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OVERVIEW

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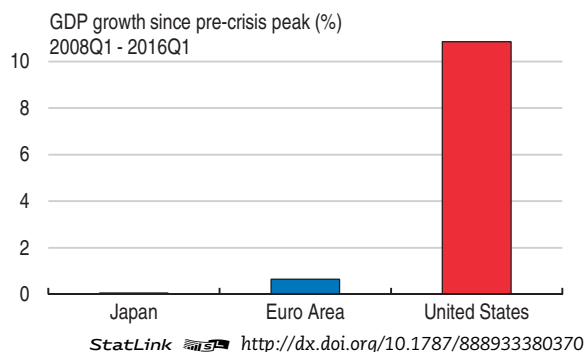
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Executive summary

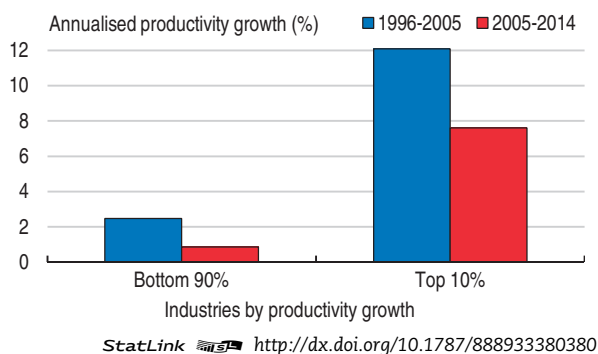
- *The US economy has rebounded from the crisis*
- *Productivity has slowed in most industries*
- *Income inequality continues to increase*

The US economy has rebounded from the crisis



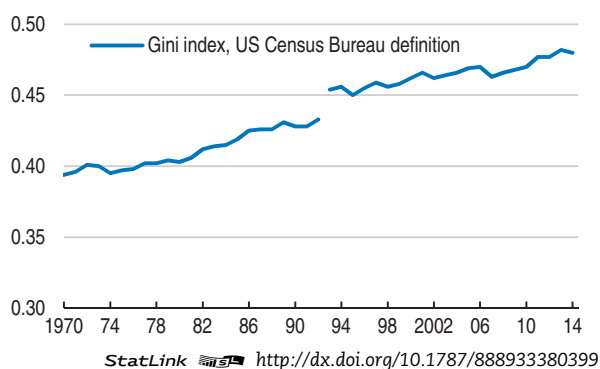
Seven years after the financial crisis, the US economy has rebounded: output has surpassed its pre-crisis peak by 10%, robust private-sector employment gains have sharply reduced unemployment, fiscal sustainability has been largely restored and corporate profits are high. The short-term outlook is for further growth near potential (albeit crisis-reduced at about 2%), where well-designed investments in infrastructure, skills and green growth would contribute to a more robust and sustainable expansion.

Productivity has slowed in most industries



Productivity growth has been sluggish recently in most sectors of activity, even in “frontier firms” of industries such as ICT and pharmaceuticals. Should it persist, slow productivity growth will create challenges, notably for addressing income inequality, welfare promises, raising standards of living and investment incentives. Restoring the traditional dynamism of the American business sector may be one way to boost productivity growth. This requires competitive market forces, skilled and mobile workers and policies to promote innovation.

Income inequality continues to increase



While growth has rebounded, it remains unequally distributed across socioeconomic groups. Income inequality continues to increase, women typically receive lower salaries than men, and some groups are disadvantaged in the labour market with little prospect to return to work, notably those with criminal records. Children of poor families often lack the opportunity to do better than their parents because they do not have access to high-quality schools and tend to drop out of college. For those lacking skills demanded by employers, vocational training and continuing education have had mixed results.

POLICY CHALLENGES	KEY RECOMMENDATIONS
Rebalancing the policy mix	
Weak global growth and fiscal consolidation are weighing down on prospects.	Boost public investment spending with long-term benefits: infrastructure, skills, innovation, health and environmental protection.
Monetary policy is overburdened	Raise policy interest rates at a pace that gradually tightens financial conditions so as not to jeopardise the recovery and to promote a return of inflation to the Fed's target.
Systemic financial risks remain	Continue to implement Dodd Frank and Basel III requirements.
Incomplete financial exchange may enable tax evasion	Implement the OECD Common Reporting Standard on automatic exchange of financial account information
Strengthening productivity growth	
The poor state of infrastructure is holding back productivity and contributing to pollution and congestion.	Boost investment in, and maintenance of infrastructure; in particular, promote mass transit. Use federal programmes to encourage co-ordination across State and local jurisdictions.
Business dynamism and entrepreneurship have weakened, harming productivity	Make R&D tax credits refundable for new firms. Ensure personal bankruptcy procedures do not undermine incentives for entrepreneurship. Continue to speed up patenting decisions in line with targets without compromising patent quality.
Incumbents have acquired more market power	Adapt antitrust policy to new trends in digitalisation, financial innovation and globalisation. Strengthen compliance with merger remedies. Continue to strengthen pro-competitive policies, including in telecoms. Use federal funding to remove unnecessary occupational licensing requirements and make others more easily portable across States.
Making growth more inclusive and sustainable	
Children from poor families lack the opportunity to do better than their parents.	Use federal funding for targeted programmes to reduce disparities in student opportunities and encourage states to be ambitious in lifting educational attainment
Women's opportunities will improve further, but the pace could be faster	Require paid parental leave and improve access to quality childcare to help reduce wage gaps and improve career prospects.
Reduce social and racial inequalities	Expand the Earned Income Tax Credit and raise the minimum wage. Make tax expenditures less regressive. Continue to roll out the Affordable Care Act. Reduce pre-screening for employment on criminal records
With population ageing, helping displaced workers is gaining importance COP21 and SDG goals to reduce carbon emissions risk being missed	Develop reskilling programmes with established effectiveness in helping people back to work. Work towards putting a price on carbon, such as by implementing the proposed \$10 per barrel tax on oil and the Clean Power Plan.

Assessment and recommendations

- *After the recovery, growth is likely to remain moderate*
- *Achieving stronger long-term growth*
- *Making growth more inclusive and sustainable*
- *Meeting environmental challenges*

Seven years after the financial crisis, the United States is making a comeback. The US economic recovery, while modest by historical standards, has been one of the strongest in the OECD, thanks to robust monetary policy support and an early fiscal expansion. Many private-sector jobs have been created, pushing unemployment down to its pre-crisis level, thereby providing consumers with higher income and improving their confidence. Further economic growth at a pace near 2% a year is likely in the short term, while a new recession is a low-probability prospect in the current environment. But a number of long-term challenges remain unresolved. In particular, the slowdown of productivity growth already apparent since the mid-2000s has continued in recent years. Faster productivity growth – supported by well-designed investments in innovation, infrastructure, skills and inclusiveness – would help to address future challenges such as rising income inequality, population ageing and fiscal sustainability. Against this background, this report focuses on:

- How to support a sustainable expansion by using fiscal and structural policies, so as to lighten the burden on monetary policy and to facilitate a normalisation of interest rates;
- How to boost productivity growth by bolstering competitive forces on market incumbents, combined with well-designed investments in innovation, skills, infrastructure and environmental protection.
- How to make growth more inclusive by enabling the acquisition of appropriate skills, eliminating obstacles to employment and enabling individuals to fulfil their potential.

After the recovery, growth is likely to remain moderate

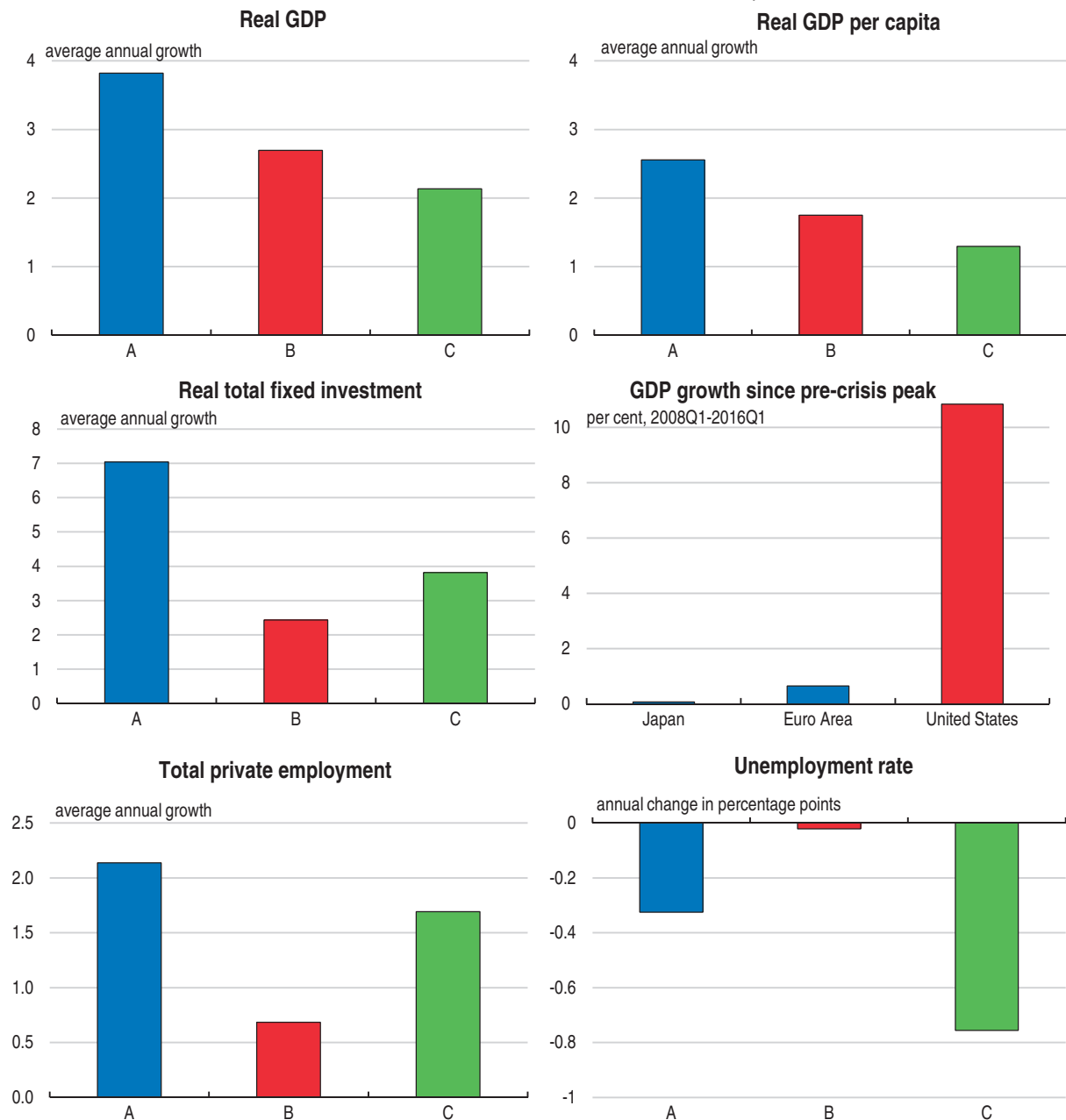
Output has recovered, albeit more slowly than in previous expansions (Figure 1). The slow speed of the recovery reflects the severity and depth of the financial crisis, fiscal consolidation, the exit of baby boomers from the labour market, weaknesses in key OECD economies, and, more recently, world trade stagnation induced by the slowdown of China and lower demand from oil-exporting countries.

While activity is, on average, well above pre-crisis peaks, the revival does not prevail everywhere. The recovery has been particularly robust in some locations, but activity remains low in other areas. Some industries have performed strongly (software, telecommunications, pharmaceutical products), whilst growth in many other areas and industries remains mired in the doldrums. The diversity in economic outcomes is reflected in income inequality, which continues to increase.


The recovery has been sustained mainly by mutually-reinforcing gains in employment, income and household spending. Declines in energy prices – which began when oil and natural gas became available from unconventional sources – have boosted household purchasing power, providing an additional lift to consumption. However, the impetus from these influences is unlikely to be sustained without a meaningful pickup in real wage growth. Meanwhile, business fixed investment has expanded steadily in comparison to the rest of the OECD, reflecting the strong recovery of business output,

Figure 1. **Output recovery has been weaker than after previous recessions, while the decline in the unemployment rate has been faster**

A: 1991Q1 to 2000Q1 ; B: 2001Q1 to 2007Q4 ; C: 2009Q2 to present

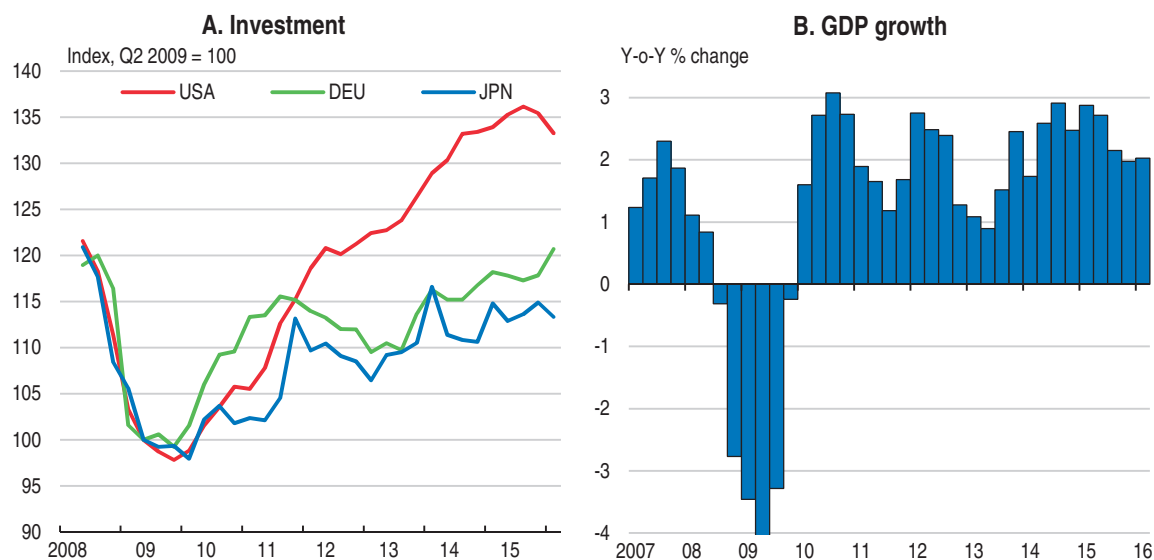


Source: OECD Economic Outlook 99 database.


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although booming conditions in the domestic energy sector that prevailed through late 2014 have come to a sudden halt.

Weak global demand and a stronger dollar have created powerful headwinds for firms exposed to international competition. The effective exchange rate has appreciated sharply since mid-2014 in real effective terms, thus exerting a drag on exports (Figure 3). Steps to expand international trade treaties could support greater US and global demand over time.

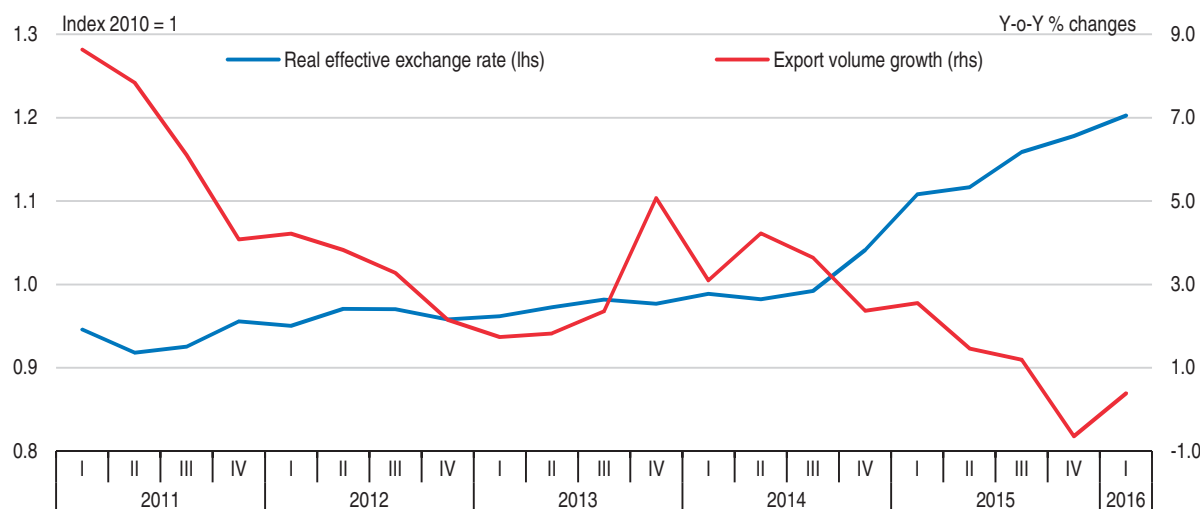
Figure 2. **Business fixed investment has recovered as output growth continues steadily**

Source: OECD Economic Outlook database.

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The recently concluded Trans Pacific Partnership is expected to lift US real incomes by around $\frac{1}{2}$ per cent of GDP by 2030 when it is fully implemented (Petri and Plummer, 2016), and negotiations for a Transatlantic Trade and Investment Partnership with the European Union and a number of other negotiations are ongoing.

Economic growth is projected to continue at an annual pace of about 2% in 2016 and 2017 (Table 1; Figure 2, Panel B). Fiscal policy is assumed to have a neutral impact after several years of budget consolidation. Monetary conditions are assumed to remain highly accommodative, even though the Federal Reserve is no longer expanding its balance sheet and has begun to gradually raise interest rates from very low levels. A new recession is an

Figure 3. **The exchange rate has appreciated sharply and export growth has slowed**

Source: OECD Economic Outlook 99 database.


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Table 1. Macroeconomic indicators and projections
Annual percentage change, volume (2009 prices)

	2012	2013	2014	2015	2016	2017
	Current prices (USD billion)					
Gross domestic product (GDP)	16 155	1.5	2.4	2.4	1.8	2.2
Private consumption	11 051	1.7	2.7	3.1	2.7	2.1
Government consumption	2 544	-2.5	-0.5	0.4	0.5	0.8
Gross fixed capital formation	3 064	2.4	4.1	3.7	2.4	4.5
Housing	442	9.5	1.8	8.9	10.1	7.5
Business	2 008	3.0	6.2	2.8	-0.1	4.1
Government	614	-4.8	-1.1	2.3	4.1	2.9
Final domestic demand	16 659	1.2	2.5	2.8	2.3	2.4
Stockbuilding ¹	62	0.1	0.1	0.2	-0.3	0.0
Total domestic demand	16 721	1.2	2.5	3.0	2.0	2.4
Exports of goods and services	2 198	2.8	3.4	1.1	0.4	3.5
Imports of goods and services	2 764	1.1	3.8	4.9	1.9	4.3
Net exports ¹	- 566	0.2	-0.2	-0.7	-0.2	-0.2
Other indicators (growth rates, unless specified)						
Potential GDP		1.7	1.7	1.7	1.6	1.5
Output gap ²		-3.5	-2.8	-2.0	-1.8	-1.2
Employment		1.0	1.6	1.7	2.1	1.5
Unemployment rate		7.4	6.2	5.3	5.0	4.7
GDP deflator		1.6	1.6	1.0	1.4	2.1
Consumer price index		1.5	1.6	0.1	1.1	2.0
Core consumer prices		1.5	1.5	1.3	1.7	1.8
Household saving ratio, net ³		4.8	4.8	5.1	5.2	4.5
Trade balance ⁴		-4.2	-4.3	-4.2		
Current account balance ⁴		-2.3	-2.2	-2.7	-2.5	-2.5
General government fiscal balance ⁴		-5.5	-5.1	-4.4	-4.3	-3.7
Underlying government primary fiscal balance ²		-1.6	-1.1	-0.8	-0.6	-0.3
General government gross debt ⁴		111.4	111.7	113.6	114.2	114.2
General government net debt ⁴		87.7	87.4	88.5	90.0	90.0
Three-month money market rate, average		0.3	0.3	0.5	0.9	1.4
Ten-year government bond yield, average		2.4	2.5	2.1	2.2	3.0
Memorandum items						
Federal budget surplus/deficit ⁴		-4.1	-2.8	-2.5		
Federal debt held by the public ⁴		72.6	74.4	73.7		

1. Contribution to changes in real GDP.
2. As a percentage of potential GDP.
3. As a percentage of household disposable income.
4. As a percentage of GDP.

Source: OECD (2016), OECD Economic Outlook 99 database and The White House: Office of Management and Budget.

unlikely prospect in the near term on the basis of existing information (Box 1). Nonetheless, low-probability but extreme events (Box 2) should not be overlooked by policymakers. With monetary policy levers persistently set at highly accommodative settings to achieve mediocre growth, the scope for policy to respond aggressively to adverse shocks is limited.

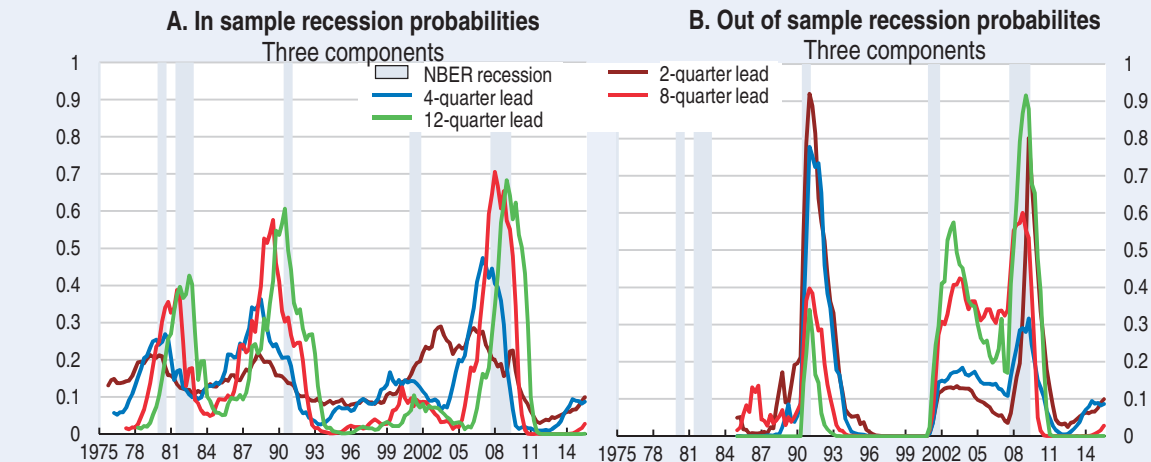
Private-sector job creation has been the most welcome aspect of the recovery (Figure 5). The unemployment rate has come down substantially and long-term unemployment has decreased further than in other countries. Labour-market participation

Box 1. Recession risks appear limited

Cross-country empirical studies on economic resilience using historical data from the OECD have highlighted a constellation of variables that have each been associated with past cyclical downturns (Hermansen and Röhn 2015; Röhn et al., 2015). Broadly speaking, these models associate the probability of recession to individual indicators of potential imbalances in domestic asset and credit markets, as well as in global markets and international trade. However, when the indicators identified by these studies are used to examine the US economy on its own, the predictive content of each variable in isolation is quite poor, with numerous false positives and false negatives. To downplay the noise from each indicator separately and focus on their collective signaling content, we used principal component analysis to extract three factors that appear to have some predictive power for the last three of the last five NBER-defined US recessions (Figure 4) within sample.

Figure 6(left panel) shows estimates of the recession probability at horizons of 2, 4, and 12 quarters using models estimated with quarterly data for these three components over the entire time span from 1975 to 2015. These models show elevated recession probabilities around the time of most downturns but are still subject to errors – such as failing to predict the 2001 downturn. Estimates from recent quarters suggest that the vulnerability to recession has risen of late but is well below previous episodes. Nonetheless, models estimated using historical data are at risk of over fitting. Figure 4 (right panel) shows the same model applied out of sample in real time. The predictive performance deteriorates somewhat relative to the in-sample estimates, often indicating a high probability of a downturn with a delay after the event or even after the recovery had begun. Not surprisingly, the real-time models also point to very little likelihood that a recession is imminent.

Figure 4. Recession probabilities: real time and in-sample comparisons



Source: OECD calculations based on Hermansen and Röhn (2015).

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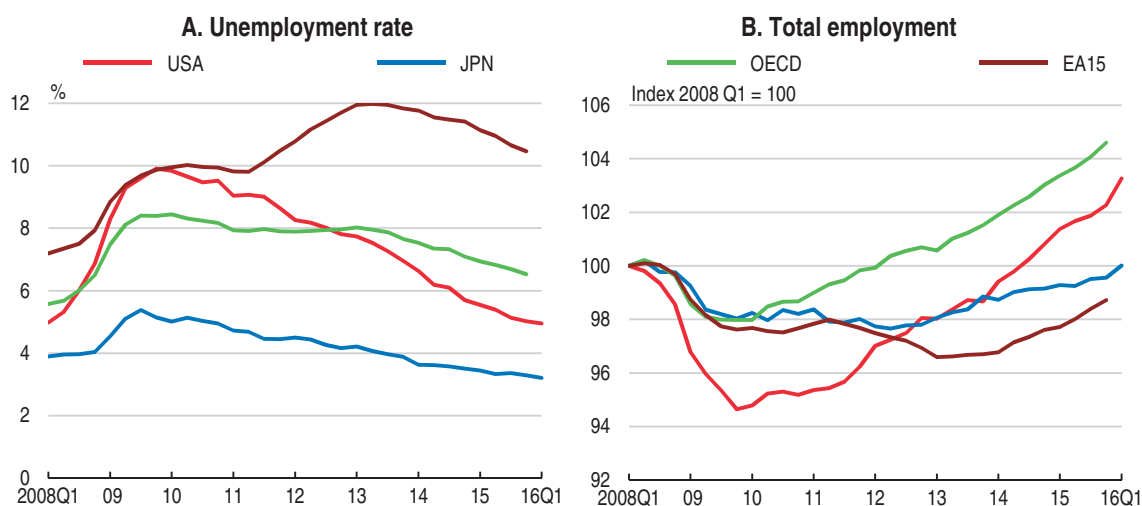
has also begun to recover recently, although it remains on a declining trend due to the retirement of baby-boomers.

Notwithstanding low unemployment, inflation is expected to remain stubbornly low, partly due to transitory downward pressure from the recent appreciation in the dollar and falling energy prices, but also due to the flattening of the Phillips curve (Figure 6, Box 3). Measures of core inflation are higher, but still below the Federal Reserve's inflation 2% target for PCE price inflation. Indicators signal little to no risk of an emerging inflationary

Box 2. Low-probability vulnerabilities

Vulnerability	Possible outcome
An intensification of geo-political tensions and threats of terrorist activity	Heightened insecurity could undermine consumer confidence. Addressing potential threats would likely require substantial public spending and may disrupt economic activity, notably through tighter border controls.
A retreat from internationalism	A broad retreat from internationalism may give rise to increased protectionist behavior, leading trade to shrink and jeopardising economic growth.
Financial market meltdown	Exposure of systemically-important financial institutions to major shocks emanating from domestic financial markets or abroad could ultimately require the authorities to intervene to ensure financial market stability and could result in another recession.
Intensified weather variability and storm activity	Coastal areas are already heavily exposed to sometimes devastating storm damage. Extreme natural disasters may have long-term negative effects on local economies (<i>e.g.</i> , Katrina) and require large responses in disaster relief, putting a strain on State and federal fiscal positions.
Political gridlock	A return to past difficulties in forging consensus on the budget and economic policy more broadly may result in gridlock. Risks of default on federal debt or underfunding of essential activities could result in sharp shocks to the economy and financial sector.

Figure 5. Strong job gains and much lower unemployment rates



Source: OECD Economic Outlook database 99.

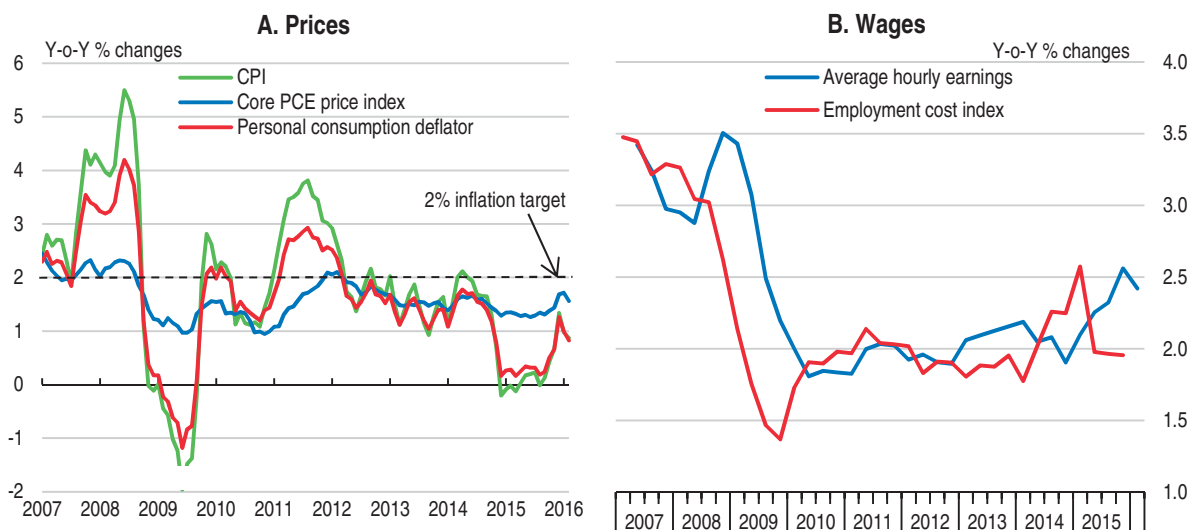
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spiral, with measures of inflation expectations showing hints of tailing downward. Nominal wage growth remains slow, although there are signs of modest upward pressure.

An exit from unconventional monetary policy has started

The expectation of Federal Reserve's FOMC members is that inflation will rise slowly toward the target. The central bank has stopped adding to its balance sheet through bond purchases and started the process of normalising interest rates. Further increases in interest rates would be warranted in line with inflation becoming more consistent with the Fed's inflation target, though at a pace so as not to jeopardise the recovery. As the target is symmetric, inflation could run temporarily higher than 2%.

Figure 6. Price and wage inflation have remained stubbornly subdued



Source: OECD, Economic Outlook database; US Department of Commerce, Bureau of Economic Analysis and the US Bureau of Labor Statistics.

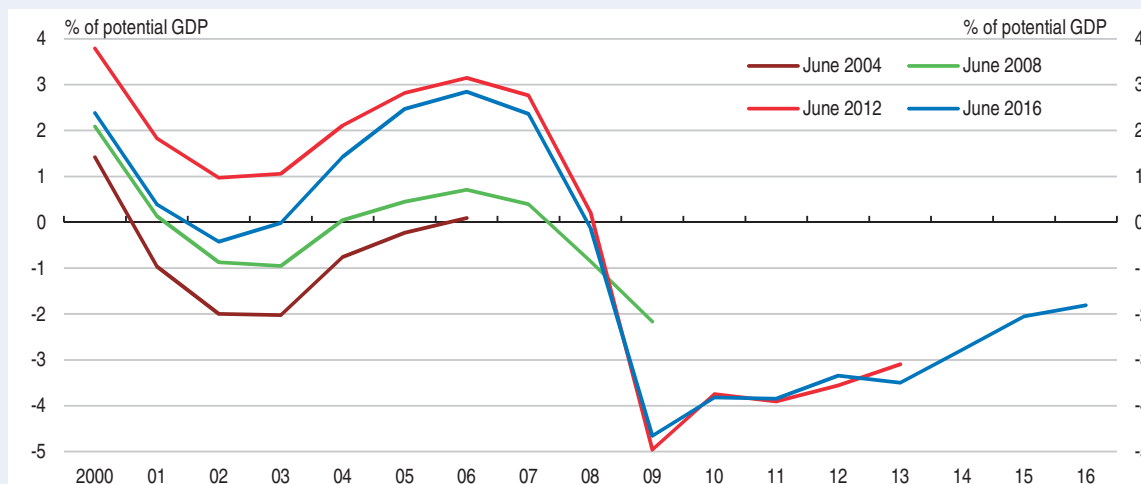
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Box 3. Real-time uncertainty in assessing inflationary pressures

The magnitude of the gap between output and potential GDP (the output gap) can be difficult to assess in real time for many countries – including the United States. These difficulties are evident in Figure 7, which compares estimates of the output gap across OECD *Economic Outlooks* from 2004 to 2016. Indeed, OECD *Economic Outlooks* initially suggested that the magnitude of the US output gap was fairly modest in the years leading up to the Great Recession in 2008/2009. The existence of an inflationary gap prior to the crisis only became substantial years later, in retrospect. This experience underscores the substantial uncertainties involved in assessing the current output gap.

Figure 7. Real-time estimates of the US output gap can be misleading

Different vintages of output gap estimates



Source: OECD, Economic Outlook database.

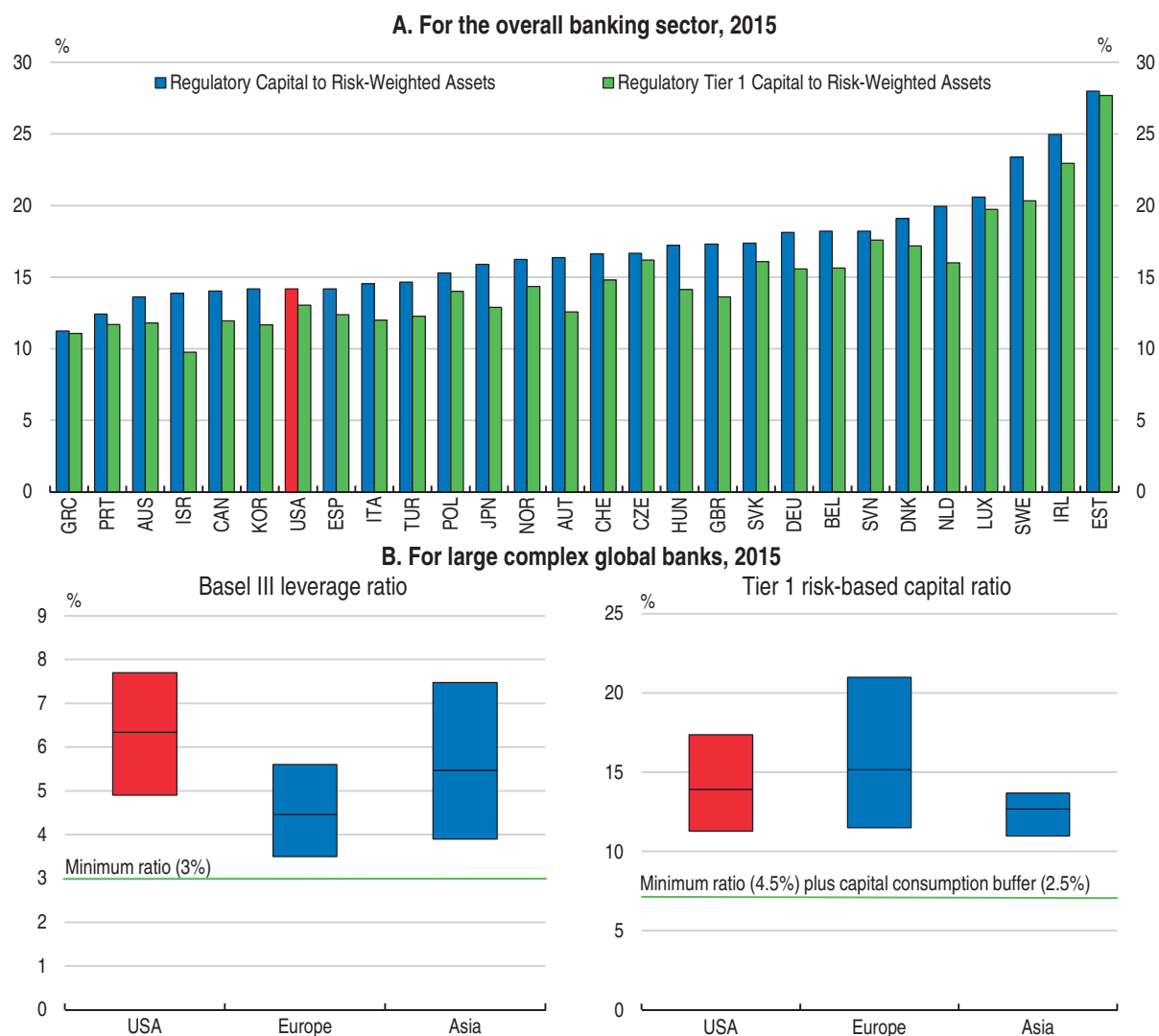
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The exit from unconventional monetary policy could be facilitated by fiscal policy taking a greater role in supporting domestic demand through well-targeted public investment. Structural policies designed to boost productivity growth and the size of the labour force would also facilitate the normalisation of monetary policy by raising potential output growth and the neutral interest rate. These policies would create space of monetary policy reacting to adverse shocks, and they would reduce the risk of hitting the lower bound.

Preserving financial stability requires introducing macro-prudential tools

Large global US banks have mostly recovered from the crisis. While US banks overall are less well capitalised than those of many other OECD countries, when measuring capital and adequacy using risk-based capital metrics (Tier 1 risk-based capital ratios) (Figure 8,

Figure 8. **Capital ratios exceed thresholds but risks remain**



Note: The boxes in panel B give the range of leverage and capital ratios in the different regions. The line in the box gives the average leverage or capital ratio for large global banks in each area. Regulatory capital ratios are only one aspect of financial soundness.
Source: IMF Financial Soundness Indicator database; SNL Financial, FDIC Global Capital Index (Hoenig Report).

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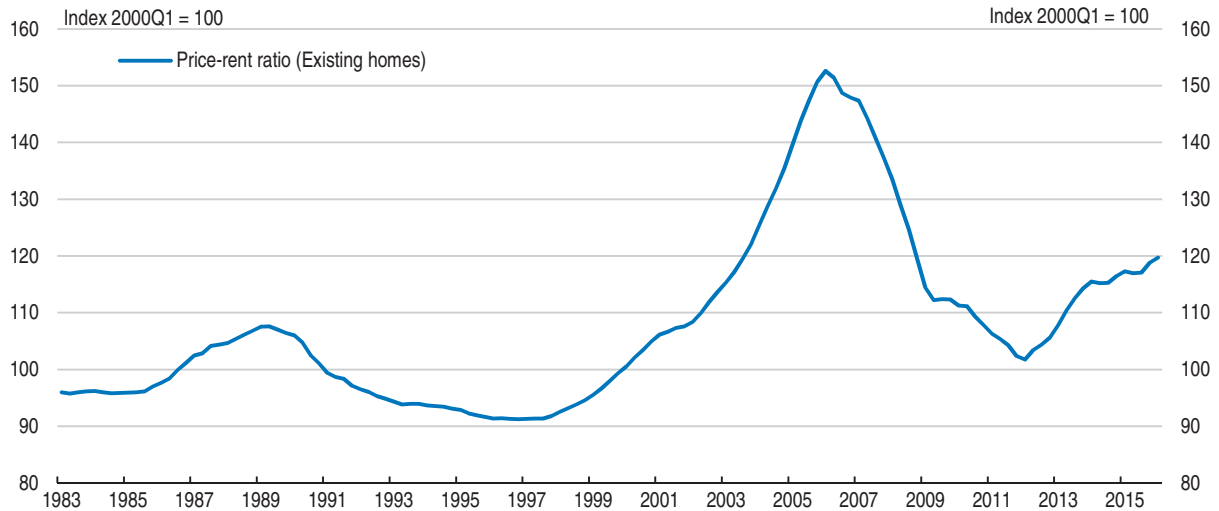
Panel A), the large global US banks are about as well capitalised as similarly large and complex banks from other OECD countries and are more highly capitalised than peers when measuring capital adequacy using a globally consistent leverage ratio measure, which controls for differences in risk-weighted assets (see comparison of Basel III leverage ratios)(Figure 8, Panel B). In addition, while the concentration of financial activity in a handful of large, global banks has increased compared to the pre-crisis years, the overall share of assets held by the six largest banks has been declining since 2010. Moreover, since 2010, the largest and most complex banks have shed assets, reduced reliance on less stable sources of funds, and significantly strengthened their capital and liquidity buffers, which has reduced risk at these banks. The authorities have been working to mitigate risks, particularly for the large, complex banks (Table 2). These steps include rules to improve funding resilience, restrict financial interconnectedness and improve the ability of regulators to resolve these firms. Work is ongoing on introducing counter-cyclical capital buffers. In addition, robust and dynamic stress testing increases the vigilance of the authorities with respect to financial stability. Finally, the Financial Stability Oversight Council was introduced with a mandate to assess and respond to systemic financial stability threats. Nonetheless, the fragmented nature of the financial regulatory system remains unaddressed which may complicate taking necessary macro-prudential policy measures (Kohn, 2014). Another possible weakness are limits on the Federal Reserve to act as a lender of last resort outside the banking sector. Against this background, it is warranted to reduce fragmentation amongst regulators and ensure substantial capital buffers, particularly in banks that are too big to fail, while macro-prudential policy remains underdeveloped.

The housing market is showing signs of recovery. Residential house prices have increased and are exceeding pre-crisis levels in nominal terms in a handful of areas. However, price-to-rent ratios remain below the pre-crisis peak (Figure 9). In addition, loan write-offs and household spending restraint have helped put household balance sheets in a stronger position overall than prior to the crisis (Figure 10). Mortgage debt growth

Table 2. Past OECD recommendations on monetary and financial policy

Recommendation	Actions taken since the 2014 Survey
Gradually reduce and ultimately remove monetary accommodation as the economy approaches full employment and inflation returns to the Fed's 2% target.	The process of raising policy rates began in December 2015, though policy remains appropriately accommodative.
Continue to roll out macro-prudential policy tools, including those associated with the Dodd-Frank Act and those addressing vulnerabilities in wholesale funding, repo market and money-market mutual funds.	Capital requirements for systemically important banks are substantially higher than before the crisis, stress tests have been implemented to reveal vulnerabilities, and regulations require systematically important institutions to form "living wills" to avoid a disorderly unwinding in the case of failure. New rules on securitisation and money market funds as well as enhanced transparency apply to the shadow banking sector.
Reform the housing finance system to ensure access to mortgage credit by creditworthy homebuyers while providing better guarantees of financial stability and avoiding again exposing taxpayers to costly bailouts.	Several housing finance reform proposals have been made, but none progressed past the committee stage in Congress.
Leave the securitisation of mortgages to the private sector. This would entail privatising the Government Sponsored Enterprises, cutting off their access to preferential lending facilities with the federal government, subjecting them to the same regulation and supervision as other issuers of mortgage-backed securities, and dividing these entities into smaller companies that are not too big to fail.	Fannie Mae and Freddie Mac remain under government stewardship. The Senate Banking Committee passed in May 2014 a bipartisan proposal ("Johnson-Crappo GSE reform") seeking to reform the housing finance system, create greater competition and reduce taxpayer risk, while ensuring affordable fair access to all creditworthy homebuyers. The proposal has not gone beyond the committee stage.

Figure 9. House price-to-rent ratios are broadly in line with historical trends



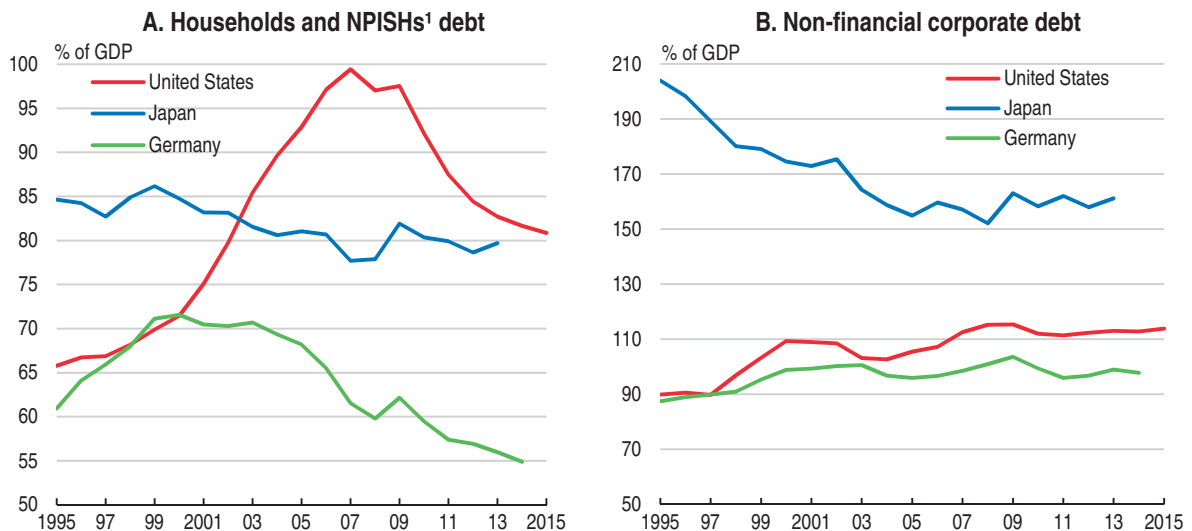
Note: Price-rent ratio is Case-Shiller US National House Price Index divided by index of owner-equivalent rent.

Source: OECD calculations using data from Case-Shiller and the Census Bureau.

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remains subdued, in part because government sponsored enterprises (GSEs) Fannie Mae and Freddie Mac have taken measures to bolster risk sharing with the mortgage originators when they purchase loans. Their regulator, the Federal Housing Finance Agency, has also imposed tighter prudential standards for the loans they can purchase. A number of reforms to the GSEs have been proposed, though none have made it into legislation (Table 2).

Figure 10. Household balance sheets have recovered from the crisis



1. NPISH: Non Profit Institutions serving Households.

Source: OECD National Accounts Database.

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The federal deficit has declined, making space for higher public investments

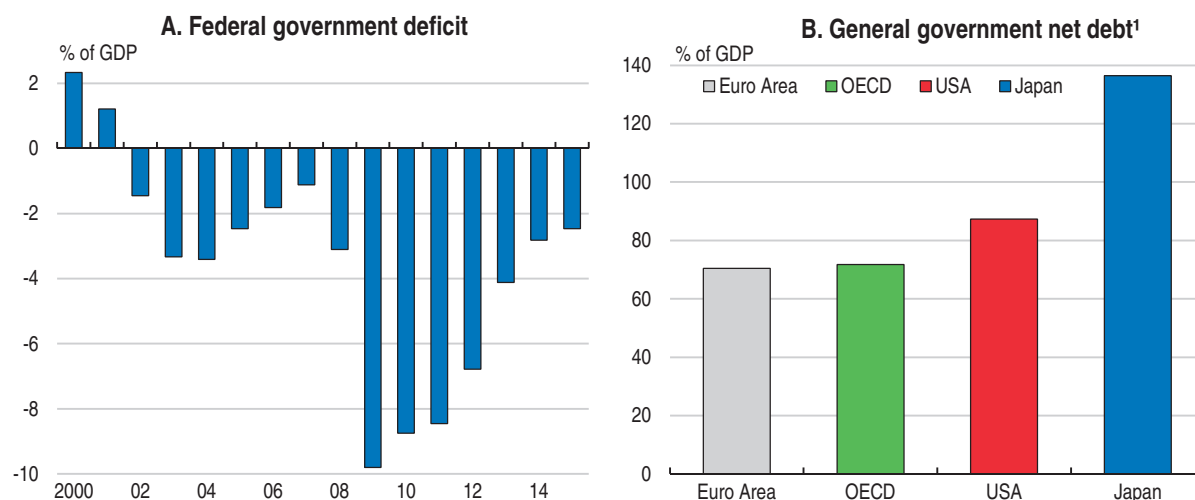
After having peaked at 10.5% of GDP in 2009, the general government budget deficit narrowed to 4.4% in 2015, reflecting both the improving economy and a period of sustained and substantial consolidation since 2011. Almost all of this consolidation occurred at the federal level, with the federal deficit falling from a peak of 9.75% of GDP to only 2.5% in fiscal year 2015 (Figure 11). Given current concerns about growth prospects and inequality, more supportive fiscal policy is appropriate. Measures to support firm creation, skill formation, innovation and infrastructure provision would likely help productivity (Auerbach and Gorodnichenko, 2013; Abiad *et al.*, 2013; Delong and Summers 2012). The President's budget proposal for fiscal year 2017 presents a package of measures intended to raise spending on infrastructure and other areas, while increasing tax revenues, including by limiting the value of regressive tax expenditures (CBO, 2016). If additional fiscal policy support were co-ordinated internationally, the multiplier effect on GDP would be substantially larger.

From 2013 to 2015, ongoing political brinkmanship resulted in a government shutdown and episodes of bond market volatility. Recently, Congress and the Administration reached an agreement that reduced short-term uncertainty. Congress suspended the federal debt ceiling until March 2017 and approved the *Bipartisan Budget Act* of 2015 that fully funded the government during 2016. Further demonstration of such bipartisanship would be beneficial, enhancing financial stability and helping progress towards long-term fiscal sustainability.

Public investment, such as temporary infrastructure spending, would increase the federal deficit in the short term, but need not have a detrimental impact on the projected trajectory of the public debt-GDP ratio if it is high quality and therefore enhances long-term productivity. Increased long-term spending commitment, such as education and

Figure 11. **The budget deficit has fallen**

In % of GDP



1. General government shows the consolidated (i.e. with intra-government amounts netted out) accounts for all levels of government (central plus State/local) based on OECD national accounts. This measure differs from the federal debt held by the public, which was 73.6% of GDP for the 2015 fiscal year.

Source: OECD, Economic Outlook database and the Congressional Budget Office.

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training, would need to be funded by higher revenue, such as reducing regressive tax exemptions and introducing green taxes, as recommended in previous OECD Economic Surveys and suggested in the Administration's proposed 2017 Budget (Box 4). Even though healthcare spending has slowed down recently (Box 5), it remains a long-term concern that needs to be addressed, including with the implementation of an excise tax on high-cost health insurance plans, which has been delayed (Table 3). The CBO projects that under current law the federal budget deficit will increase from around 3% to almost 5% of GDP from 2016 to 2026, gradually pushing up the total amount of federal debt held by the public by about 10 percentage points to 86% of GDP (Figure 13). In the absence of fiscal policy changes, debt to GDP would be on an exponential path in the longer term. Building on the CBO baseline, OECD projections suggest that somewhat slower healthcare spending growth (i.e. assuming that more of the slowdown is structural) would still place the debt-to-GDP ratio on an upward path. By contrast, an acceleration of labour productivity growth from the assumed 1.4% annually to 2% annually (the historical norm) would push down the federal debt-to-GDP ratio to 75% by 2026, assuming lower health-care spending.

Box 4. The proposed FY2017 budget

The FY2017 Budget proposal would provide a boost to spending with accompanying revenue measures that would reduce the budget deficit and federal debt held by the public in comparison with projections based on current law. By the end of the projections in 2026, federal debt would reach 77.4% of GDP rather than 85.6% of GDP under current law (CBO, 2016). The proposal builds on the bipartisan budget agreement, adhering to the discretionary levels provided for 2017 and prevents the return to sequestration thereafter, while also putting forward paid-for mandatory investments to underpin economic growth in the future and support innovation.

On the revenue side, an estimated \$2.9 trillion of deficit reduction over 10 years comes from taxes, immigration reforms, and other proposals. The Budget proposes a number of reforms that would modernise the business tax code to make it fairer and more efficient by closing tax loopholes and reforming tax expenditures, including by reducing tax benefits for high-income households. A tax on oil would also be introduced.

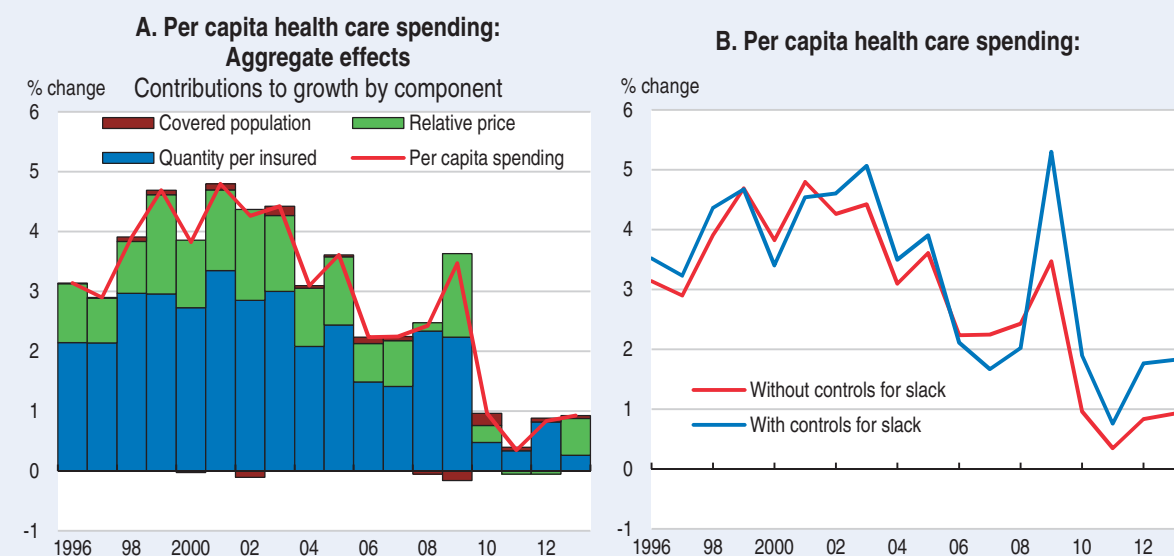
On the spending side, the proposed budget supports infrastructure and innovation. Investments in Building a 21st Century Transportation System amounting to \$320 billion over 10 years are intended to support a multi-agency initiative to build a clean transportation system. Overall, the *21st Century Clean Transportation Plan* would increase American investments in clean transportation infrastructure by roughly 50 % above current levels. The budget also calls for \$32 billion per year over 10 years to support innovative programs that make communities more livable and sustainable. The Budget proposes a number of initiatives to improve access to high-quality early childhood education, which has been supported in past *Economic Surveys*. Notably, the budget would provide funding to expand access to high-quality care to more than 1.1 million additional children under age four by 2026. In addition, the Budget proposes to help States implement changes required by the new bipartisan *Child Care and Development Block Grant Act of 2014* and for competitive pilot projects to help build a supply of high-quality child care in rural areas and during non-traditional hours. The *Preschool for All* initiative would give all four-year olds from low- and moderate-income families access to high-quality pre-school. The budget also proposes to make college education more affordable and encourage completion. Finally, the Budget includes roughly \$375 billion of health savings that grow over time and builds on the Affordable Care Act with further incentives to improve quality and control health care cost growth.

Box 5. Potential lessons from healthcare spending in OECD countries


Disentangling cyclical drivers in healthcare spending from the broader trend is particularly difficult for a single country. Examining common trends in spending across many countries may help separate the roles of cyclical effects and policy measures. Previous OECD studies (Lorenzoni *et al.*, 2014) show that the slowdown of healthcare spending in the United States is broadly consistent with patterns in a number of other OECD countries.

One way to assess the common trend in healthcare expenditure growth is to estimate aggregate effects from using a cross-country panel regression, whilst controlling for country-specific fixed effects. The red line in Panel A of Figure 12 shows yearly aggregate effects from such a regression, estimated using available data from the OECD's Health Spending Accounts (HSA) for 21 countries from 1996 to 2013. The dependent variable in this regression is the annual growth rate in per-capita healthcare expenditures, which is converted to purchasing power units using the price deflator for actual individual consumption (which adds in-kind government benefits to private consumption). This plot suggests that a spending deceleration gradually took hold in the early-2000s and then intensified around the time of the financial crisis. Insights about the sources of this deceleration can be gained by decomposing spending growth into annual contributions from the quantity of healthcare consumed per insured person, the price of healthcare relative to the consumption deflator, and the proportion of the population covered by insurance. Since these contributions jointly account for overall per-capita spending growth, aggregate effects from regressions that include an identical set of controls will cumulate to each year's overall aggregate effect. The decomposition shown by the bars in Panel A suggests that the gradual deceleration prior to the crisis was driven about equally by slowing in both the relative price and quantity of healthcare consumed, whereas the sharp post-crisis deceleration was mainly reflected in quantities. Decompositions from Lorenzoni *et al.* (2016) provide additional insights, showing that the spending deceleration to date is most evident in publicly-financed spending, which gradually slowed before leveling after of the crisis; by comparison, privately-financed spending growth ebbs steadily from the early 2000s onward. By function, the slowdown is most apparent in pharmaceuticals, with government-financed spending on curative and rehabilitative care category playing a secondary role.

Figure 12. Healthcare spending has slowed



Source: OECD Health Statistics.

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Box 5. Potential lessons from healthcare spending in OECD countries (cont.)

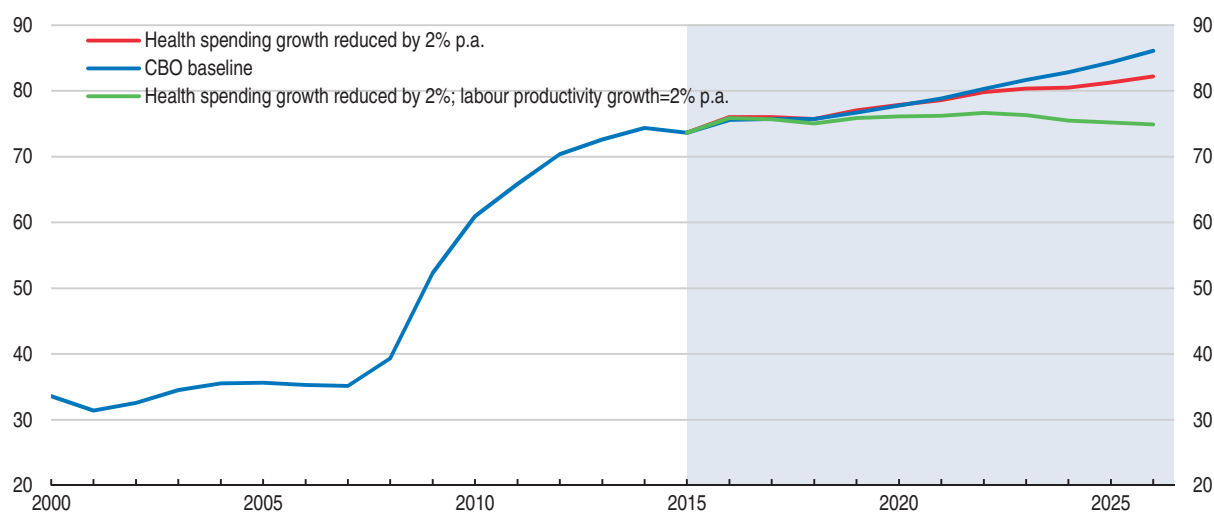
The key question for many of these OECD countries – including the United States – is how much of the steep post-crisis falloff in healthcare spending growth is cyclical. To assess how cyclicity has contributed to the cross-country downtrend, we estimated separate sets of aggregate effects for overall per-capita spending growth using the same basic specification, with and without annual measures of the each country's economic slack (measured using the unemployment gap from the OECD's Fall 2015 Economic Outlook). The aggregate effects shown in Figure 12. Panel B suggest that the widening of slack after the crisis explains only some of the slowdown in the cross-country trend of healthcare spending.

Table 3. Past OECD recommendations on fiscal policy

Recommendation	Actions taken since the 2014 Survey
Fiscal policy needs to remain cautious and prepared to take actions to ensure longer-term sustainability.	There have been no large changes in fiscal policy.
Act towards rapid international agreement and take measures to prevent base erosion and profit shifting (BEPS).	The United States participated in the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project, endorsed by the G20 Leaders in November 2015.
Increase reliance on consumption taxation.	No action taken
Make the personal tax system more redistributive by restricting regressive income tax expenditures.	The President's proposed FY2017 Budget has measures to limit regressive tax expenditures, reform capital income taxation, and reconcile different tax bases.
Replace the health tax exclusion (i.e., the exclusion from taxable personal income and payroll tax of compensation paid in the form of health insurance cover) with subsidies that do not encourage overly-generous health plans (subject to minimum standards of coverage).	The 2010 Affordable Care Act included an excise tax that will be levied on high-cost health insurance plans starting in 2018, but now delayed to 2020. The Administration is continuing to develop and implement regulations on the tax on high-cost health insurance plans, the so called "Cadillac tax".
Speed up the phased increase in the retirement age at which full social security benefits are paid from 65 to 67. Link the retirement age to active life expectancy thereafter. Reduce the replacement rate for higher earners and raise the Social Security tax cap.	No action taken. Recent research has revealed that life expectancy for low-income pensioners has remained static, undermining the case for an automatic link between average life expectancy and the retirement age.


Figure 13. Public debt scenarios

Federal debt held by the public, % of GDP, Fiscal Years



Note: The CBO baseline scenario is based on current legislation and assumes GDP average annual growth of 1.9% during the period 2015-26 (labour productivity growth of 1.4% and labour force growth of 0.5%), with interest rates paid on public debt increasing to about 3.7%. In the first scenario, public health spending growth is reduced by 2% annually (from 6.5% to 4.5%) while other assumptions are not changed, though lower outstanding debt reduces interest payments. The second scenario adds the assumption that labour productivity annual growth is increased from 1.4% to 2%, thus increasing GDP growth; the fiscal revenue-GDP ratio is the same as in the CBO baseline and primary non-health spending is the same in dollar terms as in the CBO baseline.

Source: OECD calculations based on CBO.

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Achieving stronger long-term growth

Well-designed investments and structural policies would help to boost productivity and therefore long-term growth of living standards (present section). This would not be enough, however, to make growth more inclusive, which requires adequate social policies (next section).

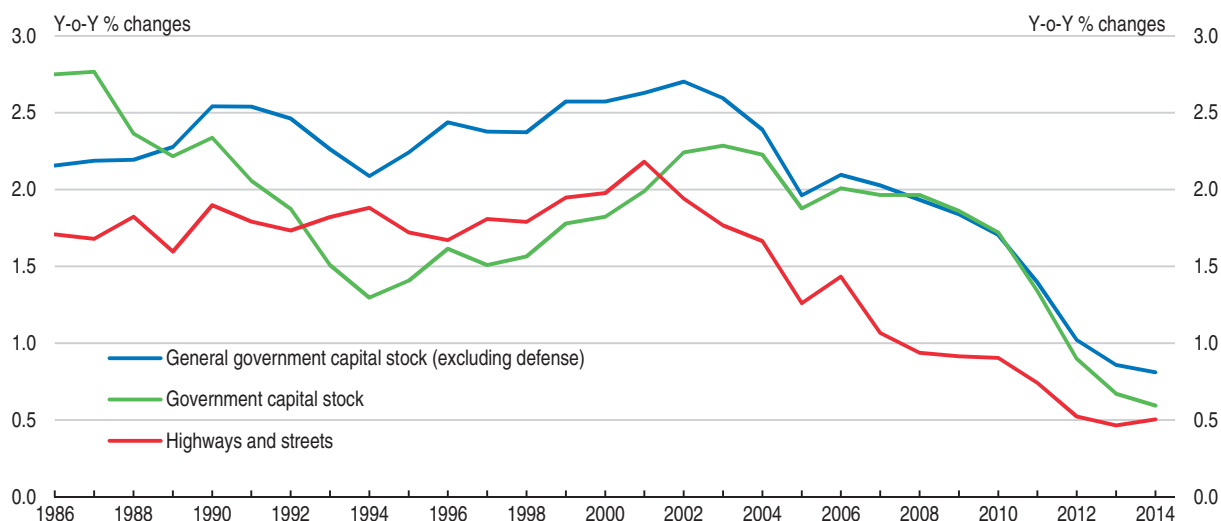
Investing in infrastructure

Public infrastructure has not kept pace with the economy (Figure 14). The marked slowdown in the growth of public investment has contributed to the deterioration in quality of existing infrastructure (Figure 15), as well as growing problems of congestion. Improving infrastructure provision would not only improve productivity and reduce congestion, but could also help to contain urban sprawl and environmental degradation. Low current interest rates make such investments even more desirable (Elmendorf and Sheiner, 2016).

Shortfalls in public infrastructure are notable in road transportation. The CEA (2014) reports estimates that traffic congestion imposes annual costs of \$120 billion on households and around \$30 billion on businesses. The main federal funding source for road transport, the Highway Trust Fund has required repeated injections from general revenue as the nominal (per-gallon) gasoline tax that was intended to fund road transport infrastructure has not been adjusted since 1993. In December 2015, the *Fixing America's Surface Transportation Act* secured funding from general revenue until 2020. Better use of taxation, distance-based charges and congestion charges could help to address the funding needs in and tighten the links between road use (captured by fuel consumption) and congestion, accidents and pavement damage.

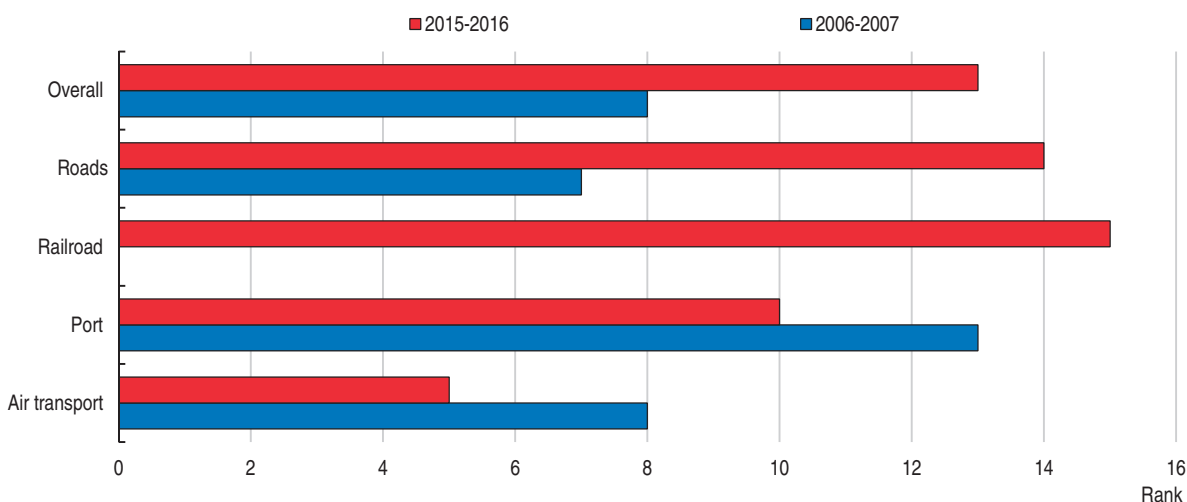
The CBO (2015) estimates that raising fuel taxes by roughly 10 cents per gallon to around 30 cents per gallon would cover spending commitments. Taxes on road use could also address externalities more effectively, for example by targeting heavy trucks, which account for just 4% of road users but represent almost one-quarter of the costs, mainly

Figure 14. **The growth of the government capital stock has slowed markedly**




Source: Bureau of Economic Analysis.

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Figure 15. **Infrastructure quality appears to have deteriorated overall**

Note: The ranking is the country rank based on questions on the quality of different types of infrastructure. Railroad quality was not ranked in 2006-7.

Source: World Economic Forum Global Competitiveness Report, 2015.

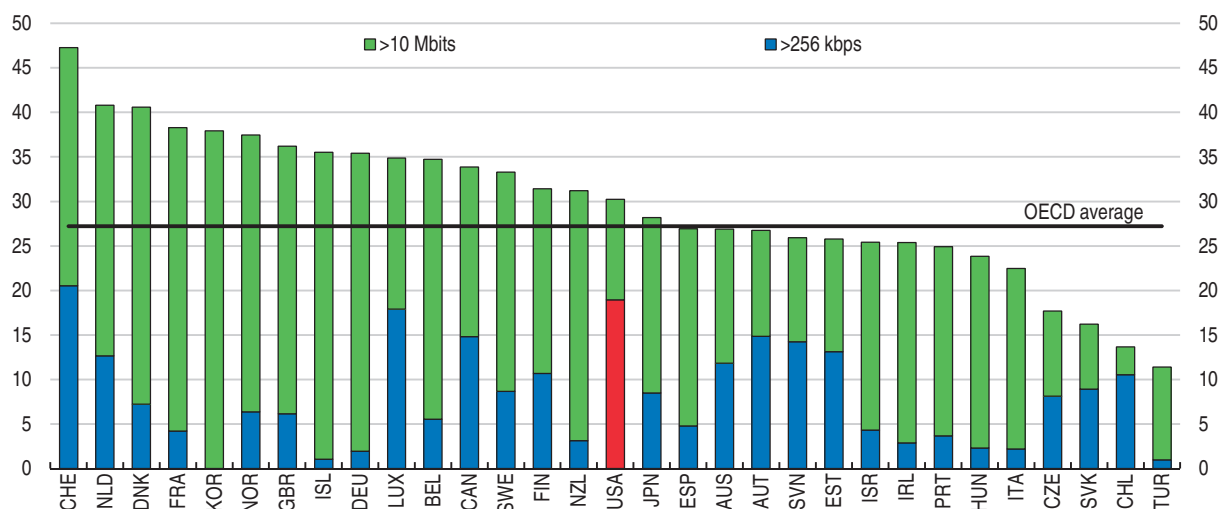
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through damage to the road pavement (Austin, 2015). In this spirit, the Administration has proposed a \$10 per barrel oil fee to fund infrastructure. As it becomes more expensive to build around congestion, implementing user tolls in the most heavily congested areas would help reduce congestion while providing funding to support needed expansion and improvement of the transport network.


State and local governments make most decisions regarding infrastructure provision. New analysis shows co-ordination problems arise when projects require several governments to act together (Glocker and Ahrend, 2016). Under-provision can emerge when co-ordination is needed for infrastructure and service provision (such as mass transit), making cars indispensable in many cities. As a result, single passenger commutes by car, commute times and greenhouse gas emissions are often higher when compared with other cities. Furthermore, such problems can weigh on city-level productivity (Ahrend et al., 2015). The federal government has some ability to facilitate co-ordination. The *Fixing America's Surface Transportation (FAST) Act* signed in December 2015 established the Nationally Significant Freight and Highway Projects competitive grant program aimed to support economically beneficial projects that will facilitate improved freight movement and set up an Innovative Finance Bureau designed to promote public-private partnership procurements of large-scale infrastructure projects through expanded technical assistance. Boosting the complementary approach developed in Partnership for Sustainable Communities would ensure multidimensional needs of residents and businesses are taken into account for infrastructure development.

Investing in infrastructure would not only boost productivity growth, but it would also enhance socioeconomic opportunities. For example, access to fixed broadband telecommunications, as measured by subscriptions, is about average for the OECD, but generally at slower speeds and higher cost (Figure 16). Access to high-speed broadband varies markedly across the United States, undermining individual and firm opportunities in poorly served areas. Recent initiatives by the Administration including ConnectALL,

Figure 16. **Fixed (wired) broadband penetration is around average and relatively slow**
Subscriptions per 100 inhabitants, June 2014



Source: OECD Digital Economy Outlook 2015.

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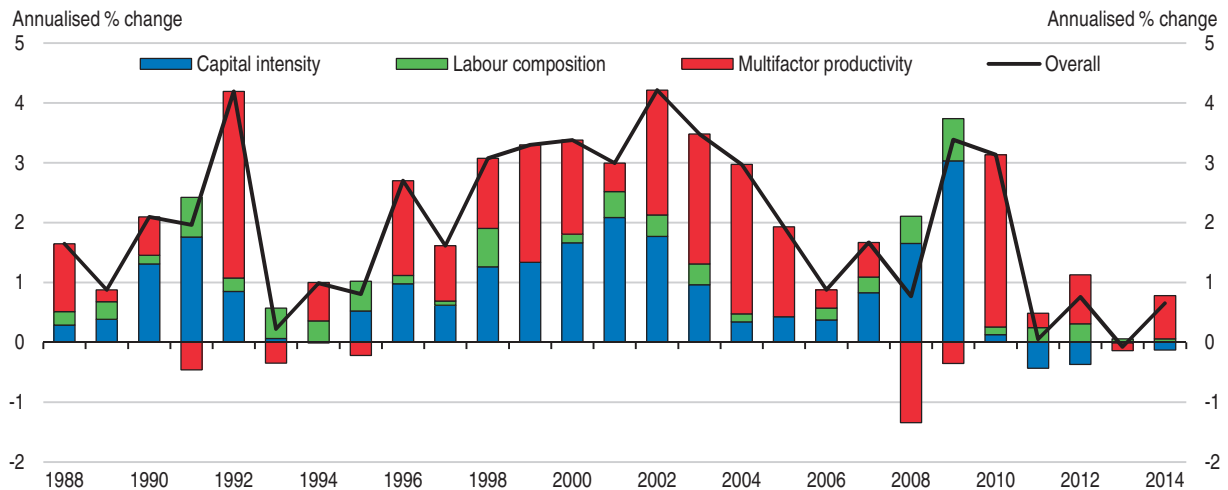
ConnectHome, and ConnectED will help address the digital divide. The FCC has been promoting competition in the wireless market, and prices are now falling and quality is improving in markets where there is competition. In the fixed market, the FCC has addressed some barriers to competition and in 2015 pre-empted state-level prohibitions on municipalities creating their own networks to help boost competition. As potential for greater competition is emerging in the fixed-line broadband sector with new entrants beginning to create or augment existing networks, competition authorities should act to strengthen competition as they have for wireless broadband.

Unleashing productivity


Measured productivity growth has been unusually sluggish post crisis. Although the sluggishness is partly linked to the business cycle, the broader pattern reflects a slower pace of capital deepening and TFP growth, as well as, to a lesser extent, weaker labour quality growth (Figure 17). This happened despite the abundant flow of new information technology and rising automation, which hints that measurement difficulties may be playing some, albeit small, role.

Business capital expenditure, which is needed to increase productivity, has been low even as corporate profitability is at multi-decade highs (Figure 18). Instead of investing, companies have opted to return earnings to shareholders through dividends and share buybacks, which account for a larger share of profits in comparison to the past (Gruber and Kamin, 2015). Average nonfarm business productivity growth decelerated about $\frac{3}{4}$ percentage point from 2009 to 2014 relative to the preceding five-year period, and weaker average contributions from capital deepening – down about $1\frac{1}{2}$ percentage points from the earlier period – are more than sufficient to explain this overall slowdown.

The aggregate health of the corporate sector obscures divergences between firms at the frontier of each industry, which are generally doing well, and non-frontier firms that are lagging behind. OECD firm-level analysis (which uses data that underrepresent US businesses) suggests a growing productivity divide between firms at the global level, which

Figure 17. **Labour productivity growth has been weak recently**

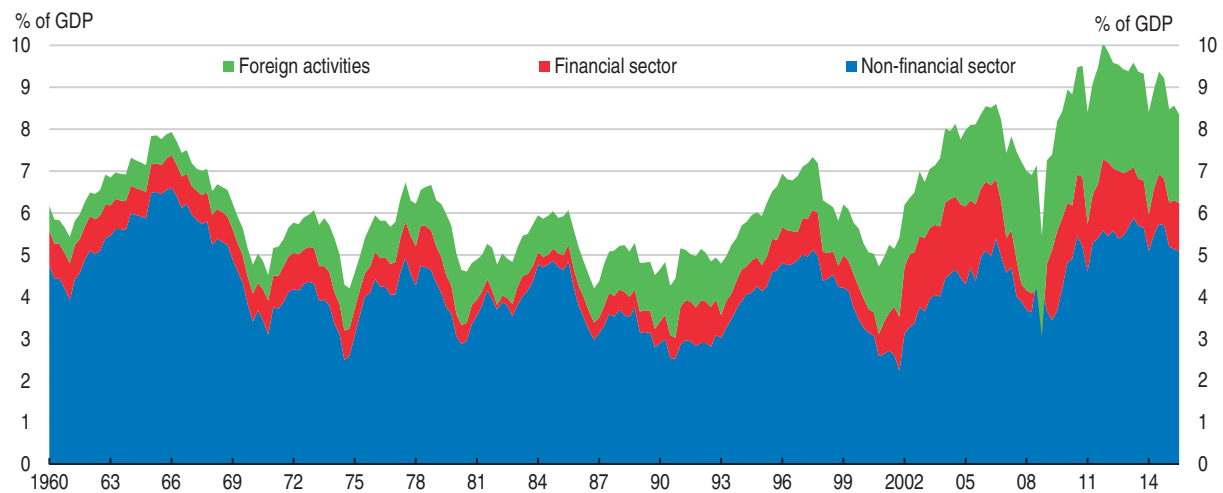
Note: Productivity is measured as nonfarm business output per hour.
Source: Bureau of Labor Statistics (BLS).

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may in part be due to slower rates of knowledge diffusion across firms (Andrews *et al.*, 2015). Studies using US specific data shed light on the productivity slowdown, revealing evidence of a substantial and persistent productivity divide across firms within detailed industry groupings, and of young firms not scaling up operations in response to profitability gains as vigorously as in the past (Decker *et al.*, 2015). Furthermore, the rate of firm entry and exit, which has been a source of productivity gains on aggregate, has declined.

The changing composition of the economy may also be contributing to slower productivity growth in a number of ways:

- The composition of activity is shifting toward industries where increasing returns to scale are more important, thereby contributing to the marked differences in firm-level productivity. For example, the ability of larger (global) firms to better tailor (digital)

Figure 18. **Aggregate corporate profits are hovering near post-war highs**

Source: Bureau of Economic Analysis (BEA).

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technology to their needs – as opposed to relying on more standardised solutions - can provide firm-specific cost advantages, contributing to winner-takes-all outcomes and potentially blunting competitive pressure, especially if there are large barriers to entry.

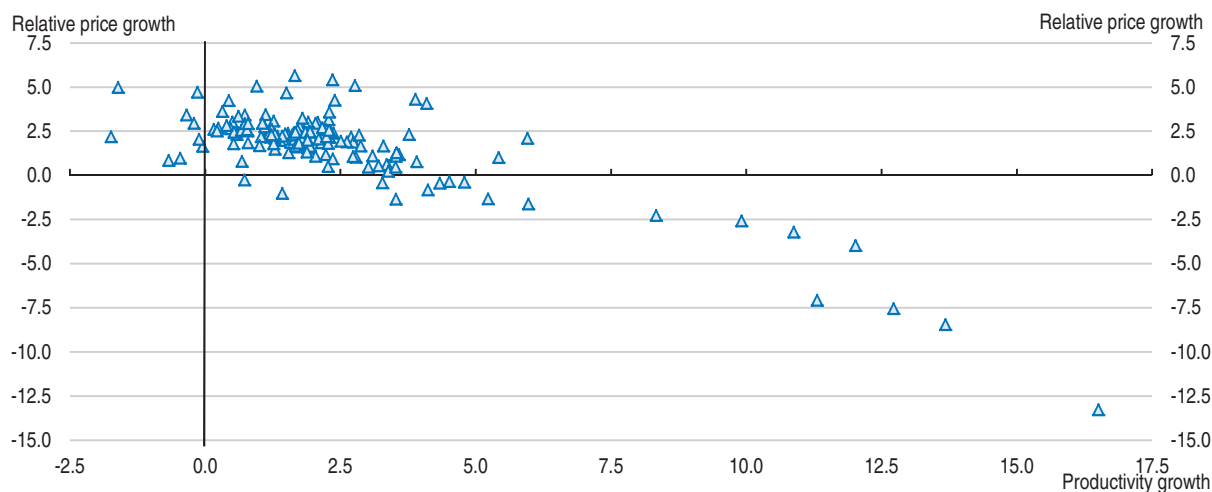
- Population ageing tends to shift activity toward lower-productivity industries that offer services required by seniors, such as long-term care, which can depress aggregate productivity growth.
- Demographics can also hold back aggregate productivity growth by shifting the age composition of the workforce away from younger workers, who historically account for a greater share of new entrepreneurship.
- Shifts in productivity and relative prices redirect resources away from industries that experience higher productivity growth (Baumol's disease). The fact that relative prices tend to fall in industries with faster productivity gains (Figure 19) is consistent with such compositional shifts.

Removing obstacles for small and new firms

Reinvigorating firm creation could play an important role in countering productivity trends. New firm creation has been an important driver for productivity growth and also employment growth. A more dynamic business sector will also reduce mis-match in the labour market, and could offer opportunities for workers to improve their remuneration through job moves. Finally, by boosting competitive pressures, new firms can spur innovation and put downward pressure on prices, ultimately lifting well-being.

Bankruptcy procedures can support new firm creation by capping potential losses for the entrepreneur, although at a potential cost of a higher risk premium levied by creditors. Reform of the personal bankruptcy code in 2005 strengthened creditors' positions by introducing means testing during bankruptcy proceedings. Entrepreneurs with "high incomes" were no longer able to use Chapter 7 to surrender assets and gain a "fresh start" but were obliged to use Chapter 11 and propose a repayment plan, making debt discharge more difficult. A further restriction put limits on how quickly an entrepreneur could re-enter bankruptcy proceedings. The immediate effect of the reforms was to cut dramatically the number of bankruptcies filed,

Figure 19. **Relative prices have fallen with productivity growth**



Source: OECD calculations using annual industry-level estimates from the BLS.

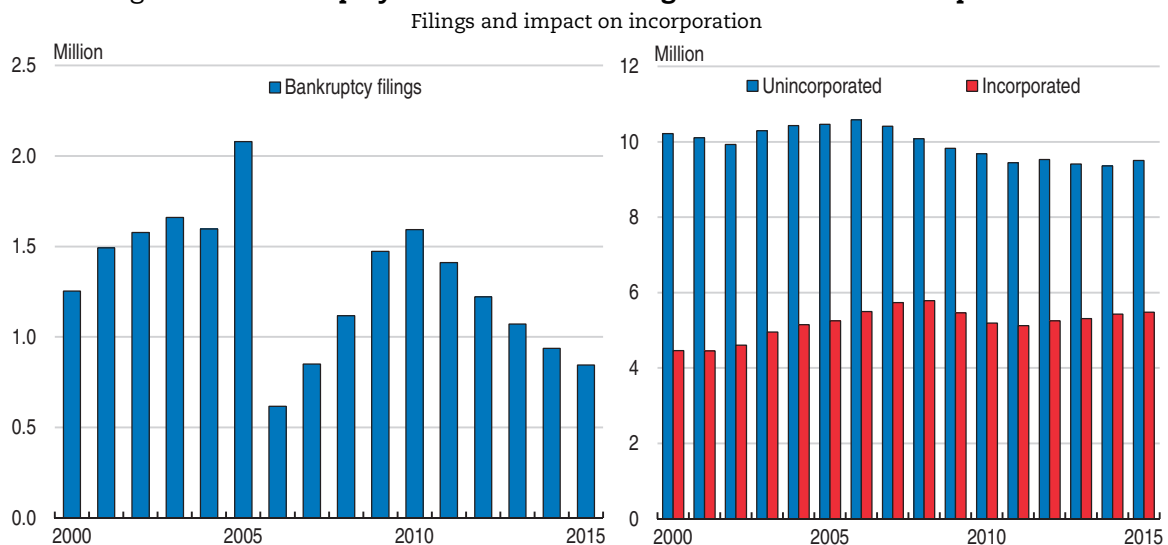
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though struggling firms may have anticipated the change, boosting pre-reform numbers (Figure 20). Disincentives to file for bankruptcy other things being equal will slow how quickly resources are reallocated. A second effect of the reform has been to encourage incorporation (Paik, 2013). Since the reform, un-incorporated self-employment has declined by over 900 000 whereas incorporated self-employment has risen by 300 000. For unincorporated firms, States offering larger exemptions under Chapter 7 appear to have sustained more firm creation (Rohlin and Ross, 2016). These results suggest enabling “fresh starts” and making debt discharge less onerous might in some cases support firm creation. In contrast, other research suggests that stronger creditor protection may increase firm creation by making credit more readily available (Cerqueiro et al, 2016; Gropp et al., 1997).


Patenting permits small firms to invest and benefit from subsequent commercialisation by larger firms, particularly in competitive markets with dominant incumbents. Patents also potentially provide collateral for financially-constrained firms. Empirical evidence suggests that new firms obtaining a patent subsequently experience stronger earnings and employment growth than those that did not. However, firms are sensitive to delays in the patenting process, which can hinder subsequently growth (Farre-Mensa et al., 2015). Delays in dealing with patent applications rose substantially during most of the 2000s, with the time taken from submission to action increasing by around 12 months to three years over the decade. After the introduction of the *America Invents Act* in 2012, the US Patent and Trademark Office made progress in addressing the application backlog and reducing the time for examiners to review applications and then subsequently either grant or deny a patent (targets for further reductions are already established). Furthermore, the patent fee was reduced for small firms.

Legal uncertainties about patenting can create a second barrier to small firms. Aggressive patent infringement lawsuits launched by “patent trolls” or patent assertion entities tend to target small firms disproportionately (Chien, 2015). Delays in patenting in some cases can aggravate the patent troll problem. While patent assertion entities can play an important role in monetising innovation, the authorities should target abuses to ensure that innovation by new firms is not unfairly undermined. The Supreme Court acted in 2014

Figure 20. **Bankruptcy reform reduced filings and increased incorporation**



Source: United States Courts, BLS CPS.

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to give the court discretion to shift the attorney fees to the loser of patent litigation as one deterrent. The Federal Trade Commission is currently investigating the activities of patent assertion entities.

Enhancing government support of innovation

Government support for innovation tends to favour incumbent firms. Support for business R&D is amongst the more generous in the OECD, amounting to 0.25% of GDP in 2013. Most of the support comprises direct support, such as grants and procurement contracts, and can favour incumbents with established reputations. Tax incentives have remained relatively constant as a share of GDP over the past decade and in late 2015 were made permanent (Table 4). The R&D tax subsidy is relatively small in comparison to other OECD countries, where there has been a trend to making incentives more generous and simpler to use (OECD, 2015c). The US tax subsidy provides more support for incumbents relative to new entrants who may not benefit from non-refundable tax credits. Redesigning the R&D tax credit to make them refundable to new firms could support new enterprises more effectively, but would need to be balanced with increased costs of administration.

A number of proposals to support R&D further has included calls to establish a so-called patent box (often called an innovation box in the US context), which lowers the tax rate on income from patents and intellectual property. Proponents of such regimes may justify them on international competitiveness concerns or because firms may not be able to appropriate all the benefits from their inventions due to various spillovers. However, patent boxes typically provide the greatest tax benefit to the most profitable activities, and there is little evidence to suggest that this approach better addresses the externalities associated with R&D than other government support. In addition, patent boxes add substantial complexity to the tax system, often providing windfall gains to holders of existing intellectual property, and have less effect on cash flow for small firms. A further concern is that countries offering patent boxes, without significant R&D activity in the country, have attracted intellectual property activity through base erosion and profit shifting. With respect to the base erosion and profit shifting concern, the recent agreement on harmful tax practices, including certain intellectual property regimes, as part of the OECD/G20 Base Erosion and Profit Shifting Project will reduce opportunities to shift profits without having significant R&D expenditures in the country.

Table 4. Past OECD recommendations on innovation

Recommendation	Actions taken since the 2014 Survey
The federal R&D budget should be protected from the expenditure cuts. Make the R&D tax credit permanent	The R&D tax credit was made permanent in 2015.
Patent reform (America Invents Act) needs to be taken further by ensuring that courts grant injunction relief and damages awards for patent infringement that reflect realistic business practices and the relative contribution of patented components of complex products.	The Supreme court has allowed costs to be shifted in cases of a lost appeal.
Tertiary education attainment in STEM fields needs to be increased. An important step in doing so is improving access to quality secondary education so that students are better prepared for STEM tertiary studies.	Every Student Succeeds Act was introduced in 2015. The 2017 budget proposal includes \$4 billion in mandatory funding over three years for States to increase access to K-12 STEM coursework, and \$80 million for a new, competitive programme to promote the redesign of secondary schools with a focus on STEM-themed schools that expand opportunities for all students, particularly girls and other under-represented groups in STEM fields.
Establish a national innovation office to increase coherence and continuity in implementation of the national innovation strategy.	No action taken. Other OECD countries have established productivity commissions.

The tax system can tilt the playing field against new and small firms (OECD, 2015b). For example, compliance costs for small and medium sized enterprises can be significant. Taking opportunities to simplify the tax code would mitigate these effects (Box 6).

Box 6. Corporate tax reforms

Previous *Surveys* have advocated reforms to the US corporate tax system, which combines high statutory marginal tax rates, a narrow base and numerous provisions that invite deadweight losses from tax-avoidance activities. In December 2015, Congress made some small changes as part of the 2015 omnibus budget legislation. The associated appropriations act permanently extended tax credits for R&D, expensing for small businesses, and a number of tax credits targeted at low-income households. A tax on the most expensive medical insurance plans from the 2010 *Affordable Care Act* (“Cadillac tax”) was deferred, delaying the incentive this tax is meant to provide for businesses to look for better value-for-money insurance coverage for their workers by two years.

The recent wave of multinational corporations using inversions and interest deductions on intra-group borrowing to reduce their US tax liabilities is driven by the high statutory corporate tax rate, the world-wide taxation with deferral and foreign tax credits, and relatively weak international tax anti-avoidance rules. A number of international tax reform proposals call for lower corporate tax rates and tougher anti-avoidance rules. The President’s 2017 budget proposal would tighten the limitation on corporate interest deductions, impose a minimum tax on foreign source income, restrict hybrid tax structure arrangements designed to create stateless income, and tighten controlled foreign corporation rules. The Treasury in April 2016 introduced new regulations that limit earning stripping and tighten certain restrictions on inversions.

Moving ahead on tax reform, including international tax reform, will require legislation, but the US administration has been actively engaged in other important changes are occurring in international taxation. The United States has committed to the outcomes of the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project, endorsed by the G20 Leaders in November 2015, which include significant measures to improve the international framework for taxation of cross-border activities and reducing BEPS. The United States is already moving forward with the implementation of the BEPS recommendations on country-by-country reporting for the largest multinationals, which will provide important information to tax administrations for risk assessment purposes, and anticipation of this reporting by multinationals has already begun to discourage aggressive tax planning. It has also incorporated the minimum standard on treaty abuse and a mandatory binding arbitration provision into its new Model Tax Convention.

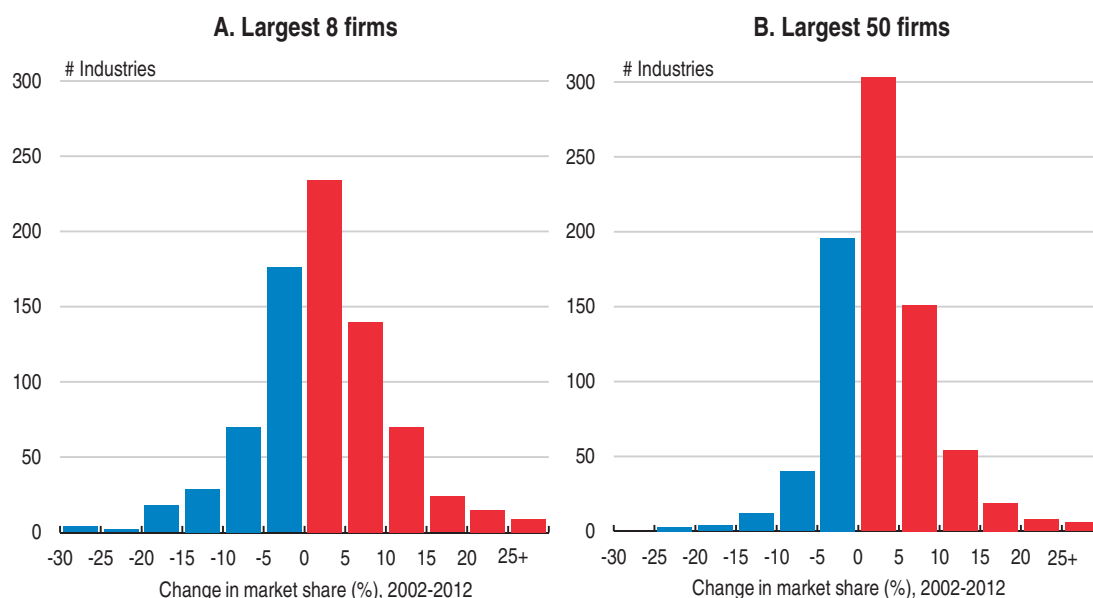
Beyond BEPS implementation, the United States has recently taken steps through regulatory action to improve the transparency of single member limited liability companies to address weaknesses in the availability of ownership information identified by the Global Forum on Transparency and Exchange of Information for Tax Purposes. The United States will be subject to a new round of peer reviews which will also assess the new standard of beneficial ownership adopted by the Global Forum. This may require further action. The enactment of FATCA in 2010 and its full implementation in 2014 provided the basis for the Common Reporting Standard, which is modelled on FATCA. The US now has automatic exchange intergovernmental agreements in place with over 100 jurisdictions, has almost 200,000 foreign financial institutions registered to supply information under FATCA and has already exchanged information in this context, including providing information to those jurisdictions about their residents’ US accounts. The information supplied by the US through these agreements is not identical to the information required to be supplied under the Common Reporting Standard and Congress has yet to enact the required proposed legislation that would put the US on parity with the Common Reporting Standard with respect to the specific types of information exchanged. The United States should also commit to implement the OECD Common Reporting Standard on automatic exchange of financial account information by 2017 or 2018 as have 101 other members of the Global Forum. It is recognised that legislative action may be required to implement the latter recommendation

Curbing market power and boosting competition

Greater market power could account for a number of the features of the current expansion, including slow growth of capital expenditure, less business dynamism and slower productivity growth. While some indicators suggest greater concentration (Figure 21), this evidence is crude and may reflect factors besides market power. For functional markets, as assessed by the competition authorities, there has been relatively little change in anti-competitive behaviour and the competition agencies are active in pursuing competitive outcomes in specific markets. However, in sectors such as fixed-line telecommunications, internet access and pharmaceuticals the permitted market structure and patent protection blunt competitive pressures. For example, the Federal Trade Commission has estimated that pay-for-delay deals (whereby a patent holder makes payments to a potential competitor for not entering the market) which are still permissible in patenting disputes between pharmaceutical companies raise drug costs by \$3.5 billion annually (FTC, 2010). The FCC in 2015 pre-empted state-level prohibitions on municipalities creating their own networks to help boost competition.

The United States is generally an open economy with comparatively few barriers to foreign merchandise trade, but some service sectors are less open to competitive pressures from foreign firms (Figure 22, Panel B). These include domestic air and maritime transport and courier services. In addition, annual quotas on the number of contractual and independent services suppliers blunt competitive pressures. Further progress in reducing barriers to trade in services could open the economy to greater competitive pressures. The recently concluded Trans Pacific Partnership goes some way in this direction. The ongoing Trade in Services Agreement negotiations also promote fair and open access across many service sectors. The Transatlantic Trade and Investment Partnership currently being negotiated with the European Union could have similar benefits, including concessions to roll back “Buy American” provisions for public procurement.

Figure 21. **Markets have become more concentrated, on balance**



Note: Data are for the 719 six-digit NAICS industries that are consistently defined from 2002 to 2012.

Source: OECD calculations using data from the quinquennial Economic Census.


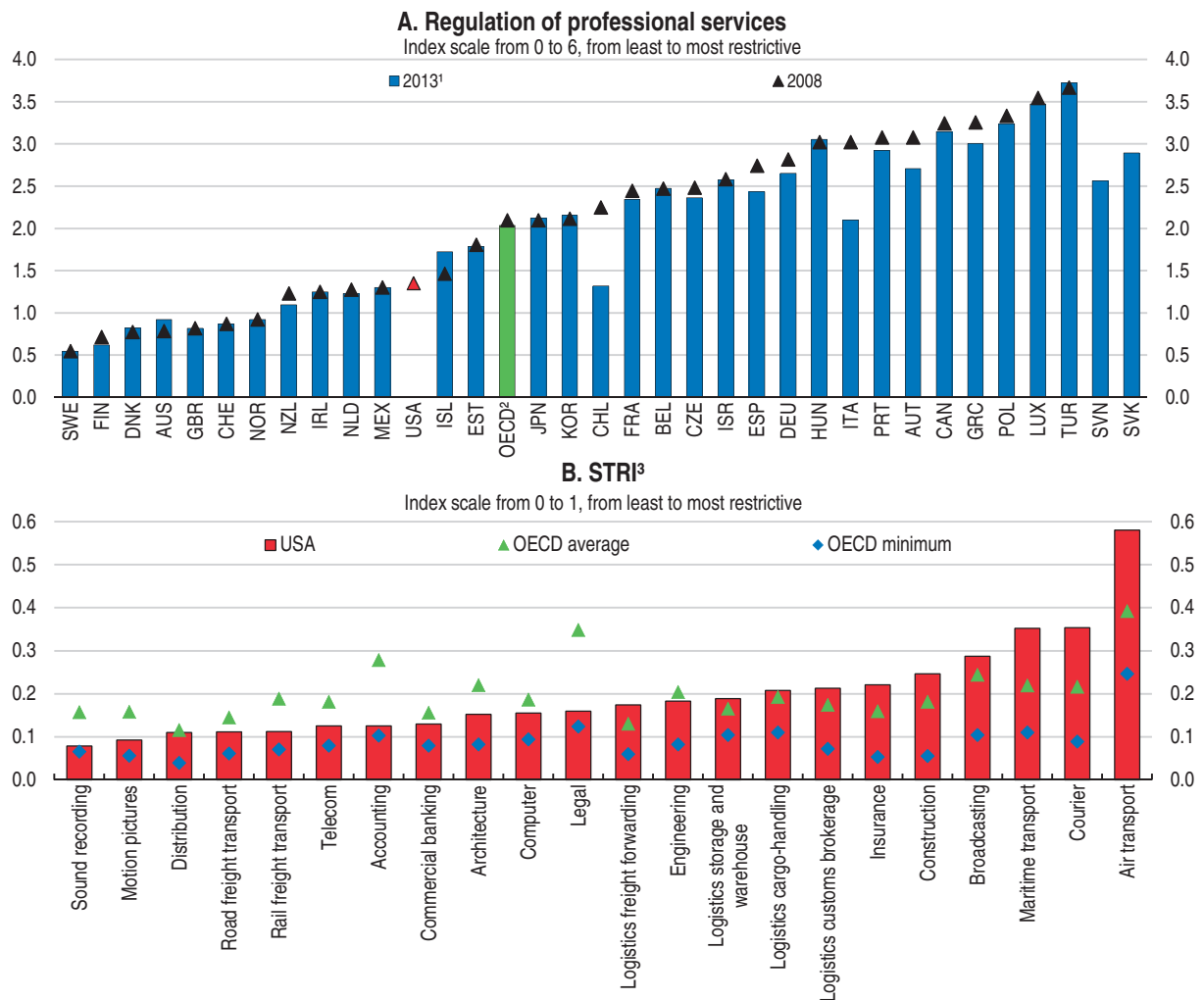
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Figure 22. Licencing of occupations and regulation in services restrict business dynamism




1. Data not available in 2013 for the United States.

2. Average of all OECD countries for 2013, excluding the United States.

3. The index includes regulatory transparency, barriers to competition, other discriminatory measures, restrictions on movement of people and restrictions on foreign entry. The STRI methodology takes into account different market and trade cost structures across sectors to ensure that they reflect the relative restrictiveness of each sector. Nevertheless, the indices may not be perfectly comparable across sectors. The indicators are for 2015 or the most recent year available.

Source: OECD Product Market Regulation Database and OECD Services Trade Restrictiveness Index (STRI).

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The strictness of regulation of professional services was close to the OECD average in 2008 (Figure 22, Panel A) and occupational licensing has grown considerably over the past decades (Kleiner and Krueger, 2013). In 2015, around one quarter of the population had a certificate or licence, with the prevalence rising for full-time workers. Some of the growth of licensing is related to shifts in the composition of economic activity towards sectors such as health. Indeed, the incidence of licensing is particularly pronounced for health care practitioners with over 70% coverage as well as public administration (mainly local) where 40% of workers hold licences. However, the rising prevalence of licensing requirements at the State level also suggests efforts to restrict entry. Indeed, wage premia tend to increase over time following the introduction of an occupational license (Han and Kleiner, 2016). On

average, median weekly earnings are one third higher for workers holding a licence. In a number of cases, licensing is a standard requirement across the States, including for occupations such as pest control, bus and truck drivers, and barbers. In other cases, licensing is fairly widespread but not universal, such as for construction occupations in around 30 States. Finally, State-level licensing can be fairly idiosyncratic, including occupations such as interior design and floristry. The growth of occupational licensing also appears to have an effect on migration patterns, with people in occupations that are typically licensed less likely to move across State lines (CEA, 2015). This dynamic has likely contributed to the decline in inter-state migration (Molloy *et al.* 2014).

While difficult to measure, indirect indicators and anecdotal evidence suggest that the importance of zoning is rising over time (Furman, 2015). Zoning can exacerbate house price appreciation that often accompanies local productivity growth by artificially restricting housing supply. As house prices rise, a sorting on the basis of income tends to occur as fewer lower-income people can afford housing in these high-productivity areas, ultimately leading to residential segregation (Ganong and Shoag, 2015). Such effects contribute to mismatch, act as a drag on productivity, and hamper the ability of labour mobility to moderate income differences across the country.

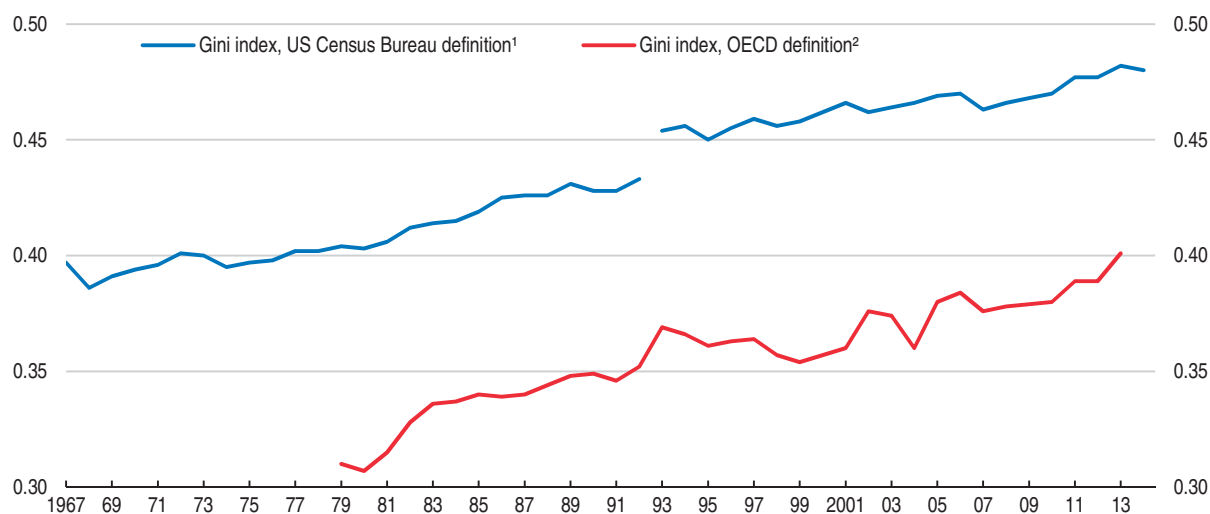
Making growth more inclusive and sustainable

Raising the growth rate overall will only benefit well-being in the long run if it is also inclusive and sustainable. Well-being is high on average in the United States (Box 7), but there is considerable heterogeneity with some groups of the population faring considerably better than others.

Inequality in income, wages and opportunity appear to have been growing over time. Growth rates in nominal labour compensation per worker have not kept pace with domestic prices and productivity, implying ongoing erosion of labour's share of income and a growing share of non-labour income (which tends to flow to high earners). Moreover, gains in labour compensation are mainly flowing to those in the upper end of the income distribution, further widening income inequality (Figure 23). Existing assessments of income inequality are imperfect, including because population surveys involve mis-measurement. For instance, Meyer and Mittag (2015) document that underreporting of assistance programmes (such as SNAP and TANF) understates the effectiveness of anti-poverty policy. Nonetheless, median real disposable household income has not improved materially over the past two decades, though the impact of non-cash benefits, such as Medicaid, paints a more positive picture. Creating opportunities to participate in the labour market more fully would be an important step towards reducing income inequalities. Achieving this requires action to ensure individuals are able to acquire skills they need and do not face discrimination or other obstacles in the labour market.

Improving opportunities for all


Schools play an important role in developing the skills that employers are demanding and that offer pathways for children from disadvantaged backgrounds to better life outcomes (Table 5). The quality of schooling, as measured by the National Educational Assessment Program scores for mathematics and literacy as well as enrolment, has been improving (Figure 25, Panel A). In particular, the poorest performing States have been successful in narrowing the gap with other States. In large part this reflects substantial improvements in reducing the number of students performing poorly, which has followed

Figure 23. **Income inequality has been trending upwards**

1. Includes cash transfers but does not exclude taxes paid from income.

2. OECD Gini definition is based on disposable income, post taxes and transfers.

Source: OECD Income Distribution Database and US Census Bureau.

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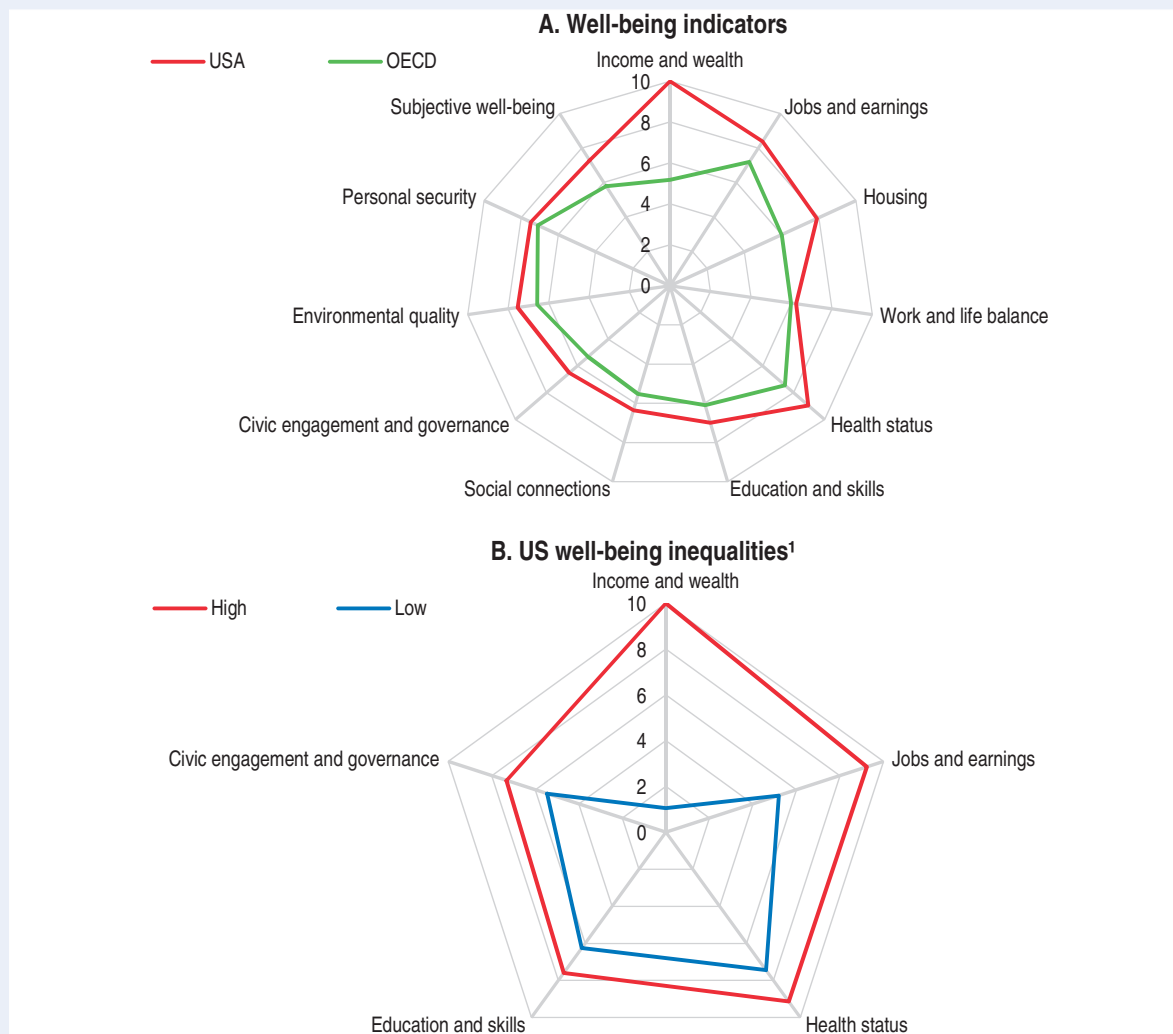
a wave of school finance reforms that reduced resource inequalities between schools and boosted performance (Lafortune *et al.*, 2016). In the early 1990s, large shares of students from ethnic minority backgrounds failed to attain basic numeracy and literacy skills (up to 80% of students). Substantial improvements have led to this falling more recently, such that less than a half do not show at least basic numeracy and literacy, although there is still room for improvement given that the national average is less than one third of students (33% for mathematics and 29% of reading for 8th grade). Notwithstanding progress, student attainment is around the OECD average when measured by PISA (Figure 25, Panel B). The difficulties of education have left large segments of the US adult population with relatively weak skills by international comparison (Figure 25, Panel C). Workers with only basic skills are particularly susceptible to being unemployed, especially during cyclical downturns.

Good schools can have a marked impact on student outcomes and support inter-generational income mobility (Chetty and Hendren, 2015). In this context, the *Every Student Succeeds Act* of 2015 replaces the nationwide K-12 standards in *No Child Left Behind*, and gives States control in setting their own educational objectives. By setting ambitious targets, States can help ensure that their students are well prepared for the job market and can help narrow geographic differences in attainment. An important aspect of the new law is increased State accountability for educational outcomes, including an intervention requirement for underperforming schools. However, there is as yet no evidence of the impact of the Act and States will need to resist the temptation to revert to less demanding standards. Resources differences, such as the incidence of teacher shortages, vary across schools in line with the socio-economic background of students (OECD, 2015c). To offset these differences, tackling underperformance may require the States and the federal government to level the playing field for poorly-performing schools in poorer areas. Funding across States is currently largely regressive partly due to underfunding of federal programmes (Schanzenbach *et al.*, 2016).

Box 7. Well-being is high, but not for all

Well-being of the average household is high in the United States in comparison to the rest of the OECD (Figure 24, Panel A). This is particularly so in terms of income and wealth, but outcomes are comparatively strong in almost all dimensions. Only indicators of work-life balance are below the OECD average. However, behind the average significant differences emerge, particularly with respect to income and wealth (Figure 24, Panel B). New indicators of child well-being are comparatively weak in the United States (OECD, 2015d). In particular, children in the United States rank relatively poorly on health indicators (infant mortality, birth weight and obesity).

Figure 24. High, but unequal well-being



1. The bottom panel shows well-being outcomes in various dimensions for people in the United States with different socio-economic background. In the dimensions “income and wealth”, “health” and “civic engagement and governance”, “high (low)” are people with an income belonging to the top/(bottom) quintile of the income distribution; in “jobs and earnings”, “high (low)” are people with the high/(low) educational attainment (i.e. ISCED 5/6 versus ISCED 0/1/2) or with gross earnings belonging to the top/(bottom) quintile of the distribution; and in “education and skills”, high (low)” are people with a score belonging to the top/(bottom) quintile of the PISA index of economic, social and cultural status. Outcomes are shown as normalised scores on a scale from 0 (worst condition) to 10 (best condition) computed over OECD countries, Brazil and the Russian Federation. For further details on the indicators included, please refer to www.oecd.org/statistics/OECD-Better-Life-Index-2016-definitions.pdf.

Source: OECD Better Life Index 2016.


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Table 5. **Past OECD recommendations on education policy**

Recommendation	Actions taken since the 2014 Survey
Improve quality secondary education to better prepare students for STEM tertiary studies.	The United States is taking policy actions to improve quality secondary education, based on a 5-year strategic plan for enhancing STEM education, including supporting state-led standards for secondary education; making investments toward the goal of preparing 100 000 more STEM-qualified teachers over the next decade; and initiating a STEM Master Teacher Corps. The 2017 budget proposal includes \$4 billion in mandatory funding over three years for States to increase access to K-12 STEM coursework, and \$80 million for a new, competitive program to promote the redesign of secondary schools with a focus on STEM-themed schools that expand opportunities for all students, particularly girls and other under-represented groups in STEM fields.
Greatly raise limits on Stafford loans, especially for unsubsidised direct loans, so that they cover the full cost of study. The interest rate on these loans should vary with the long-term bond rate. The default repayment plan should be income-contingent.	In August 2013 the <i>Bipartisan Student Loan Certainty Act</i> re-established interest rates for new Federal Direct Student Loans. Interest rates at origination are tied to the 10-year Treasury note, plus a margin, but are fixed for the life of the loan. For loans made between July 1, 2013 and June 30, 2014, the interest rate was 3.86% for undergraduates, 5.41% for graduate students, and 6.41% for PLUS loans. The bill also imposes a cap to ensure interest rates never exceed 8.25% for undergraduate students, 9.5% for graduate students, and 10.5% for PLUS borrowers. The Administration has expanded income driven repayment plans, allowing all who borrowed federal direct loans as students to cap their payments at 10 per cent of their monthly incomes.

Investing in higher education significantly boosts the chances for an individual to be in employment, earn a higher wage and to move up the income scale over their lifetime. The expansion of higher education in the United States since the early 1980s has seen the prospects improve for many more people, including for people from disadvantaged backgrounds. Enrolment rates have been rising steadily, reaching about two-fifths of 18-24 year olds in 2015. Attainment rates have also been trending up, though with around one-third of 25-29 year olds now having completed bachelor degrees. The measure of attainment remains somewhat lower than enrolment. In part this is due to students dropping out, particularly in private for profit colleges where only around one-third of students successfully complete their studies.

Since the early 1980s, college fees have risen steadily, making college education increasingly expensive. Whereas the annual fees for private non-profit was equivalent to a quarter of median household disposable income in the early-1980s, these costs are now approaching 60%. Fees are smaller for public schools and 2-year colleges, but have been increasingly equally rapidly. Partly as a consequence, student debt has been rising as a proportion of household debt (Figure 26). While student debt is not problematic if it enhances earning power, it can load students with debt, which is difficult to discharge, in low-quality degree programmes. In response to emerging problems, the federal government has limited the ability of students to obtain loans for institutions that are performing poorly and have put in place several measures that enable borrowers to shift to income-contingent repayment.

Boosting jobs

Raising employment will also raise output and well-being and - by bringing in groups of the population that have faced difficulties in finding jobs - make growth more inclusive. Employment rates dropped during the crisis and now stand below other major economies

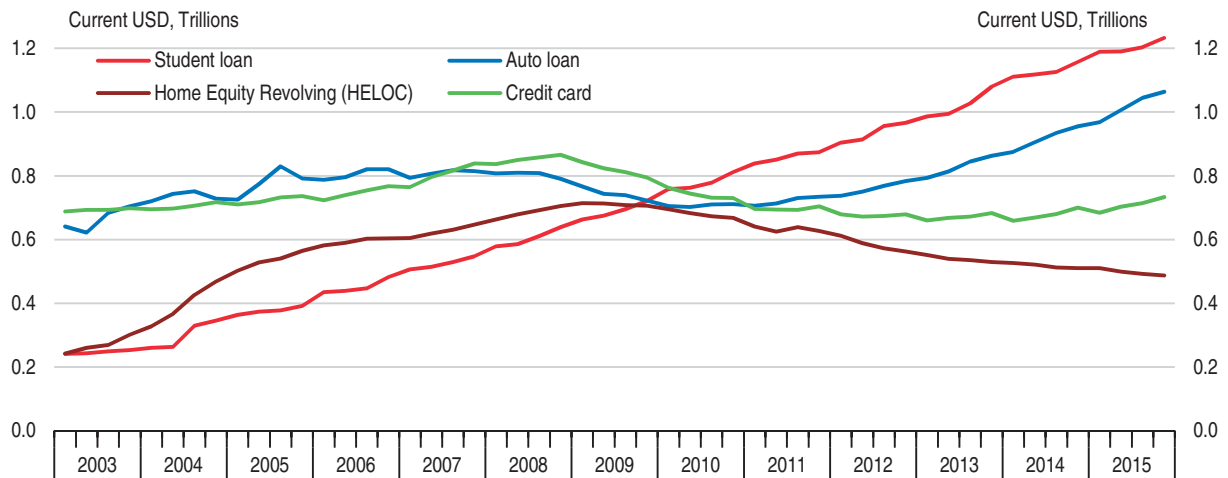
Figure 25. Education performance has improved though skills remain weak on average




Source: NAEP, OECD PISA, and Broecke et al. (2016).

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Figure 26. **Student loans have become a much more important element of household debt**
Household debt balances

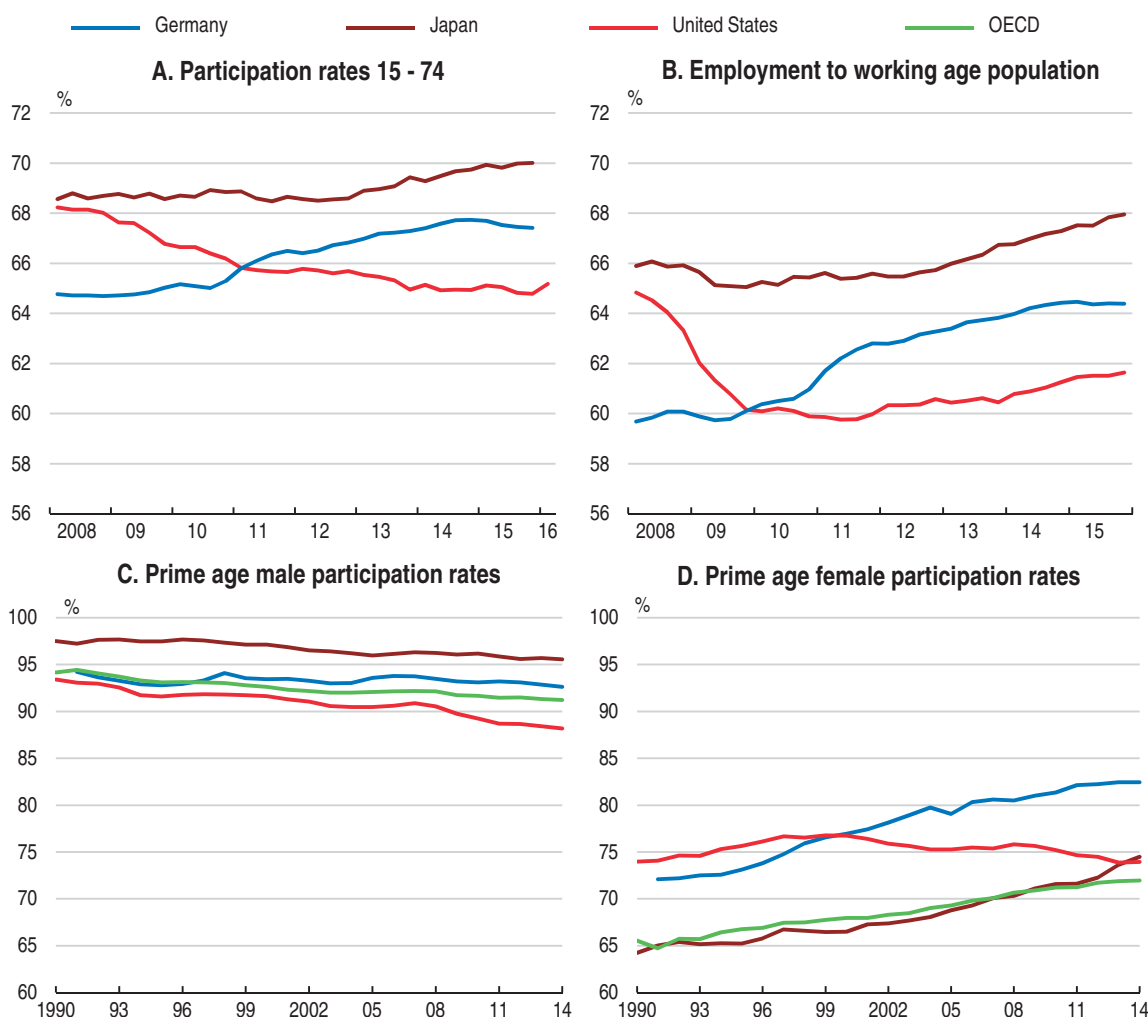


Source: Federal Reserve Bank of New York, Consumer Credit Panel/Equifax.


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(Figure 27). In part, this reflected the severity of the recession, but also demographic pressures, generally rising disability rolls, and educational enrolment that have been pushing participation rates down. The decline in participation for prime-age individuals is in marked contrast to elsewhere in the OECD, particularly for women. Certain population groups face greater difficulties in finding rewarding work and removing the barriers they currently face would help boost employment. Immigration reform presents another means to boost labour supply, though moving forward on different proposals has proven difficult politically.

Women have greatly improved their economic opportunities, working longer and earning higher incomes, with benefit to overall society, yet there is ample scope for further progress. Women's participation in the labour force and employment rates remain well below men's and have been falling back recently such that they are now below those of Germany and Japan. On the other hand, American women are far more likely to work full time (around three quarters against one half in Germany). The United States remains the only OECD country that does not offer paid parental leave on a national basis. In the States that require paid leave, the likelihood that women work increases (Adema *et al.*, 2015). Furthermore, employers can benefit from reduced replacement and training costs as women return to work for the same companies. Differences in State policies concerning paid leave, child and elderly care suggest that States with policies that support greater flexibility (paid parental leave, better quality child care and old age care) also have with higher female employment, including in managerial and professional occupations. The 2014 *Economic Survey* recommended that access to paid family leave be expanded nationally (Table 6). It also recommended improving the flexibility of working arrangements, increasing access to quality pre-school and childcare to help struggling families better balance work and family commitments. These remain policy priorities for the administration. Second earners, most of whom are women, generally face higher marginal tax rates on labour force participation decisions due to the US family-based tax system in combination with progressive tax rates.

Figure 27. **US labour-market participation has fallen**

Source: OECD Labour Force Statistics.

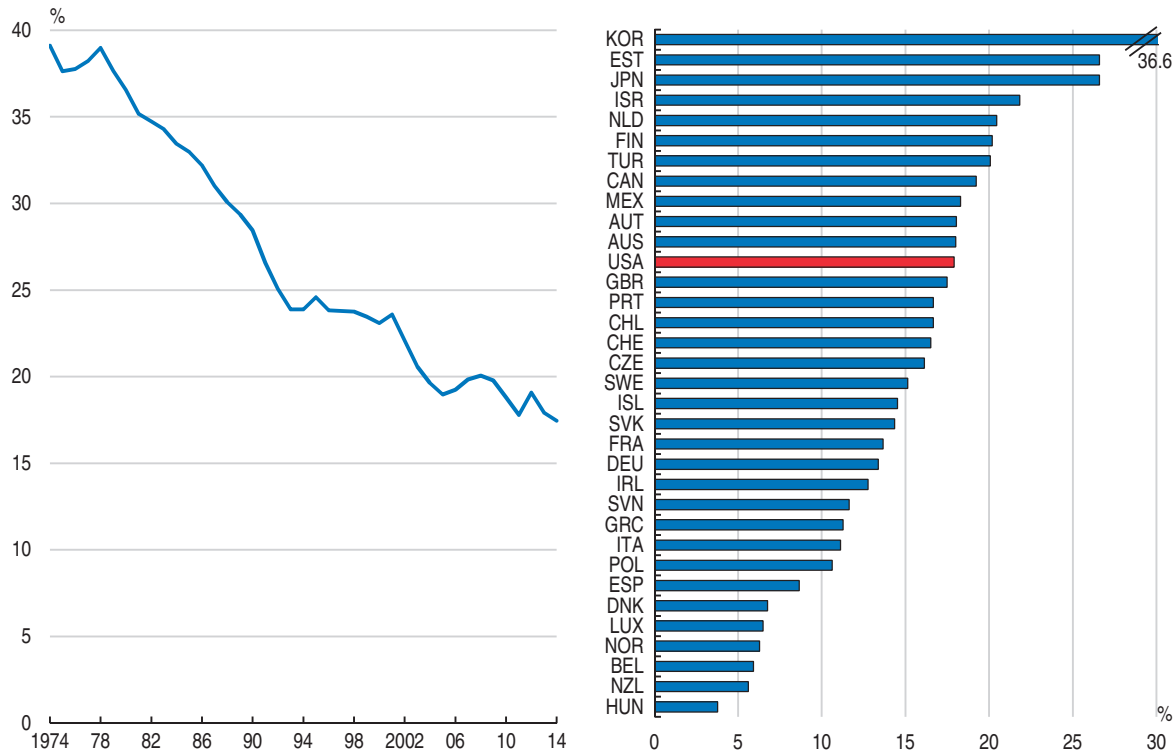
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Improving opportunities not only requires breaking down barriers to finding work but also being appropriately remunerated. The gender pay differential, as measured by the differences in the median wages for men and women, has fallen in the United States (Figure 28), although substantial differences remain across States. Part of this wage inequality

Table 6. **Past OECD recommendations to improve work-life balance**

Recommendation	Actions taken since the 2014 Survey
Provide support to parents with young children by expanding access to paid family leave nationally.	The proposed 2017 budget includes \$2.2 billion to support the creation of State paid leave programmes as well as offer federal employees six weeks of paid leave. Since 2014 some States, such as California, have introduced State-wide programmes and more than 20 cities or counties, such as San Francisco, require paid maternity leave.
Help States develop right-to-ask policies to support flexible working arrangements.	Since June 2014, all federal employees have such rights.
Increase access of low and moderate-income families to quality preschool and childcare.	The Preschool for All initiative would invest \$75 billion over 10 years with the aim of providing access to high quality preschool for all 4-year olds from low and moderate income families. Support is included in the 2017 budget proposal.

Figure 28. **The gender wage gap has declined over time, but remains comparatively high**
 % difference in gross earnings of full-time dependent employees



Source: OECD Labour Force Statistics.

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arises from sorting by occupation and firm. Men typically work at higher paying firms and receive larger wage increases when they switch jobs. Further progress in closing gender wage gaps requires changes in job structure and remuneration, particularly if job flexibility comes at the cost of reduced hourly wages (Goldin, 2015). States with more flexible work arrangements tend to have greater employment rates and smaller gender wage gaps. With women increasingly outperforming men at all levels of education, failure to make occupations attractive to women will hold back the economy and individual well-being (Table 7).

Table 7. **Gender inequalities are large**

		United States		OECD	
		Women	Men	Women	Men
Health status	Life expectancy at birth (years)	81	76	83	78
	Share of people in good/very good health conditions	89%	90%	67%	72%
Education and skills	Tertiary degrees awarded (all fields)	58%	42%	58%	42%
	Employment rates (tertiary educated individuals)	76%	84%	79%	88%
Jobs and Earnings	Wage gap between men and women	+18%		+16%	
	Share of poor single-adult households	33%	49%	37%	30%
Work-Life balance	Number of hours dedicated to household tasks (per week)	27	18	32	21
Civic engagement and governance	Share of seats in national parliament	19%	81%	29%	71%
Personal security	Share of people feeling safe when walking alone at night	67%	82%	61%	79%
Subjective well-being	Level of life satisfaction on a 0 to 10 scale	7.2	7.1	6.6	6.5

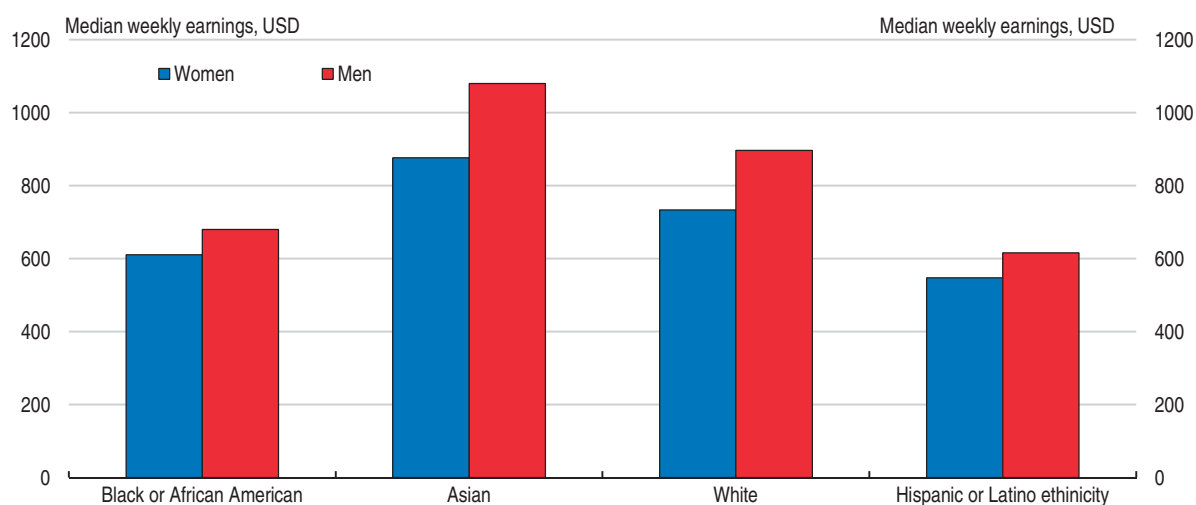
Source: OECD Better Life Index.

Substantial gaps in the median earnings of full-time workers also exist across races (Figure 29). Black and African American and Hispanic and Latino male workers earn a bit less than three quarters of that earned by white males. The gaps between women workers across races are less pronounced. Asian workers generally earn significantly more than other groups. In part, differences in educational attainment may account for these differences, though improvement in test scores by minority students over time has not translated into the wage gap narrowing over the last few decades. Black and Hispanic workers tend to work in lower-paying jobs and their returns to experience have tended to be lower.

Current disability insurance provides little incentive to re-enter the labour market for those whose health condition has improved and would like to work, as earnings above a limit will lead to the disability benefit being withdrawn. People qualifying for disability benefits also qualify for Medicare. Currently, there are some programmes aimed at helping transition individuals back into the workforce, such as retraining, continuing cash benefits for a period of time, and extending Medicare benefits for 102 months after resuming work. These efforts should be carefully evaluated and, if needed, the incentives should be strengthened to get off disability rolls for people who want to work and are again capable of doing so. The number of disability benefit recipients, which exceeded 10 million in 2014, now exceeds the number of unemployment benefit recipients, which dropped below 8 million in 2015. The previous *OECD Economic Survey* recommended encouraging greater labour market attachment, both by helping maintain labour force attachment during the claims process and by reducing the disincentives to work once receiving disability insurance (Table 8).

Another group facing difficulties in finding jobs are people with criminal records. By some estimates, almost 30% of the adult population have been arrested, and even those who are released without charge may still have a record that shows up during a background check (Solomon, 2012). The United States has the highest incarceration rate in the OECD by a considerable margin. In 2009, over 754 persons for every 100 000 population were incarcerated, compared to 140 on average in the OECD. The administration is working

Figure 29. **Wage gaps are large between population groups**



Note: Median usual weekly earnings of full-time wage and salary workers.

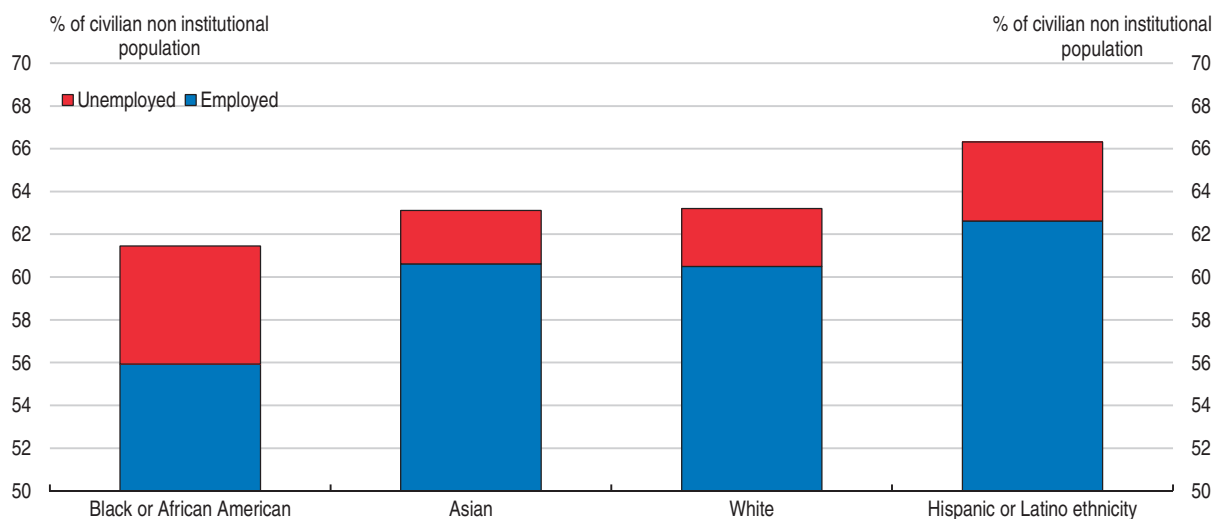
Source: Bureau of Labor Statistics (BLS).

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Table 8. **Past OECD recommendations on disability and health care reform**

Recommendation	Actions taken since the 2013 Survey
Provide comprehensive work support to get disability recipients back to work.	The 2014 <i>Workforce Innovation and Opportunity Act</i> put some emphasis on states putting in place policies to improve employment outcomes for people with disabilities
Reform the individual and small-group market to facilitate greater risk pooling. To this end, require community-rated and guaranteed issue policies and make health insurance compulsory. Introduce means-tested subsidies to help low-income persons afford health insurance.	These were features of the Affordable Care Act of 2010.

to reduce incarceration and efforts in Congress are underway to reform the criminal justice system to reduce incarceration through the reduction of overly long sentences. The administration is also working to help reintegrate individuals who have been incarcerated into the labour market through improving access to employment, job training, housing and healthcare. These actions are needed, as possessing a criminal record reduces employment prospects. In some cases, criminal records may be misused to discriminate on the basis of race, which can compound the disadvantages certain groups already face in the labour market, stemming from factors including poorer quality schools, residential segregation and discrimination (Bertrand and Mullainathan, 2004). Given the over-representation of blacks in prison populations, black males, particularly young males, have much higher unemployment rates and lower employment rates (Figure 30). To counter discrimination, 23 States and the District of Columbia (and over 100 cities or counties) have introduced “ban the box”, which removes pre-screening questions from application forms, but does not prevent firms subsequently checking a candidate’s past. A number of major firms and the federal government have removed these questions during their recruitment processes. Rolling out this initiative nationally would give this marginalised group a fairer chance in getting a job. On the downside, new empirical evidence suggests job applicants without work experience suffer because potential employers have introduced new questions about work experience as a way to mimic the criminal record question.

Figure 30. **Employment rates are lower amongst blacks**

Source: BLS Current Population Survey.

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Reducing mismatch

Reducing mismatch between the supply and demand of skills is a means to boost growth while raising well-being. Past technological disruptions have eliminated some jobs, but also created others, making it important to facilitate the skilling and reskilling of workers throughout their working lives. The pace at which changes are occurring is now arguably faster and policy settings need to be adjusted to keep pace with it. Reducing mismatch has become more complicated with the decline in business dynamism. Fewer people have been leaving their job voluntarily and moving to new jobs in the aftermath of the last two recessions (Hyatt and Spletzer, 2013). Historically, this type of job switching has been closely associated with individual earning growth, reflecting gains from better resource allocation and matching the demand and supply of skills. The evidence from Mukoyama (2015) suggests that a share of the recent slowdown in total factor productivity (up to 0.5% annual decline) can be traced to workers finding it harder to move to a job that better match their skills. OECD empirical work on policies that could reduce mismatch, such as bankruptcy procedures and housing policies, suggests opportunities to raise the level of US output by over 3% (Adalet McGowan and Andrews, 2015).

A growing number of firms are aware of the societal challenges posed by inequality of opportunity and are beginning to address them by raising their own minimum wage, improving working conditions (such as offering parental leave), allowing greater flexibility and removing screening on the basis of criminal records. It is in the interest of businesses to engage with educational institutions, both to ensure the right skills are being taught and to counter problems with professional certificates not being portable across the country and which contributes to mismatch (Table 9). In some sectors, such as construction, firms have worked with educational institutions to ensure that credentials are widely recognised. Helping other sectors reach similar arrangements will ensure the right skills

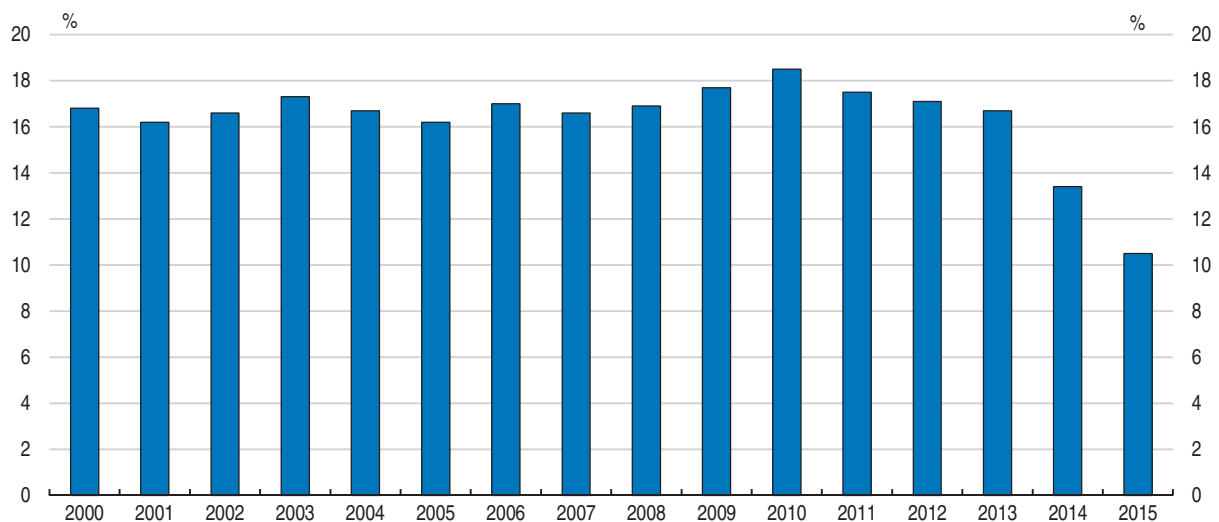
Table 9. Past OECD recommendations on business sector contribution to well-being

Recommendation	Actions taken since the 2014 Survey
Strengthen the portability and recognition of training by involving employers in programme design.	The Department of Health and Human Services introduced the Licensure Portability Grant Program to support State professional licensing boards cooperating in reducing statutory and regulatory barriers to telemedicine. The FY2016 Budget included \$7.5 million to support efforts by a consortium of States to expand reciprocity for a range of occupational licenses. The proposed FY2017 budget also calls for a community college partnership tax credit. This proposal would provide businesses with a new tax credit for hiring graduates from community and technical colleges as an incentive to encourage employer engagement and investment in these education and training pathways. The proposal would provide \$500 million in tax credit authority for each of the five years, 2017 through 2021. The tax credit authority would be allocated annually to states on a per capita basis and would be available to qualifying employers that hire qualifying community college graduates
Work with employers in preventing the negative effects of job strain on mental health, prolonged sick leaves, job loss and disability-benefit claims	No action taken.
Raise labour earnings at the low end by expanding the EITC, which would be more effective if supported by a higher minimum wage.	EITC expansions were made permanent in 2015 as were similar expansions made to the Child Tax Credit. The 2017 budget proposes to expand the earned income tax credit to workers without qualifying children. 14 States and over 30 cities and counties have introduced minimum wages that are higher than the federal minimum wage in 2014 and 2015.


are being taught while increasing the scope of opportunity for students. The proposed FY2017 budget calls for a tax credit to strengthen partnerships between businesses and community colleges.

Investment in health can also make growth more inclusive and expand opportunities. The introduction of the *Affordable Care Act* has led to considerable progress in addressing the lack of health insurance coverage (Figure 31). As a result, fewer people lack access to adequate healthcare coverage, which could enable them to participate in the job market or take more productive jobs. Among other things, the law helps address shortcomings with employer-provided healthcare coverage, which can create lock-in effects that discourage inter-firm mobility. The expansion of coverage has also helped ease access to healthcare for would-be entrepreneurs, who previously would have relied on a spouse's employer-provided coverage, purchased more expensive coverage in the individual market, or opted for no coverage.

Figure 31. **Health un-insurance has dropped since 2013**



Source: Centres for Disease Control and Prevention, National Health Interview Survey.

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Meeting environmental challenges

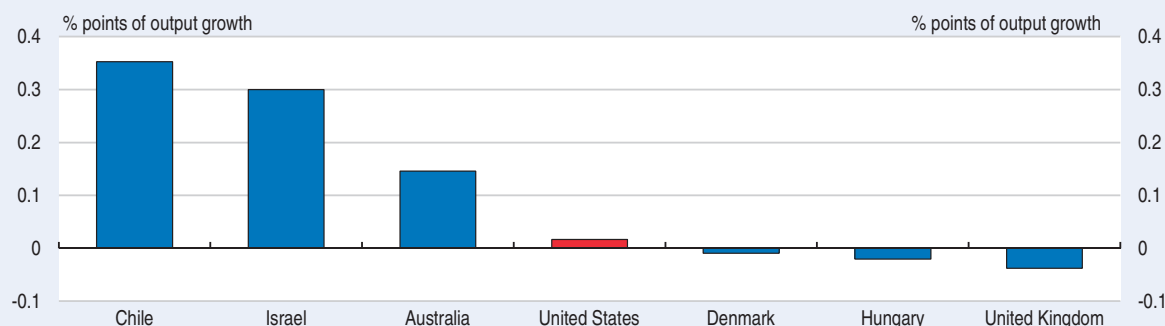
Ensuring environmental sustainability is an overarching challenge. Greenhouse gas emissions remain relatively high per capita, but are around one-tenth lower than their peak in 2007. The United States has recently made a number of agreements to support emission reduction, notably with China. Reducing carbon dioxide emissions remains an area in which the US performs relatively poorly in comparison with the rest of the OECD, despite the strengthening of fuel economy standards, and significant use of policies and incentives for renewable energy and energy efficiency at the State level (Box 8). The Administration has proposed a \$10 per barrel oil fee to fund infrastructure. Implementation of further measures to abate climate change should include the roll-out of Clean Power Plan for new, modified, and reconstructed coal, oil and natural gas-fired power plants

The Administration recently proposed the 21st Century Clean Transportation System, an initiative designed to address the challenges of climate change mitigation. The plan would levy modest fees on oil producers to finance investment in clean transportation


Box 8. Economy-environment linkages in the United States

The US economy benefits from abundant natural resources. Their contribution to output growth has been positive until 2013 (Figure 32).

Figure 32. **Contribution of domestic natural capital to output growth, 1991-2013 averages**



Note: The contribution is measured in percentage points of output growth, long-term annual average over 1991-2013. The United States is compared to three OECD countries from the top and bottom of the range.

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Energy intensity and carbon intensity of the economy have declined. The United States is a net importer of CO₂ emissions, which started to grow in the previous decade and stabilised after the 2008 crisis. The rising share of gas in energy production lowers CO₂ intensity although fugitive emissions of methane from fracking are an offsetting factor.

The exposure of the population to air pollution by fine particulates has declined steadily for several decades even in periods of stronger economic growth, although still above the WHO target levels for long-term exposure (10 µg/m³). Such pollution is not only an industrial or urban phenomenon. High levels of particle pollution in Los Angeles are likely associated with manufacturing and the urban environment. Neighbouring Central Valley, also with high levels of pollution, is predominantly agricultural (EPA Green Book).

Municipal waste generation, though it has declined on a per capita basis, remains higher than the OECD, though less so when compared with GDP. Recycling rates are below the best performers, though similar to the OECD average. For non-recycled waste, the share dealt with through incineration is well below average as low overall population density often makes landfill the preferred option.

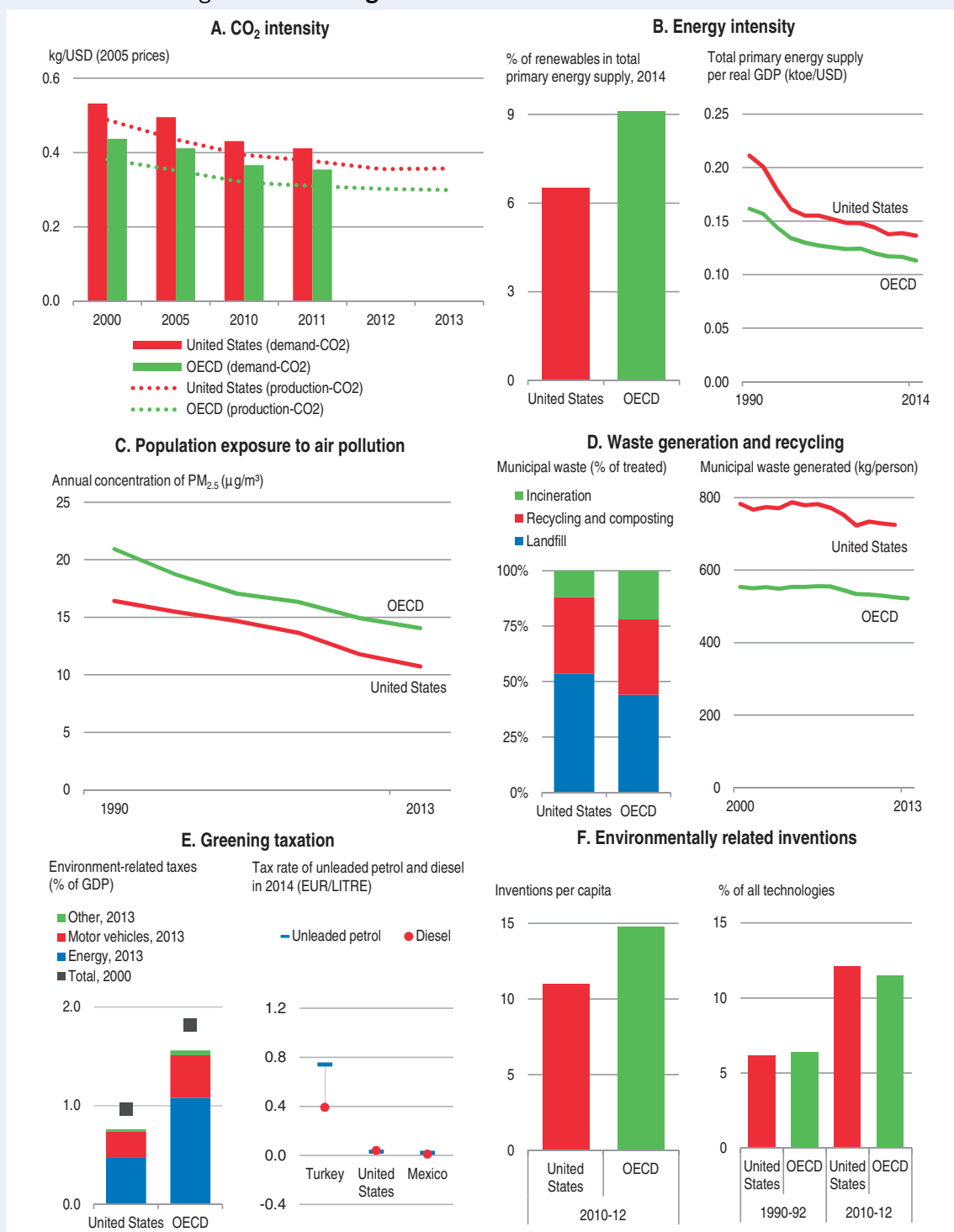
Revenues from environmentally related taxes are very much lower than in other countries, largely because of low energy taxation. The average tax rate on motor fuel is between 10 and 20% of the level in Europe, for example. Diesel is taxed higher than gasoline in the United States, more in line with their relative externalities than in most other OECD countries.

The backlog of investment in public infrastructure covers many sectors including public water supply and sewage systems. Many legacy sites with hazardous waste have been cleaned up over the 30 year history of the Superfund and other programmes but resources devoted to this have diminished. Water quality can be seriously affected by polluted sites. In other areas, for example in California, water availability is the key issue, as water pumping, mainly for agriculture, from some of the largest aquifers continues at unsustainable rates.

A high proportion of innovation activity is associated with green inventions, higher than the average for the OECD. The United States is a leader in innovation on energy-efficiency technologies, although only a small fraction of government R&D support (less than 2.5%) is allocated to the environment and energy. R&D expenditure on energy technologies has been relatively stable since 1990, but picked up more recently and as a share of GDP is around average for the OECD.

Box 8. Economy-environment linkages in the United States (cont.)

Figure 33. Green growth indicators for the United States



Source: OECD Green Growth Indicators, OECD Environment Statistics, OECD National Accounts; World Energy Balances (IEA), OECD Municipal waste statistics, Taxes and charges - Environment-related database; OECD Environmental Patents, OECD Historical population and projections.

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infrastructure and to promote innovation in clean technologies. Putting a price on greenhouse gas emissions and supporting innovation in clean technologies were previous recommendations in past *Economic Surveys* (Table 10). While implementing climate change policy may have an impact on the budget, the net effect on public finances over the longer term is ambiguous. The impact will partly depend on innovation, the speed at which businesses and individuals adopt greener environmental solutions and the extent to which adaptation costs are reduced as a result. In addition, to the extent that addressing climate change also reduces local air pollution, the impact on health of reduced pollution would boost productivity and reduce health care costs (OECD, 2014).

Managing water presents challenges in ensuring safe supply and long-run sustainability. Water service providers are often small municipal corporations that lack the institutional capacity needed to raise funding for major capital investments. However, many drinking water systems are ageing and require upgrading to meet environmental requirements. The Environmental Protection Agency has estimated that \$384 billion is needed over 20 years to maintain and improve water infrastructure, with the majority accounted for by investment in transmission and distribution networks (EPA, 2013). In addition to water supply systems, large swathes of the country confront challenges in addressing groundwater depletion and water stress, which may ultimately reduce drinking water sources and lead to desertification and saltwater intrusion in coastal areas. Coordinating groundwater withdrawals across catchment areas and between the multiple uses of water has proven challenging in parts of the country.

Table 10. **Past OECD recommendations on environmental sustainability and energy**

Recommendation	Actions taken since the 2014 Survey
Further lower emissions with efficient policy tools, as part of the climate-change strategy, notably by putting a price on greenhouse gas emissions, though well-designed regulation and investment in renewables also have a role to play.	The Clean Power Plan of 2015 aims to reduce greenhouse gas emissions from electricity generation, from reducing emissions from coal-fired power stations while promoting renewables.
Promote innovation in energy saving and low carbon technology.	The 21st Century Clean Transportation System would fund low carbon technology and infrastructure.
Ensure that trade restrictions do not hamper energy exports.	The ban on crude oil exports was lifted at the end of 2015

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ANNEX

Progress in structural reform

The objective of this Annex is to review action taken since the previous Survey (June 2014) on the main recommendations from previous Surveys.

A. Recommendations on monetary and financial policy

Recommendations	Actions taken since the 2014 Survey
Gradually reduce and ultimately remove monetary accommodation as the economy approaches full employment and inflation returns to the Fed's 2% target.	The process of raising policy rates began in December 2015, though policy remains appropriately accommodative.
Continue to roll out macro-prudential policy tools, including those associated with the Dodd-Frank Act and those addressing vulnerabilities in wholesale funding, repo market and money-market mutual funds.	Capital requirements for systemically important banks are substantially higher than before the crisis, stress tests have been implemented to reveal vulnerabilities, and regulations require systematically important institutions to form "living wills" to avoid a disorderly unwinding in the case of failure. New rules on securitisation and money market funds as well as enhanced transparency apply to the shadow banking sector.
Reform the housing finance system to ensure access to mortgage credit by creditworthy homebuyers while providing better guarantees of financial stability and avoiding again exposing taxpayers to costly bailouts.	Several housing finance reform proposals have been made, but none progressed past the committee stage in Congress.
Leave the securitisation of mortgages to the private sector. This would entail privatising the Government Sponsored Enterprises, cutting off their access to preferential lending facilities with the federal government, subjecting them to the same regulation and supervision as other issuers of mortgage-backed securities, and dividing these entities into smaller companies that are not too big to fail.	Fannie Mae and Freddie Mac remain under government stewardship. The Senate Banking Committee passed in May 2014 a bipartisan proposal ("Johnson-Crapo GSE reform") seeking to reform the housing finance system, create greater competition and reduce taxpayer risk, while ensuring affordable fair access to all creditworthy homebuyers. The proposal has not gone beyond the committee stage.

B. Recommendations on fiscal policy

Recommendations	Actions taken since the 2014 Survey
Fiscal policy needs to remain cautious and prepared to take actions to ensure longer-term sustainability.	There have been no large changes in fiscal policy.
Act towards rapid international agreement and take measures to prevent base erosion and profit shifting (BEPS).	The United States participated in the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project, endorsed by the G20 Leaders in November 2015.
Increase reliance on consumption taxation.	No action taken
Make the personal tax system more redistributive by restricting regressive income tax expenditures.	The President's proposed FY2017 Budget has measures to limit regressive tax expenditures, reform capital income taxation, and reconcile different tax bases.
Replace the health tax exclusion (i.e., the exclusion from taxable personal income and payroll tax of compensation paid in the form of health insurance cover) with subsidies that do not encourage overly-generous health plans (subject to minimum standards of coverage).	The 2010 Affordable Care Act included an excise tax that will be levied on high-cost health insurance plans starting in 2018, but now delayed to 2020. The Administration is continuing to develop and implement regulations on the tax on high-cost health insurance plans, so called Cadillac tax.
Speed up the phased increase in the retirement age at which full social security benefits are paid from 65 to 67. Link the retirement age to active life expectancy thereafter. Reduce the replacement rate for higher earners and raise the Social Security tax cap.	No action taken. Recent research has revealed that life expectancy for low-income pensioners has remained static, undermining the case for an automatic link between average life expectancy and the retirement age.

C. Recommendations on innovation

Recommendations	Actions taken since the 2014 Survey
The federal R&D budget should be protected from the expenditure cuts. Make the R&D tax credit permanent	The R&D tax credit was made permanent in 2015.
Patent reform (America Invents Act) needs to be taken further by ensuring that courts grant injunction relief and damages awards for patent infringement that reflect realistic business practices and the relative contribution of patented components of complex products.	The Supreme court has allowed costs to be shifted in case of a lost appeal.
Tertiary education attainment in STEM fields needs to be increased. An important step in doing so is improving access to quality secondary education so that students are better prepared for STEM tertiary studies.	Every Student Succeeds Act was introduced in 2015. The 2017 budget proposal includes \$4 billion in mandatory funding over three years for States to increase access to K-12 STEM coursework, and \$80 million for a new, competitive program to promote the redesign of secondary schools with a focus on STEM-themed schools that expand opportunities for all students, particularly girls and other under-represented groups in STEM fields.
Establish a national innovation office to increase coherence and continuity in implementation of the national innovation strategy.	No action taken. Other OECD countries have established productivity commissions.

D. Recommendations on education policy

Recommendations	Actions taken since the 2014 Survey
Improve quality secondary education to better prepare students for STEM tertiary studies.	The United States is taking policy actions to improve quality secondary education, based on a 5-year strategic plan for enhancing STEM education, including supporting state-led standards for secondary education; making investments toward the goal of preparing 100 000 more STEM-qualified teachers over the next decade; and initiating a STEM Master Teacher Corps. The 2017 budget proposal includes \$4 billion in mandatory funding over three years for States to increase access to K-12 STEM coursework, and \$80 million for a new, competitive program to promote the redesign of secondary schools with a focus on STEM-themed schools that expand opportunities for all students, particularly girls and other under-represented groups in STEM fields.
Greatly raise limits on Stafford loans, especially for unsubsidised direct loans, so that they cover the full cost of study. The interest rate on these loans should vary with the long-term bond rate. The default repayment plan should be income-contingent.	In August 2013 the Bipartisan Student Loan Certainty Act re-established interest rates for new Federal Direct Student Loans. Interest rates at origination are tied to the 10-year Treasury note, plus a margin, but are fixed for the life of the loan. For loans made between July 1, 2013 and June 30, 2014, the interest rate was 3.86% for undergraduates, 5.41% for graduate students, and 6.41% for PLUS loans. The bill also imposes a cap to ensure interest rates never exceed 8.25% for undergraduate students, 9.5% for graduate students, and 10.5% for PLUS borrowers. The Administration has expanded income driven repayment plans, allowing all who borrowed federal direct loans as students to cap their payments at 10 per cent of their monthly incomes.

E. Recommendations on improving work-life balance

Recommendation	Actions taken since the 2014 Survey
Provide support to parents with young children by expanding access to paid family leave nationally.	The proposed 2017 budget includes \$2.2 billion to support the creation of State paid leave programmes as well as offer federal employees six weeks of paid leave Since 2014 some States, such as California, have introduced State-wide programmes and more than 20 cities or counties, such as San Francisco, require paid maternity leave.
Help States develop right-to-ask policies to support flexible working arrangements.	Since June 2014, all federal employees have such rights.
Increase access of low and moderate-income families to quality preschool and childcare.	The Preschool for All initiative would invest \$75 billion over 10 years with the aim of providing access to high quality preschool for all 4-year olds from low and moderate income families. Support is included in the 2017 budget proposal.

F. Recommendations on disability and health care reform

Recommendation	Actions taken since the 2013 Survey
Provide comprehensive work support to get disability recipients back to work.	The 2014 Workforce Innovation and Opportunity Act put some emphasis on states putting in place policies to improve employment outcomes for people with disabilities
Reform the individual and small-group market to facilitate greater risk pooling. To this end, require community-rated and guaranteed issue policies and make health insurance compulsory. Introduce means-tested subsidies to help low-income persons afford health insurance.	These were features of the Affordable Care Act of 2010.

G. Recommendations on business sector contribution to well-being

Recommendation	Actions taken since the 2014 Survey
Strengthen the portability and recognition of training by involving employers in programme design.	The Department of Health and Human Services introduced the Licensure Portability Grant Program to support State professional licensing boards cooperating in reducing statutory and regulatory barriers to telemedicine. The FY2016 Budget included \$7.5 million to support efforts by a consortium of States to expand reciprocity for a range of occupational licenses. The proposed FY2017 budget also calls for a community college partnership tax credit. This proposal would provide businesses with a new tax credit for hiring graduates from community and technical colleges as an incentive to encourage employer engagement and investment in these education and training pathways. The proposal would provide \$500 million in tax credit authority for each of the five years, 2017 through 2021. The tax credit authority would be allocated annually to states on a per capita basis and would be available to qualifying employers that hire qualifying community college graduates
Work with employers in preventing the negative effects of job strain on mental health, prolonged sick leaves, job loss and disability-benefit claims	No action taken.
Raise labour earnings at the low end by expanding the EITC, which would be more effective if supported by a higher minimum wage.	EITC expansions were made permanent in 2015 as were similar expansions made to the Child Tax Credit. The 2017 budget proposes to expand the earned income tax credit to workers without qualifying children. 14 States and over 30 cities and counties have introduced minimum wages that are higher than the federal minimum wage in 2014 and 2015.

H. Recommendations on environmental sustainability and energy

Recommendation	Actions taken since the 2014 Survey
Further lower emissions with efficient policy tools, as part of the climate-change strategy, notably by putting a price on greenhouse gas emissions, though well-designed regulation and investment in renewables also have a role to play.	The Clean Power Plan of 2015 aims to reduce greenhouse gas emissions from electricity generation, from reducing emissions from coal-fired power stations while promoting renewables.
Promote innovation in energy saving and low carbon technology.	The 21st Century Clean Transportation System would fund low carbon technology and infrastructure.
Ensure that trade restrictions do not hamper energy exports.	The ban on crude oil exports was lifted at the end of 2015