Please cite this paper as:

OECD (2012), "Looking to 2060: A Global Vision of Long-Term Growth", *OECD Economics Department Policy Notes,* No. 15 November 2012.

ECONOMICS DEPARTMENT POLICY NOTE No. 15

LOOKING TO 2060: A GLOBAL VISION OF LONG-TERM GROWTH

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An earlier version of this paper was discussed at the OECD Economic Policy Committee and its Working Party 1. The authors would like to thank the participants.

The main paper providing background to this note is:
Johansson *et al.*, (2012), "Long-term Growth Scenarios", *Economics Department Working Papers* No. 1000, forthcoming, OECD Publishing.

LOOKING TO 2060: A GLOBAL VISION OF LONG-TERM GROWTH

- **Global GDP is expected to grow at around 3% per year over the next 50 years, but wide variations are forecast between countries and regions.** Fast-growing emerging countries will be the principal driver of the long-term outlook. Growth rates of emerging countries will eventually slow, converging towards those projected for the OECD area. Growth and living standards are supported by active implementation of fiscal and structural reforms.

- **In parallel, the relative size of economies will change radically over the next 50 years.** The combined GDP of China and India will soon surpass that of the G7 economies and will exceed that of the entire current OECD membership by 2060.

- **The global saving rate will remain fairly stable until 2030.** The rising weight of high-saving countries especially China and India will compensate for the tendency of private saving rates to fall in individual countries, mostly on account of ageing.

- **Notwithstanding fast growth in low-income and emerging countries, large cross-country differences in living standards will persist in 2060.** Income per capita in the poorest economies will more than quadruple by 2060, and China and India will experience more than a seven-fold increase, but living standards in these countries and some other emerging countries will still only be one-quarter to 60% of the level in the leading countries in 2060.

- **Bolder structural reforms and more ambitious fiscal policy could raise long-run living standards by an average of 16% relative to the baseline scenario of moderate policy improvements.** Ambitious product market reforms, which raise productivity growth, could increase global GDP by an average of about 10%. Policies that induce convergence towards best practice labour force participation could increase GDP by close to 6% on average.

- **Global imbalances could widen up until 2030 perhaps reaching pre-crisis levels, but deeper and faster structural and fiscal reforms could reduce imbalances by as much as one-quarter by then**.

The global economy faces a number of challenges in the short and the long-term

1. The global economy currently faces serious challenges and policy action is needed to restore confidence and put the economic recovery onto a sustainable growth path. Many countries face a long period of adjustment to absorb the legacies of the crisis, particularly in terms of high unemployment, excess capacity and large fiscal imbalances. Further ahead, demographic changes, including ageing, and economic convergence will bring about large shifts in the composition of global GDP. In the scenario presented here, countries confront these challenges and the appropriate policy responses and structural reforms are taken in order to ensure that growth returns to a sustainable path. Thus, the scenario embeds sustained, albeit not dramatic, policy improvements in both advanced and emerging economies in a number of areas including labour and product markets, fiscal consolidation and reforms of welfare and financial policies.

2. The working hypothesis underlying this note is that the crisis has only reduced the level of trend GDP, currently and over the next few years, and has had no permanent effects on trend growth rates. Moreover, in keeping with the long-term focus, possible repercussions on trend output of prolonged period of deficient demand are ignored. Thus, the resulting long-term scenario provides a relatively benign long-term outlook for the global economy. Indeed, a number of other factors are also ignored, including the possibility of disorderly debt defaults, trade disruptions and possible bottlenecks to growth due to an unsustainable use of natural resources and services from the environment.

Global growth will be sustained by emerging countries, though at a declining rate

3. Over the next half century, the global economy is projected to grow at around 3% per annum on average. The OECD-wide trend GDP growth rate is projected at about 2% annually to 2060, with declining

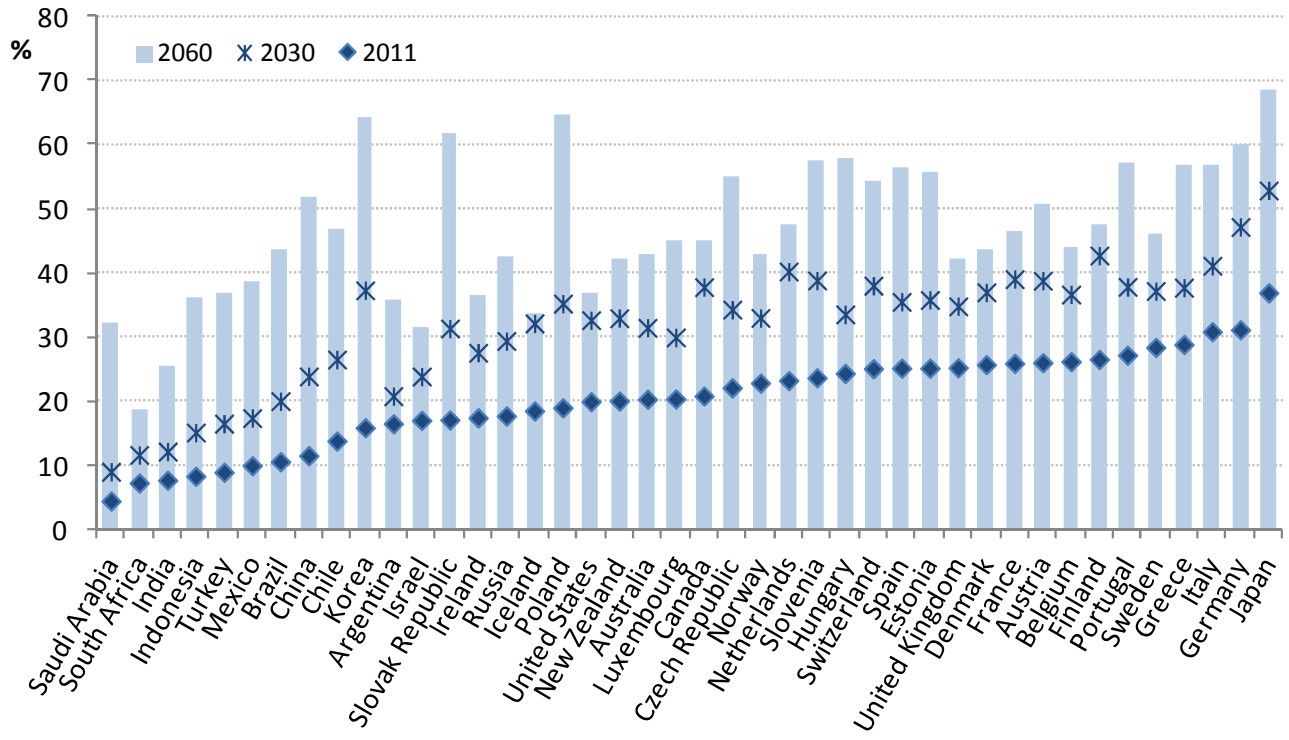
rates in many countries after the recovery from the current crisis. But, global growth will remain fairly stable because relatively fast-growing countries will progressively account for a larger share of global output. Indeed, growth in non-OECD countries will continue to outpace the OECD average, though the difference will narrow over coming decades. From over 7% per year over the past decade, non-OECD growth will decline to around 5% in the 2020s and to about half that by the 2050s (see Annex Table). Until 2020, China will have the highest growth rate of any country, but will be then surpassed by both India and Indonesia.

Ageing will be a drag on growth in many countries, while improvements in education will sustain it

4. These trends in GDP growth are driven by population ageing, which will exert downward pressure on labour input, and productivity developments that differ widely across countries. Population ageing, due to the decline in fertility rates and generalized gains in longevity, has a negative effect on trend growth as it leads to a declining share of the working age population, with potentially negative effects for labour force participation. Population projections suggest that ageing over the next 50 years will be particularly rapid in Asia, Eastern European countries and Southern European countries with old-age dependency ratios more than doubling, and even quadrupling in China (Figure 1).[1,2] Indeed, more rapid ageing in this country partly explains why India and Indonesia will overtake China's growth rate in less than a decade. Taking into account developments of all age groups, total population over the next 50 years is estimated to increase by 0.3% per year globally. All else equal, comparatively high overall population growth will act as a drag on GDP per capita growth in a number of countries (*e.g.* English speaking countries and some emerging economies) (see Annex Table).

Figure 1. Populations will age in most countries

Per cent of the population older than 65 as a share of population aged 15-64



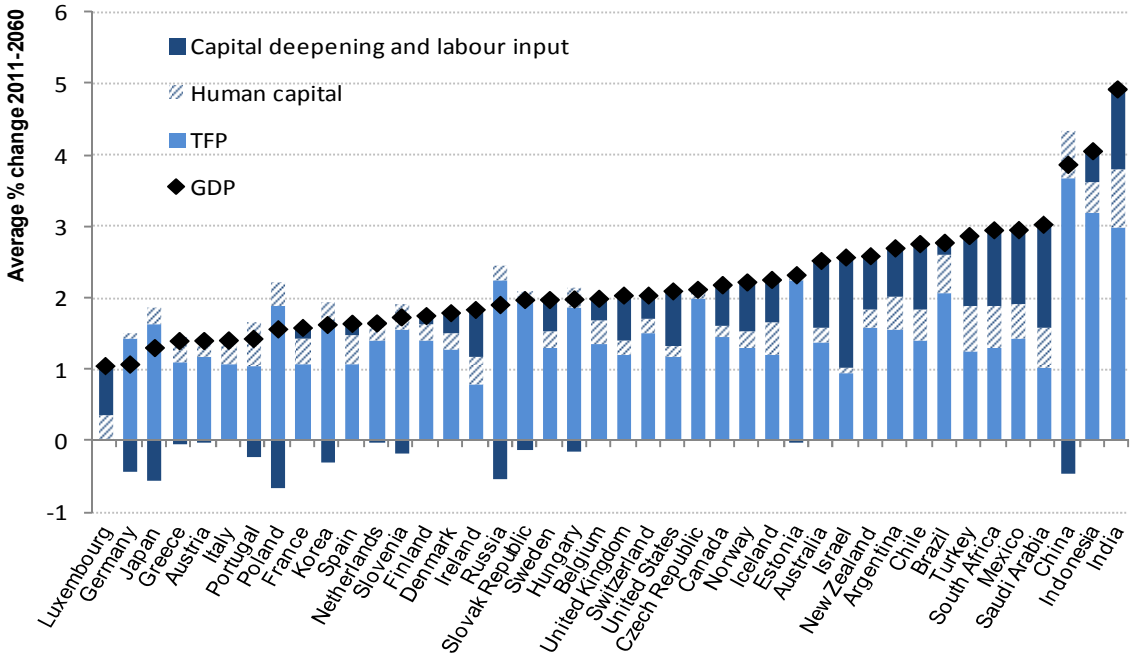
1 The increase in the old-age dependency ratio quoted in the text is based on a fixed age threshold of 65 years. This may given an overly pessimistic impression as it is likely that gains in longevity will result in longer active working-lives, which would require an evolving definition of working-age population.

2 Population projections are sourced from Eurostat (Europop, 2010) for European countries, while for non-European countries projections are from the United Nations Population Database

5. In the scenario, the decline in the share of the population at working age does not fully translate into lower labour force participation. Rather, it is assumed that the legal pensionable age is indexed to longevity so as to maintain a stable share of lifetime spent in the labour force. Furthermore, the long-term trend expansion of education is set to continue and is associated with higher participation. Hence, in the scenario the aggregate OECD labour force participation rate (among the population older than 15 years) stays roughly constant at the current 60% level over the next half century. However, there are still countries in which falling participation is projected to drag down growth *(e.g.* Poland, Korea, Portugal, Japan, Slovenia and China). Similarly, trend unemployment in OECD countries is assumed to gradually return to its pre-crisis level (where it is currently above it), sustaining labour input. Overall, labour input is not seen as contributing strongly to growth except in a few countries (*e.g.* Israel, South Africa, Mexico, Turkey, Saudi Arabia and India) (Figure 2). Moreover, with capital-to-output ratios gradually stabilising in most countries, capital deepening will also not be a major driver of growth.

Figure 2. Convergence in GDP across countries is mainly driven by education and productivity improvements

Contribution of drivers of growth to annual average trend real GDP growth 2011-2060

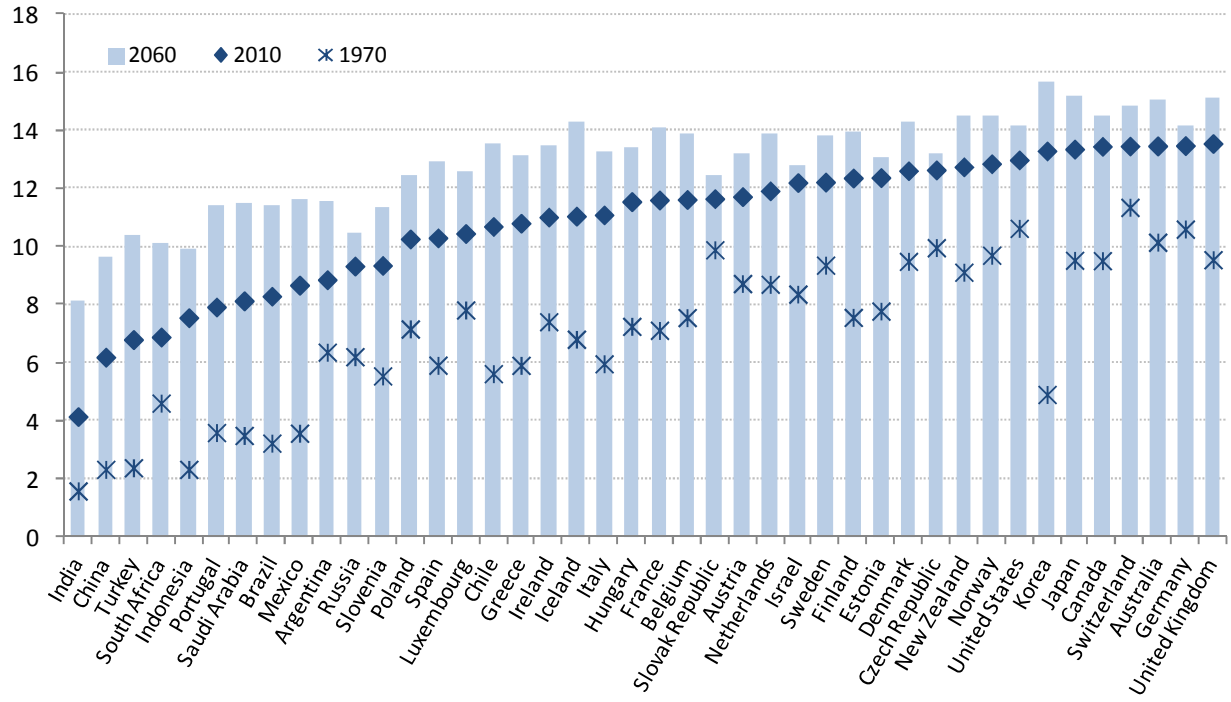


6. While on balance the quantity of labour used in production will not be a major driver of growth, improvements in the quality of labour will. These are due to the build up of human capital where average levels of education are currently relatively low, which will add significantly to GDP growth over the next 50 years in India, Turkey, China, Portugal and South Africa. Average years of schooling of the adult population are projected to increase by two years on average over the next 50 years (Figure 3), with attainment of cohorts aged 25-29 slowly converging towards that of the current highest attainment country (Korea), with education in this country also rising over time.[3]

[3] Educational attainment has converged across countries over the past decades and convergence is generally explained by decreasing returns to education for both individuals and society as a whole and by the fact that the cost of additional years of education rises with attained grades.

Figure 3. Educational attainment is projected to continue to improve

Average years of schooling of the adult population



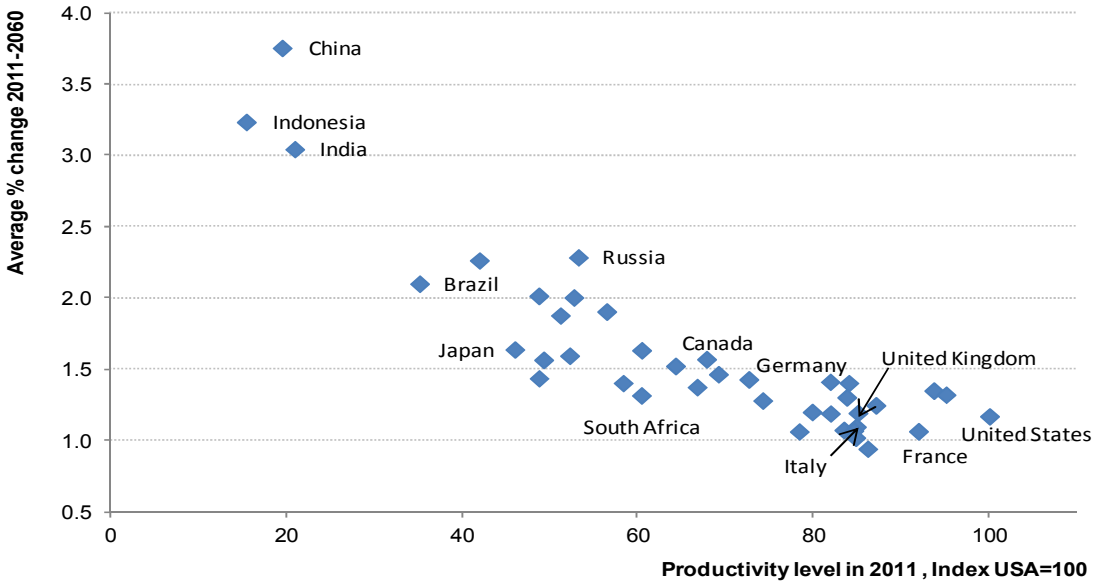
Improvements in productivity will be the most powerful driver of growth

7. Sustained improvements in the combined productivity of inputs into production (*e.g.* different kinds of capital and labour) will be the main driver of growth over the next 50 years. Average annual productivity growth is projected to be 1.5% globally. But countries with comparatively low productivity levels now – such as India, China, Indonesia, Brazil and Eastern European countries – are projected to grow faster than more developed economies (Figure 4).[4] This reflects not least the assumed tendency for a number of regulatory policies to converge towards higher standards. Indeed, productivity growth in laggard countries will be positively influenced by trade openness and the strength of domestic competition, as determined in particular by border and domestic regulations. Thus, by facilitating technological diffusion, greater openness to trade increases the speed of convergence towards the technological frontier and, thus, enhances productivity growth. Competitive pressures provide firms with strong incentives to improve productive efficiency, thus boosting both the catch-up process and the long-run attainable level of productivity. Over a time-horizon covering several decades these regulations are likely to adapt to changing economic circumstances, with countries where they are initially relatively restrictive of competition slowly converging to the more open and competitive environment currently prevailing in the average OECD country.

[4] In each country, productivity growth is driven by the global rate of technological progress, assumed to be 1.3% per year, and by the rate at which the country "catches up" with the level of productivity that is consistent with its underlying structural conditions.

Figure 4. Productivity tends to converge across countries over 2011-2060

Initial productivity level and average annual growth in the baseline



1. PMR regulations are hypothetically eased in restrictive countries to gradually reach the current OECD average.

Global savings will be sustained by fiscal consolidation and the rise of China and India

8. By translating into capital accumulation, saving is an engine of growth. Private saving rates will be falling over the next 50 years in most countries, largely driven by population ageing. But the global saving rate will remain relatively stable until around 2030 (Figure 5). This is because the combined share of relatively high-saving China and India in global income will rise, compensating for the tendency of saving rates to fall. The other factor contributing to the stability of global saving is the higher public saving in OECD countries needed to stabilise general government debt over the medium term, in some cases involving substantial fiscal tightening (*e.g.* Japan and the United States) (Figure 6).[5] This will offset a large part of the fall in private saving in the next decade, notably in Japan and the United States. After 2030, demographic developments, particularly rapid ageing in China, and slower growth in emerging economies will take over, gradually reducing the global saving rate.[6]

Interest rates may rise over time

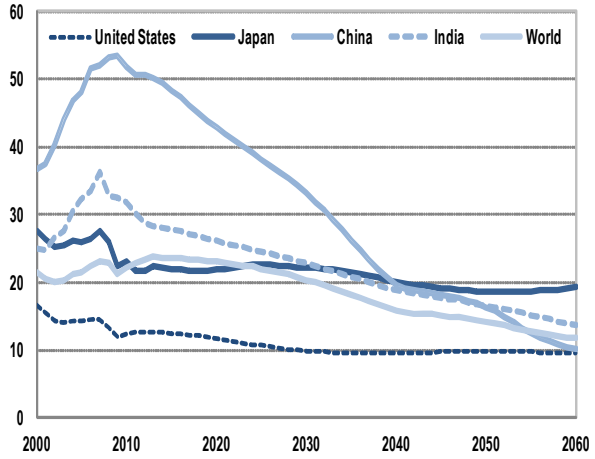
9. The fall in global saving beyond 2030, although speculative, may exert an upward pressure on interest rates. Moreover, since public debt ratios will often stabilise at high levels in the baseline scenario, fiscal risk premia will increase in a number of OECD countries, implying higher future real interest rates as compared with the past decade. In the medium term, rates will also be pushed up by the reversal of the low monetary policy rates prevailing since the onset of the crisis, which have pushed down long-term interest rates.

5 For details on fiscal consolidation see the *OECD Economic Outlook* No. 91, Chapter 4.

6 Saving is set to decline less in India, as compared with China, because of a falling share of young dependents in the population offsetting the effect of a rise of old dependents on savings.

Figure 5. Emerging economies will account for an increasing share in global savings

National saving rates as % of GDP



Shares in global savings, %

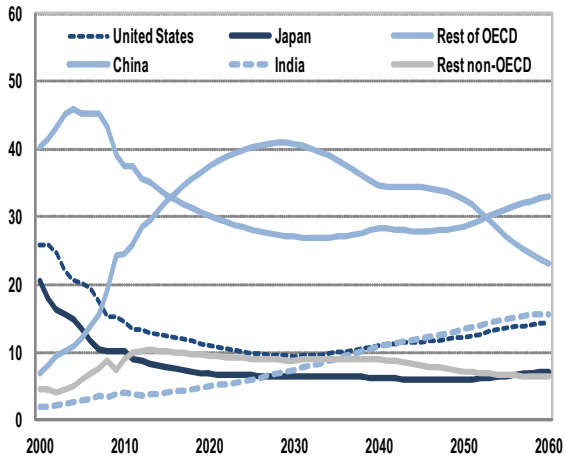
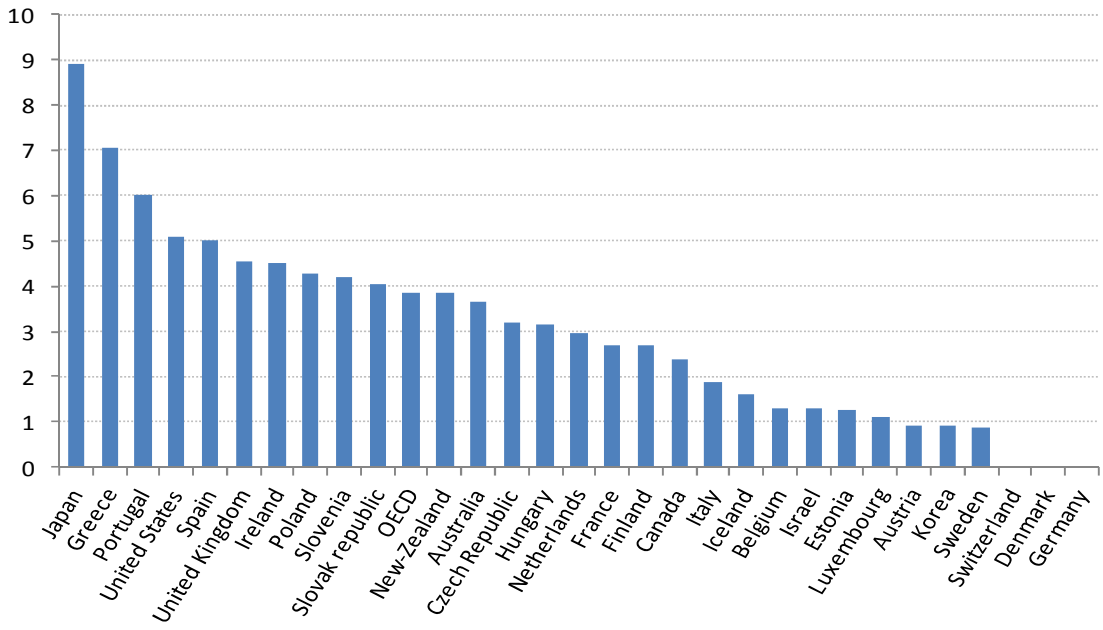


Figure 6. Fiscal consolidation is required to stabilise debt over the medium-term

Average increase in the underlying primary balance from 2011 to 2030, in percentage points of GDP[1]



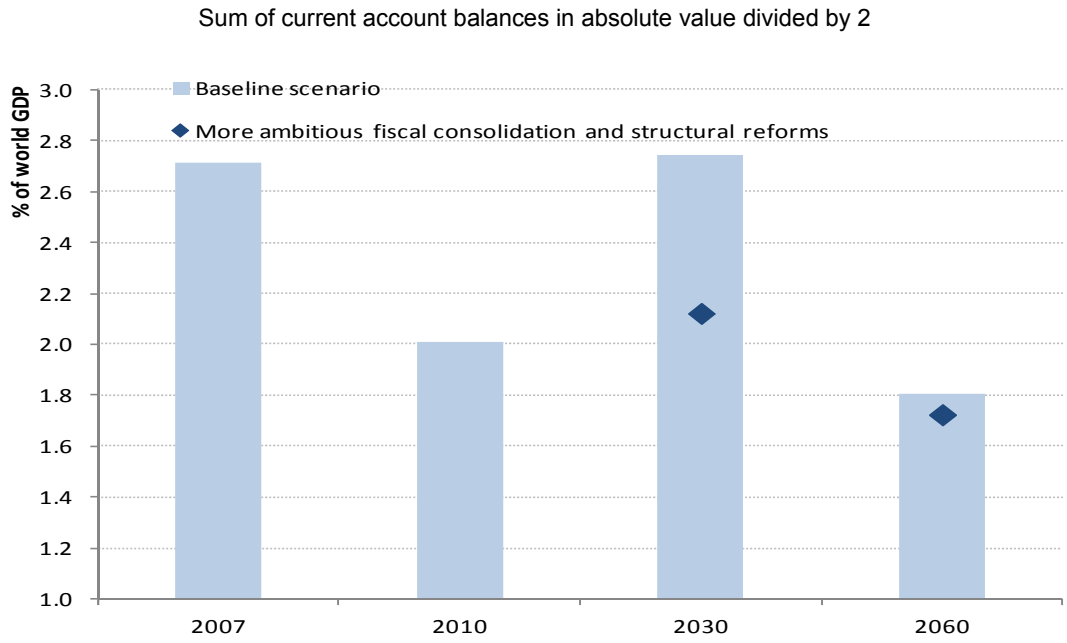
1. The bars show the average improvement in the underlying primary balance between 2011 and 2030 (2040 in the case of Japan) necessary to stabilise government debt ratios at their current levels. The average increase in the underlying primary balance over this period corresponds closely to the peak increase over the same period.

Current account imbalances will rise over the next two decades

10. Reflecting cross-country differences in saving developments, global current account imbalances are projected to widen over the coming two decades to reach pre-crisis levels by 2030, but will thereafter narrow (Figure 7). In the short term, the widening of imbalances is mostly a cyclical response, because most countries that had been running large deficits prior to the crisis (*e.g.* the United States) have generally experienced sharper downturns than those that had been running surpluses (*e.g.* China). Over the longer term, the adverse effect of population ageing on saving is the main factor leading to lower current account

balances in most OECD countries. The Chinese current account surplus widens until around 2030 as the investment rate falls more rapidly than the saving rate due to slowing growth. However, these projections are surrounded by uncertainty and policy reforms in a number of areas (fiscal, welfare and financial reform) may alter the projections substantially (see below).

Figure 7. Global imbalances are projected to initially widen and thereafter narrow

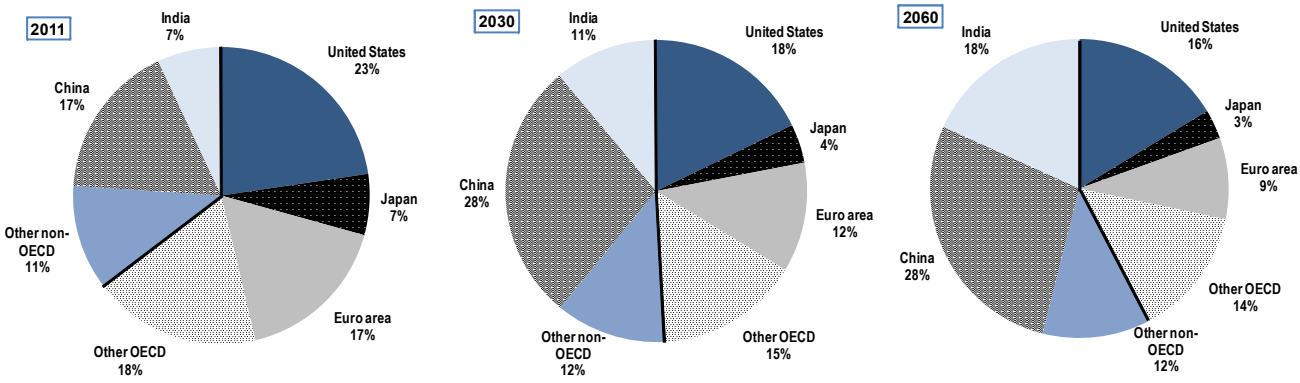


The relative size of economies will change dramatically over the next half century

11. The next 50 years will see major changes in country shares in global GDP (Figure 8). On the basis of 2005 purchasing power parities (PPPs), China is projected to surpass the Euro Area in 2012 and the United States in a few more years, to become the largest economy in the world, and India is about now surpassing Japan and is expected to surpass the Euro area in about 20 years. The faster growth rates of China and India imply that their combined GDP will exceed that of the major seven (G7) OECD economies by around 2025 and by 2060 it will be more than 1½ times larger, whereas in 2010 China and India accounted for less than one-half of G7 GDP. Strikingly, the combined GDP of these two countries will be larger than that of the entire OECD area, based on today's membership, in 2060, while it currently amounts to only one-third of it.

Figure 8. There will be major changes in the composition of global GDP[1]

Percentage of global GDP in 2005 PPPs



1. Global GDP is taken as sum of GDP for 34 OECD and 8 non-OECD G20 countries.

GDP per capita gaps will shrink but significant cross-country differences will persist

12. Such changes in shares of global GDP will be matched by a tendency of GDP per capita to converge between advanced and emerging economies, although substantial gaps in living standards will remain (Figure 9).[7] Over the next half century, the unweighted average of GDP per capita (in 2005 PPP terms), is predicted to grow by roughly 3% annually in the non-OECD area, as against 1.7% in the OECD area. As a result, GDP per capita in the poorest economies (in 2011) more than quadruples (in 2005 PPP terms), whereas it only doubles in the richest economies. China and India will experience more than a seven-fold increase of their income per capita by 2060. The extent of the catch-up is more pronounced in China reflecting the momentum of particularly strong productivity growth and rising capital intensity over the last decade. This will bring China 25% above the current (2011) income level of the United States, while income per capita in India will reach only around half the current US level.

13. Despite this fast growth among "catching-up" countries as differences in productivity and skills are reduced, remaining differences in these factors still explain a significant share of gaps in living standards in 2060. In particular, large differences in average education will persist in the long term, as such averages reflect education levels across the whole adult population, and therefore evolve slowly over time so that gaps with advanced economies close more slowly than productivity gaps.[8] This does, however, suggest that major educational reforms which facilitate more rapid advances in average educational attainment could be an important policy lever for achieving a faster catch-up in living standards among developing countries – indeed recent OECD analysis identifies education reforms as among the highest priorities for structural reform in Brazil, China, India and Indonesia (*OECD Going for Growth*, 2012).

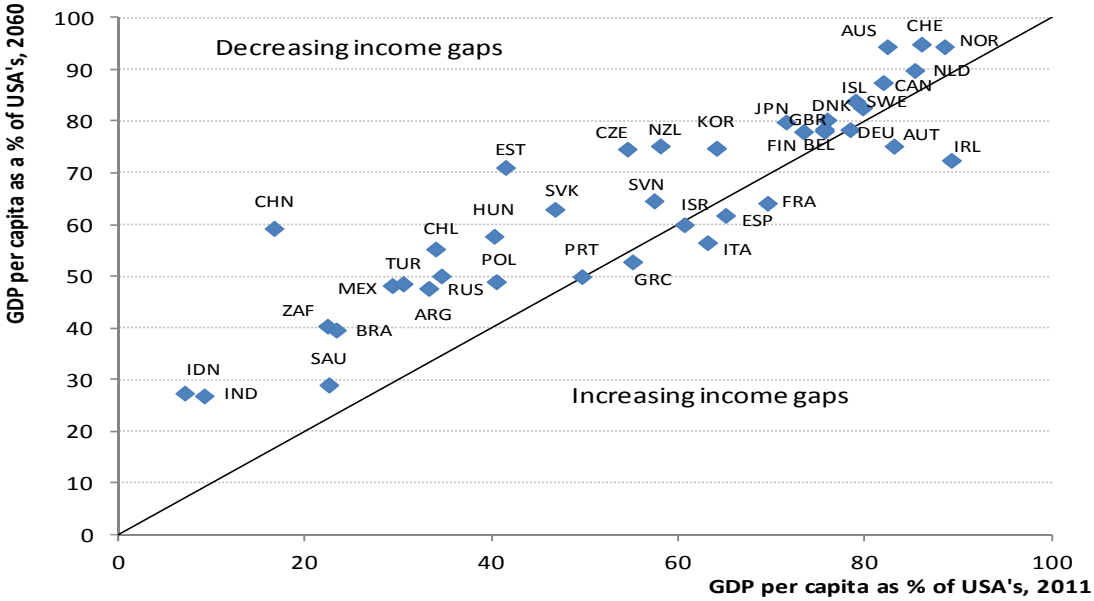
14. Differences in the evolution of demographics and labour force participation are responsible for shifts in the ranking of GDP per capita among the initially richer economies. Indeed, for some European countries, where ageing is more pronounced and/or older-age participation rates are low, these factors are enough to cause a widening in the income gap with the United States, despite continued convergence in productivity and skills levels. This in turn highlights the potential importance of labour market policies, particularly those which influence retirement decisions, as being important in determining the future relative position of GDP per capita among rich economies.

7 One caveat to these comparisons of GDP levels is that using a fixed base year PPP may bias comparisons far into the future.

8 Furthermore, the gains in average education also reflect the gradual exit of older cohorts, whom are less educated than younger cohort, from active life.

Figure 9. Despite substantial gains by emerging countries, differences in GDP per capita relative to the United States still remain in 2060[1,2]

GDP per capita relative to the United States (constant 2005 PPPs), %



1. Luxembourg is excluded from the chart for visibility. GDP per capita in Luxembourg declines from 160% of the level of USA in 2011 to 90% in 2060.
2. GDP per capita in Norway and Saudi Arabia excludes the oil-sector,

Structural reforms coupled with ambitious fiscal consolidation can raise living standards and reduce imbalances

15. Implementing bolder structural, budgetary and financial policies than in the baseline, such as those promoted in the context of the G20 mutual assessment process, could improve significantly the global long-term outlook. Over the next half-century, this would help close further the cross-country gaps in living standards, contribute to absorb global imbalances and raise the global growth potential: [9]

- *If deeper and more rapid reforms increase competitive pressures in product markets, productivity gaps could close faster.* For instance, assuming that such reforms in countries with currently restrictive policies were to align regulations on those prevailing in the five "best practice" countries in 2011 (*i.e.* the United States, the United Kingdom, Ireland, Canada and the Netherlands), annual average productivity would be projected to grow 0.2 percentage points faster relative to the baseline scenario over the next 50 years.

9 It should be noted that this stylised scenario does not take into account any ramifications on public budgets and interest rates from the labour reforms, which could be potentially significant.

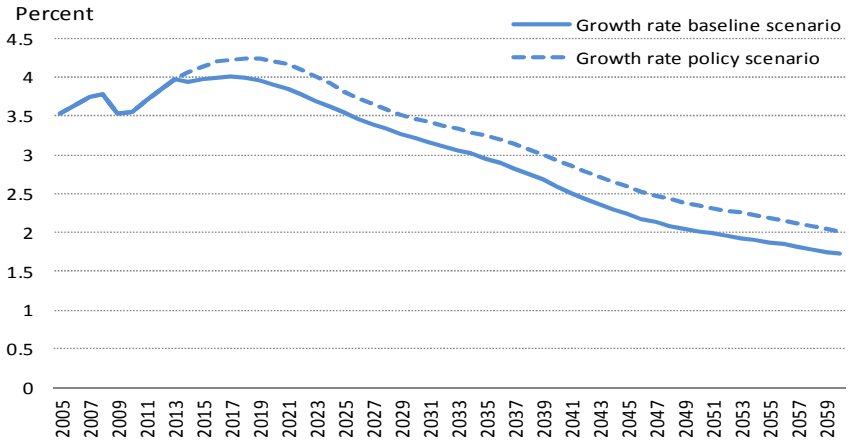
- *Deeper labour market reforms would boost participation*. For instance, if the average duration of time spent in the labour force were to slowly converge in all countries towards the top end of the current distribution (39 years),[10] aggregate participation in OECD would increase on average by 2.7 percentage points relative to the baseline by 2060, with particularly marked increases in Italy, Israel, Korea, Hungary and Poland. In addition, a reduction in the tax wedge by 4 percentage points in 2014 could on average lower trend unemployment by about 1 percentage point in OECD countries by 2060, with notably larger effects in Spain and France.

- These structural reforms could combine with faster fiscal consolidation in OECD countries and deeper welfare and financial reforms in non-OECD countries. This combination of policies could contribute to absorbing global imbalances and reducing risk premia with positive influences on the growth potential, though no allowance is made for possible adverse short-term Keynesian effects of consolidation on reducing demand. For instance, if structural reform is combined with fiscal consolidation sufficient to reduce debt ratios to 60% or lower, global imbalances would decline by as much as one quarter around 2030 (Figure 7). This improvement would be largely reflect reductions in precautionary savings in some non-OECD countries (notably China) as a result of more rapid welfare and financial reforms, such as increased public spending on social protection including health care and pension and greater access to private business credit.[11]

16. Altogether these reforms could boost annual global GDP growth on average by 0.3 percentage points over the next 50 years (Figure 10), implying that GDP per capita is raised by an average of 16% by 2060 relative to the baseline scenario. The largest gainers from bolder structural reforms are countries where policy settings currently lag most behind best practice in respect of product market regulation and labour market performance such as some southern and eastern European countries and emerging economies.

Figure 10. Structural reforms and sound macro policies can raise global growth[1]

Difference in annual global trend growth rate as compared to the baseline, %



1. Global GDP is taken as sum of GDP for 34 OECD and 8 non-OECD G20 countries

10 The alternative scenario assumes that the average duration of individual active life slowly converges towards the .standard observed in Switzerland, one of the leading countries in terms of aggregate participation. This implies that the share of life time spent in activity would have to increase by on average about 1 year, with notably larger increases in Italy and Israel (more than 2.5 years).

11 Fiscal consolidation also helps reduce external imbalances, particularly as the need for fiscal tightening is typically greater in high external deficit countries.

ANNEX TABLE

Table A.1: Average growth rate in trend GDP and trend GDP per capita in USD 2005 PPPs[3]

	Average growth in GDP in USD 2005 PPPs				Average growth in GDP per capita in USD 2005 PPPs			
	1995-2011[1]	2011-2030	2030-2060	2011-2060	1995-2011[1]	2011-2030	2030-2060	2011-2060
Australia	3.3	3.1	2.2	2.6	1.9	2.0	1.7	1.8
Austria	2.0	1.5	1.4	1.4	1.7	1.2	1.4	1.3
Belgium	1.8	2.1	2.0	2.0	1.3	1.5	1.7	1.6
Canada	2.6	2.1	2.3	2.2	1.6	1.3	1.8	1.6
Switzerland	1.7	2.2	2.0	2.1	1.0	1.5	1.8	1.7
Chile	3.9	4.0	2.0	2.8	2.8	3.4	2.0	2.5
Czech Republic	3.2	2.7	1.8	2.1	3.1	2.6	1.9	2.2
Germany	1.4	1.3	1.0	1.1	1.4	1.5	1.5	1.5
Denmark	1.5	1.3	2.1	1.8	1.1	1.0	2.0	1.6
Spain	2.9	2.0	1.4	1.7	1.9	1.6	1.3	1.4
Estonia	3.6	2.8	2.0	2.4	3.8	3.1	2.3	2.6
Finland	2.5	2.1	1.6	1.8	2.2	1.8	1.5	1.6
France	1.7	2.0	1.4	1.6	1.1	1.6	1.2	1.3
United Kingdom	2.3	1.9	2.2	2.1	1.9	1.3	1.8	1.6
Greece	2.4	1.8	1.2	1.4	1.9	1.7	1.3	1.4
Hungary	2.4	2.5	1.7	2.0	2.6	2.7	2.0	2.3
Ireland	4.7	2.1	1.7	1.9	3.2	1.3	0.9	1.1
Iceland	3.0	2.2	2.4	2.3	1.8	1.2	1.9	1.6
Israel	3.7	2.7	2.6	2.6	1.5	1.3	1.6	1.5
Italy	1.0	1.3	1.5	1.4	0.6	0.9	1.5	1.3
Japan	0.9	1.2	1.4	1.3	0.8	1.4	1.9	1.7
Korea	4.6	2.7	1.0	1.6	4.0	2.5	1.4	1.8
Luxembourg	3.8	1.8	0.6	1.1	2.3	0.7	0.1	0.3
Mexico	2.6	3.4	2.7	3.0	1.2	2.5	2.6	2.5
Netherlands	2.2	1.8	1.6	1.7	1.7	1.5	1.7	1.6
Norway	3.0	2.9	1.9	2.3	2.2	2.0	1.4	1.6
New Zealand	2.7	2.7	2.6	2.6	1.6	1.8	2.2	2.0
Poland	4.3	2.6	1.0	1.6	4.4	2.6	1.4	1.9
Portugal	1.7	1.4	1.4	1.4	1.3	1.4	1.6	1.5
Slovak Republic	4.5	2.9	1.4	2.0	4.4	2.8	1.7	2.1
Slovenia	2.6	2.0	1.6	1.8	2.2	1.7	1.8	1.8
Sweden	2.5	2.4	1.8	2.0	2.1	1.7	1.5	1.6
Turkey	4.2	4.5	1.9	2.9	2.8	3.6	1.8	2.5
United States	2.5	2.3	2.0	2.1	1.5	1.5	1.5	1.5
Argentina	3.6	3.6	2.2	2.7	2.6	2.9	1.9	2.3
Brazil	3.3	4.1	2.0	2.8	2.1	3.4	2.1	2.6
China	10.0	6.6	2.3	4.0	9.3	6.4	2.8	4.2
Indonesia	4.4	5.3	3.4	4.1	3.1	4.5	3.3	3.8
India	7.5	6.7	4.0	5.1	5.8	5.6	3.6	4.4
Russia	5.1	3.0	1.3	1.9	5.4	3.2	1.7	2.3
Saudi Arabia	4.4	4.2	2.4	3.1	1.3	2.5	1.7	2.0
South Africa	3.4	3.9	2.5	3.0	2.1	3.4	2.3	2.7
World unweighted average[2]	3.1	2.8	1.9	2.2	2.3	2.2	1.8	2.0
World weighted average[2]	3.5	3.7	2.3	2.9	2.5	3.1	2.3	2.6
OECD unweighted [2]	2.8	2.3	1.7	2	2.1	1.8	1.6	1.7
Non-OECD unweighted[2]	4.3	4.7	2.5	3.3	3.1	4.0	2.4	3.0
OECD weighted[2]	2.2	2.2	1.8	2.0	1.5	1.7	1.7	1.7
Non-OECD weighted[2]	6.7	5.9	2.8	3.9	5.6	5.2	2.7	3.7

1. 1995 or first year available.

2. Aggregate calculations start in 1996, for a few countries, where trend GDP is not available at the beginning of the sample period, actual GDP is used in place of trend GDP.

3. World GDP is taken as sum of GDP for 34 OECD and 8 non-OECD G20 countries.

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