



# OECD Technical Report on Progress on Structural Reform Under the G20 ESRA

April 2017

This OECD technical report to G20 Finance Ministers and Central Bank Governors provides an assessment of progress on structural reform to achieve strong, sustainable and balanced growth under the G20 Enhanced Structural Reform Agenda (ESRA) agreed at the Hangzhou Summit.

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## OECD Technical Report on Progress on Structural Reform Under the G-20 Enhanced Structural Reform Agenda

This OECD technical report to G-20 Finance Ministers and Governors provides an assessment of progress on structural reform to achieve strong, sustainable and balanced growth under the G-20 Enhanced Structural Reform Agenda (ESRA) agreed at the Hangzhou summit.<sup>1,2</sup>

The ESRA identified 9 priority reform areas, a set of agreed indicators of policy settings and outcomes, and G-20 principles for structural reform. These elements provide the basis for this report. Progress is assessed using the most recent data compared with 2011, the end of the immediate post-crisis period, and 2007, just prior to the start of the global financial crisis. Given that the ESRA was agreed in 2016, comparison with these earlier periods shows the recent trajectory of structural reform, including the impact of measures under the G-20 Growth Strategies, starting with the Brisbane Action Plan in November 2014.

### Overview of G-20 Enhanced Structural Reform Agenda

G-20 Structural Reform Priorities	Structural indicators		
	Policy indicators	Outcome indicators	
<i>Promoting trade and investment openness</i>	Implicit barriers to trade and investment OR* Trading across borders	Labour productivity	
<i>Promoting competition and an enabling environment</i>	Barriers to entrepreneurship OR* Starting a business		
<i>Encouraging innovation</i>	Public funding of business R&D (% of GDP) AND R&D tax incentives (% of GDP)		Total spending on R&D OR* (% of GDP)
<i>Improving infrastructure</i>	Public investment (% of GDP)		OR* Investment (% of GDP)
<i>Advancing labour market reform, educational attainment and skills</i>			Employment to population ratio
<i>Improving and strengthening the financial system</i>			
<i>Promoting fiscal reform</i>			
<i>Enhancing environmental sustainability</i>			
<i>Promoting inclusive growth</i>		Gini coefficient OR* Shared Prosperity Premium	

\*Denotes that G-20 countries had the choice between indicators in this area.

1. The 24 July 2016 Chengdu Communique asked “the OECD to help assess G20 progress and challenges within the structural reform priority areas by producing a technical report, with input from other international organizations, using the common set of indicators.”
2. “G20 Enhanced Structural Reform Agenda”, note prepared by the G20 Framework Working Group, September 2016.

This technical report has two sections. **Section 1** provides an overview of the collective progress of the G-20 members in the nine priority areas. **Section 2** provides a set of notes assessing progress areas for each G-20 member individually.

The indicator-based assessment is complemented by an evaluation including input from the OECD's teams of country experts and drawing on analysis in the OECD's 2017 [Going for Growth](#) exercise that assesses structural policies and outcomes for inclusive growth.<sup>3</sup> As with any indicator-based exercise, some judgement may be required to interpret the indicators and set them in context. Data and indicators are from the IMF, OECD and World Bank. Countries may in some cases choose which of the indicators to use for the ESRA exercise.<sup>4</sup>

## Section 1 – Collective progress on G-20 structural reforms and outcomes

Structural reforms are an important driver of growth over the long-term and – in conjunction with macroeconomic policies – a key element of achieving the G-20 objective of strong, sustainable and balanced growth. Since 2011, G-20 GDP has continued to expand but at a slower pace than during the pre-financial crisis period. GDP growth in advanced G-20 economies slowed after 2011 and has only slowly recovered or remained fairly flat in most countries. In emerging market G-20 economies, GDP growth has remained on average higher than in advanced economies but amid wide discrepancy with a few countries experiencing recessions. These developments reflect a combination of demand weakness and lower potential growth, driven by weaker investment performance and other factors.

While inequality has been decreasing for the G-20 collectively, developments within many countries since the mid-1990s are more mixed, raising concerns that many people are being excluded from the fruits of economic growth. For a large number of people in advanced economies incomes have stagnated. Similarly, since the crisis and since 2011 changes in income inequality within countries have not been uniform, with inequality rising in some countries and decreasing in others. On environmental sustainability, progress is still far from G-20 countries' aspirations, including the longer-term goals of the COP21 agreement.

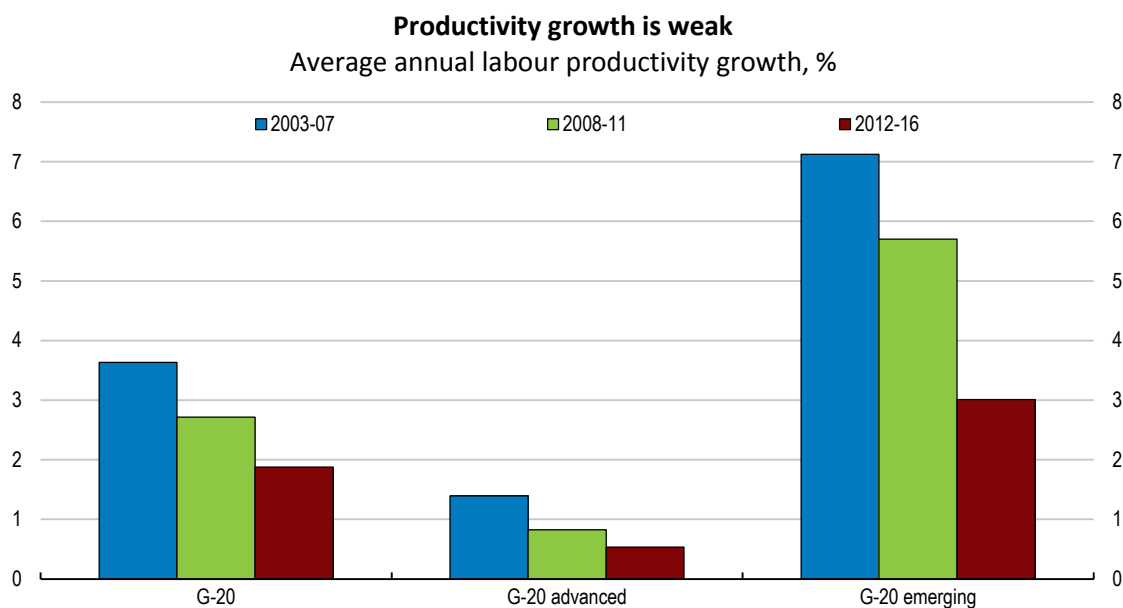
Underlying many of these developments is a widespread slowing of productivity growth.<sup>5</sup> Across the G20 countries, labour productivity is higher than before the crisis and 2011, but its growth has slowed significantly in both advanced and emerging economies since 2011. Productivity gains have been strong in China, India, Indonesia and, to a lesser extent, Turkey and Korea. However, in many countries performance in recent years has been weak with labour productivity levels in Germany, Italy, Mexico, South Africa and the United Kingdom either below or not far above pre-crisis levels. For many G-20 countries, productivity growth rates are well below pre-crisis norms due to a combination of weak investment and slower growth of multifactor productivity, reflecting cyclical and structural developments.

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3. OECD (2017), *Economic Policy Reforms 2017: Going for Growth*, OECD Publishing, Paris.

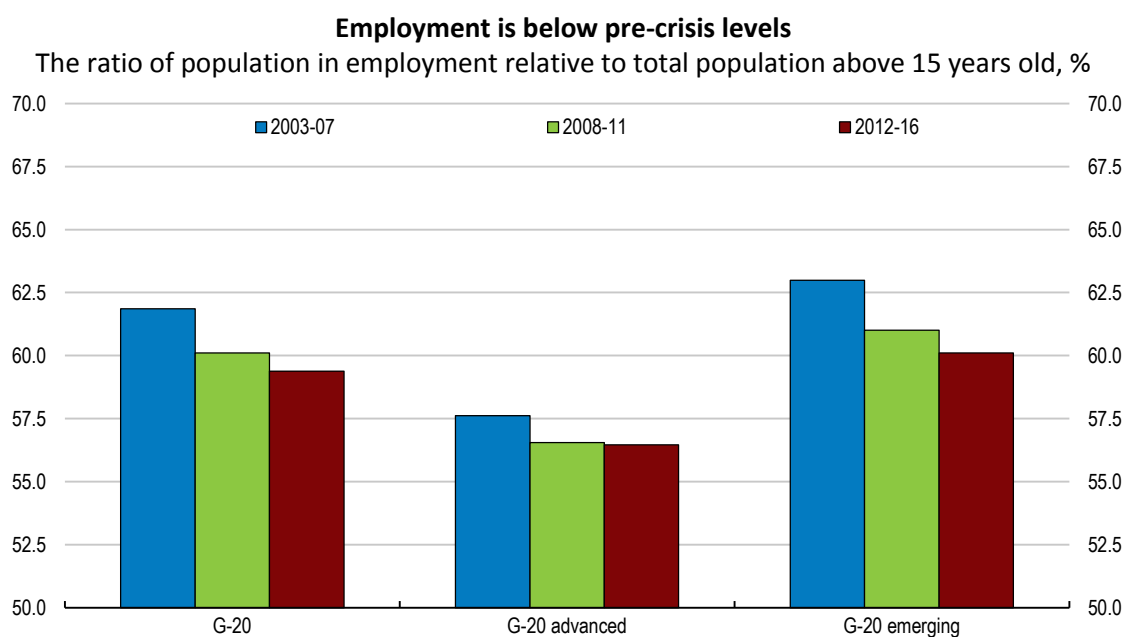
4. Details on indicator coverage, construction and sources are provided in the Data Annex. In rare cases where internationally harmonised data are not available, national sources have been used.

5. Measured as GDP per employee, 2010 constant USD, 2010 PPPs.



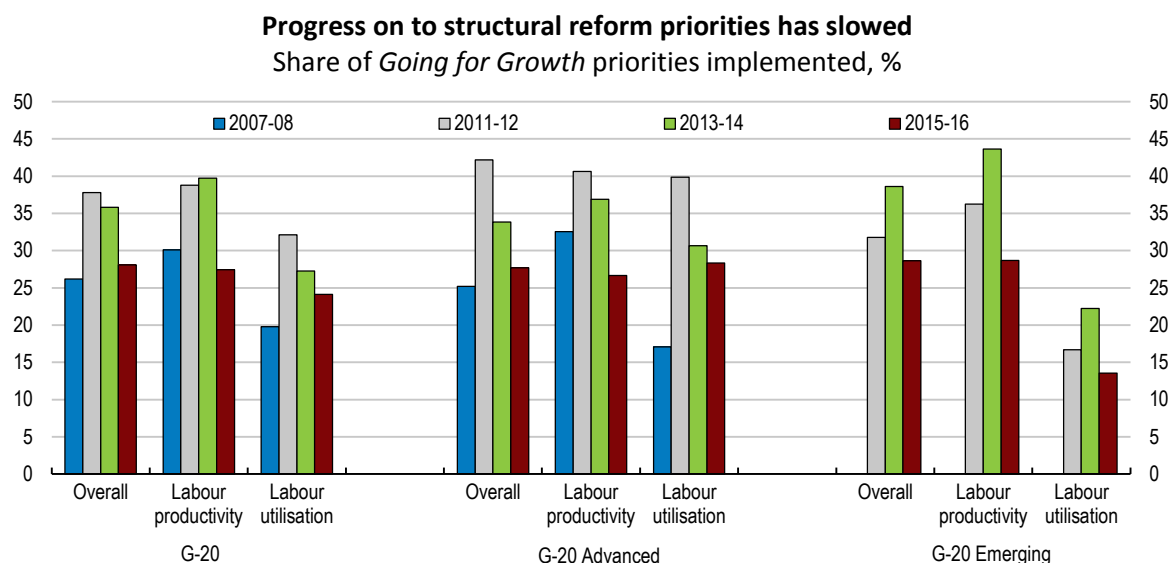
Note: G-20 emerging aggregate includes Argentina, Brazil, China, India, Indonesia, Mexico, Russia, Turkey, Saudi Arabia and South Africa. G-20 advanced aggregate includes the remaining G-20 countries.

Employment outcomes have been mixed across G-20 countries. The aggregate G-20 employment-to-population ratio has been stable over recent years, after a steep fall during the crisis. In China, India, Japan and the United States, the share of people in work is lower than before the crisis. In some cases, demographic factors play a role. On the other hand, many advanced and emerging G-20 economies have seen rising employment shares since the crisis, including Germany, Indonesia, Saudi Arabia, Turkey and the United Kingdom.



Note: G-20 emerging aggregate includes Argentina, Brazil, China, India, Indonesia, Mexico, Russia, Turkey, Saudi Arabia and South Africa. G-20 advanced aggregate includes the remaining G-20 countries.

However, the pace of structural reform appears to have slowed compared to the immediate aftermath of the crisis – as indicated by the responsiveness of countries to priorities identified in the OECD *Going for Growth* report. In key areas, the pace of policy reform picked up sharply following the crisis in advanced economies and in the following years in emerging economies. More recently, reform intensity is at around pre-crisis levels. Progress on implementation of the G-20 Growth Strategy structural reform commitments has also been incomplete with the IMF-OECD assessment suggesting that just over half of Growth Strategy Key Commitments measures were implemented by September 2016, adding around 1 percent to G-20 GDP by 2018.<sup>6</sup>



*Note:* The figure presents the reform responsiveness index which is an indicative assessment of reform intensity across time and countries, constructed for each individual priority area and for each country – as identified in OECD’s *Going for Growth*. The indicator measures the share of total policy recommendations formulated in the last issue of OECD’s *Going for Growth* on which governments in each country have taken some action. It considers only legislated changes as opposed to announced changes. G-20 Emerging include Brazil, China, India, Indonesia, Mexico, Russia, Turkey and South Africa. G-20 Advanced include the remaining G20 countries except Argentina and Saudi Arabia. It includes the EU for which *Going for Growth* identifies an individual set of reform priorities.

The slowing in the number of reforms has not been uniform across priority areas and G-20 countries. In emerging market economies, progress has been particularly visible with respect to reforms that aim to boost the slowing labour productivity: promoting trade, innovation and competition, improving infrastructure and boosting human capital. In advanced economies, the focus has tended to be more on reforms addressing employment – in response to poor performance in many of them. While across the G-20 there seems to be less progress on reforming the tax structures or public spending efficiency, several countries introduced significant measures. These efforts are reflected in G-20 Growth Strategies and examples are discussed in the following subsections.

6. “Quantifying the Implementation and Impact of G-20 Members’ Growth Strategies”, Note by the IMF and OECD to the G-20, September 2016.

### ***Promoting trade and investment openness***

Greater openness to trade and FDI contribute to productivity growth by raising the scope for cross-border knowledge diffusion and boosting competition. Policies in this area include reducing tariff and non-tariff barriers to trade and FDI (including reducing behind the border restrictions), implementing trade facilitation measures to reduce border costs, greater cross-border regulatory harmonisation and making trade and investment deals that are wide-reaching and minimise discriminatory measures against third parties.

Trade growth has slowed markedly in recent years as the result of cyclical and structural factors (OECD, 2016), while FDI remains volatile. Progress on trade opening has been mixed compared with earlier decades. Since the crisis, G-20 countries have implemented a large number of measures restricting trade and investment.<sup>7</sup> However, overall there has been some progress on barriers to investment and the ease of doing business across borders since the global financial crisis. For example, India and Mexico have opened up selected network sectors to foreign investment. Notable trade agreements have been signed among G-20 members since 2014 (Australia-China, Australia-Japan, Australia-Korea, Canada-European Union, Canada-Korea, China-Korea) and will result in lower trade barriers. The implementation of the Trade Facilitation Agreement will help to reduce trade costs. Implicit barriers to trade have fallen somewhat in Brazil, due to improvements in administrative efficiency; India, with an easing of restrictions on cross-border investment; and Argentina, due to the removal of a number of regulations that discouraged trade and investment.

### ***Encouraging innovation***

Innovation boosts productivity both by advancing the technology frontier and by speeding up the adoption of existing technology. At the same time, knowledge spillovers mean that firms may not be able to fully appropriate the gains from innovation, leading to under-investment in R&D. Combined with adequate framework policies in the areas of education, infrastructure and product market regulations, specific innovation policies – including public support measures – can help raise business expenditure on R&D and its effectiveness, thereby enhancing productivity.

Total R&D spending has been growing faster than GDP in most G-20 economies – both emerging and advanced – and has not been much affected by the crisis. At the same time, direct public support has decreased in many countries and has been often accompanied by a stronger reliance on tax incentives. Examples of reforms in the area of R&D support in recent years include Canada, Italy, Korea, Mexico and Russia which introduced new support measures for business R&D, in particular for innovative SMEs. Specific programmes in Australia, China, Mexico and Russia aim at encouraging greater links between research and business.

### ***Promoting competition and an enabling environment***

Competition and lower barriers to entry are key for encouraging investment, innovation and reallocation among firms to boost productivity. Estimates of the potential pay-offs from reforms to reduce explicit and implicit regulatory barriers to entry and competition suggest strong gains. Policies include reducing barriers to starting and expanding a business, strengthening competition law and enforcement, promoting a

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7. OECD-UNCTAD-WTO 16th Report on G20 Trade and Investment Measures, 10 November 2016.

level playing field, removing restrictive regulations particularly in service sectors, implementing efficient bankruptcy procedures and ensuring the rule of law and the efficiency of the judicial system.

Barriers to starting a business and to entrepreneurship remain significant, along with challenges regarding the effectiveness of competition frameworks and bankruptcy laws in many G-20 countries. Barriers to entry are particularly high in professional services, network sectors and retail trade. However, some progress has been made by G-20 countries in recent years, including reforms undertaken in France in 2015, regarding network sectors, professional services and retail; the liberalisation of the electricity sector in Japan in 2016; and reforms in India, Indonesia and South Africa, where the governments are taking action to facilitate doing business.

### ***Improving infrastructure***

Infrastructure is the backbone of the economy. Accessible, high quality infrastructure is crucial for productivity growth – raising whole-economy capital stock and providing spillover benefits to private activity. Solving infrastructure bottlenecks and under-provision, for example in education, transport, energy or communication, can also raise labour utilisation and inclusiveness. The G-20 has significant infrastructure investment needs, and needs to mobilise private sector investment (including through the use of Public Private Partnerships) as well as to ensure the quality of infrastructure spending.

In many advanced G-20 economies, there have been sizeable cuts in public investment since the crisis. At the same time, there has been progress in increasing or improving public infrastructure spending, for example in Argentina, India and Russia, where new infrastructure investment programmes have been directed largely at transport and energy. Mexico and South Africa have rolled out programmes to improve school infrastructure. Germany has put in place new programmes focussing on rail and broadband, while the United Kingdom has taken measures on the organisational and administrative side of infrastructure investment and on increasing infrastructure spending. Argentina, Australia, Brazil, China, India and Indonesia took measures to increase and facilitate private participation in infrastructure.

### ***Advancing labour market reform, educational attainment and skills***

Improving employment and labour market outcomes is a top priority across G-20 economies, increasing both the number and quality of jobs. In advanced economies, reducing unemployment and raising the participation of groups such as women, youth and older workers are key challenges. Protection needs to be rebalanced from jobs to workers and labour market dualism addressed. In emerging economies, reducing informality is a common challenge. Adequate education and skills allow people to access jobs and technological progress to translate into economic growth – making reforms that facilitate the accumulation of human capital and skills key for enhancing long-run living standards, including improving education in early childhood and in schools. Access to and the efficiency of vocational education and training, tertiary education and reskilling have scope to be improved in many G-20 countries.

A number of countries have made some progress in recent years in reducing labour market dualism, improving active labour market policies, reforming labour market institutions, increasing formality and lowering the tax wedge for low earners. For example, some progress on reforms reducing labour market dualism is visible in Japan and Korea. Australia, France and South Africa have introduced targeted measures to increase employment of young and low-qualified workers; in Italy, significant reforms to the system of active labour market policies are being pursued since 2015. Measures to strengthen work



incentives and improve activation policies are underway since 2015 in Spain, Turkey, the United Kingdom and the United States. These efforts are often already delivering gains in employment. Moreover, most G20 economies pursued some reforms in education and skills in the recent years, though their nature and depth varied widely. Such reforms can often take a long time to bear fruit but are crucial for the accumulation of human capital.

### ***Improving and strengthening the financial system***

The financial system plays a critical role in funding investment for productive activities and ensuring that capital is well-allocated. At the same time, financial systems need to contribute to economic resilience. Policies, including macroprudential policies, can help to safeguard financial stability and investor protection while ensuring that the institutional framework is conducive to market financing, as well as improving access to both traditional bank financing and innovative sources of finance. G-20 countries have in recent years focussed on implementation of the evolving post-crisis international regulatory system and have made significant progress towards those goals.

### ***Promoting fiscal reform***

Improving the efficiency of government expenditure and tax systems can boost productivity and raise employment, while contributing to fiscal sustainability and more inclusive outcomes. On the spending side, this includes prioritising growth-friendly expenditure such as education; implementing sustainable and efficient social protection programmes; public investment; and improving the efficiency of public administration and public service delivery. Recent actions taken in the area of public spending efficiency include Italy, Saudi Arabia, the United Kingdom and the United States.

An effective tax system is needed to raise revenues to pay for key public services, support redistribution and maintain incentives for growth. Key reform areas include broadening the tax base, reducing inefficient tax expenditures to curb related distortions and improving the tax collection. For example, some G-20 tax systems create disincentives for second earners to work. In recent years, various actions to reform the tax system have been taken: in India with the introduction of a Goods and Service Tax in 2016; in China with the VAT reform; in Saudi Arabia, with the 2017 ratification of the introduction VAT and Excise taxes; in Australia, Japan and the United Kingdom, with cuts in corporate tax rates; in Canada, with a review of federal tax expenditures; and in Korea. Argentina, Indonesia and Saudi Arabia have made progress in scaling back of energy subsidies.

### ***Enhancing environmental sustainability***

Greenhouse gas emissions continued to rise strongly in the pre-crisis period, but their growth has slowed more recently. In most countries CO<sub>2</sub> emissions from fossil fuel combustion and industrial activities have been growing slower than GDP since the 1990s, and there are some indications that globally they may even be peaking.<sup>8</sup> Nevertheless, this progress is still far from G-20 countries' aspirations, including achieving the goals of the COP21 agreement. A similar statement can be made about other environmental pressures, such as air pollution, which weigh on human health and well-being.

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8. IEA (2017), News, 17<sup>th</sup> March 2017, <http://bit.ly/2nUtJeM>

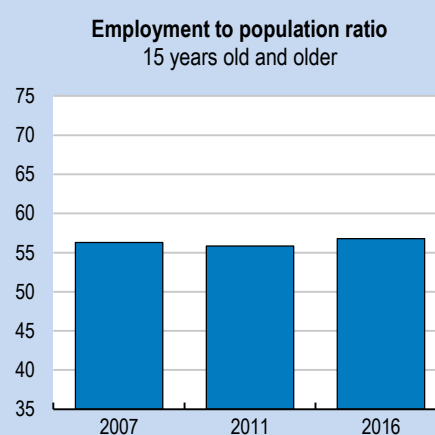
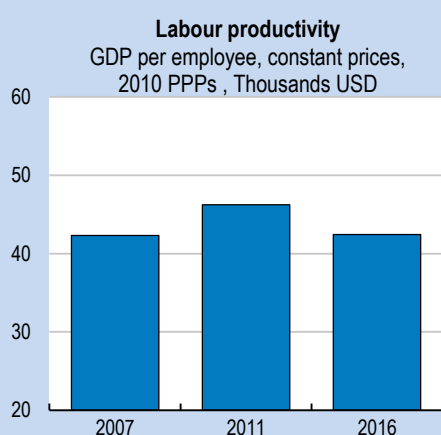
***Promoting inclusive growth***

Achieving greater inclusiveness and reducing inequalities of income and opportunities as well as getting rid of poverty are important objectives for the well-being of citizens and winning back their trust. They are necessary for safeguarding social cohesion and sustaining growth in the longer run. This is particularly important as the experience from the past two decades has shown that technological advances do not automatically translate into broadly-based productivity and income gains, including in the lower part of the earnings distribution. Ensuring that progress in technology and knowledge turns into higher and more widespread gains requires that workers, business managers and governments are better equipped to acquire the skills and adopt the organisational structures and regulatory settings needed to keep up with the pace of innovation.

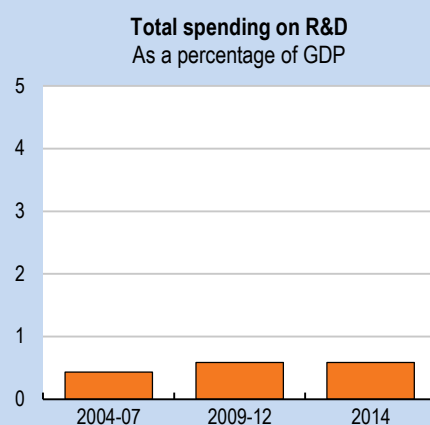
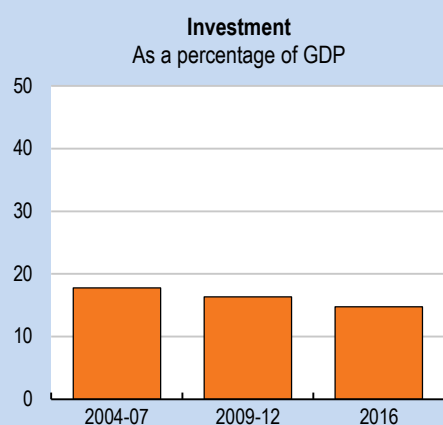
Inclusiveness has many faces, which are not possible to capture in a single indicator. In principle, absolute poverty and overall income inequality in G-20 countries have declined, meaning that the benefits of growth are available to an increasing share of the global population. Still, inequality within countries gives more of a mixed picture, in particular since the global crisis. Even if some of the developments turn out to be cyclical, they are of concern to policy makers not only because sharing the goals across a broad spectrum of population is crucial as an objective, but also because poor performance on the inclusive front can undermine the support for pro-growth reforms.

## ARGENTINA

After 5 years of stagnant economic growth, reflecting the build-up of significant macroeconomic imbalances, the inability to access international financial markets and structural policy settings, Argentina's economy has returned to growth in the third quarter of 2016. Overall, falling productivity growth has been offset by a slight increase in the employment to population ratio. While the benefits of recent policy reforms have yet to be fully realised, there are some signs of confidence in domestic and international markets starting to return. Inequality is relatively high, but the government is taking measures to increase transfers to the most vulnerable households, strengthen social expenditures and unemployment insurance.

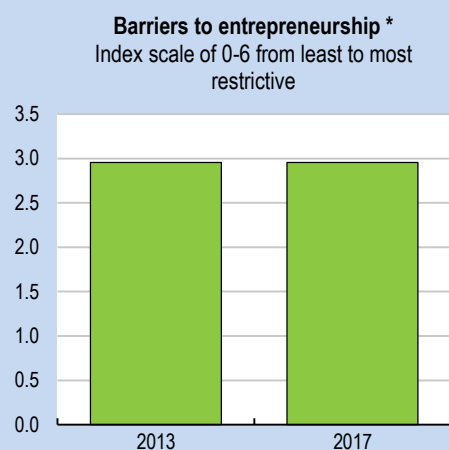
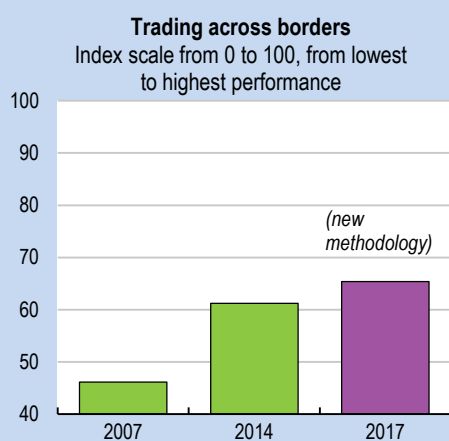


Total investment has continued its trend decline, reflecting a poor business climate and difficulties in access to financing. Recent government plans include stronger investment in infrastructure but also macroeconomic and structural reforms across a wide range of areas to raise the returns on business investment and improve the business climate.



### ARGENTINA (continued)

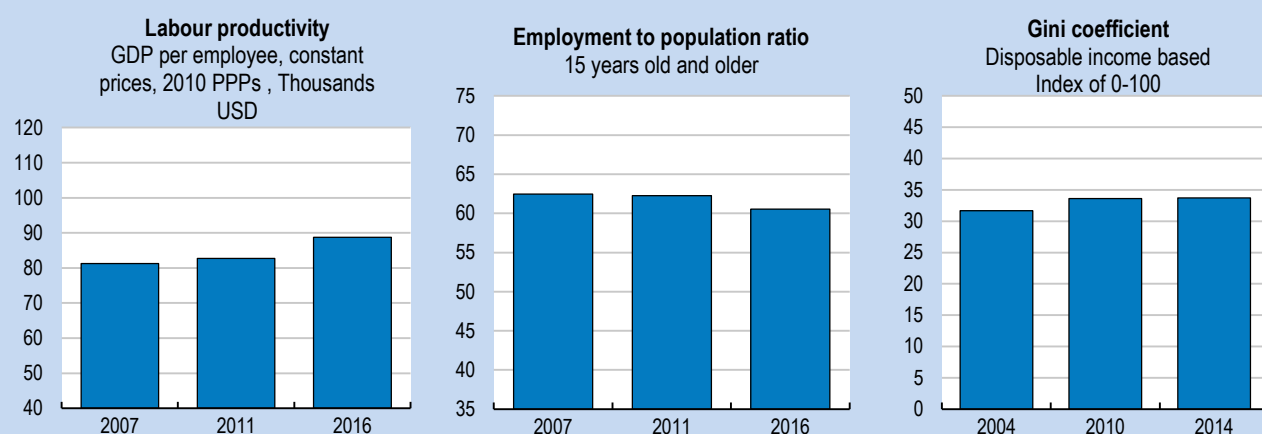
Barriers to entry as well as to trade across borders remain high reflecting, among others, high tariffs and burdensome administrative procedures. However, progress in easing import procedures has been achieved in recent years with the removal of regulations in the financial and trade sectors that created disincentives and obstacles to trade and investment. As a result, there has been a significant increase in capital inflows.



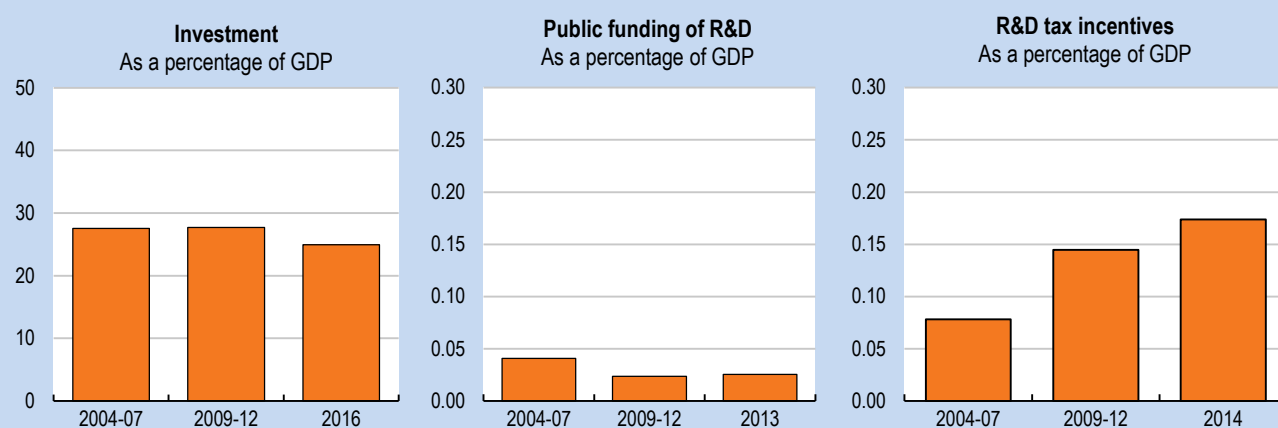
Notes: \*The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

## AUSTRALIA

GDP per capita has been growing at an annual pace of around 1% following the global financial crisis. Labour productivity growth has picked up but total factor productivity growth remains low. The employment to population remains virtually unchanged since 2010. Inequality, as measured by the Gini index, remains flat since 2008.

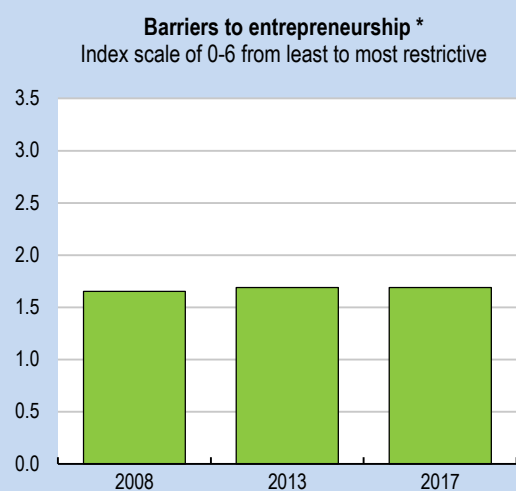
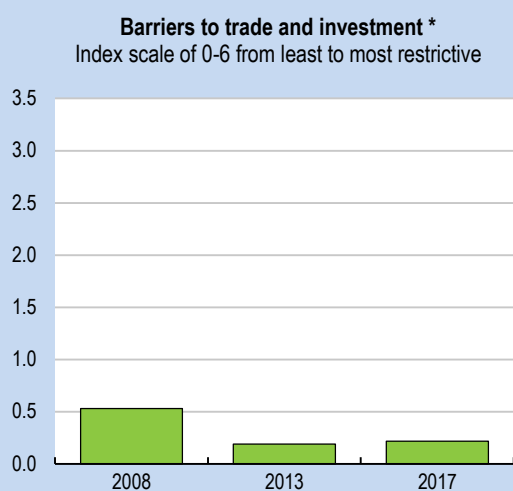


Total investment has been declining since 2012, amid substantial declines in mining investment. Direct public R&D support has declined since before the crisis, while indirect support has increased significantly. Since 2015, the government is implementing the *National Innovation and Science Agenda*, aiming at making the indirect support more effective. The Australian Government has also recently commissioned a 2030 Strategic Plan to help guide its investment in the Australian innovation, science and research system.



**AUSTRALIA (continued)**

Regulatory barriers to entry and competition, as measured by the OECD Product Market Regulation indicators, are already low and remained unchanged. Barriers to trade and investment have decreased from an already low level.

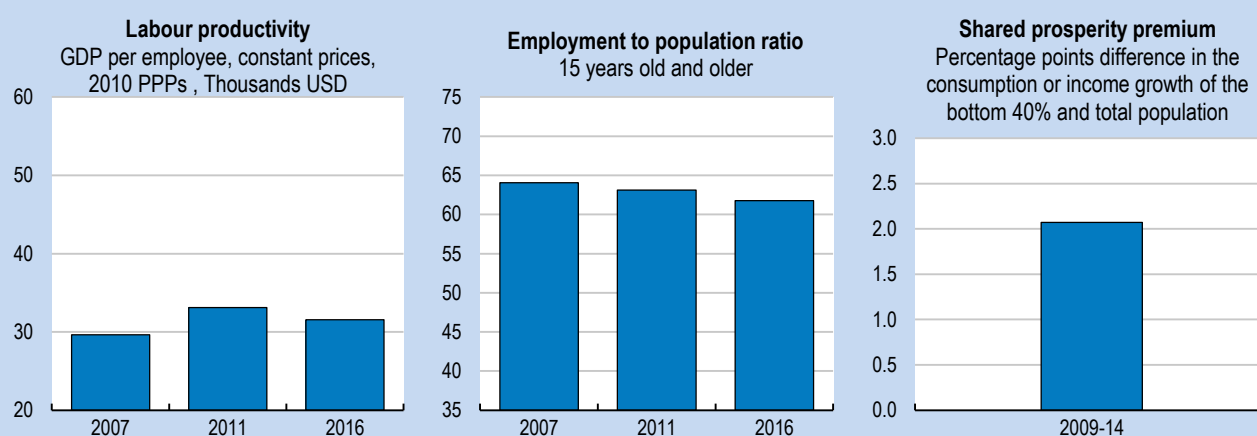


Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

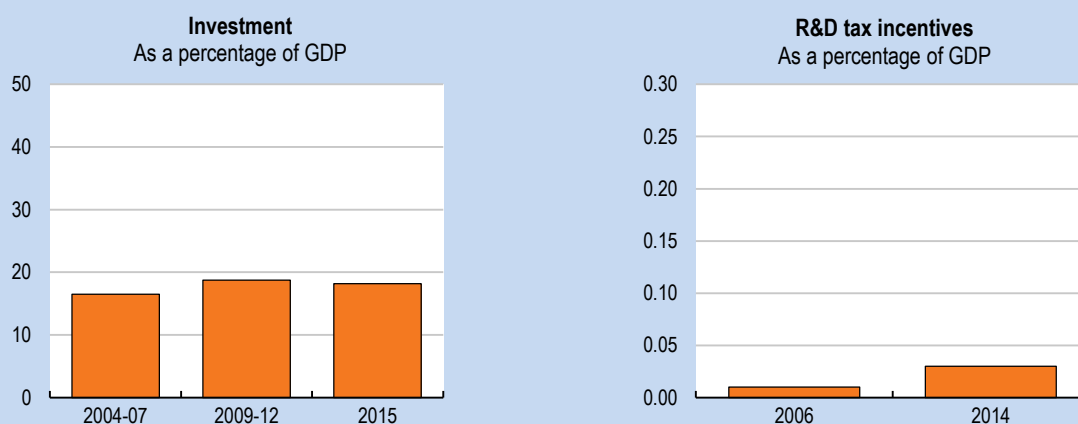
## BRAZIL

Income per capita has been declining since 2014 due to the turning of the commodity cycle, a sharp fall in investment and a deep recession with labour productivity falling back to 2008 levels. The employment to population ratio, on an upward trend since the early 2000s, has declined since 2013. Nevertheless it remains relatively high.

Inequality is high, but has been declining steadily throughout the 2000s, with low and middle income households seeing their income grow as opposed to top income households since 2009 in light of targeted poverty reduction programs.

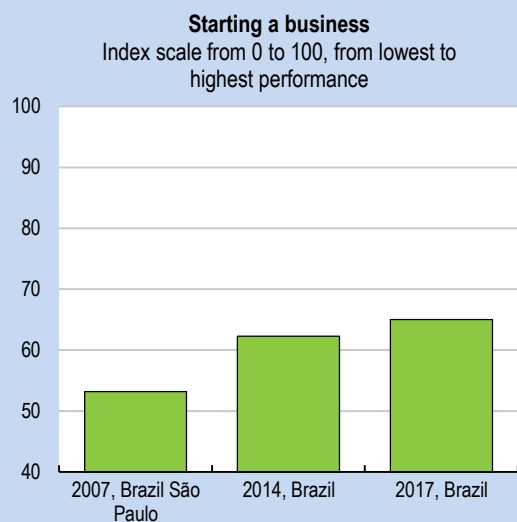
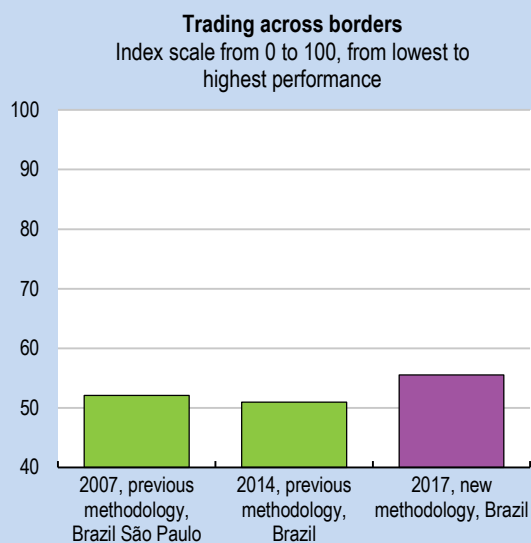


Total investment as a share of GDP has been falling since 2014 but remains higher than in the early 2000s. R&D tax incentives have increased between 2006 and 2014.



**BRAZIL (continued)**

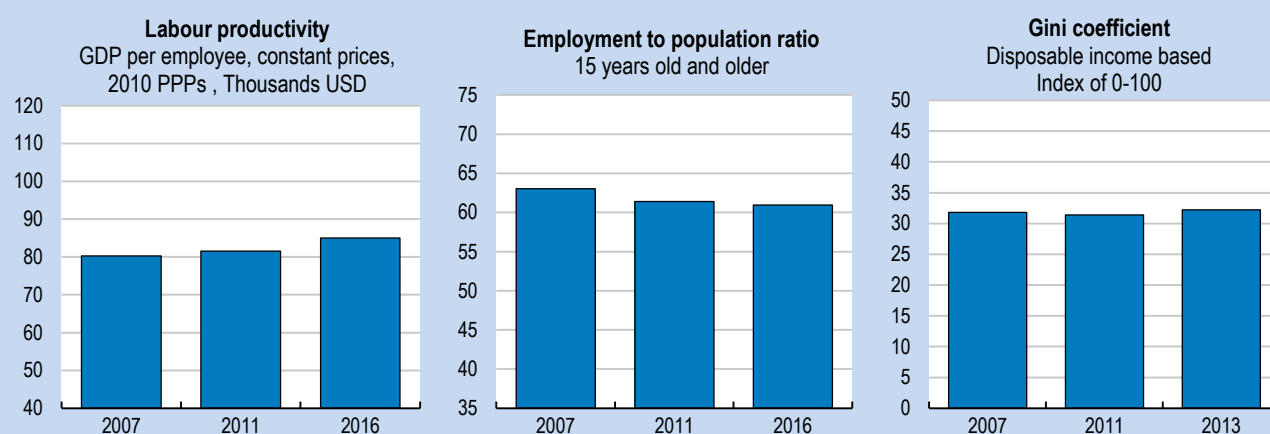
Barriers to entrepreneurship, as measured by the World Bank Doing Business indicators, are high, as are barriers to trade due to high tariffs and local content requirements. Nevertheless, progress in reducing burdensome administrative procedures and local content requirements has been achieved in recent years, bringing de facto burdens down somewhat.



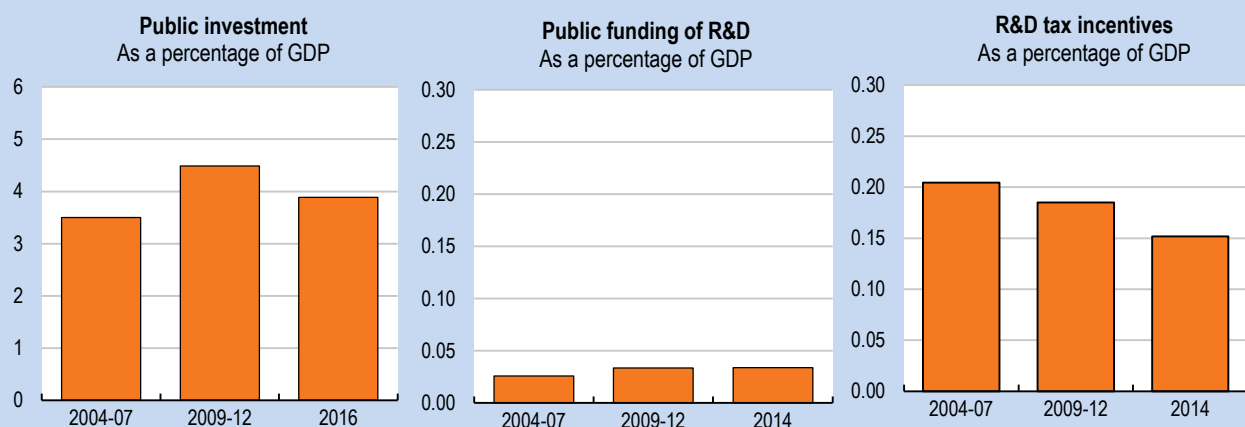


## CANADA

Growth in income per capita has slowed in the recent years. Labour productivity has been increasing at a modest pace of 1 percent since 2010 and remains below the average of the most advanced countries. The employment to population ratio is high but has not recovered after the crisis, partly reflecting declining labour participation along with the ageing of the population. Income inequality, as measured by the Gini indicator, is around the average of advanced economies. Incomes of the poorest households stagnated between 2008 and 2013, but have risen since then.



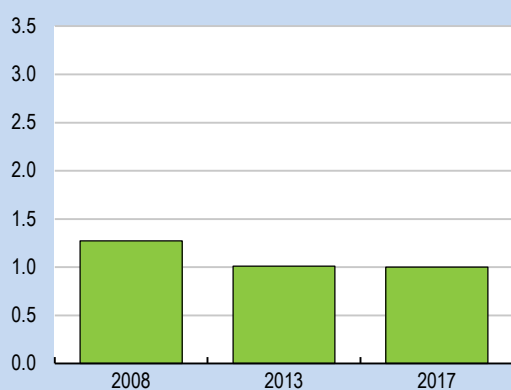
After a post-crisis surge, public investment has returned close to the levels of mid-2000s, below 4% of GDP. Direct public R&D support has picked up post-crisis while tax incentives remain relatively strong. Recent measures target scaling up of new, innovative firms and support innovation networks and clusters.



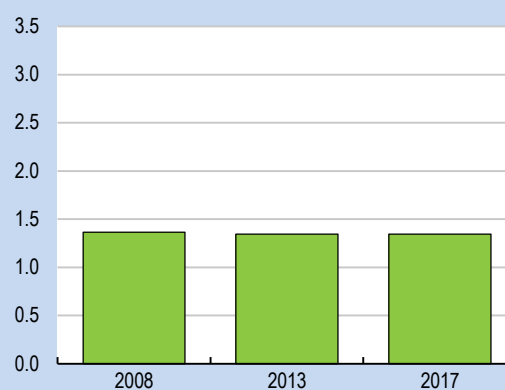
### CANADA (continued)

Regulatory barriers to entry and competition have been stable at a relatively low overall level. However, barriers in professional services and retail trade remain high. Regulatory barriers to trade and investment have also been declining, but FDI restrictions in network sectors and discrimination against foreign suppliers in professional services and transport remain a burden.

**Barriers to trade and investment \***  
Index scale of 0-6 from least to most restrictive



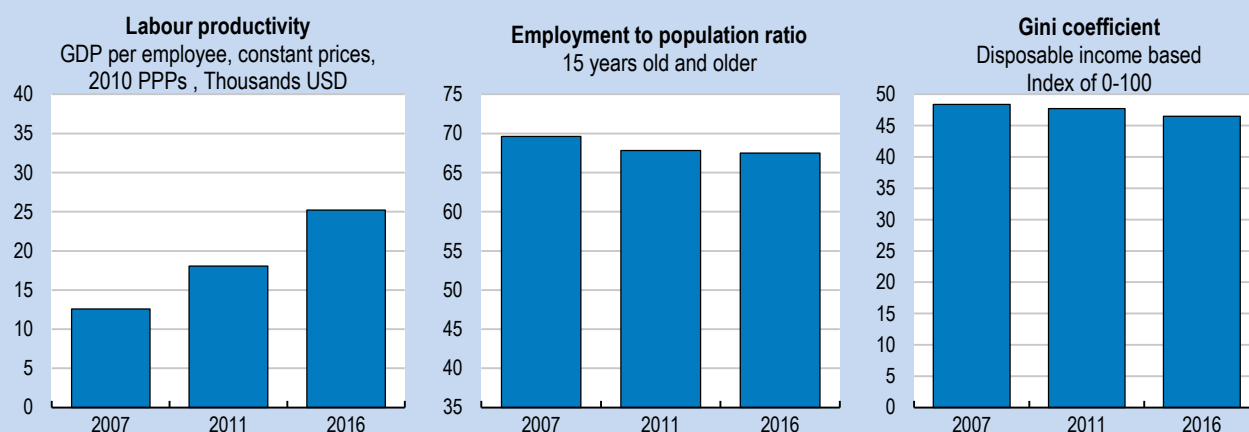
**Barriers to entrepreneurship \***  
Index scale of 0-6 from least to most restrictive



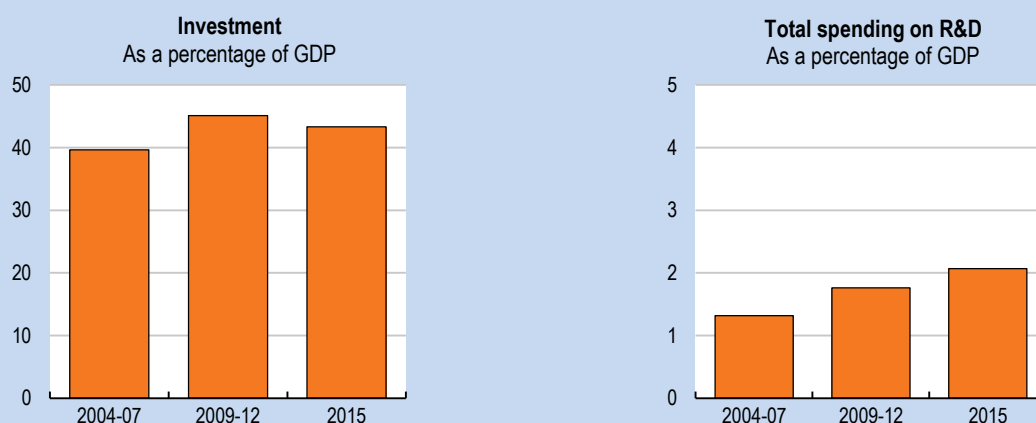
Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

## CHINA

Amid the “New Normal”, income per capita growth remains high, though it has slowed compared with pre-crisis levels. GDP growth largely followed developments in labour productivity with the employment ratio stable at a relatively high level. Inequality, as measured by the Gini index, decreased since 2007 and the gap between rural and urban populations has narrowed.

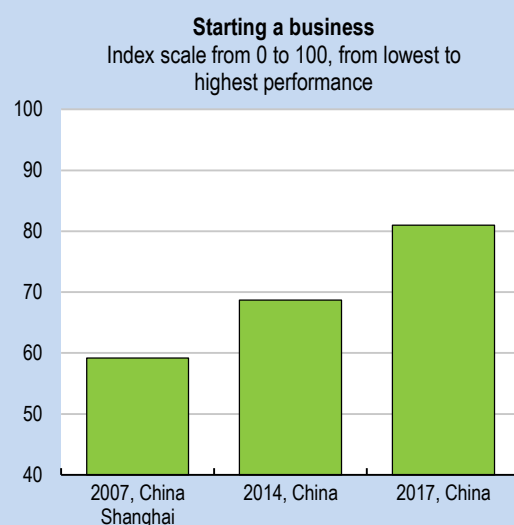
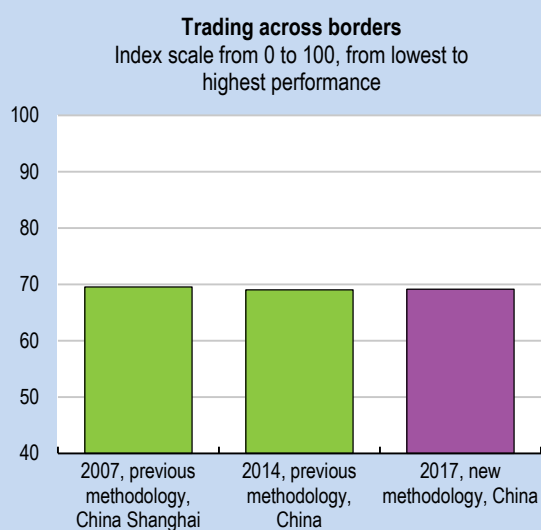


Investment has declined somewhat since 2012, but remains at a high level. Total spending on R&D has been rising steadily since the early 2000s. At the same time, national education expenses have increased gradually. In 2015, total national education expenses amounted to 3.6 trillion CNY, with an annual growth rate of over 10%.



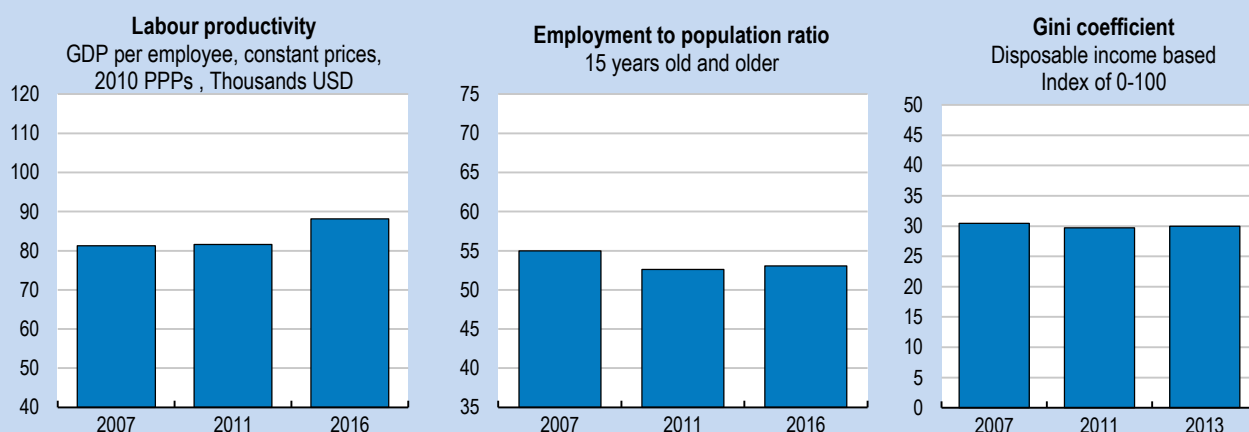
## CHINA (continued)

Barriers to trade, as measured by the World Bank Doing Business indicators, have remained unchanged since 2014. Nevertheless, the establishment of free trade zones has facilitated trade. Regulatory barriers to entry have eased significantly as reforms to simplify administrative procedures in the past couple of years have substantially reduced the burden for new entrants, increasing overall efficiency. The unification of three licences in the registration process has substantially reduced the burden on start-ups, be it firms or sole proprietorships. But there is still some way to go to achieve a one-stop shop, which is being piloted in Jiangxi province.



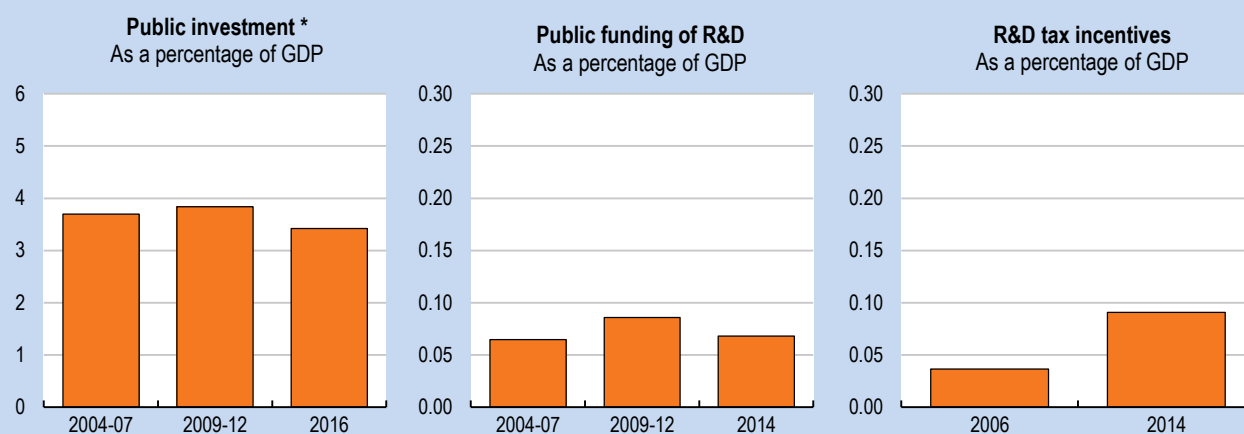
## EUROPEAN UNION

Since the onset of the global financial crisis, GDP per capita growth has remained weak, with a modest pickup in recent years. Labour productivity has continued to increase steadily following the initial recovery in 2010-11 and the average employment ratio – while recently increasing – has not yet recovered to pre-crisis levels. Inequality, as measured by the average Gini coefficient across EU Member States, has been stable since the pre-crisis period.



Notes: Aggregate EU values.

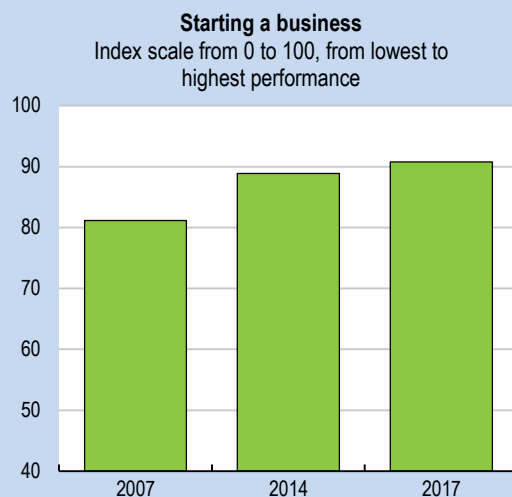
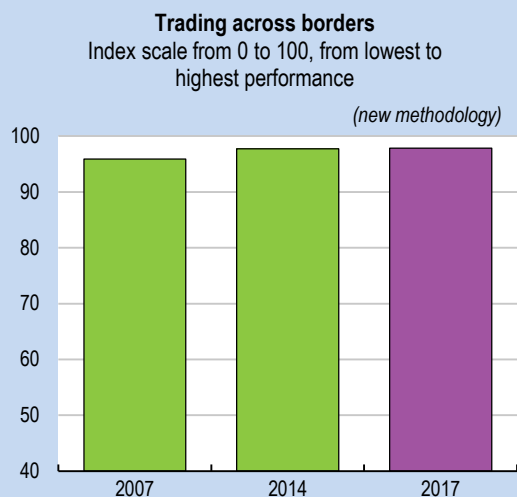
Public investment is now below pre-crisis levels while direct public funding to R&D fell markedly in 2014. Indirect support was significantly higher in 2014 than in 2006.



Notes: \* For 2016, the last available year is 2015 for Hungary, Latvia, Slovak Republic and Sweden.

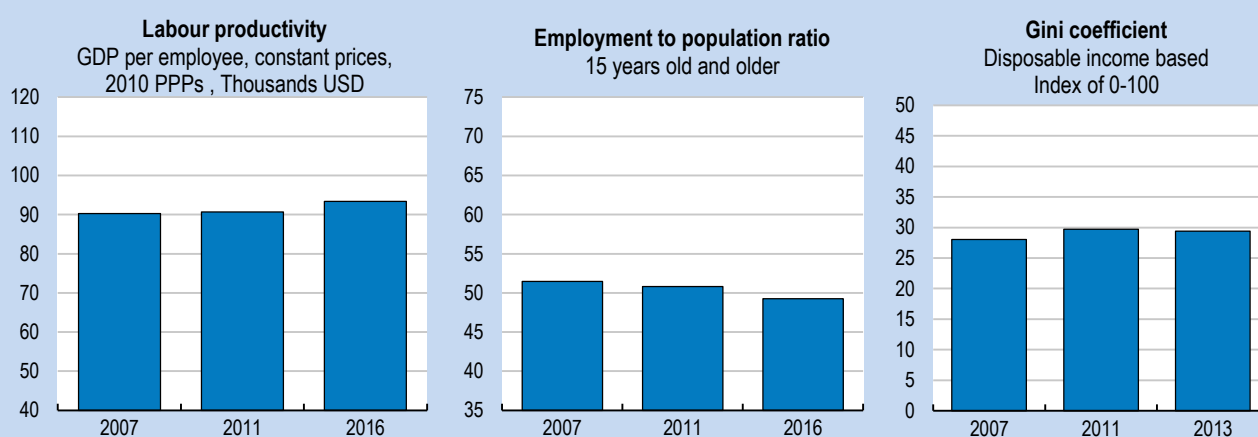
**EUROPEAN UNION (continued)**

Overall barriers to starting a business have declined on the back of measures taken to reduce administrative burdens – as evidenced by the World Bank Doing Business indicators. However, barriers remain high in professional services and retail trade. Slow progress on implementing the single market in the area of services poses a barrier to cross-border competition, trade and investment within the EU. Barriers to trading across borders are low on average for EU countries.

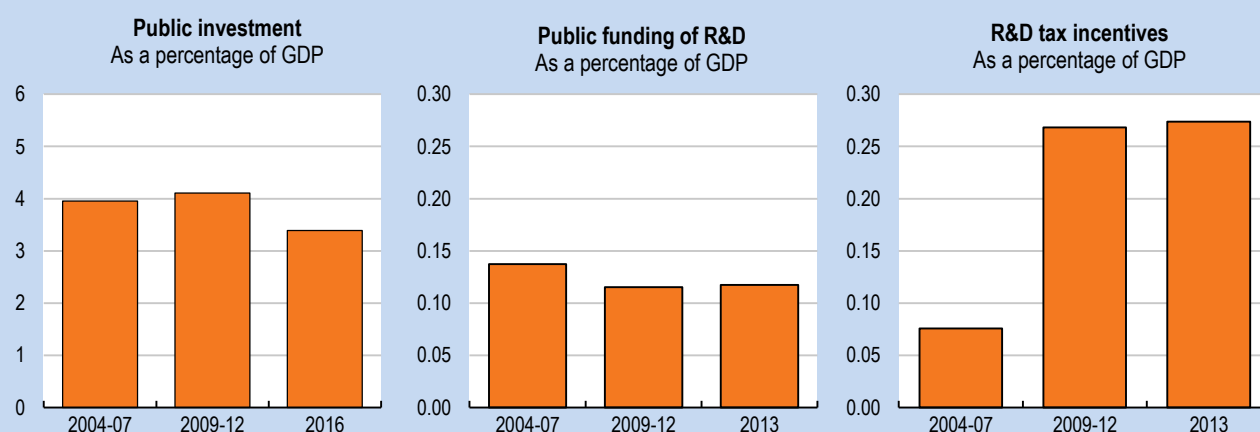


## FRANCE

Post-crisis GDP per capita has continued to grow slowly albeit labour productivity has started to improve recently. The employment to population ratio has been on a steady decline since the crisis, mainly driven by demographic trends (the share of people between 65 and 74 years old, most of which are above retirement age, has increased strongly). Inequality, as measured by the Gini coefficient, has increased since the crisis but remains at relatively low levels.

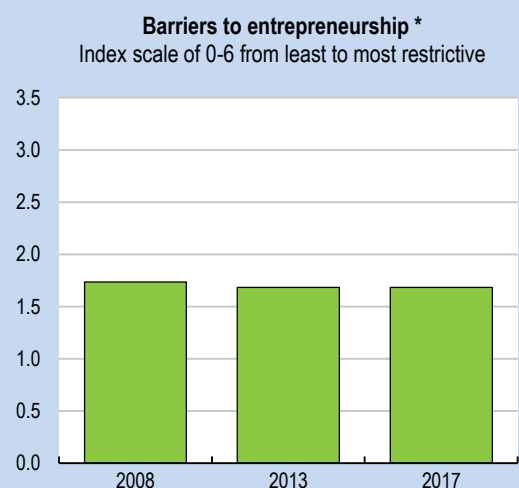
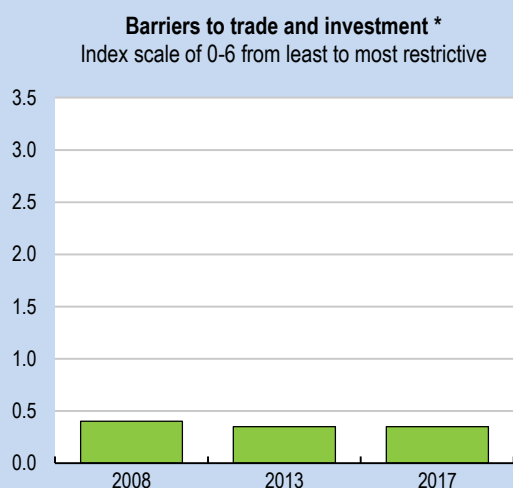


Public investment has been on a steady decline since 2012 and is well below pre-crisis levels. Direct public R&D support has not recovered after the crisis, but indirect support has increased significantly between 2006 and 2014. As a result, business R&D has remained dynamic, gaining 17% in volume terms between 2008 and 2015.



### FRANCE (continued)

Regulatory barriers to entry and competition, as measured by the OECD Product Market Regulation indicators, have been relatively low since before the crisis. In 2015 the government deregulated some energy tariffs, opened passenger coach services to competition, extended Sunday trading opportunities and facilitated entry into some legal professions, while reforming their tariffs. Barriers to trade and investment are low.



Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

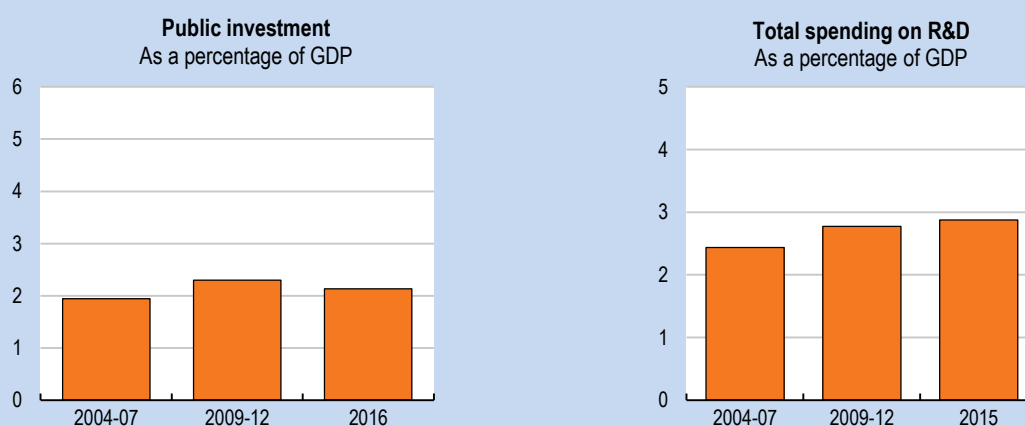


## GERMANY

Growth in income per capita slowed markedly after 2011, on the account of weak labour productivity growth driven by weak investment. Unemployment is low and the employment to population ratio has been improving throughout the 2000s, and is already at a high level. Inequality, as measured by the Gini index, has hardly changed since 2008.



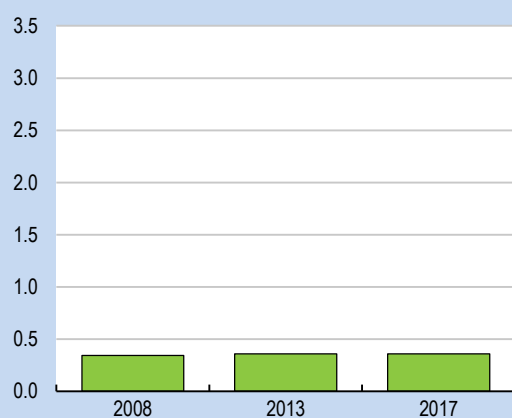
Public investment has remained roughly unchanged at a relatively low level, contributing to the lack of capital deepening of the economy. Total spending on R&D has held up throughout the crisis and is now above the levels in early 2000s.



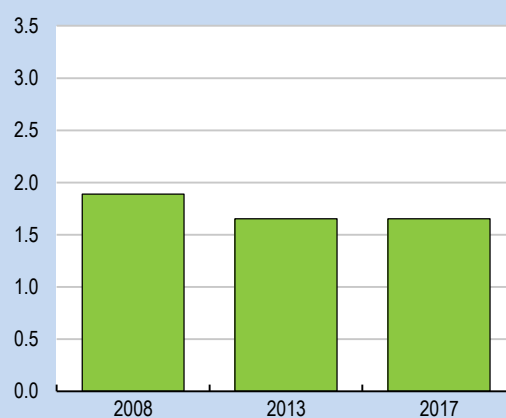
**GERMANY (continued)**

Barriers to trade and investment, as measured by the OECD Product Market Regulation indicators, have decreased somewhat from an already low level since the crisis. Still, regulatory barriers to competition remain relatively high in telecoms and professional services with government ownership being significant in sectors like banking, car manufacturing, telecommunications and postal services.

**Barriers to trade and investment \***  
Index scale of 0-6 from least to most restrictive



**Barriers to entrepreneurship \***  
Index scale of 0-6 from least to most restrictive

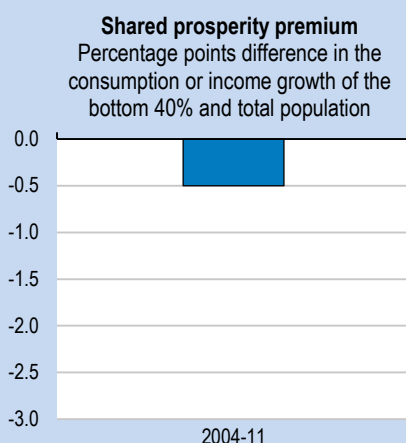
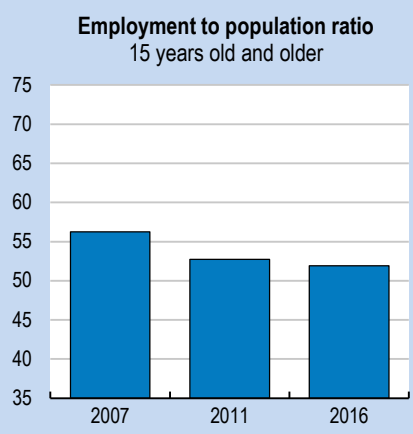


Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

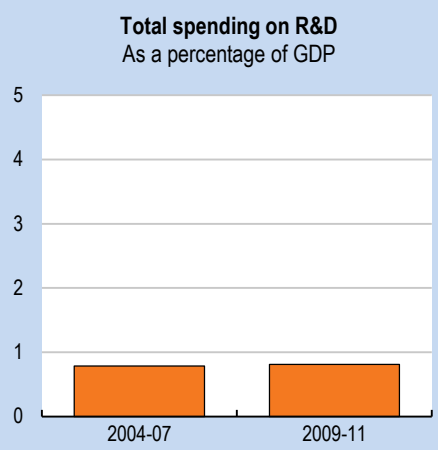
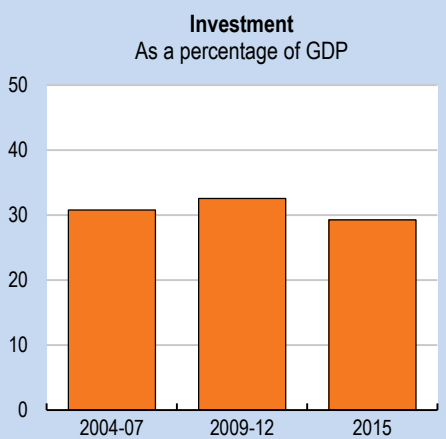
## INDIA

Income per capita is now growing faster than in most other countries, with rapidly increasing labour productivity being the key driving force. The employment to population ratio has been declining since the mid-2000s, largely due to falling labour force participation rates among women.

Absolute poverty has declined steadily, but inequality remains high and the bottom 40 percent have benefitted less than others from economic growth since the crisis.

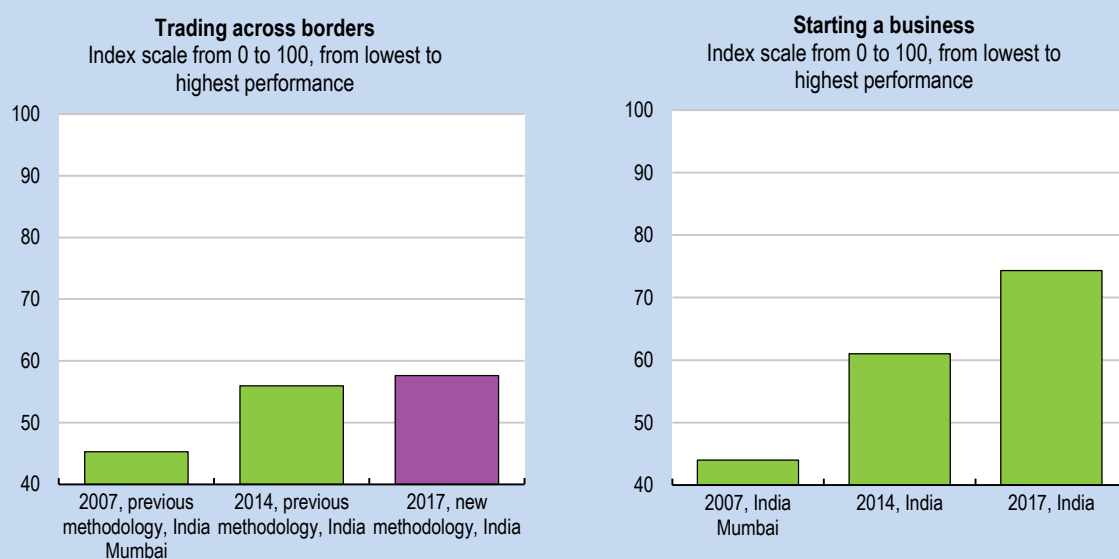


Both total expenditure on R&D and total investment have risen between the early 2000s and 2011. Since then, total investment has been falling markedly while poor infrastructure continues to weigh heavily on activity, access to markets and services and the urban/rural divide.



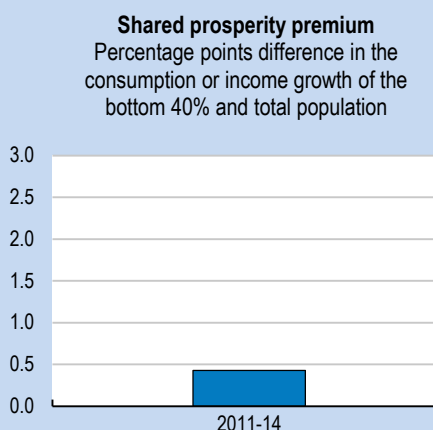
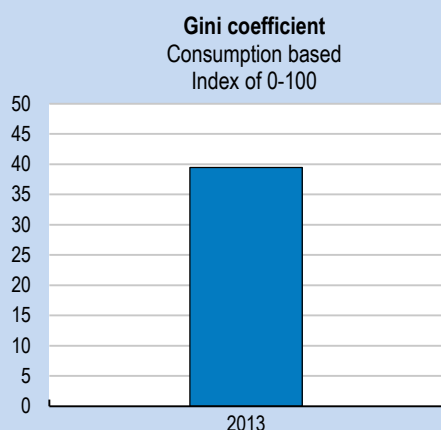
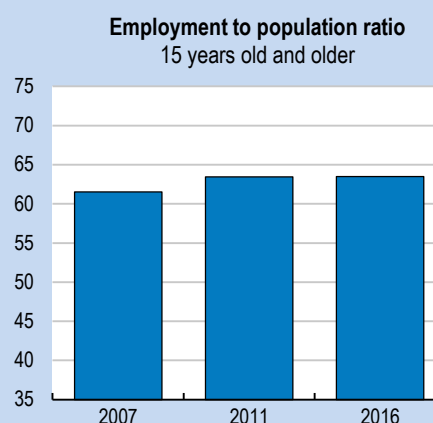
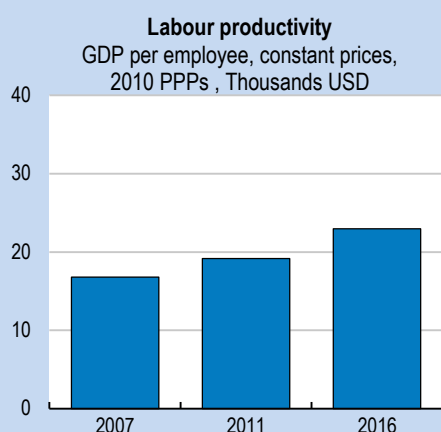
## INDIA (continued)

Investment and formal activity would benefit from lower regulatory barriers to doing business. In this respect, some progress has been made both at the central government and state levels. Regulatory and administrative barriers to starting a business have been on a steady decline, notably with the launch of the *Start-up India* initiative while the new bankruptcy law should help shorten insolvency procedures while improving banks' balance sheet and ability to lend. Barriers to trade across borders remain high, though barriers to FDI have loosened significantly in several sectors, such as finance, food and defence.

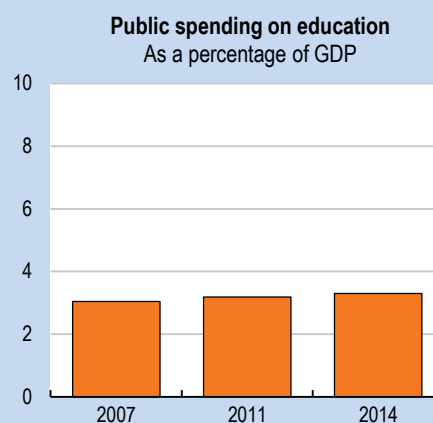
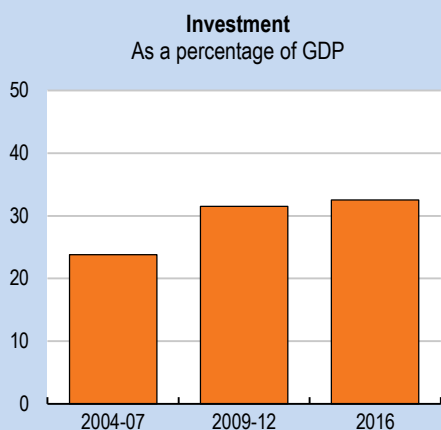


## INDONESIA

Income per capita continued on a stable growth path, averaging over 4% since 2010 and reflecting increasing labour productivity. The employment-to-population ratio, on an upward trend since the mid-2000s and at relatively high levels, has only recently ceased increasing. Inequality is moderate compared to other emerging market economies, and low-income households have benefitted more than others from growth in recent years.

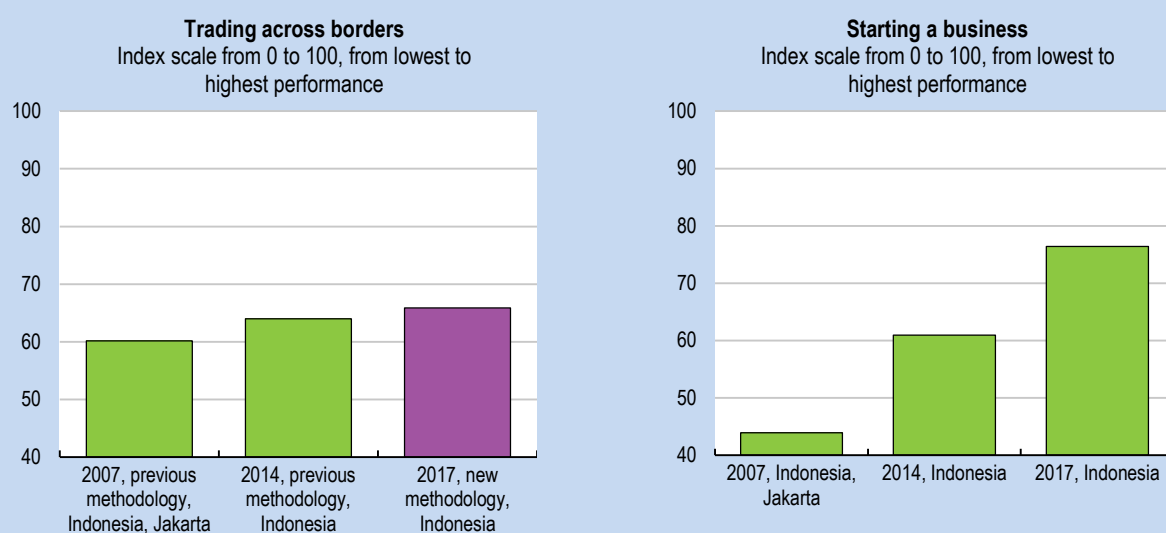


Overall investment increased rapidly with respect to GDP up to 2010 and then stabilised. Public spending on education has been gradually increasing since the early 2000s, though has been volatile in recent years.



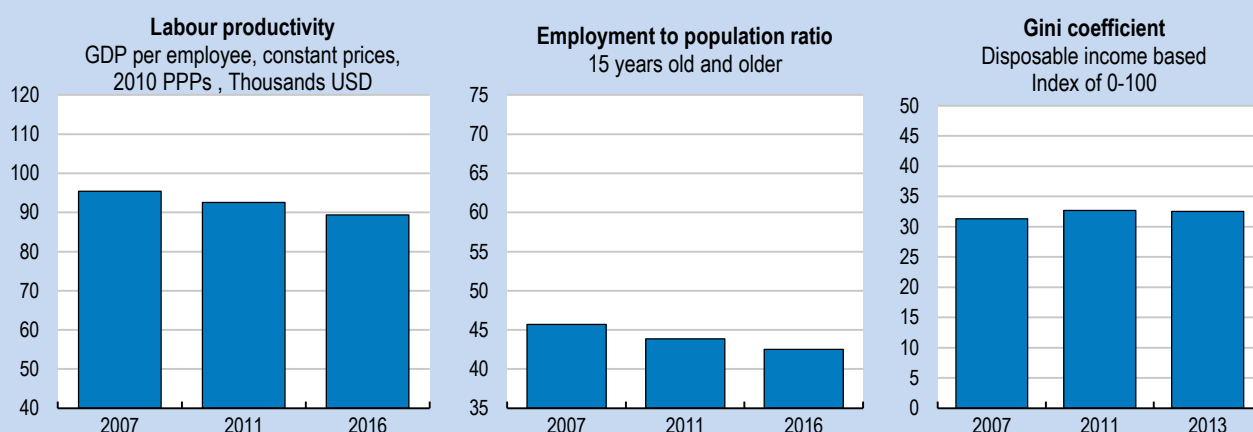
## INDONESIA (continued)

Progress has been achieved in lowering barriers to entrepreneurship and trading across borders. In particular since mid-2015, reforms aimed at improving the business climate, including significant streamlining procedures for setting up and running a business. As a result, the position on barriers to entrepreneurship, as measured by the World Bank Doing Business indicator, has improved markedly. De facto barriers to trade are somewhat below the average for emerging G-20 economies, with progress made over recent years.

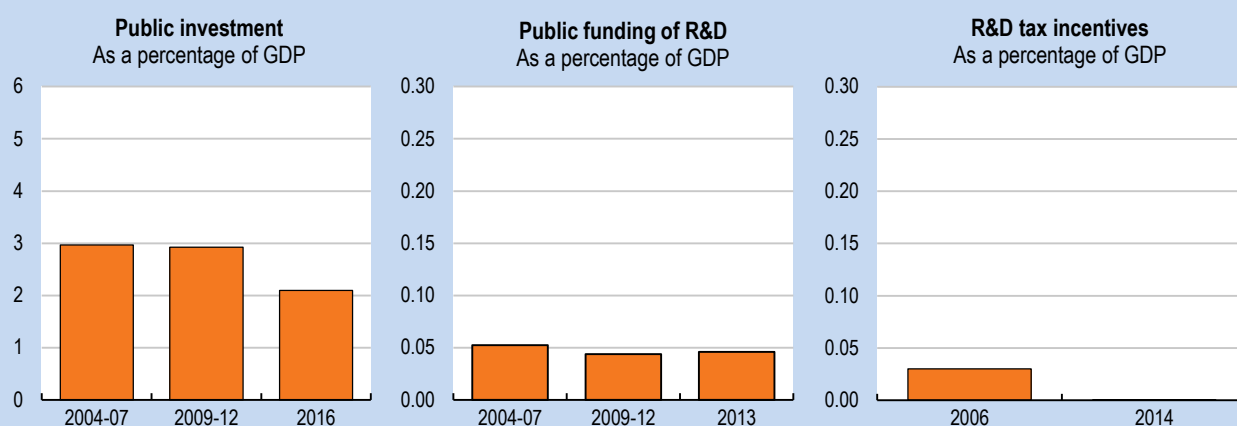


## ITALY

Italy is recovering after a deep and long recession, although GDP per capita is still well below pre crisis levels, reflecting a combination of weak demand, tight financial conditions and structural challenges. Both labour productivity and investment have been weak. The employment to population ratio has been on a declining trend, despite increasing labour force participation, especially among women. A structural reform agenda since 2014 aims at addressing the employment problem. Inequality, as measured by the Gini index, has increased since 2008, not least due to increases in the population at risk of poverty in groups such as children and youth, but the government has responded with some improvement in the redistributive power of the tax and benefits system.

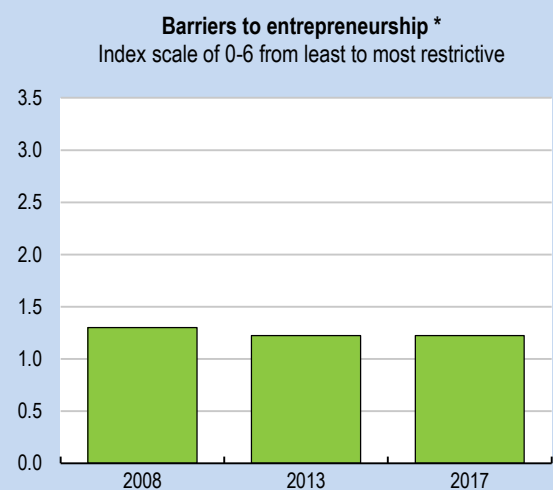
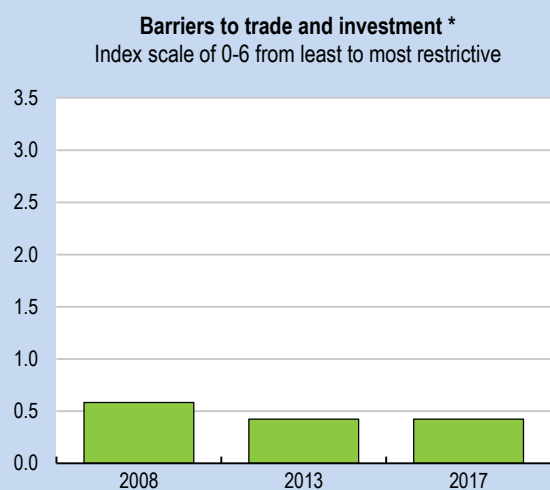


Public investment has been on a steady decline since 2009, holding back the capital deepening of the economy. Plans to revive public investment are underway. Direct public R&D support has started to recover slowly after the crisis and has remained at a low level, while indirect support has collapsed due to the withdrawal of previous support measures. New R&D tax credits were introduced in 2015 and reinforced in 2017 - together with other policies to support R&D - as part of the Industry 4.0 plan to boost the innovative capacity of Italian firms.



**ITALY (continued)**

Barriers to trade and investment, as measured by the OECD Product Market Regulation indicators, have decreased somewhat from an already low level. Regulatory barriers to entry and competition are also low, but reforms in these areas would benefit from further measures to strengthen the public administration's efficiency.

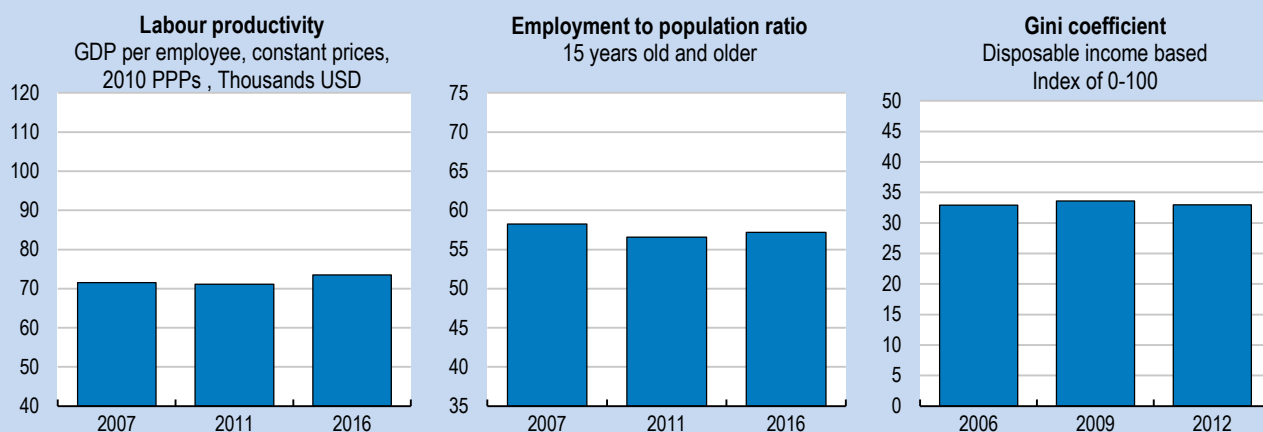


Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

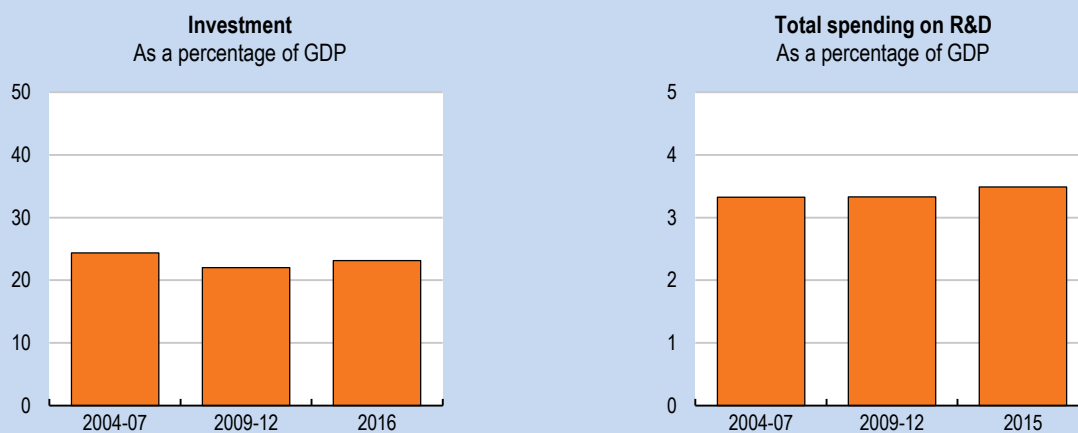


## JAPAN

Growth has picked-up post crisis, notably due to recent improvement in labour productivity, but remains nonetheless sluggish. The employment to population ratio has bucked the long-term downward trend, edging up since 2012 – in part due to the rising participation rate, notably among women and the elderly and despite a significant decline in the working age population. Income inequality remained stable, close to the average among advanced countries.

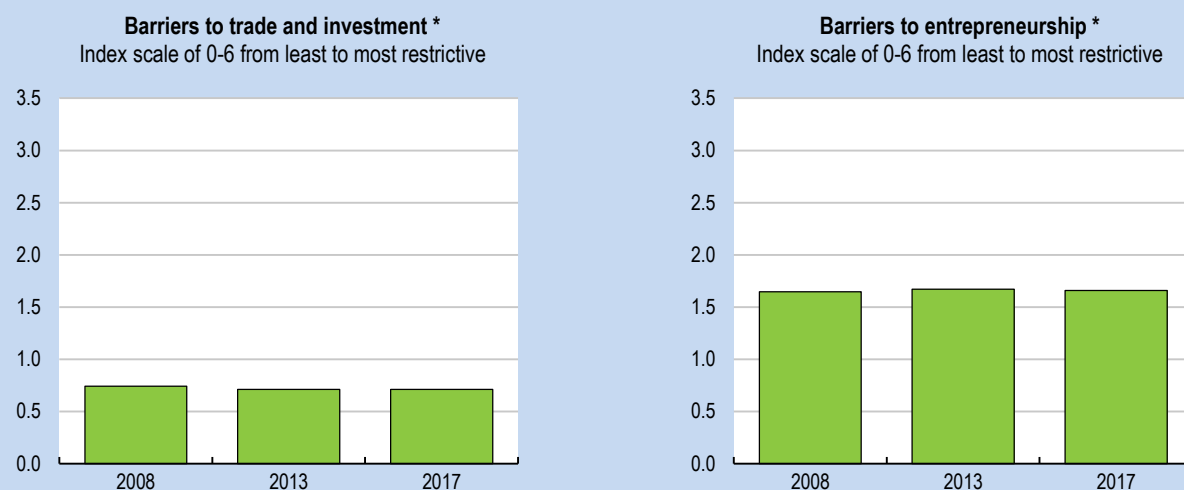


Total investment is slightly below pre crisis levels while R&D spending is on an upward trend since before the crisis.



**JAPAN (continued)**

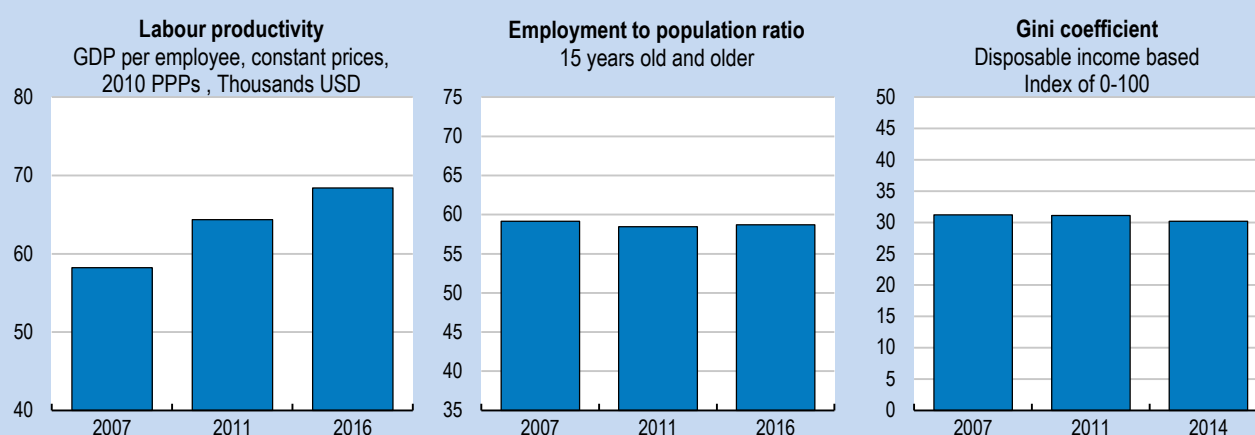
Barriers to trade and investment and regulatory barriers to entrepreneurship, as measured by the Product Market Regulation indicators, have hardly changed in the recent years. Entry barriers in service sectors remain relatively high while recent reforms have notably lowered barriers to entry and competition in the electricity sector.



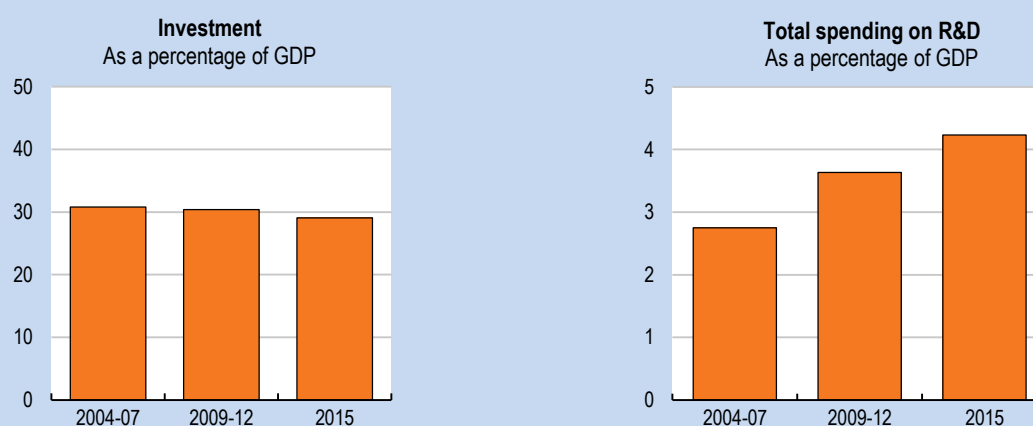
Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

## KOREA

GDP per capita growth has held up on the back of sustained improvements in labour productivity since before the global financial crisis. Strong performance in total factor productivity has been the key driver and the employment ratio has remained virtually unchanged, with a wide disparity between the high rate for men and low rate for women. Inequality, as measured by the Gini coefficient, has declined slightly since 2007.

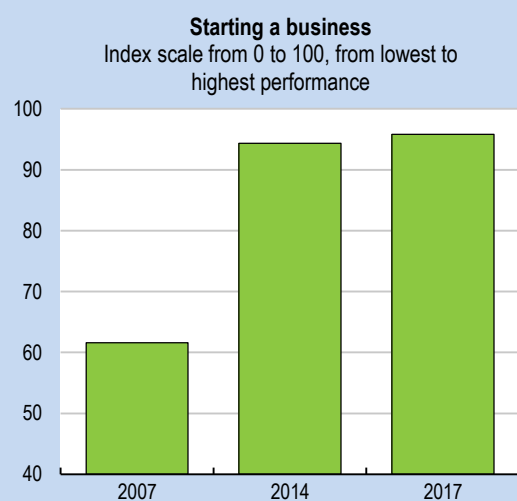
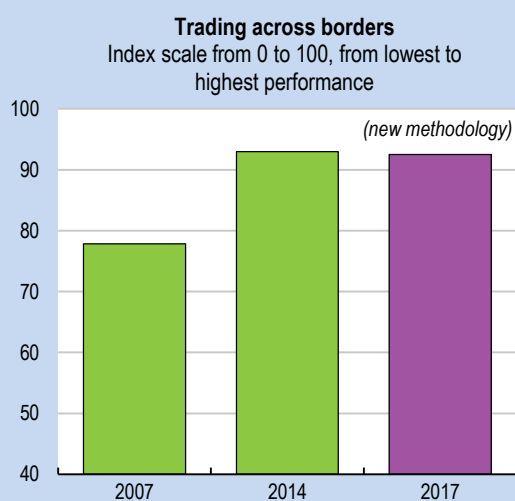


Investment remains unchanged at relatively high levels since 2012. Total spending on R&D has been increasing steadily and, relative to GDP, is now about double the level in the early 2000s.



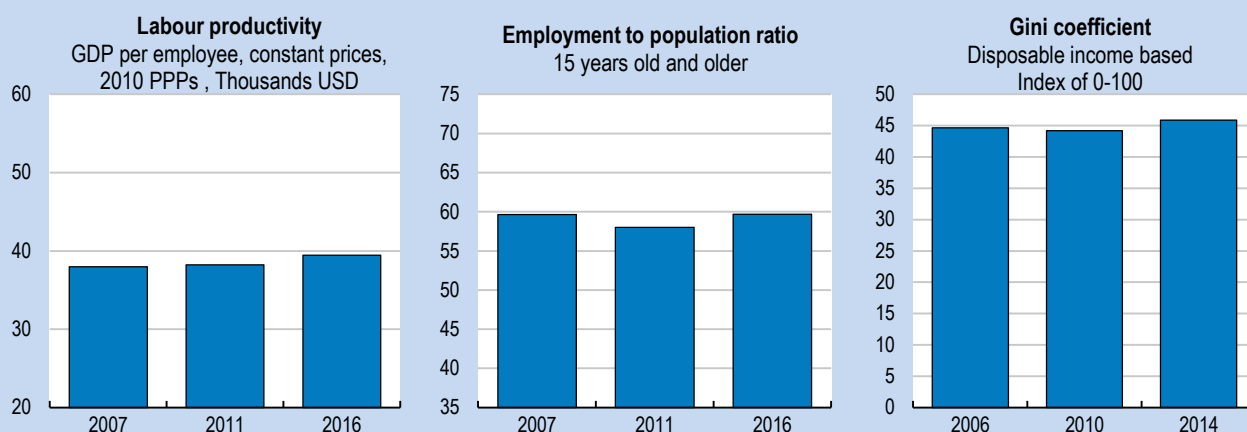
**KOREA (continued)**

Barriers to trade, as measured by the World Bank Doing Business indicator, have declined between 2008 and 2011 and remained unchanged since then. Regulatory barriers to entry have eased, as a result of several government initiatives to cut red tape in recent years, but remain high in some service sectors.

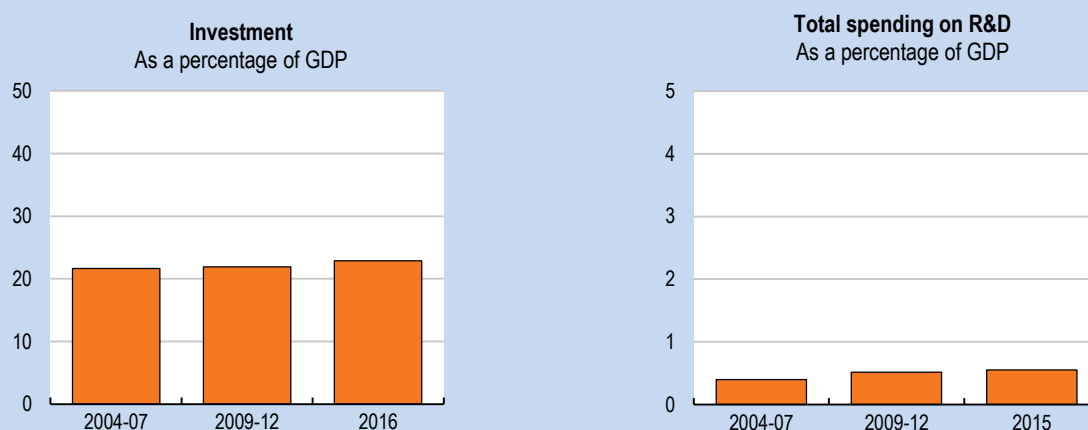


## MEXICO

After a post-crisis bounce back, growth in income per capita slowed from 2013, but labour productivity is showing signs of a pick-up following recent reforms. The employment to population ratio has started to recover and is at its pre-crisis level. Inequality, as measured by the Gini coefficient, remains virtually flat since the mid-2000s, with persistently high poverty prevalence.

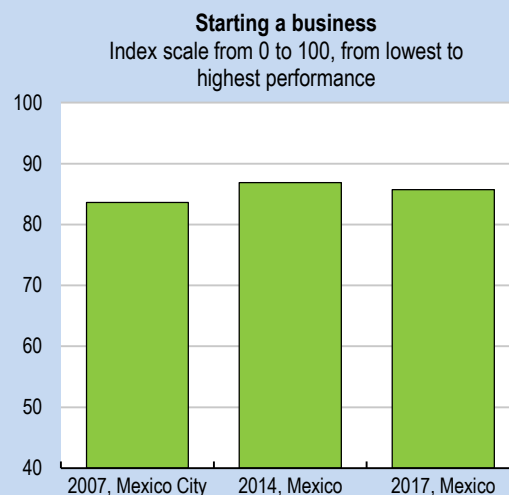
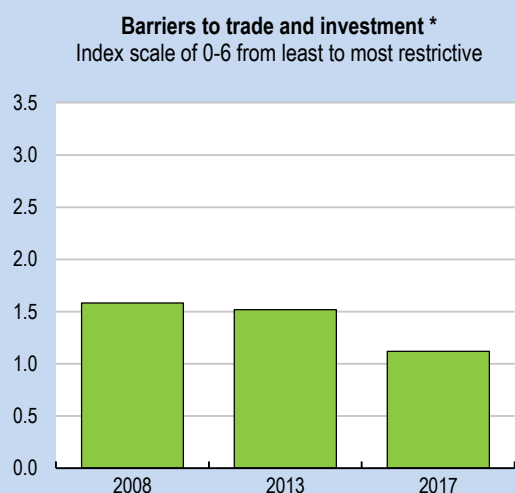


Total investment remained relatively stable since the mid-2000s. Spending on R&D has increased steadily over the past two decades, but remains low.



### MEXICO (continued)

Barriers to trade and investment, as measured by the OECD Product Market Regulation indicators, have decreased with selected network industries (i.e. telecoms and energy) having been substantially opened up to FDI. Nevertheless, they still remain stringent in some services sectors such as transport. Barriers to starting a business have remained unchanged, limiting new entry, in particular in sectors such as professional services, retail trade and infrastructure, with costly registration procedures and burdensome licensing requirements.



Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

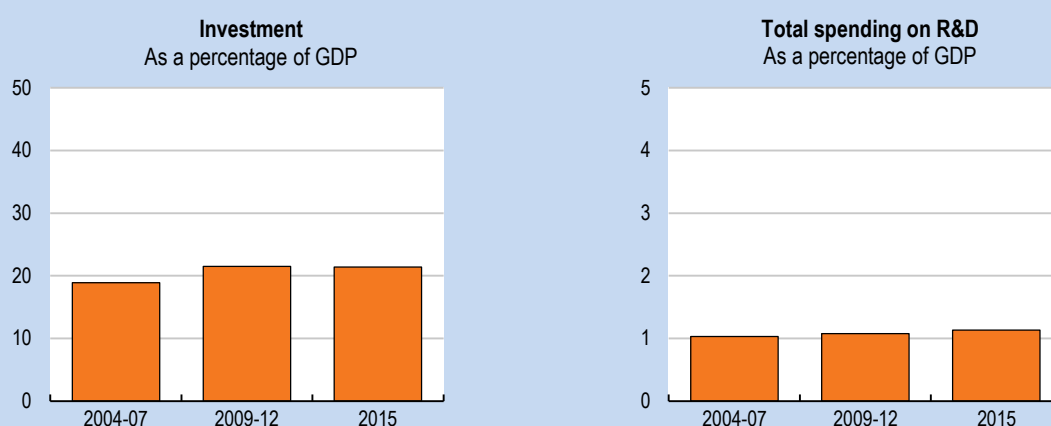
## RUSSIA

GDP per capita growth has been low since the crisis. It slowed further in 2015 on the account of declining oil prices and sanctions affecting revenues from external trade, with some offsetting effects coming from the depreciation of the rouble. At the same time, the employment to population ratio remains high.

Inequality is relatively high. Between 2008 and 2012, only the top income households have seen their incomes increase, but more recent national data on the Gini coefficient show a slight decline in inequality between 2011 and 2015.

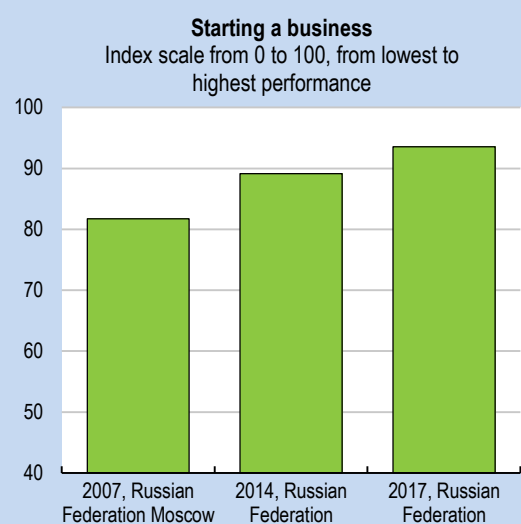
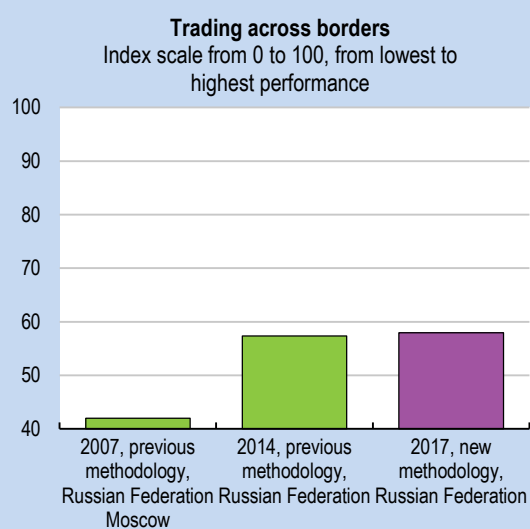


Total investment, relative to GDP, is higher than pre-crisis levels. Public support to innovation – and to investment in infrastructure – by SMEs increased over the 2014-2016 period. The overall spending on R&D has been increasing and further steps to boost innovation have been adopted in 2016 in particular aiming at boosting the links between research institutions and the business sector.



**RUSSIA (continued)**

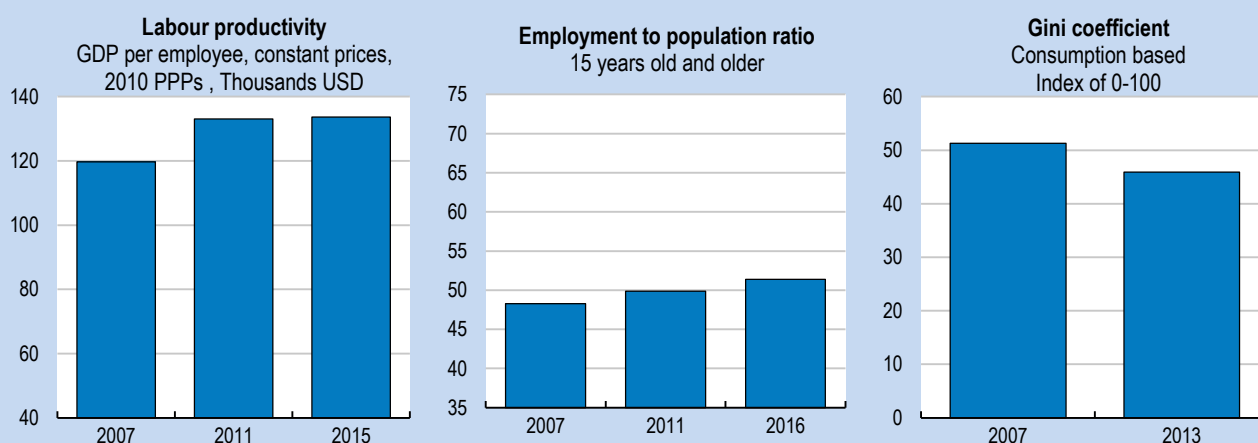
Barriers to starting a business, as measured by the World Bank's Doing Business indicators, have gradually been lowered. Despite improvements since 2007, barriers to trade across borders, as measured by the World Bank's indicators, remain high.



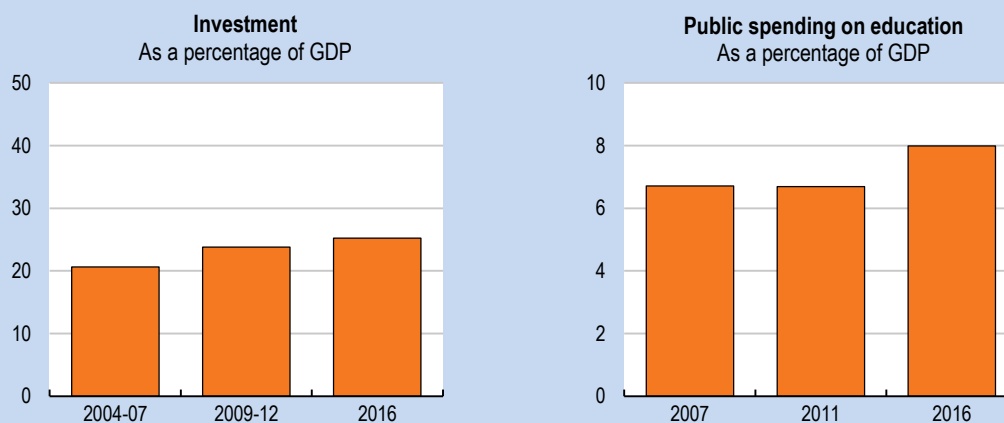


## SAUDI ARABIA

Income per capita is high, but growth has been weak in recent years in light of low oil prices. Labour productivity has been stable since 2011 but employment has been rising. The government has taken several actions to reform the labour market, including recently establishing the Job Creation and Employment Commission to help improving labour market conditions and boost employment of nationals. Inequality, as measured by the Gini coefficient, is still high, but has decreased significantly between 2007 and 2013.

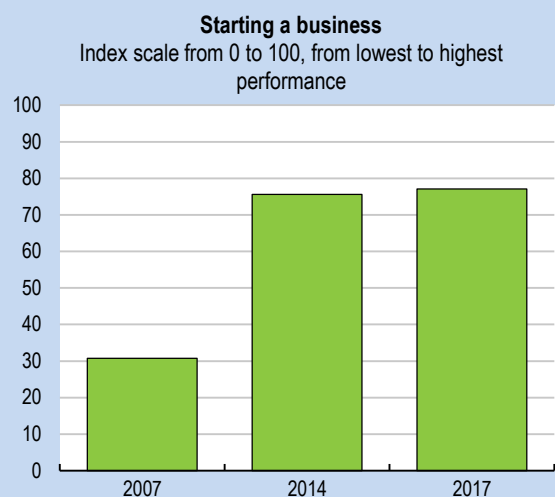
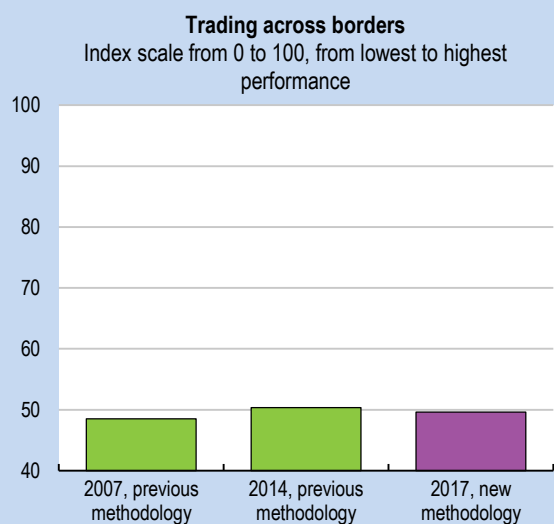


A government initiative launched in 2016 aims to diversify the economy and increase the role of the private sector. Both investment and public spending on education have been on an upward trend since the early 2000s.



**SAUDI ARABIA (continued)**

Administrative barriers to starting a business and in particular to trading across borders remain high. However, in the context of the National Transformation Program, the government has recently announced a number of initiatives to improve the business climate and the ease of doing business.

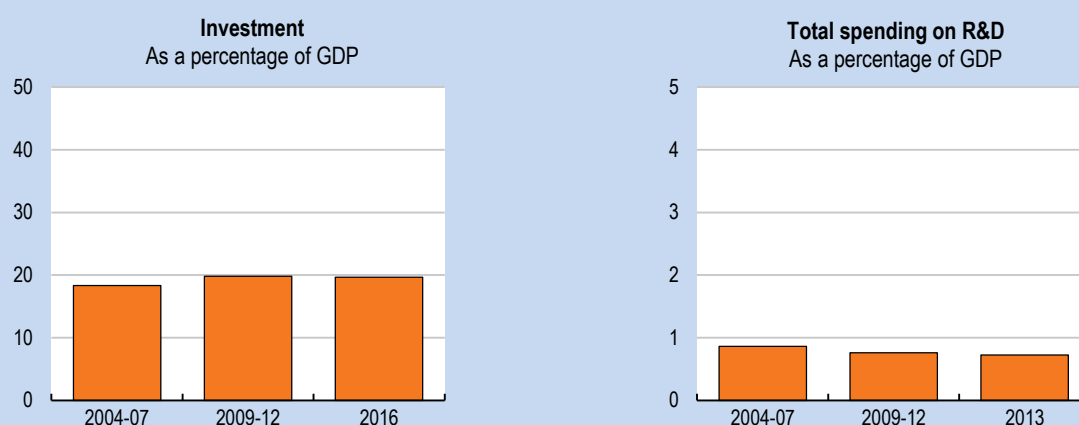


## SOUTH AFRICA

Growth in incomes has stalled since the 2008 crisis, on the back of low productivity growth. However, labour utilisation has also weighed on growth since the crisis. The employment ratio has not recovered and is relatively low. Inequality and poverty have remained high – with the bottom 40% of households benefitting less from growth than the average – despite increases in social spending and measures taken to combat youth unemployment.

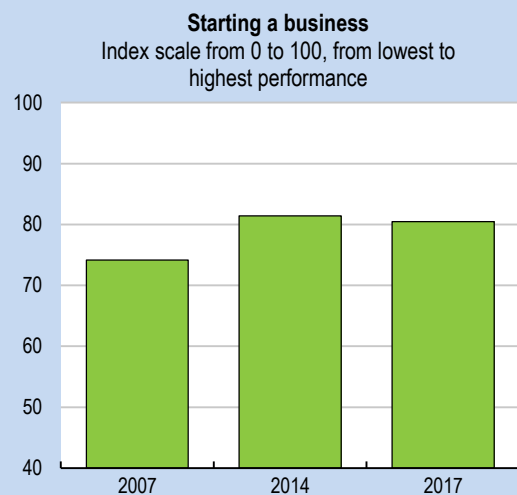
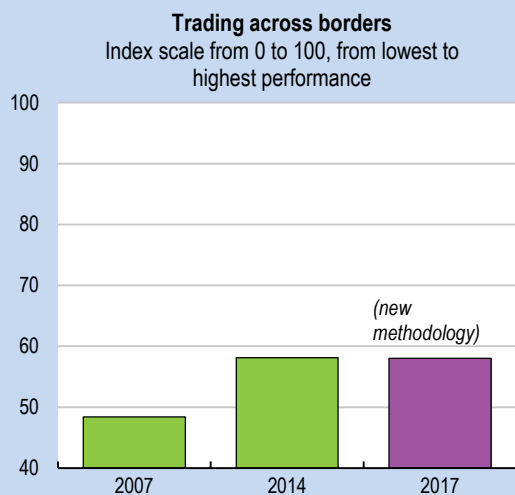


After a fall in 2009-10, total investment had been recovering, but fell again in 2016. In 2016, the government increased funding for education and rolled out dedicated programmes for improving school infrastructure.



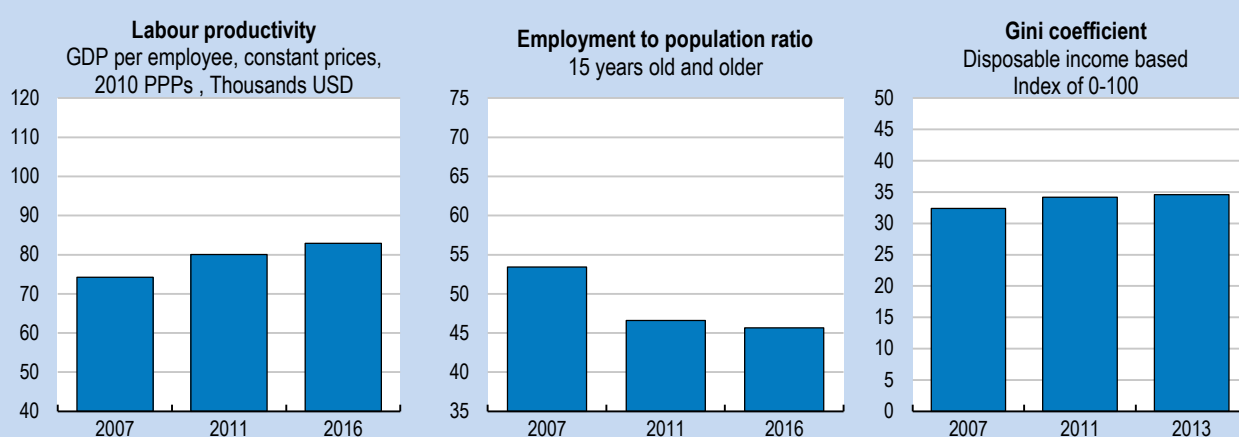
**SOUTH AFRICA (continued)**

Competition in network industries remains low and administrative barriers to starting a business remain high, but several steps have been initiated in 2016 aiming at reducing them. Implicit barriers to trading across borders remain high.

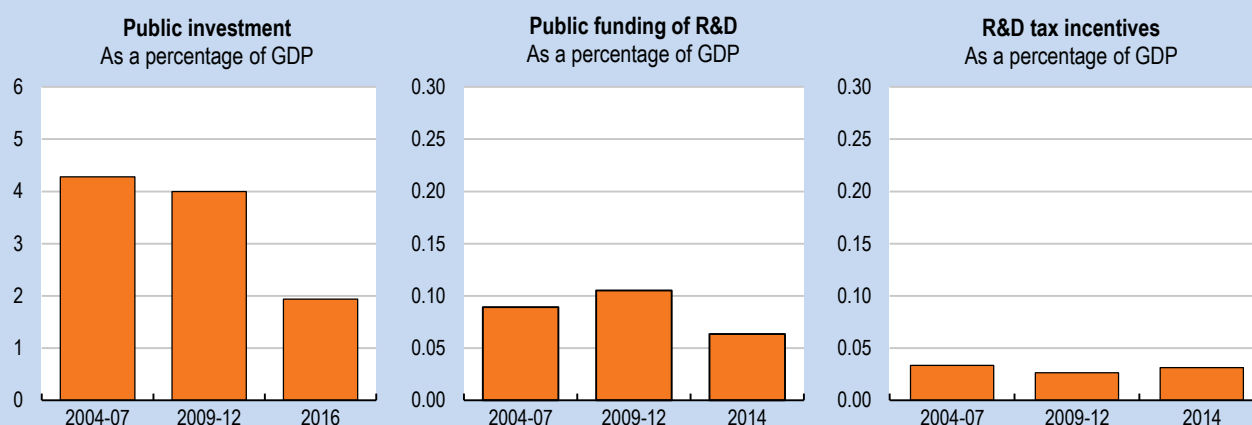


## SPAIN

A strong economic recovery, underway since the end of 2013, has now brought GDP per capita back to pre-crisis levels. Labour productivity growth has continued to increase since the crisis, albeit the pace has been slower in the recent years. In the aftermath of the crisis, the employment to population ratio has declined significantly amid high unemployment, while inequality has risen with the income of the poorest households falling significantly. However, with the recovery underway, the labour market has been improving with strong job creation since 2014.

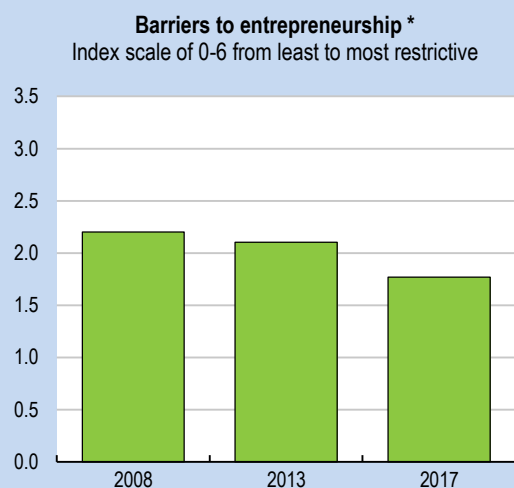
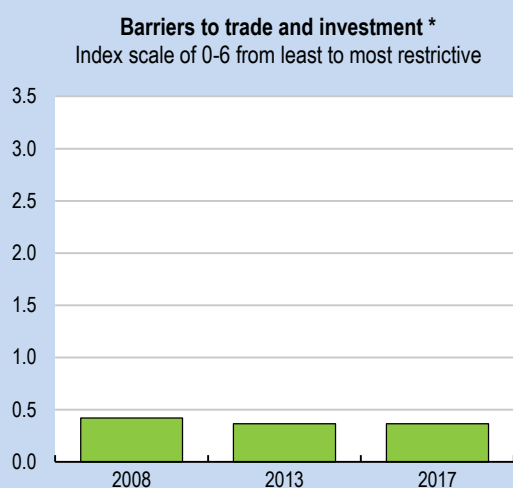


Public investment has been reduced and is now at half the level of the 2009 peak as a share of GDP. Direct public funding of R&D has followed similar developments.



**SPAIN (continued)**

Regulatory barriers to entry and competition have declined, but remain relatively high, in particular in professional services and maritime transport. On the other hand, barriers to trade and investment are low.

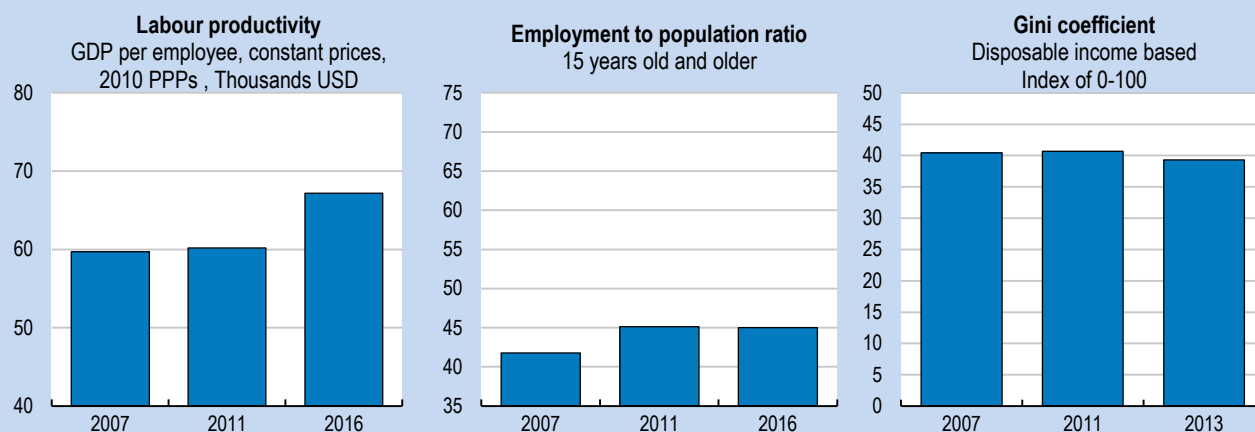


Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

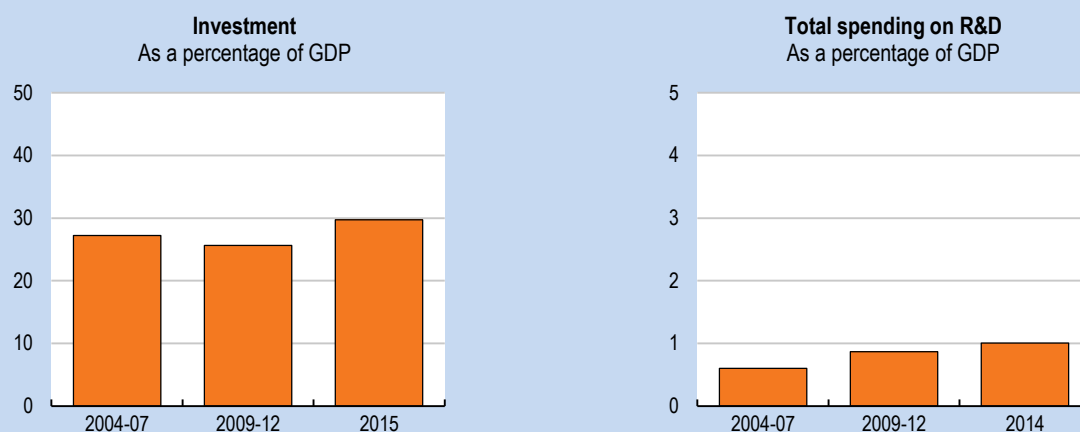
## TURKEY

Incomes and labour productivity have been rising relatively fast since 2010. Rising labour force participation and job creation, mostly in service sectors, have improved labour utilisation.

Consequently, and while inequality remains relatively high, it has been decreasing, with growth in incomes being higher for low-income households in the recent years.

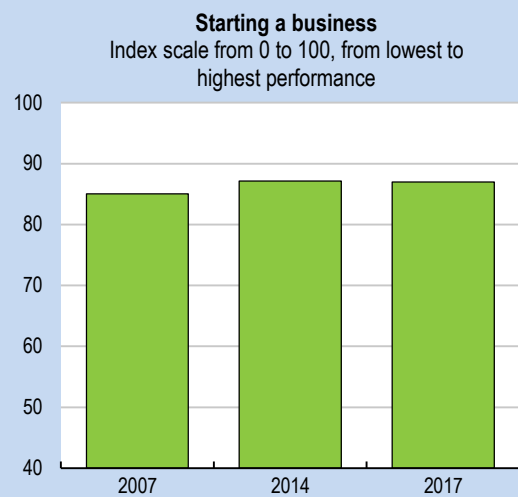
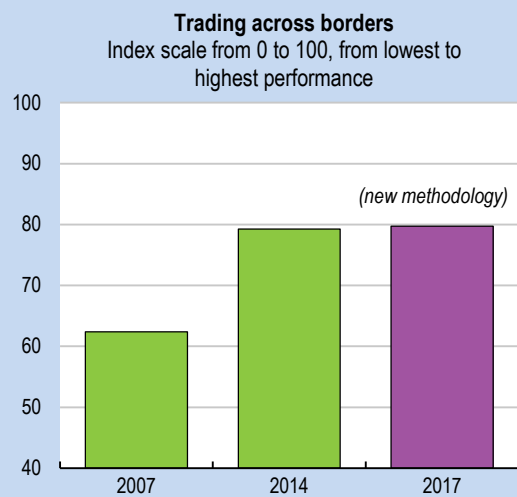


Total investment is now above pre-crisis levels, having increased steadily as a proportion of GDP since 2010. Total spending on R&D has been gradually increasing.



**TURKEY (continued)**

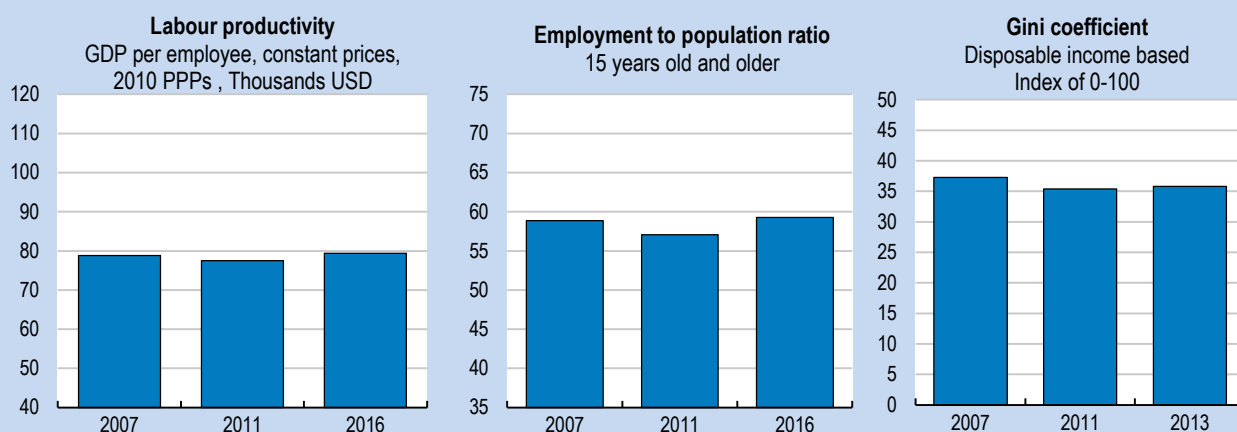
The government has taken several steps in fostering competition in network sectors, but overall obstacles to starting a business and trading across borders remain elevated.



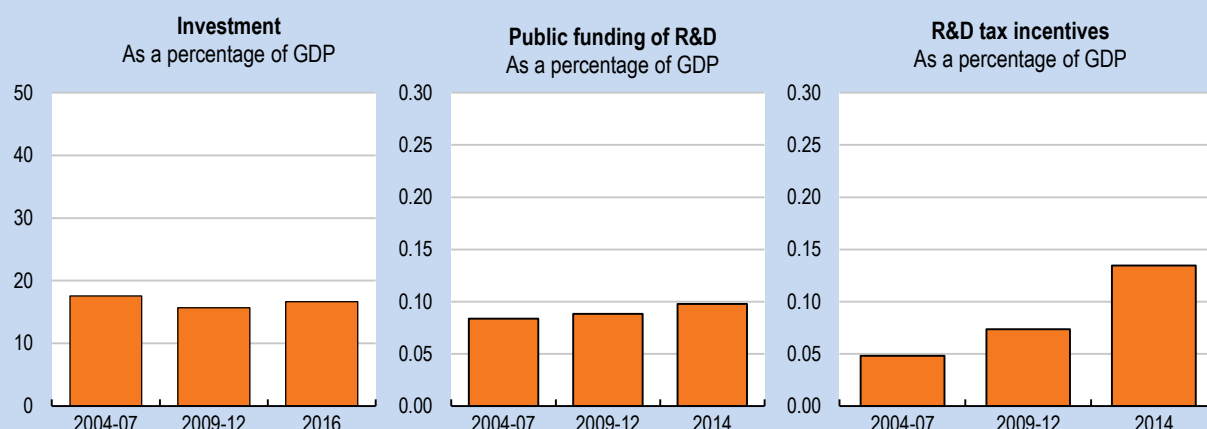


## UNITED KINGDOM

Income per capita growth has recovered somewhat since 2014, but labour productivity growth remains weak. The employment ratio has been recovering steadily since the 2009 trough and is now above pre-crisis levels. Despite the crisis, inequality, as measured by the Gini index, has decreased since the mid-2000s, owing to sustained poverty reduction.

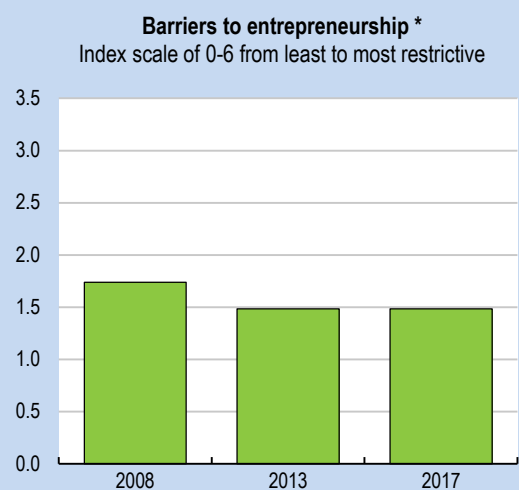
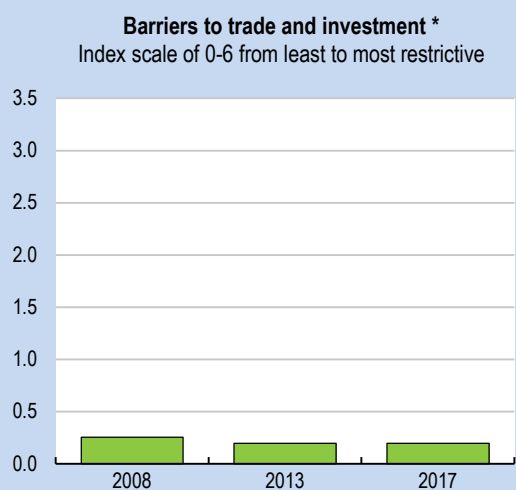


Total investment has recovered somewhat since 2010 but is still well below pre-crisis levels. Public investment remained stable since 2012 but remains relatively low with the perceived quality of the infrastructure stock perceived as suboptimal. Support for business R&D has been increasing throughout the 2000s largely due to an increase in indirect support with direct funding being relatively stable.



**UNITED KINGDOM (continued)**

Barriers to trade and investment, as measured by the OECD Product Market Regulation indicators, have decreased somewhat from an already low level. Regulatory barriers declined, due to reforms in the service sectors.

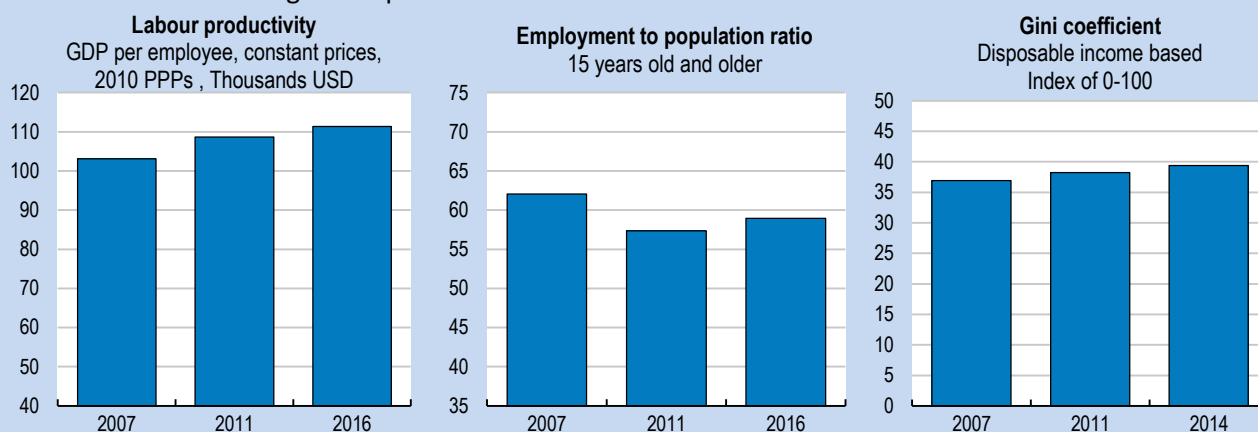


Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

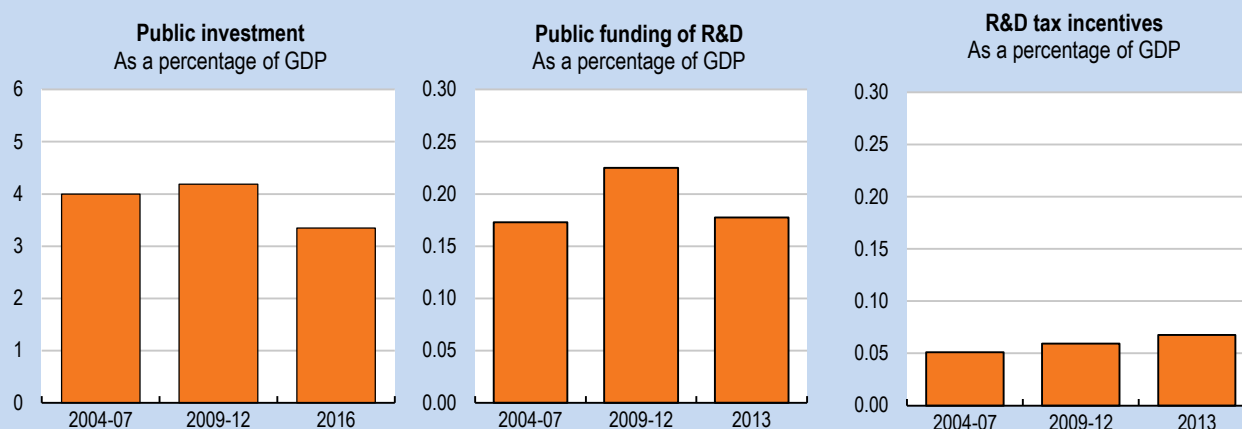
## UNITED STATES

Output per capita has slowed during the recovery compared to the pre-crisis trend, reflecting demographic pressures on labour force participation as well as the drag on productivity growth from diminished capital deepening.

Income inequality has continued to increase up to 2014 and remains relatively high, with a low share of national income accruing to the poorest.

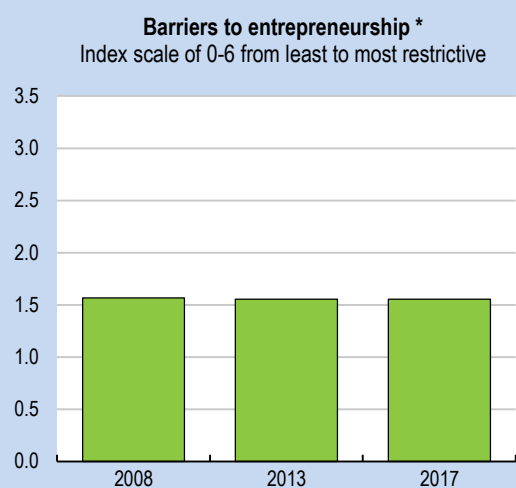
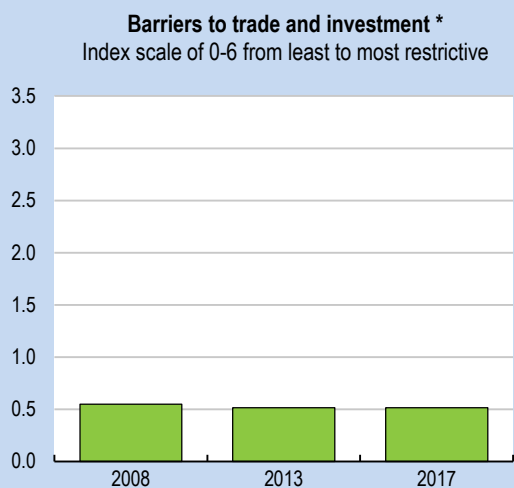


After temporary boosts during the crisis, public investment has fallen below pre-crisis levels and public spending on R&D returned to pre-crisis levels.



**UNITED STATES (continued)**

Barriers to entrepreneurship remain relatively low, though some aspects of the corporate income tax may be penalising young firms.



Notes: \* The last available year for a full indicator is 2013. The 2017 value is a provisional update based on OECD research and calculations.

## Data Sources for G-20 ESRA Indicators

### Labour productivity

Measured by Gross domestic product per employee (expenditure approach) expressed in USD, constant prices, constant PPPs, OECD base year 2010.

Source: OECD calculations based on OECD, Economic Outlook Database.

### Employment to population ratio

Employment for age 15 and over as a share of the population age 15 and over.

Source: ILO KILM, table 2A.

### Gini coefficient

Measured based on disposable income post taxes and transfers or by consumption expenditures – as indicated in each individual country note. Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. For OECD countries, data have been rebased to ensure comparability between historical series and latest data.

Source: OECD Income Distribution Database for OECD countries; China National Bureau of Statistics for China; GASTAT for Saudi Arabia; Federal State Statistics Service for Russia and World Bank, World Development Indicators for other countries.

### Barriers to trade and investment and Barriers to entrepreneurship

Index scale of 0-6 from least to most restrictive. The last available year for a full set of indicators is 2013. A provisional update was conducted based on external data and OECD research and calculations.

Source: OECD, Product Market Regulation Database.

### Investment

Measured by Gross fixed capital formation as a percentage of GDP.

Source: International Monetary Fund, International Financial Statistics Database.

For Argentina, Australia, Japan, Mexico, South Africa, and the United Kingdom, the source is OECD, Economic Outlook Database.

### Public investment

Measured by General government gross fixed capital formation, value, appropriation account, as a percentage of GDP.

Source: OECD, Economic Outlook Database.

### Public funding of business R&D

Measured by Government support for research and development (R&D) aimed at encouraging innovation by direct public funding of business R&D, as a percentage of GDP.

Source: OECD calculations based on OECD, Science and Technology Indicators Database.

### R&D tax incentives

Measured by Government support for business R&D aimed at encouraging innovation through tax incentives, as a percentage of GDP.

Source: OECD, R&D Tax Incentive Indicators, <http://oe.cd/rdtax> and Main Science and Technology Indicators, <http://oe.cd/msti>, March 2017.

### Total spending on R&D

Measured by Gross domestic expenditure on research and development (GERD) which refers to total intramural expenditure on research and development performed on the national territory during a given period, as a percentage of GDP.

Source: OECD, Science and Technology Indicators Database except for Brazil, India and Indonesia for which the source is World Bank, World Development Indicators Database.

**Trading across borders and Starting a business (distance to frontier)**

The distance to frontier score helps assess the absolute level of regulatory performance over time. It measures the distance of each economy to the “frontier,” which represents the best performance observed on each of the indicators. An economy’s distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier. Due to changes in methodology and coverage, the indicators are not strictly comparable through years for selected countries. However, the series have been adjusted to allow comparability: for both series where only data for one city was available prior to 2014 these have been rebased and combined with the more recent national series; and for trading across borders Doing Business 2016-17 methodology is used and historical data have been rebased to allow comparability with latest data.

Source: World Bank, Doing Business Database.

**Shared prosperity premium**

Difference in percentage points between the growth in the income or consumption of the bottom 40 percent of the population in a country and the growth in the income or consumption of its total population. The larger the growth rate in the incomes of the bottom 40, the more quickly economic progress is shared with the poorer segments of society. Performance on this indicator is examined by country rather than globally.

Source: World Bank, Global Database of Shared Prosperity.

**Unless otherwise indicated the indicators for the EU are the averages of the 28 EU members.**

