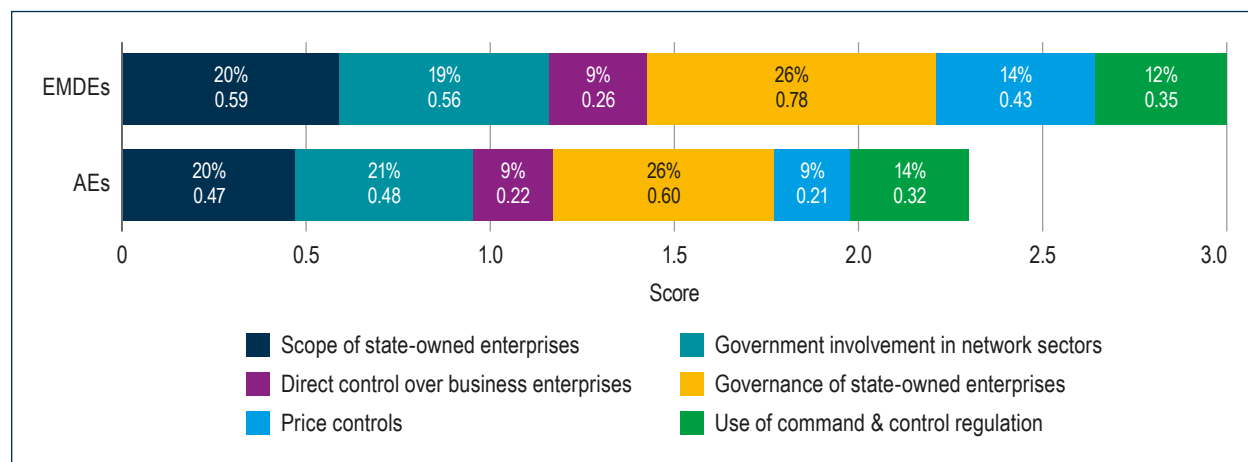
# Appendix C. Summary of Key Findings by High-Level Policy Area

## 1. Economywide PMR

### 1.1. State Control

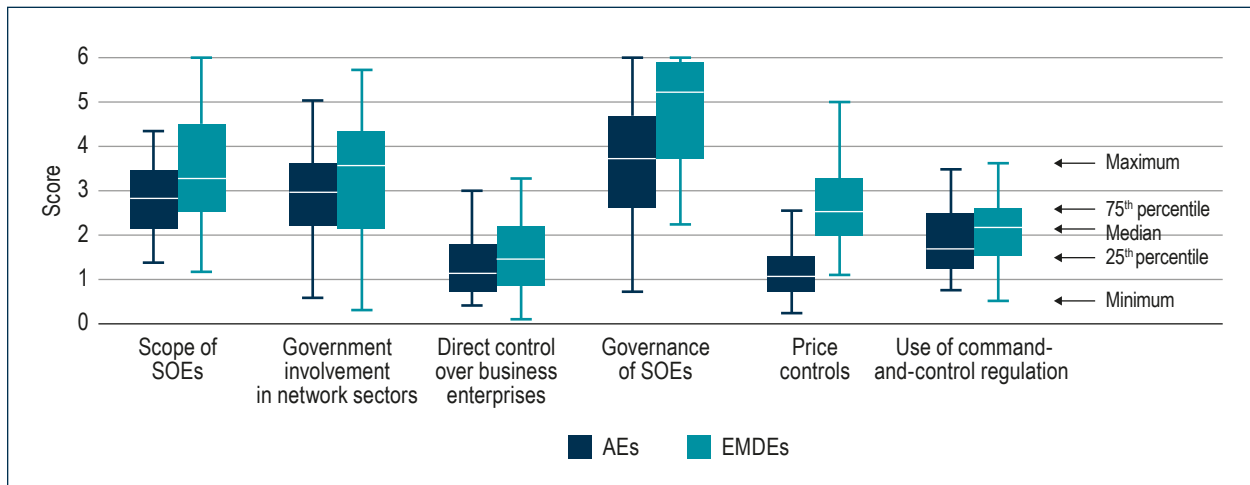
- On average, state control is more pervasive in emerging market and developing economies (EMDEs) than in advanced economies (AEs) (figure C1).
- EMDEs intervene more often through price controls (figure C2).
- The scope of state ownership, government involvement in network sectors, and state-owned enterprise (SOE) governance are also more restrictive in EMDEs, but there is significant variation among countries (figure C2).
- Direct control over private firms and command-and-control regulation are less common, among both AEs and EMDEs (figure C2).
- EMDEs rarely support competition in the telecom sector (figure C3, panel a). However, EMDEs have in general less restrictive regulations in the retail and rail sectors (figure C3, panel b).

**Figure C1. Breakdown of PMR Score for State Control**



Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C2. Variation in PMR Score for State Control**



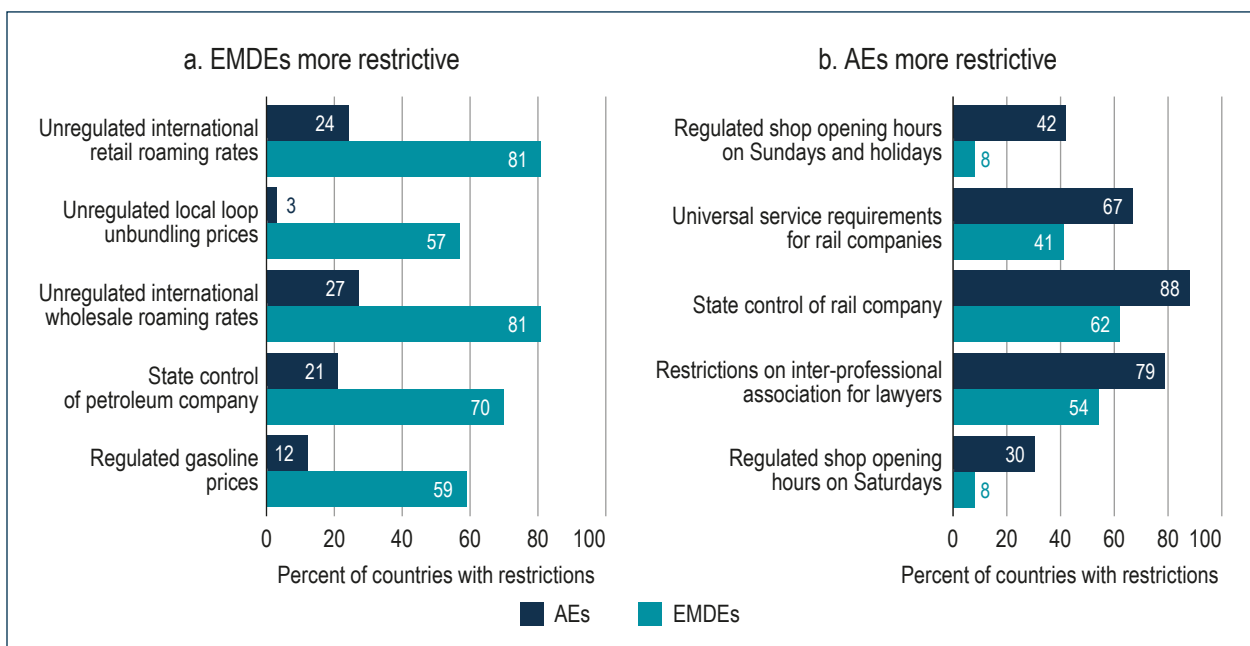
Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Table C1. Smallest Policy Differences**

1	State control of electricity and gas suppliers, passenger transport companies (road, rail, air), and postal services
2	Restrictions on backhauling for trucks
3	Restrictions on multidisciplinary practice for accountants, architects, and engineers

Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C3. Biggest Policy Differences**

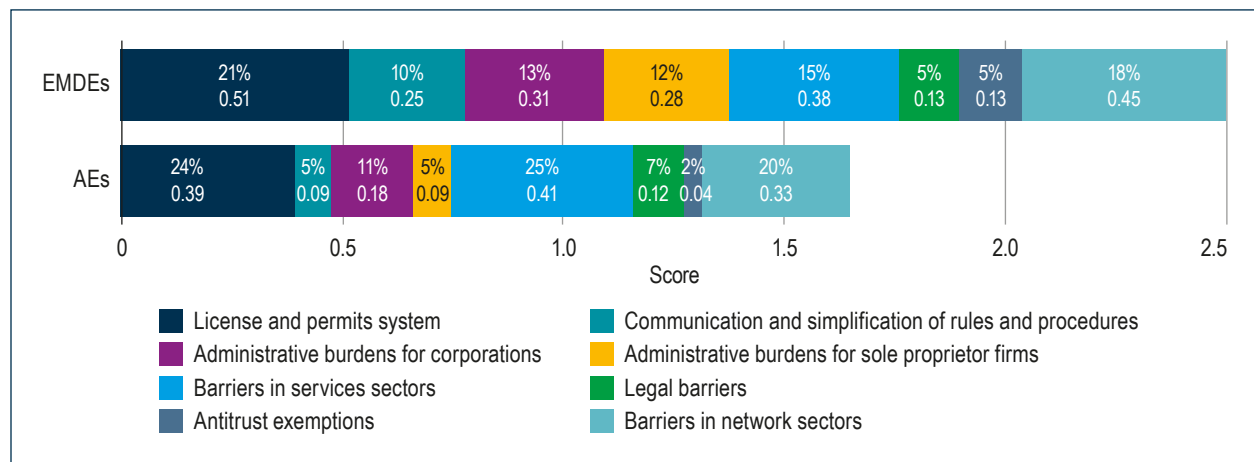


Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

## 1.2. Barriers to Entrepreneurship

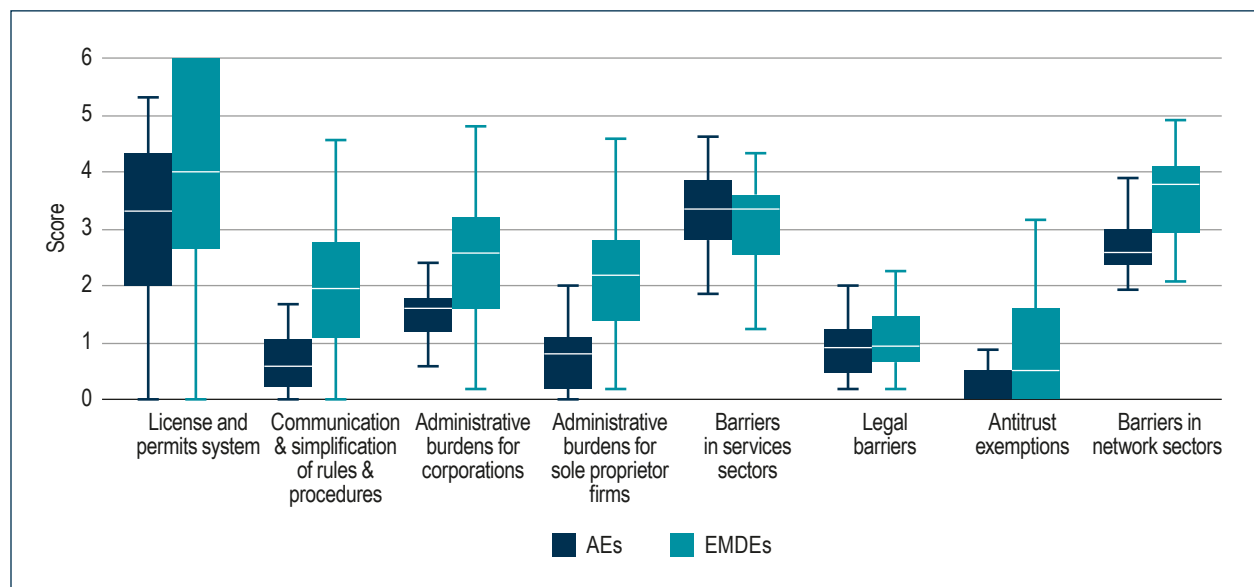
- There are more barriers to entrepreneurship in EMDEs than AEs (figure C4)
- The differences among AEs and EMDEs are attributable to more restrictive licensing, higher administrative burdens, weaknesses in the regulatory process, and barriers in network sectors (figures C5 and C6).
- Policies on these issues diverge more among EMDEs than AEs (figure C5).
- Entrepreneurs who provide professional services or engage in retail face fewer barriers in EMDEs than AEs (figures C5 and C6).

**Figure C4. Breakdown of PMR Score for Barriers to Entrepreneurship**



Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C5. Variation in PMR Scores for Barriers to Entrepreneurship**



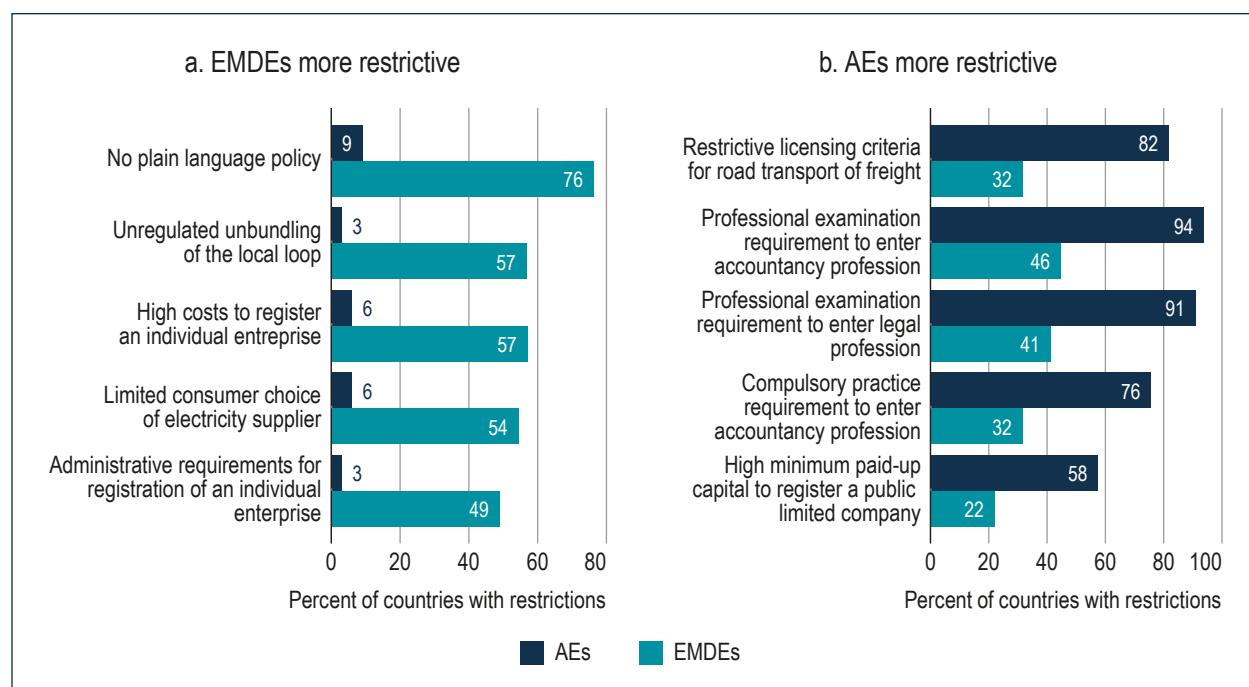
Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Table C2. Smallest Policy Differences**

1	Private sector participation in water sector
2	Degree of vertical separation in electricity sector
3	No supplier quotas in manufacturing, water transport, or hospitality industry

Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C6. Biggest Policy Differences**



Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

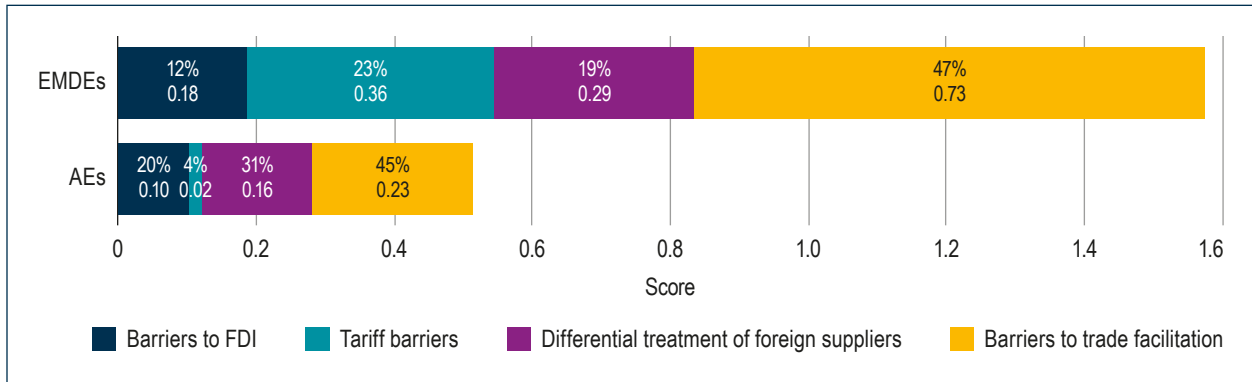
### 1.3. Barriers to Trade and Investment

- Barriers to trade and investment are three times more severe in EMDEs than AEs (figure C7)
- Tariff barriers and barriers to trade facilitation are more common across EMDEs than AEs. However, tariff barriers and barriers to trade

facilitation vary significantly among EMDEs (figure C8).

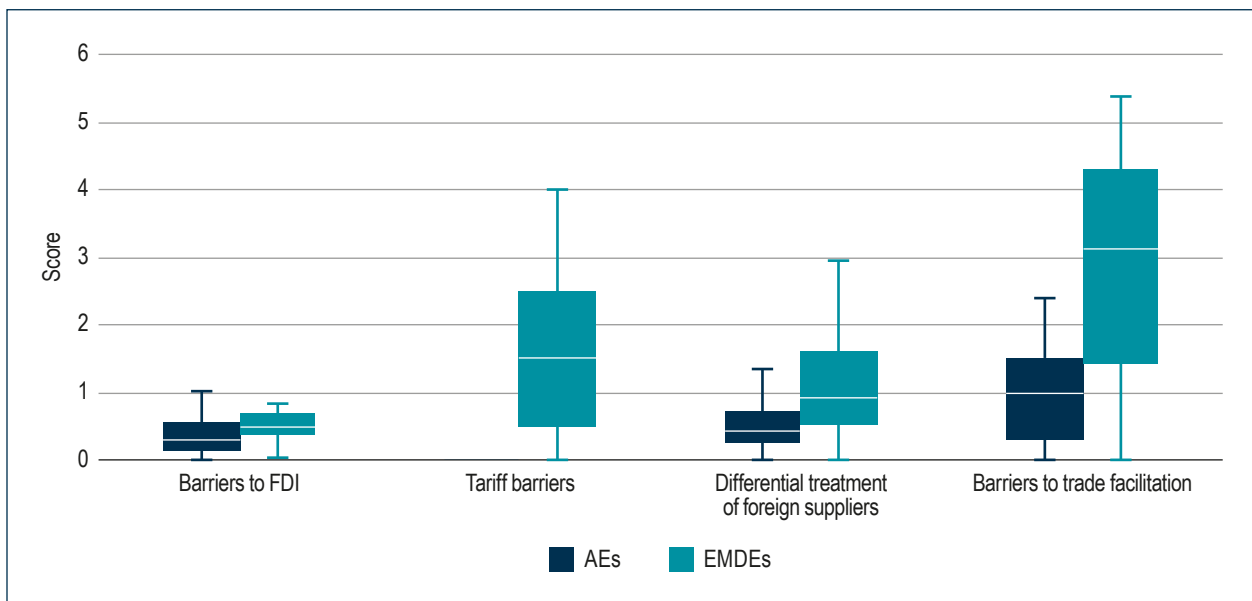
- Across all countries, the barriers to FDI are scored as less restrictive than trade barriers (figure C7).
- EMDEs frequently lack mutual recognition agreements but are more likely to treat foreign suppliers on par with domestic firms (figure C9).

**Figure C7. Breakdown of PMR Score for Barriers to Trade and Investment**



Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C8. Variation in PMR Score for Barriers to Trade and Investment**



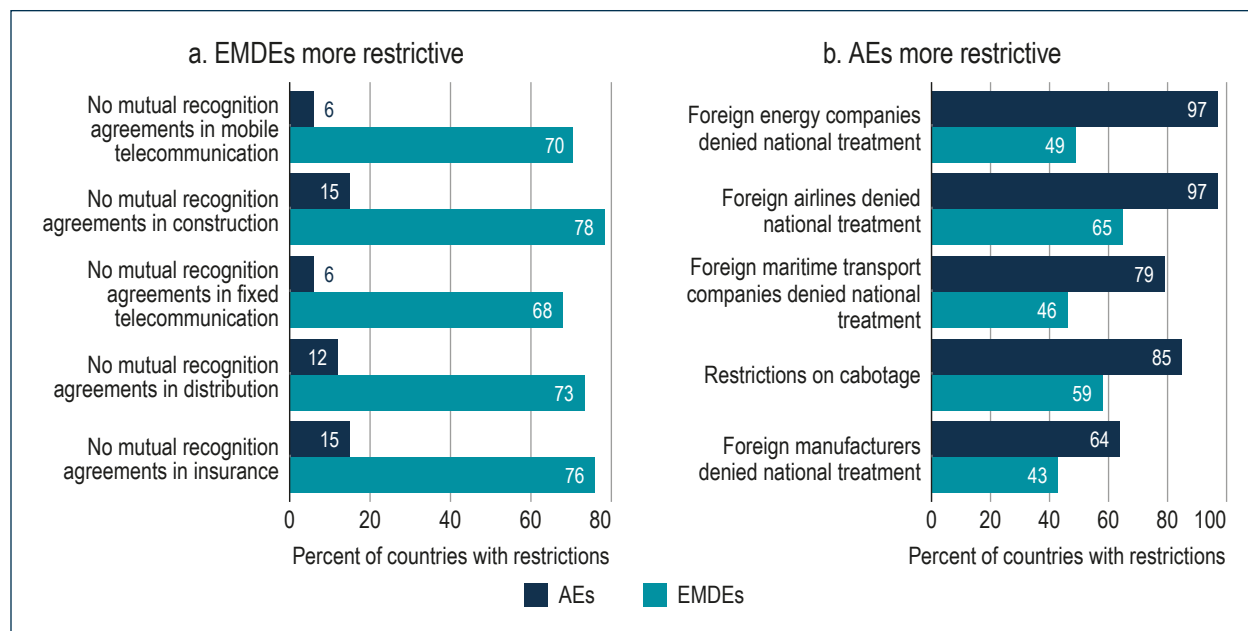
Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Table C3. Smallest Policy Differences**

1	Restrictions on number of foreign professionals permitted to practice as accountants, architects, and engineers
2	Differential treatment of foreign suppliers in telecommunications, construction, road transport, and computer sectors

Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C9. Biggest Policy Differences**



Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

## 2. Sectoral PMR

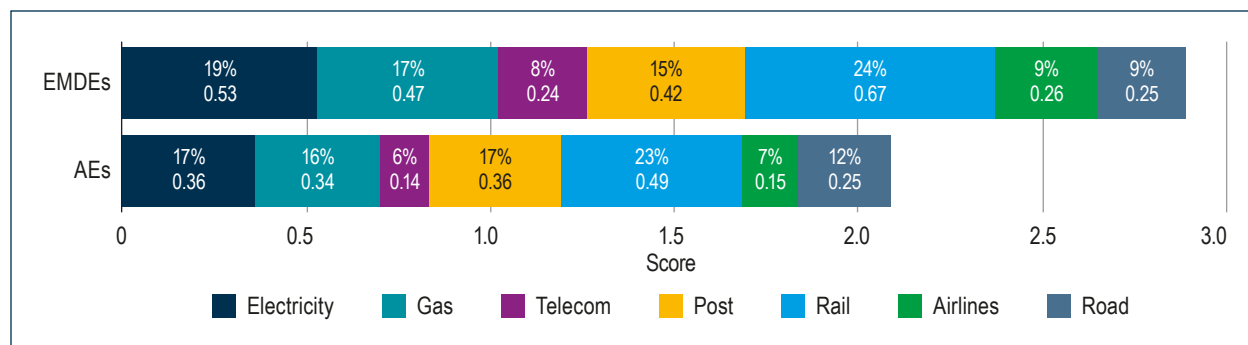
### 2.1. Network Sectors (Energy, Communications, and Transport)

- Restrictive regulations in network sectors (energy, transport, and communications) are more prevalent in EMDEs than in AEs, on average (figure C10).
- Most differences among EMDEs and AEs are

attributable to entry regulations in network sectors, followed by differences in market structure (figure C11).

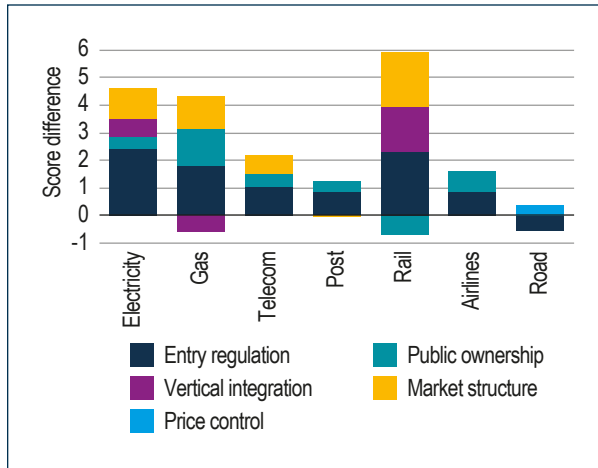
- Across both AEs and EMDEs, regulations are more restrictive in the rail sector than in other network sectors (figure C12).
- Countries diverge on policies in most sectors. In telecom and road transport, policies in AEs diverge less than policies in EMDEs (figures C12 and C13).

**Figure C10. Breakdown of PMR Score for Network Sectors**



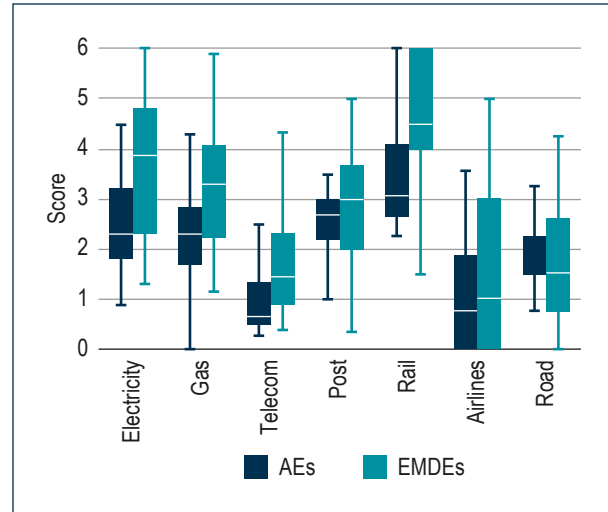
Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C11. Average PMR Score Differences among EMDEs and AEs, by Sector and Policy Area**



Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C12. Variation in PMR Score for Network Sectors**



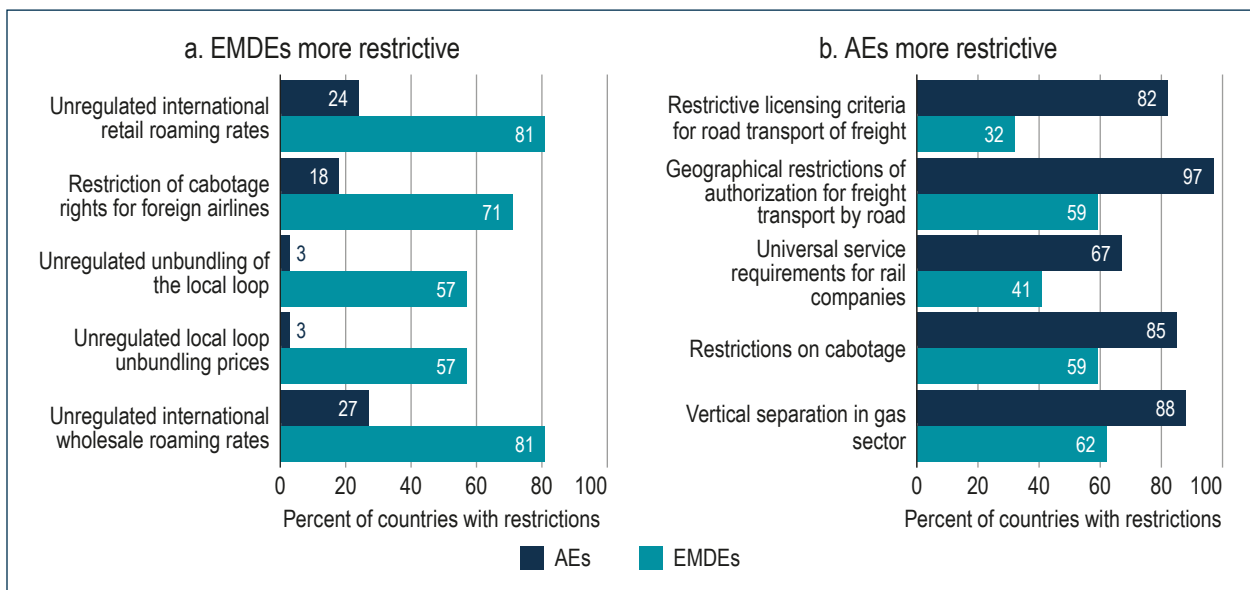
Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Table C4. Smallest Policy Differences**

1	State control in gas, telecom, post, and air transport sectors
2	Degree of vertical separation in electricity sector

Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C13. Biggest Policy Differences**

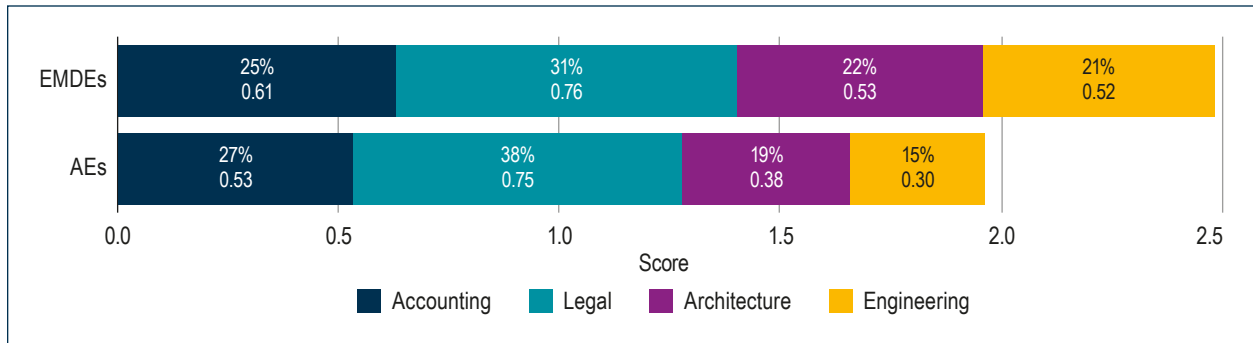


Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

## 2.2. Professional Services

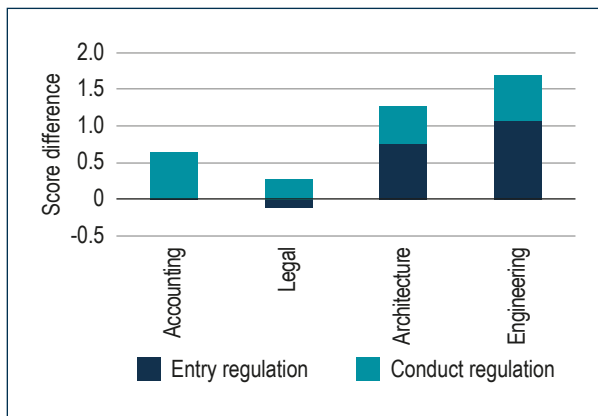
- There are more restrictions for providers of professional services in EMDEs than AEs (figure C14).
- Most differences among EMDEs and AEs concern entry and conduct regulations for architects and engineers (figures C14 and C15).
- Regulations for lawyers and accountants vary less among AEs and EMDEs than within each of the country groups (figures C14, C15, and C16).

**Figure C14. Breakdown of PMR Score for Professional Services**



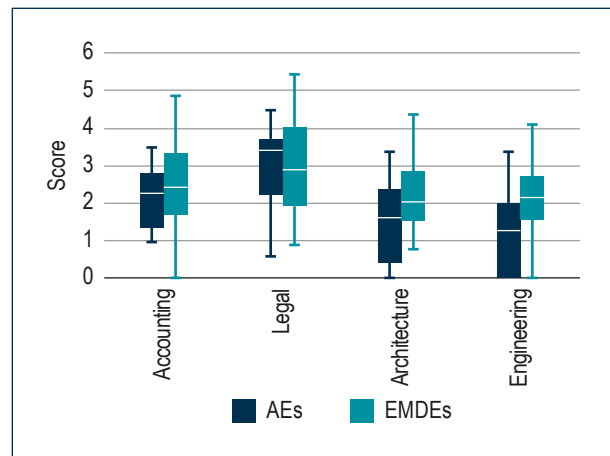
Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C15. Average PMR Score Differences among EMDEs and AEs, by Sector and Policy Area**



Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C16. Variation in PMR Score for Professional Services**



Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.

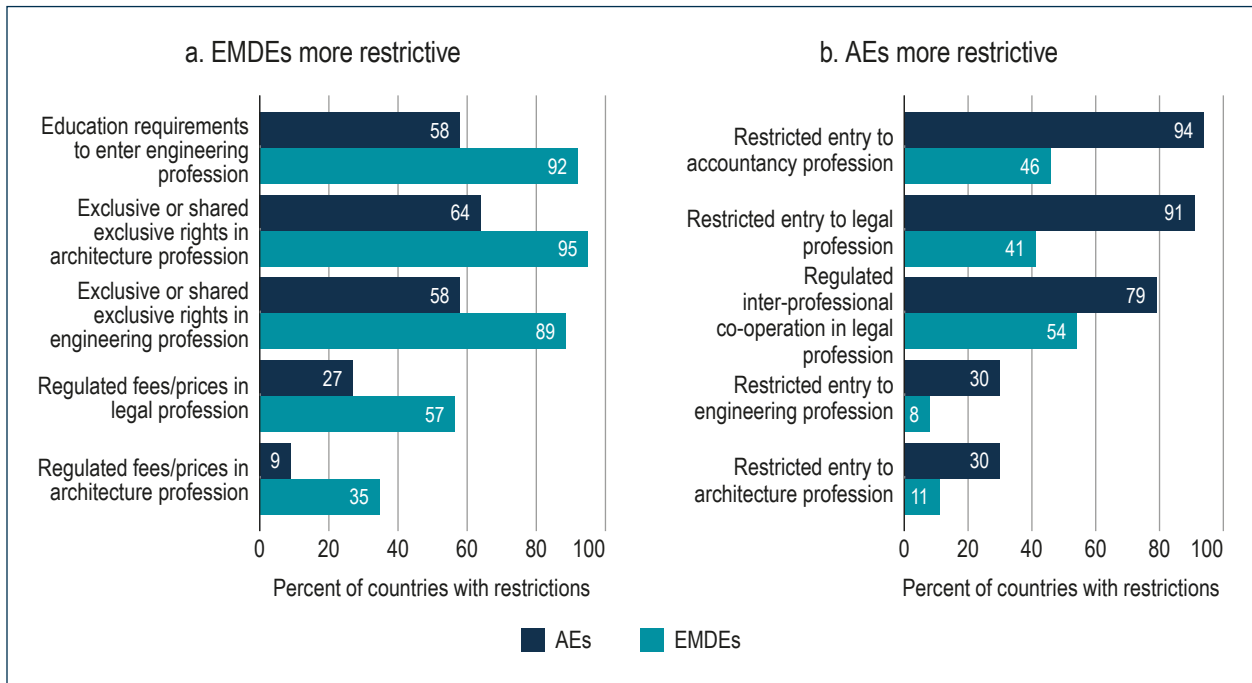
**Table C5. Smallest Policy Differences**

1	Occupational licensing for lawyers, accountants, architects, and engineers
2	Limited restrictions on multidisciplinary practice for accountants, architects, and engineers

Source: World Bank staff analysis of 2013–2017 data from the OECD PMR database and the WBG–OECD PMR database.



**Figure C17. Biggest Policy Differences**



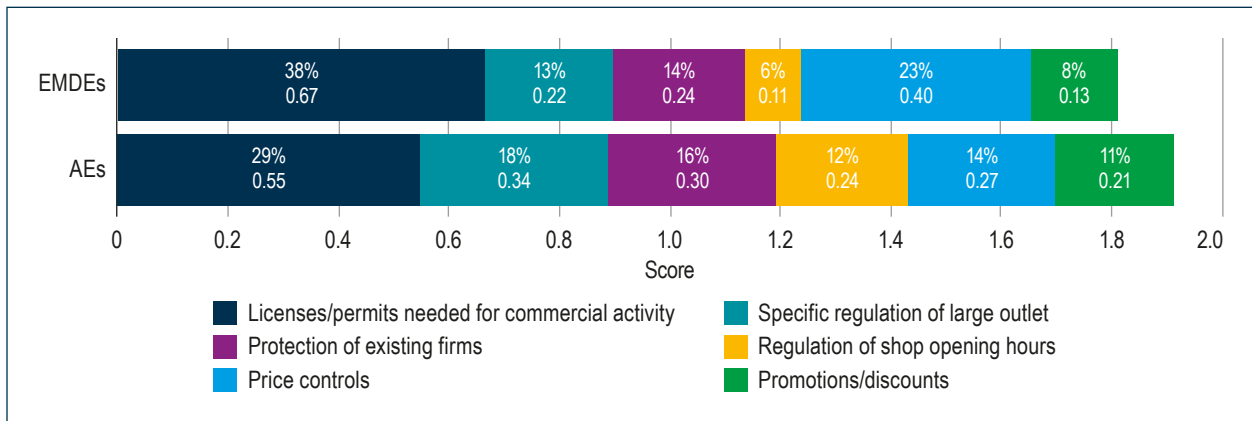
Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

### 2.3 Retail Trade

- On average, retail regulations are less restrictive in EMDEs than in AEs (figure C18).
- Regulations in the retail sector diverge significantly,

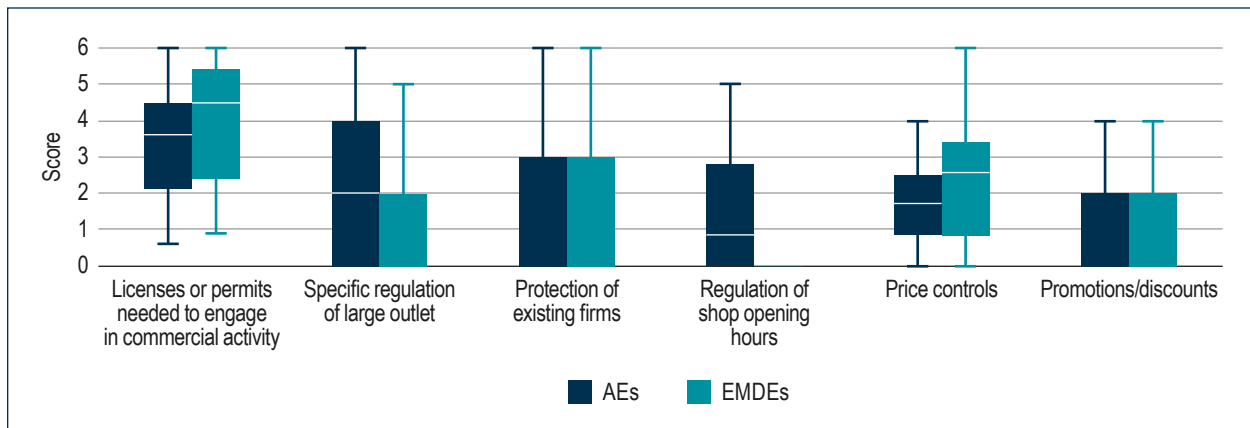
- among both EMDEs and AEs (figure C19).
- Regulation of shop opening hours is more frequent among AEs than EMDEs, while price control is more common among EMDEs (figures C18 and C20).

**Figure C18. Breakdown of PMR Score for Retail Trade**



Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C19. Variation in PMR Score for Retail Trade**



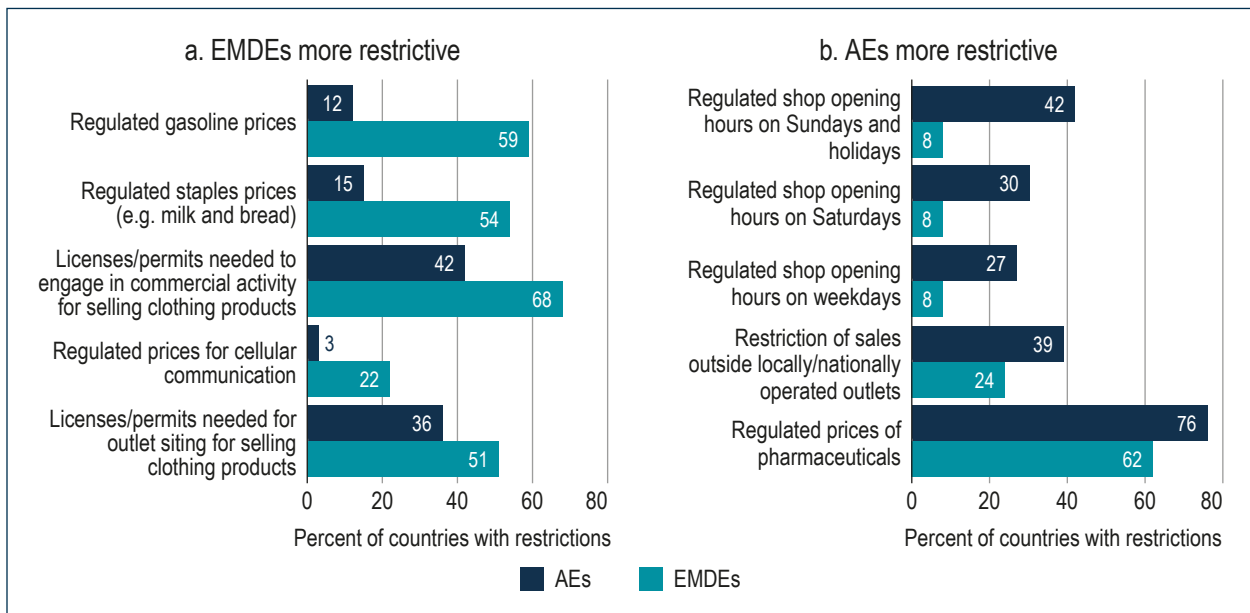
Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Table C6. Smallest Policy Differences**

1	Limited registration requirements for new retail outlets (food, clothing)
2	Limited regulation of shop opening hours on weekdays
3	Price controls for alcoholic beverages
4	Limited restrictions on promotions

Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.

**Figure C20. Biggest Policy Differences**



Source: World Bank staff analysis of 2013 – 2017 data from the OECD PMR database and the WBG–OECD PMR database.



