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# SHIFTING GEAR: POLICY CHALLENGES FOR THE NEXT 50 YEARS

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OECD Economics Department  
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## SHIFTING GEAR: POLICY CHALLENGES FOR THE NEXT 50 YEARS

### Main findings

#### ***Growth will slow and economic activity will shift, with skills being crucial and wage inequality rising***

- Global growth will slow from 3.6% in 2010-2020 to 2.4% in 2050-2060 -- due to ageing and gradual deceleration in emerging economies -- and will be increasingly driven by innovation and investment in skills.
- The global economic balance will continue to shift towards the current non-OECD area, which will have an economic structure and exports increasingly similar to those of the OECD.
- With technical progress raising the global demand for high-skilled workers, by 2060 average market earnings inequality (before tax and transfers) in the OECD area will reach the level of today's most unequal OECD countries.
- Climate change will curb global GDP by 1.5% on average and almost 6% in South and South-East Asia, unless increases in CO2 emissions are curbed.

#### ***Sustaining growth while addressing rising inequality will be a major policy challenge***

- Further reforms to inject dynamism in labour and product markets, combined with re-designed intellectual property right policies, will be needed to sustain innovation, productivity and employment. Such policies could put further pressure on earnings inequality however.
- Efficient redistributive measures and education policies will be crucial to accompany the increasing demand for skills. Financing such policies in the context of rising fiscal pressures requires:
  - shifting from increasingly mobile labour and corporate income tax bases to immobile ones, such as consumption, housing and use of natural resources (e.g. extraction taxes),
  - focusing public funding on pre-tertiary education and life-long learning, where some of the largest social benefits can be reaped not least in terms of equality of opportunities, and
  - for tertiary education relying to a greater extent on tuition fees.

#### ***More international cooperation will be needed in an increasingly multipolar world***

- Increasing trade cooperation spurs growth and technological innovation. With rising international integration and expanding supply chains, the positive effects of lifting border barriers and facilitating trade will be magnified. Trade agreements at global level will bring the greatest global GDP and welfare gains by 2060.
- Rising economic interdependence requires international cooperation in providing global public goods such as basic research, intellectual property rights legislation, competition policy and the climate. Effective cooperation could boost research incentives and make antitrust activity more effective. Coordinated action to curb CO2 emissions will limit damages to growth and well-being.
- International cooperation on taxation of bases that are mobile across borders (e.g. corporate income) could help recover revenues and avoid possible negative consequences of tax avoidance.

## **The world economy is shifting, with new risks and challenges emerging**

1. The global economy is driven by a number of deep-seated and likely long-lasting trends. If these trends - including ageing, skill-biased technological change, globalisation, and rising environmental pressures – persist, they will have a profound effect on the world economy. Each of these trends by themselves raises difficult policy challenges. But it is the interactions between them that will create the most potent dilemmas for policy makers. This note describes how the world may look in 2060 if these trends were prolonged. This should not be interpreted as a forecast but only as a description of how these past trends may generate new policy challenges, both on a national and international level, if they were to continue. Given the nature of the exercise, numerical estimates are provided only to give a sense of the scale of potential challenges.<sup>1</sup>

2. Over the next 50 years, global growth is set to slow from 3.6% in 2010-2020 to 2.4% in 2050-2060. Still, such growth rates will mean that global economic output will more than quadruple over the coming 50 years. Incomes in emerging and low income economies will tend to grow even faster, with GDP per capita increasing sevenfold in *e.g.* India and some African countries. Consequently, income convergence will lead to a reduction in cross-country inequality continuing to lift masses of people out of poverty. By 2060, GDP per capita in China will be comparable to the current US levels (measured in constant PPPs), while India's will be half the US level. While growth will be more sustained in emerging economies than in advanced economies, it will still slow down due to less population growth and less scope for catching up to the standards of living of the most advanced countries (Figure 1). Even if the retirement age is increased, population ageing will result in a declining or at best a stable labour force in most economies. Against this backdrop, future gains in GDP per capita will become more dependent on accumulation of skills and, especially, gains in productivity driven by innovation and the accumulation of knowledge-based assets -- such as organisational know-how, databases, design and various forms of intellectual property (OECD, 2013).

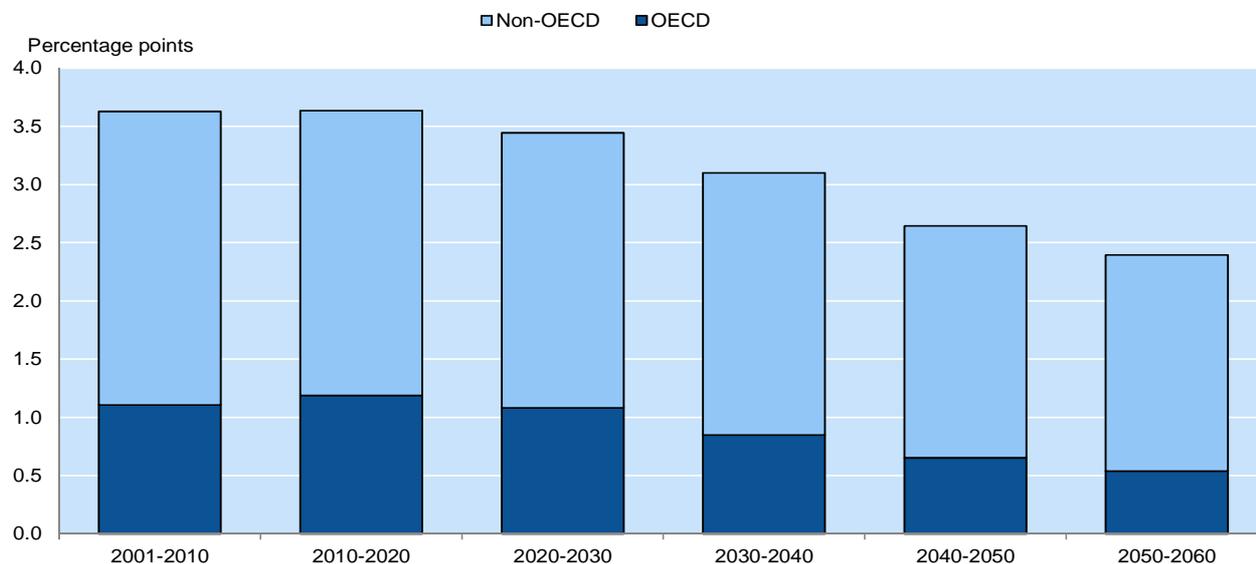
3. Persistent growth differentials between OECD and emerging non-OECD economies will lead to a major shift of economic balance towards the non-OECD area, particularly to Asian and African economies. As a result, by 2060 the share of non-OECD countries in world GDP will significantly exceed that of the current OECD members.

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1. Details on the methodology underlying the long-term scenarios described in this note can be found in the accompanying OECD Policy Papers (Braconier et al., 2014; Johansson and Olaberria, 2014).

**Figure 1. Global GDP growth is set to slow down over the next 50 years**

Contribution of OECD and non-OECD countries to global GDP growth  
(annual average, constant 2005 PPP)

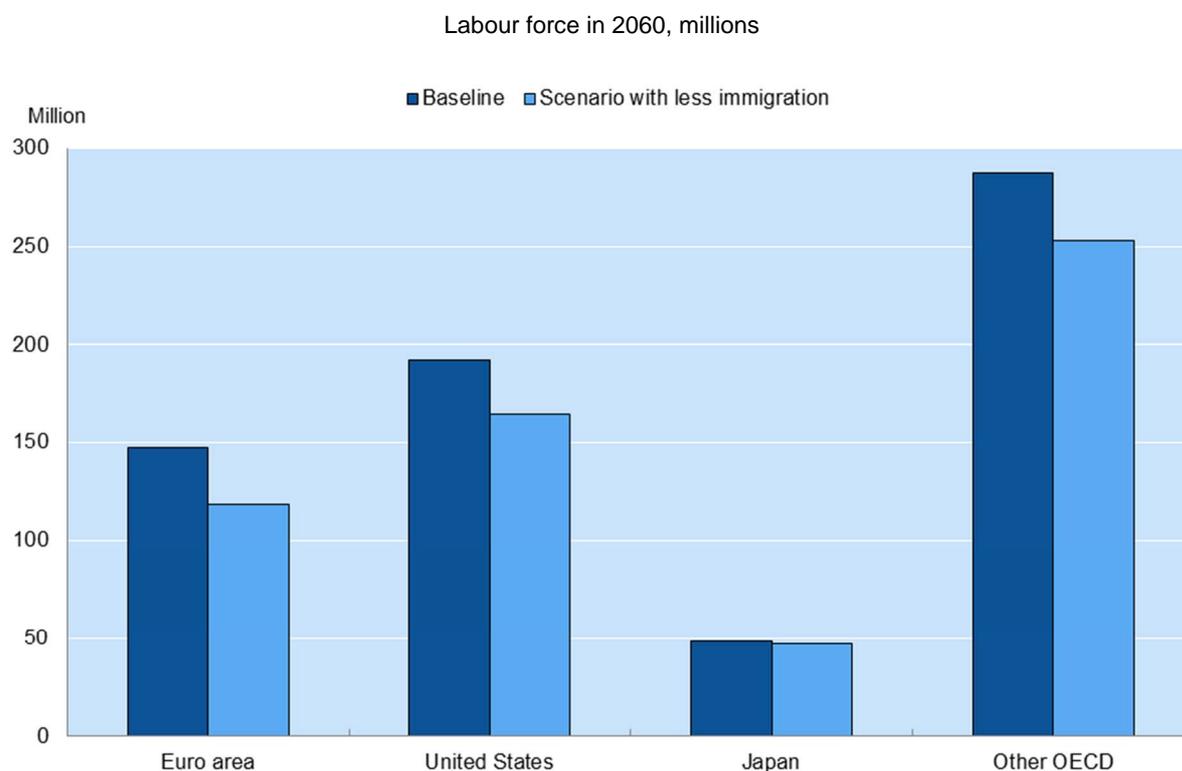


*Note:* The charts combine the long-term projections for 42 countries published in the OECD Economic Outlook 95 and, for all other countries, projections from the ENV-growth model of the OECD Environmental Directorate.

*Source:* Braconier et al. (2014).

4. The shrinking income gaps between OECD countries and emerging economies and rising global demand for skills will lower incentives for economic migration and slow work-related immigration to the OECD area. This will add to demographic pressures from ageing in advanced and many emerging economies. Indeed, by 2060 the drying up of immigration could have lowered the labour force by 20% in the euro area and by 15% in the United States if the effect of cross-country convergence in incomes is taken into account (Figure 2). This in turn will weigh on growth and fiscal positions.

**Figure 2. A fall in work-related immigration would bear on OECD labour forces**



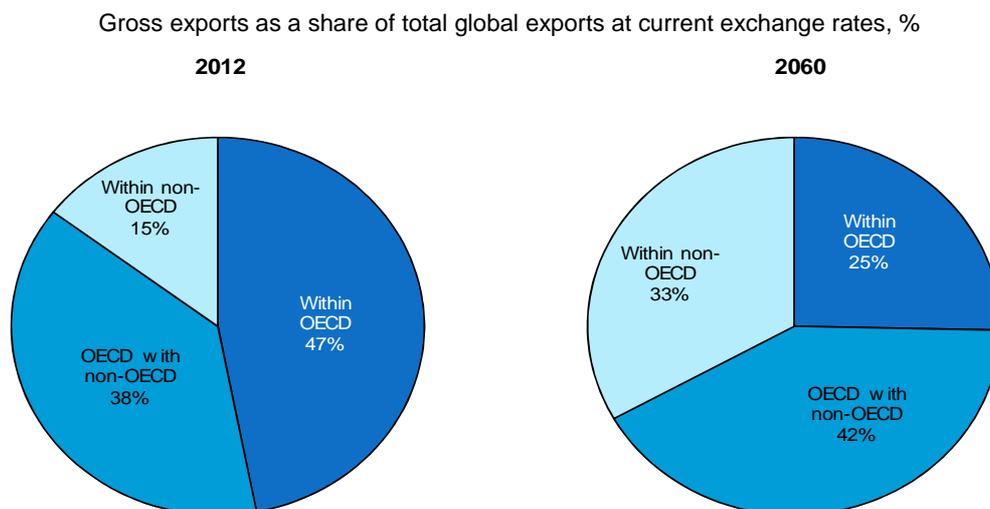
*Note:* The lower immigration scenario accounts for the effect of gradual convergence in wages between OECD and non-OECD countries.

*Source:* Braconier et al. (2014).

5. Global exports will continue to outpace GDP growth over the next half century with an increasing role of non-OECD economies in the global market. Exports in relation to GDP will on average rise by 60% between 2010 and 2060, and relatively closed (and large) economies as the United States and Japan will in 2060 be as open as the United Kingdom is today. As a result trade integration will keep rising, though at a slower pace than in recent decades.

6. Economic interdependency among non-member economies and between OECD and non-OECD countries is likely to increase. By 2060, about 50% of world trade will take place among current non-OECD economies, up from 25% today (Figure 3). At the same time, OECD economies will increasingly import products from non-OECD economies. Trade linkages will rise as global value chains continue to expand. Increased trade integration with a wider set of actors will also raise the mobility of already mobile tax bases, including high-skilled labour and corporate and intangible investment.

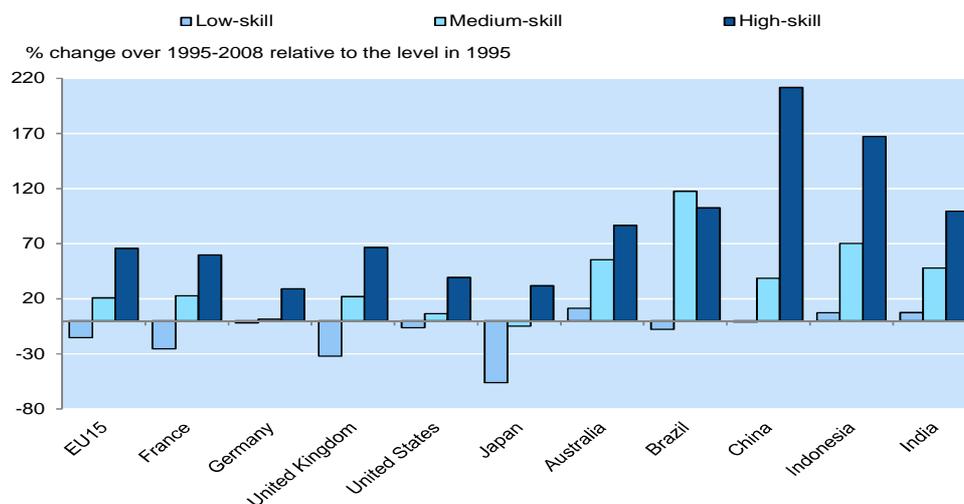
**Figure 3. The share of trade occurring within and with the non-OECD area will increase dramatically**



Source: Johansson and Olaberria (2014)

7. In parallel with increasing globalisation, patterns of trade and industrial specialisation will shift. Continuing past trends, the skill composition of emerging economies will gradually converge towards that of the OECD, with a rising demand for high and medium skills (Figure 4). As a result, production structures in emerging economies will increasingly resemble those in OECD countries. The share of services in the economy will continue to increase while the share of low-skilled manufacturing will shrink. Technological catch-up and better skills will help emerging economies climbing the ladder towards higher-value added manufacturing and service activities (Figure 5). At the same time, primary sectors will expand in some OECD economies due to abundance of land and other natural resources and technological advancements. For example, the US share of world energy exports could triple by 2060, while its share of agricultural exports may rise from 18% to 25%. Changing global specialisation patterns will lead to a substantial structural transformation in both advanced and emerging economies. Efforts to attract higher value-added production will be increasing globally, together with competition to attract mobile tax bases.

**Figure 4. Demand for high-skilled workers rose in most countries over 1995-2008<sup>1</sup>**

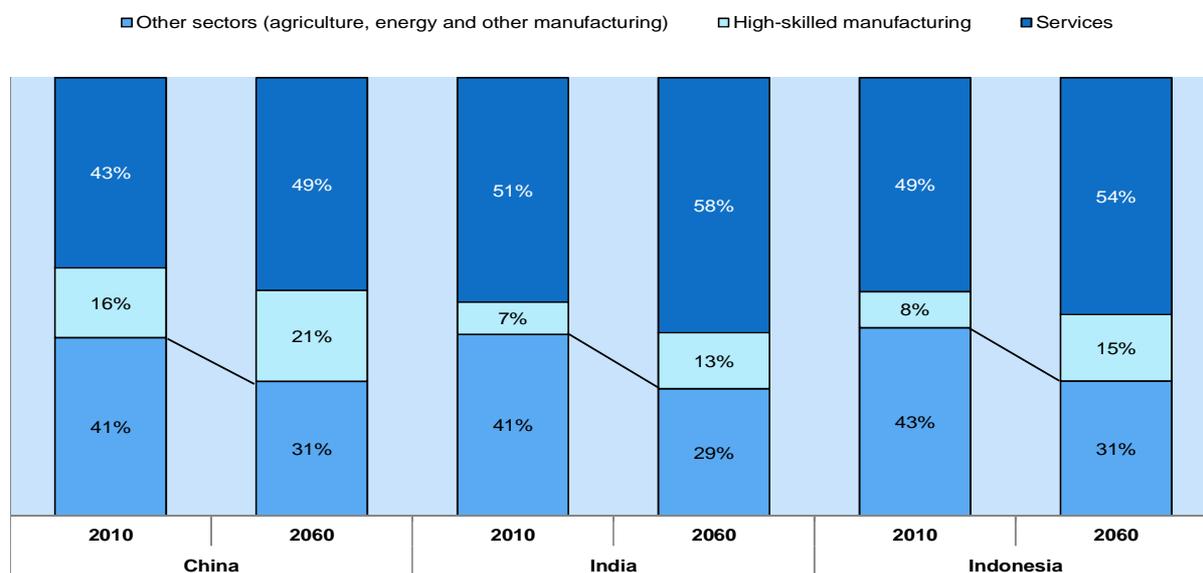


1. Low-skill refers to completed primary and/or lower-secondary education (ISCED 1 and 2); medium-skill refers to completed upper-secondary and/or non-tertiary education (ISCED 3 and 4); and high-skill refers to completed tertiary education (ISCED 5 and 6).

Source: Los et. al 2014.

**Figure 5. Industrial structure is set to shift to higher-value activities in emerging economies**

Value-added shares of different sectors in China, India and Indonesia, 2010 and 2060

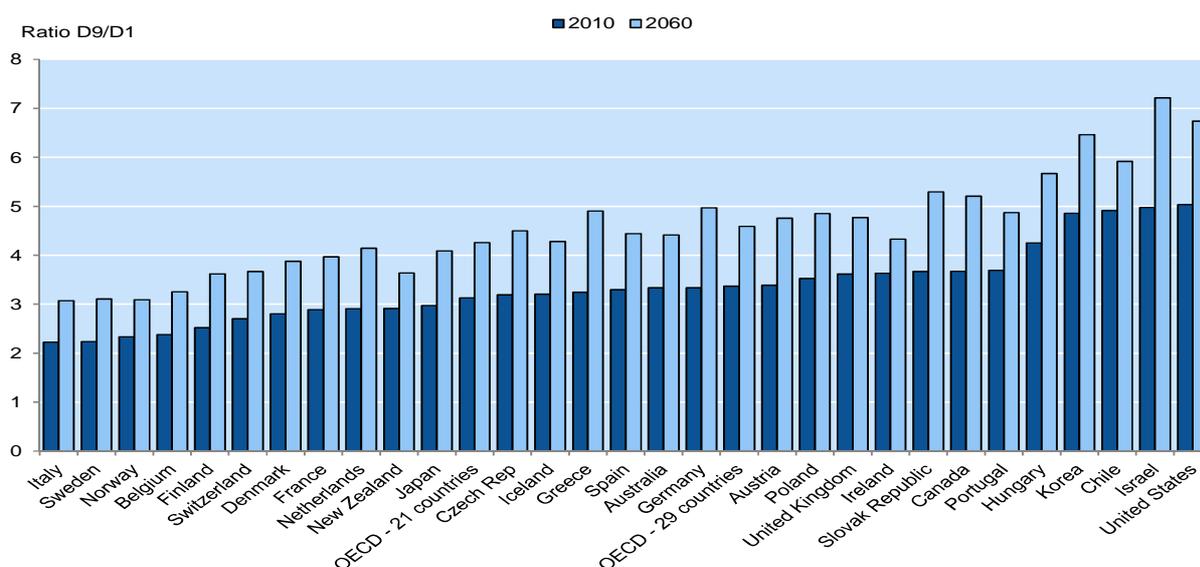


1. Services include business services, transport service, wholesale and retail, public administration and other services; High-skill manufacturing includes chemicals, iron and steel, transport equipment and electronics; Other sectors include agriculture, mining, food, textile, paper and wood, metal products, coal, crude oil, electricity, gas, other manufacturing, other metals and other mining.

Source: Johansson and Olaberria (2014).

8. Despite falling absolute global poverty and shrinking income gaps across countries, the growing importance of skill-biased technological progress for growth and rising demand for higher skills will lead to continued polarisation of the wage distribution within each country (Figure 6). With unchanged redistributive policies, the average OECD country will face an increase in (pre-tax) earnings inequality by 30% in 2060, facing almost the same level of inequality as is seen in the United States today.<sup>2</sup> Significant increases in inequality will also materialise in other G20 economies. In turn, rising inequalities may backlash on growth, notably if they reduce economic opportunities available to low-income talented individuals.

**Figure 6. Gross earnings inequality (D9/D1) 2010 and 2060<sup>1</sup>**



1. Ratio of gross earnings (before tax and transfers) of the 9<sup>th</sup> and the 1<sup>st</sup> deciles of the earnings distribution.

Source: Braconier et al. (2014).

9. At the same time, knowledge-driven growth will mean that demand for highly-skilled labour will outstrip slower-growing and less flexible supply of skills, leading to a rise in earning differentials and private and social returns to education. As a consequence, demand for skill formation and, especially, tertiary education is likely to rise rapidly. Meeting such demand provides an opportunity for public policy to sustain growth and mitigate inequality, but also puts pressures on public-funded education systems unless educational technologies can be improved significantly.

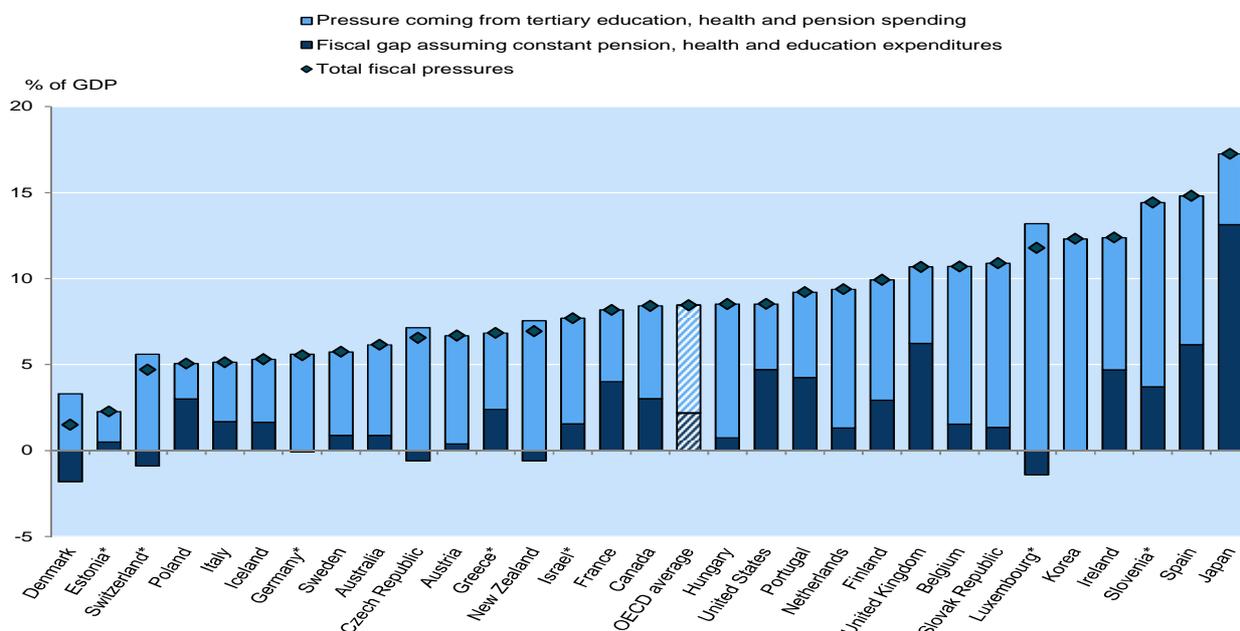
10. Indeed, as of 2014, the fiscal adjustments needed to stabilise gross debt-to-GDP ratios at 60% by 2060 in the context of rising pension, health and education spending are estimated to be over 7% of GDP

2. Earnings inequality is measured as the ratio of gross earnings for an individual at the 9th decile of the earning distribution (earning more than 90% of all full-time employees) compared to an individual at the 1st decile (earning more than 10% of all full-time employees).

for the average OECD country (Figure 7).<sup>3</sup> There are additional fiscal risks for OECD countries related to weakening revenues due to less migration and more mobile tax bases.

**Figure 7. Fiscal pressures in the OECD area are strong**

Budget adjustment needed as of 2014 to stabilise debt ratios at 60% of GDP by 2060



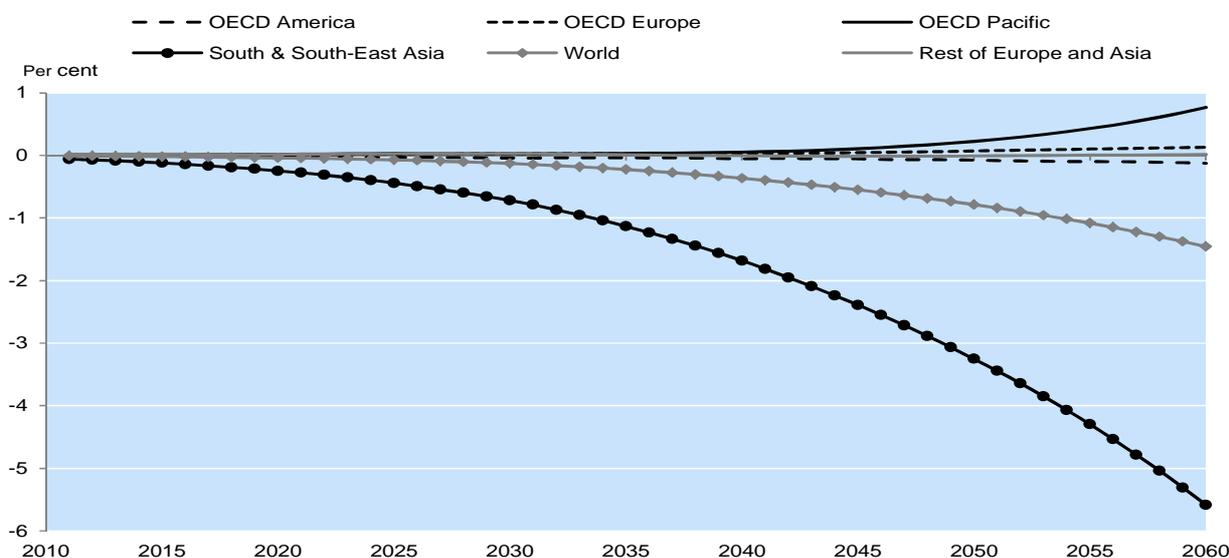
\*Tertiary education spending projections not available.

Source: Braconier et al. (2014)

11. Last but not least, environmental damages associated with business as usual growth are expected to continue to accumulate. With unchanged or ineffective emission reduction policies, rising economic damages from environmental degradation due *inter alia* to climate change are likely to hamper growth already before 2060. By 2060, greenhouse gas emissions will have doubled from 2010 and environmental damages, stemming from e.g. lower agriculture productivity and rising sea levels, may have lowered global GDP by 1.5%, with the negative GDP impact in South and South-East Asia being more than 5% (Figure 8). These estimates do not include soaring health costs and productivity losses related to local pollution in many countries. Risks of catastrophic environmental events will rise, and the increase in concentration of greenhouse-gases in the atmosphere up to 2060 will lock-in further, and potentially more serious, environmental damages beyond the 2060 horizon (OECD, 2013).

3. The size of fiscal adjustment does not change markedly if alternative debt targets are used, since even relatively small changes to underlying fiscal positions add up when maintained for decades (Sutherland et al. 2012).

**Figure 8. Regional loss of GDP due to the impact of climate change, 2010- 2060**  
% of GDP



Source: Braconier et al. (2014).

### **Policies for a shifting world**

12. In this future global scenario, some long-standing OECD recommendations will become more pressing while some new emerging challenges will require a redesign of existing policy tools. These areas include supporting growth while facing the future redistributive and environmental challenges, meeting new demands while continuing to ensure fiscal stability, making tax structures consistent with increasingly mobile tax bases, and scaling up or developing international policy coordination in an increasingly multipolar world.

#### ***Dealing with demographic change and risks***

13. OECD countries will be hit by a double demographic shock due to ageing and slowing immigration from low-income economies as cross-country income differentials shrink. With longevity increasing and health conditions improving, postponement of the retirement age and stronger work incentives at old age will help prolonging work lives. Combined with rising female labour force participation, this will ease demographic pressures. Efforts to sustain labour force participation should be supported by life-long learning strategies, job matching policies and labour market policies that ease transition from job to job, as ageing labour forces will become less flexible and less able to cope with structural change. Similarly, in rapidly ageing non-OECD economies, social policies to lengthen healthy working-lives are crucial to sustain growth.

#### ***Supporting knowledge-based growth***

14. With growth increasingly depending on innovation and productivity improvements, fostering the expansion of efficient and successful firms by making sure that competition prevents the build-up of rents and that workers and investment are directed toward their most productive uses will be crucial in the future. Hence, implementing policies that make entry of new firms easy (e.g. by reducing start-up costs), that support job creation and firm-to-firm job flows (e.g. by enhancing job-matching mechanisms and

easing employment protection) and that allow exit of ailing firms (e.g. by reforming bankruptcy laws) will become even more pressing than in the past.

15. Well-designed framework policies could also help economies reap growth benefits from trade. Improvements in regulatory quality and in credit access can reduce transaction and transportation costs and facilitate the integration of domestic industries into global supply chains. This induces a more efficient allocation of resources and increases access to larger international markets, bringing about economies of scale and generating technological and knowledge spill overs across countries.

16. A range of growth policies affecting business conditions will also become more relevant. Supporting the build-up of firms' capabilities to absorb and deploy new technologies, for example in terms of R&D, is going to be key in a knowledge-intensive economy. In this context, intellectual property right (IPR) policies will have to be reviewed to boost incentives and support the development of innovation. IPRs are crucial for investment in some types of knowledge-based assets, but could also hinder innovation in some areas (such as ICT), especially if they unduly favour incumbents.

#### ***Addressing rising inequalities in a growing and integrated world economy***

17. Widening earnings inequalities driven by a persistent skill bias in technical change, combined with social costs due to structural adjustment, will increase the relevance of policies aimed at reconciling equity and growth. The keys are better redistributive policies, enhanced focus on equality of opportunities and reviewing both funding mechanisms (e.g. for education) and tax structures to account for rising global integration.

18. More efficient and better-targeted redistribution through tax and benefit systems could cushion the impact of market income inequality on household disposable income. At the same time, further global integration and trade liberalisation will increase the costs of redistribution, sharpening some of the growth-equity trade-offs in designing tax and benefit systems. In this context, it will be useful to rely more on less mobile tax bases such as property, consumption or returns from natural resources (e.g. extraction), which will also help improve environmental sustainability. These policies would be desirable on efficiency and growth terms too, while global cooperation on, for example, corporate taxes will support fiscal positions and equity.

19. Education policies aimed at ensuring equality of opportunities and meeting the increasing demand for knowledge and skills will create conditions for stronger growth and lower earnings inequality. Here as well, given tight fiscal conditions, public funds will have to be better targeted. Focus on early-schooling and pre-tertiary education will have high social returns. The same is true of life-long learning, whose domestic returns in terms of maintaining a skilled labour force despite ageing are also strong, given the lower international mobility of older workers. Tertiary education will have to expand through more extensive reliance on tuition. In view of the high private return resulting from higher wages for graduates. A tuition-based and loan-financed system is likely to be more efficient in providing equal opportunities while recovering costs than a tax-based system in a world with high mobility of skilled labour.

#### ***Making the most out of rising global integration***

20. Global interdependencies are likely to grow in a number of areas in the coming 50 years. Rising interdependencies may help create a more stable global economy, for example through an increased sharing of the burden of domestic shocks globally, or help distribute the costs of local environmental damages among trade and investment partners. In other areas, rising interdependencies will lower the potency of domestic policies and increase negative international spillovers, pointing to the increasing

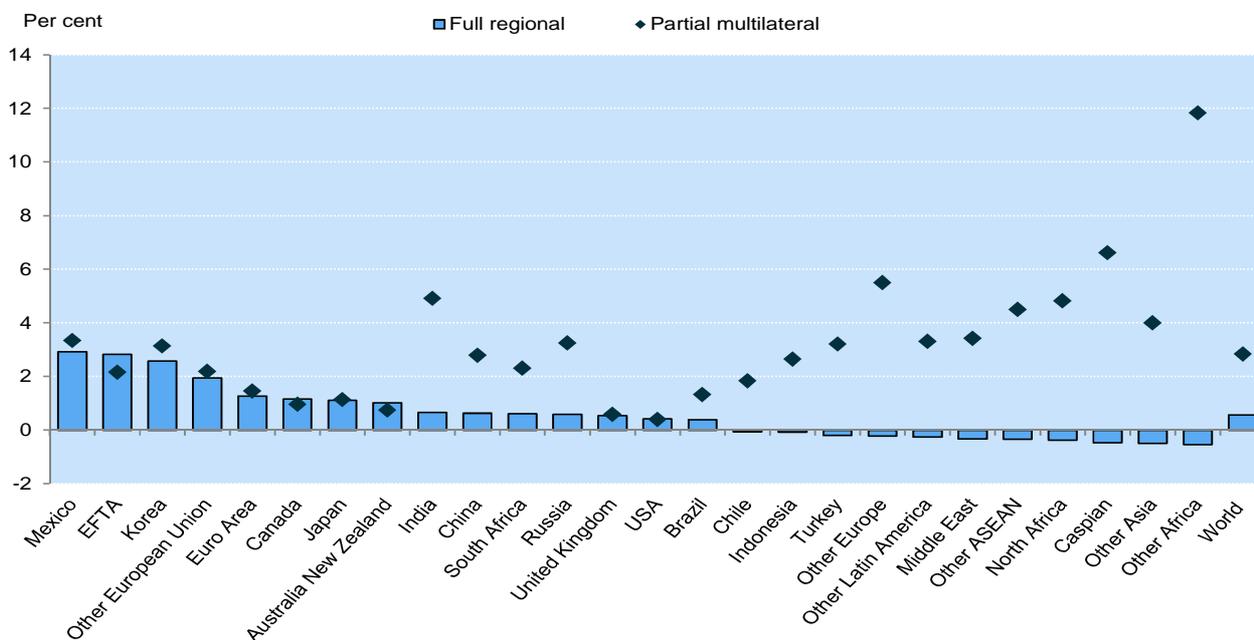
importance of effective international policy cooperation and coordination. Such areas include trade, innovation, taxation and the environment.

21. Further trade liberalisation can support global growth and spur technological innovation (Figure 9). Growth and welfare gains are larger from multilateral trade liberalisation at the global level than from regional liberalisation among a core group of OECD economies, since the latter tends to lead to trade diversion away from countries outside the region, limiting real income gains everywhere due to lesser use of countries' comparative advantages. Furthermore, maintaining industrial policies based on tariffs will become even more counter-productive than in the past. In an integrated supply chain, imposing tariffs at one stage on a foreign product affects the whole chain of suppliers through backward and forward linkages magnifying the effect of tariffs, and reducing exports of downstream industries. Thus, coordination on trade policy will become most important.

22. Increased global integration and the rising reliance on innovation for growth raise the potential benefits from international coordination and cooperation on the provision of certain global public goods. For example, growth could be enhanced by international cooperation on basic research, because incentives of individual countries for spending on such research will diminish as economies become more interconnected and cross-country technological spillovers spread out. Lack of consistency in legislation of intellectual property rights across countries can also lead to reduced innovation rates or slower technological diffusion. Finally, enhanced international cooperation will make competition policy enforcement more effective vis-à-vis activities of multinational firms that extend across jurisdictions, also favouring innovation.

**Figure 9. Global GDP gains from multilateral trade liberalisation are larger than from a regional OECD agreement**

% increase in real GDP of trade liberalisation as compared with the baseline by 2060



Source: Johansson and Olaberria (2014).

23. Cooperation in the area of taxation can limit excessive global tax competition related to increasingly mobile tax bases. For instance, inconsistencies and loopholes of corporate income tax provisions across countries are used as a source of tax avoidance that can lead to base erosion and profit-shifting (BEPS) with losses of tax revenues for governments and potential efficiency losses if real activities of firms are affected as well.

24. With economic costs of climate change projected to already be significant over the next few decades, global cooperation in emission reducing policies is increasingly needed to sustain future growth. Combining appropriate pricing of carbon and reform of fossil-fuel subsidies, can avoid the lock-in of further emission-intensive infrastructure, making it easier to shift toward a cleaner development path. In the absence of a binding multilateral agreement on emissions reduction, pressure for alternative mechanisms such as border carbon adjustments will increasingly be felt. Although these mechanisms can appear an attractive solution, the practical difficulties and economic costs of such measures should provide a strong incentive to find a globally coordinated solution.

25. Trade and (long-term) investment integration resulting from multilateral agreements can also improve risk-sharing of hard-to-predict climate damages, as long as impacts are not strongly correlated across regions, as integrated economies will be better at adjusting specialisation patterns to changes in comparative advantages due to climate damages.

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