



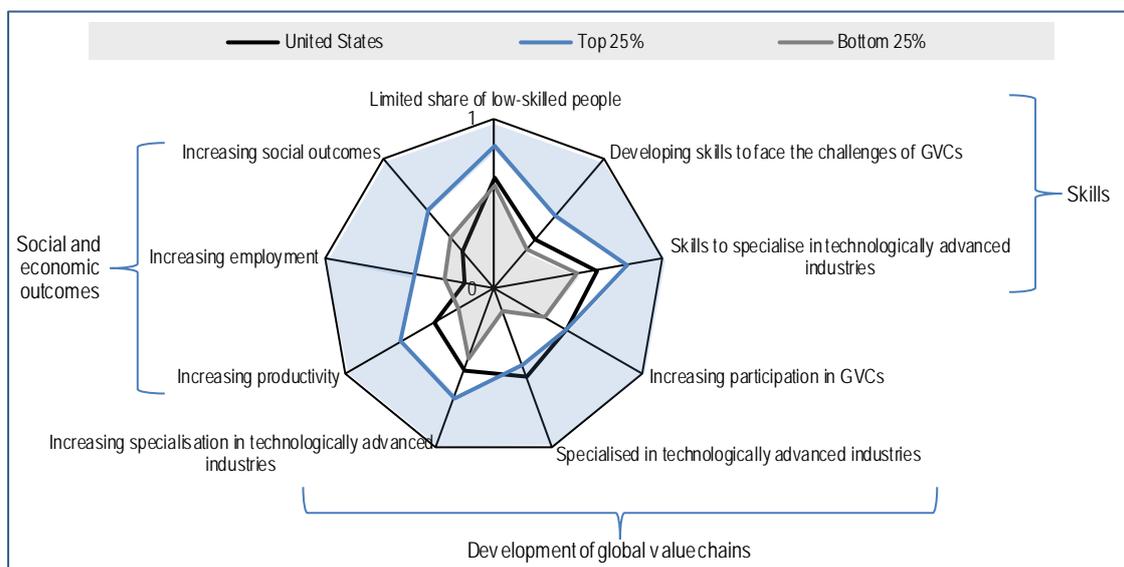
SKILLS OUTLOOK 2017 SKILLS AND GLOBAL VALUE CHAINS

How does the United States compare?

OECD Skills Outlook 2017

The *OECD Skills Outlook 2017* shows that skills matter for global value chains. This report presents new analyses based on the Survey of Adult Skills, a product of the OECD Programme for the International Assessment of Adult Competencies (PIAAC), and the Trade in Value Added Database. It develops a Scoreboard on Skills and Global Value Chains with the objective to measure the extent to which countries have been able to make the most of GVCs through the skills of their populations in terms of skills, global value chains, and social and economic outcomes. It also explains what countries would need to do to specialise in technologically advanced industries.

Figure 1. Scoreboard on skills and global value chains



Source: OECD (2017), *OECD Skills Outlook 2017, Skills and Global Value Chains*, <http://dx.doi.org/10.1787/9789264273351-en>.

- Since the 2000s, the United States has significantly increased its participation in global value chains, but participation remains relatively low (Figure 1, Table A.1; OECD, 2017, pp. 41-44). As a big economy with large internal value chains, the United States relies less on foreign inputs than smaller OECD economies. More than 10% of jobs in the business sector of the United States are sustained by foreign final demand, which is less than the OECD average (OECD, 2017, Figure 2.9).
- The United States is strongly specialised in technologically advanced industries, particularly more complex business services and high-tech manufacturing, but the analysis shows that this specialisation pattern is not fully supported by the country's skills characteristics

(Table 1; OECD, 2017, pp. 107-115). In particular, the skills mix of its population is not well aligned with the skills requirements of these industries, which can make it difficult to maintain specialisation in these industries as competition intensifies, or to specialise in similar industries.

- Increased participation in global value chains and specialisation in complex business services have been accompanied by economic and social progress over the last decade at or below the OECD average (Figure 1, Table A.1). Productivity growth has been at the OECD average, employment outcomes have been below the OECD average, and inequalities and labour market insecurity have increased.
- To ensure that the United States benefits economically and socially from its participation in global markets, the country needs to equip its population with skills mixes of both cognitive and social and emotional skills, achieve greater equity in learning outcomes, and encourage adults to continuously develop and adapt their skills. The Survey of Adult Skills (PIAAC) shows that 30% of adults are low performers in literacy and/or numeracy skills (OECD, 2017, Figure 1.7). In addition, the mathematics and reading scores of 15-year-old students have not improved since 2000, when the first round of the OECD Programme of International Student Assessment (PISA) took place.

Table 1. Specialisation opportunities in technologically advanced industries

From the alignment of the US skills characteristics with industries' skills requirements

		Medium/high-tech manufacturing			High-tech manufacturing			Business services (more complex)				
		Machinery and equipment n.e.c	Electrical machinery, apparatus n.e.c	Motor vehicles, trailers, semi-trailers	Chemicals and chemical products	Computer, electronic, and optical	Other transport equipment	Finance and insurance	Real estate activities	Renting of machinery, equipment	Computer and related activities	R&D, and other business services
specialisation in 2011	observed					○	○	○	○	○	○	○
	opportunity											
specialisation trend 2000-11	increased				●	●			●	●	●	●
	decreased	●	●	●			●	●				

Note: The dots in the table show whether countries have increased (black circle) or decreased (grey circle) their revealed comparative advantages over the period 2000-11. Revealed comparative advantages (white circle) show the extent to which a country is specialised in a certain industry within GVCs (or receives more income from its exports in this industry than other countries). Opportunities for specialisation are the results of empirical work developed in the OECD Skills Outlook 2017. Countries have an opportunity to specialise in an industry if there is a good alignment of countries' skills characteristics with the skills requirements of this industry. Several characteristics of skills shape countries' specialisation in GVCs. The extent to which these characteristics are aligned with each industry's skills requirement can be consolidated into one measure showing the specialisation opportunities of each country in each industry.

Source: OECD (2017), *OECD Skills Outlook 2017, Skills and Global Value Chains*, <http://dx.doi.org/10.1787/9789264273351-en>.

Key policy messages

Equip graduates with strong mixes of relevant skills and reliable qualifications

- Workers in the United States have strong readiness to learn. They also perform ICT, STEM, managing, communication and marketing and accounting tasks on the job, more frequently than workers in other OECD countries (OECD, 2017, Figure 3.3): these skills are highly valued by employers. To turn these skills into a source of comparative advantage, they need to be paired with strong cognitive skills, which are lower in the United States than in many other OECD countries.
- To specialise in most technologically advanced industries, countries need pools of workers with qualifications that reliably reflect what they can do. One in four higher education graduates in the United States have numeracy skills below level 2 on a scale that goes to level 5 (OECD, 2017, Figure 4.7). In addition, the large skills discrepancies between advantaged and disadvantaged 15-year-old students – the largest gap in reading among OECD countries who participated in the first round of PISA – translate into the uneven learning outcomes for United States' adults.

- To equip all graduates with a strong skills mix and reliable qualifications, the Skills Outlook emphasises the importance of high-quality pre-primary education for all to give every child a strong start to their education careers. The United States would also need to reduce inequalities of opportunity among schools by lessening the concentration of disadvantaged and low-performing students in particular schools or allocating more resources, including better teachers, to those schools. In addition, innovative teaching methods in schools and stronger teacher support for all students can help them attain the relevant skills, both cognitive and social and emotional ones.

Continuously develop and adapt adults' skills

- The United States' workers are some of the most engaged participants in adult learning among the OECD countries participating in the Survey of Adult Skills (OECD, 2017, Figure 4.16). The majority of employees (67%) participate in some form of education or training. Many adults who have lost their job (47%) are also involved in learning, but the gap between these two groups is large compared to other OECD countries.
- If these people withdraw from the labour market, they may face a vicious cycle in which they do not benefit from training and therefore their skills remain weak. As in many OECD countries, the US participation rate in adult education for those who are not in the labour force is low (26%). Policies need to better support all workers at risk of displacement. They also need to ensure access to skills development for those who have difficulty accessing loan financing for developing skills.

Make the best use of the skills pool

- Data suggest that the use of best management practices is more widespread in the United States than in any other OECD country (OECD, 2017, Figure 4.9). These practices are a powerful tool for using skills assets effectively, adjusting them to new needs, and thereby giving a country a comparative advantage in GVCs.
- Various types of policies affect the use of management practices, including employment protection legislation but also policies outside the skills area such as product market regulation. A better understanding of the incidence of atypical forms of work, and of social protection entitlements of workers under such contracts, would help the United States design employment protection legislation shielding the group of workers exposed to competition from offshoring. In addition, regulating non-compete clauses, under which employees agree not to use information learned during employment in subsequent jobs, in a way that enables expertise and knowledge to be shared across the whole economy more effectively would foster a better use of the pool of workers with technology-specific skills.

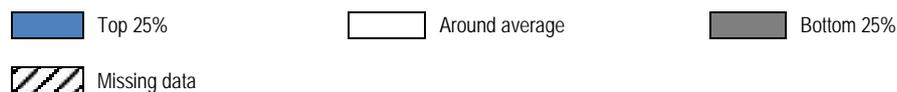
Participate in the global network of education, training and innovation

- Among OECD countries, the United States, given its size, co-operates relatively little in the global network of education, training and innovation (OECD, 2017, pp. 144-45). Fifteen percent of the country's patenting activities in 2012 are run in collaboration with international partners and 30% of scientific publications are co-authored with researchers from abroad, far below the OECD average. The international mobility of scientific authors in the United States is also relatively low, along with the country's funding incentives for international co-operation.
- But the United States has some of the highest shares of international researchers among OECD countries, who contribute to the country's innovation and research capacity. In 2014, 35% of doctorate candidates had come from abroad (OECD, 2017, Figure 4.13).

Reference

OECD (2017), *OECD Skills Outlook 2017, Skills and Global Value Chains*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264273351-en>.

Table A.1. Scoreboard on skills and global value chains



	Skills			Development of GVCs			Economic and Social Outcomes		
	A limited share of low-skilled people	Developing skills to face the challenges of GVCs	Skills to specialise in tech. advanced industries	Increasing participation in GVCs	Specialised in tech. advanced industries	Increasing specialisation in tech. advanced industries	Increasing productivity	Increasing employment	Improving social outcomes
Australia	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Austria	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%
Belgium	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%
Canada	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Chile	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Missing data
Czech Republic	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Bottom 25%	Bottom 25%
Denmark	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Estonia	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Bottom 25%	Bottom 25%
Finland	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
France	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Germany	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%
Greece	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Hungary	Missing data	Bottom 25%	Missing data	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Bottom 25%
Iceland	Missing data	Bottom 25%	Missing data	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%
Ireland	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%
Israel	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%
Italy	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Japan	Top 25%	Bottom 25%	Top 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Korea	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Top 25%
Luxembourg	Missing data	Bottom 25%	Missing data	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%
Mexico	Missing data	Bottom 25%	Missing data	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Netherlands	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%
New Zealand	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%
Norway	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Poland	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Top 25%	Bottom 25%	Top 25%
Portugal	Missing data	Top 25%	Missing data	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%
Slovak Rep.	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Top 25%	Bottom 25%
Slovenia	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Spain	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%
Sweden	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
Switzerland	Missing data	Bottom 25%	Missing data	Bottom 25%	Top 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%
Turkey	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%
United Kingdom	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%
United States	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%

Note: indicators are described in Box 1.1 of the report. The scoreboard shows for each sub-category, countries that perform in the top 25%, bottom 25%, and those around the OECD average. For instance, Finland is among the OECD countries that have the lowest share of low-skilled people, have not developed skills much to face the challenges of GVCs but have the skills to specialise in technologically advanced industries, and have not increased much their specialisation in technologically advanced industries. It performs around the average for the other sub-categories.

Source: OECD (2017), *OECD Skills Outlook 2017, Skills and Global Value Chains*, <http://dx.doi.org/10.1787/9789264273351-en>.