COUNTRY NOTE

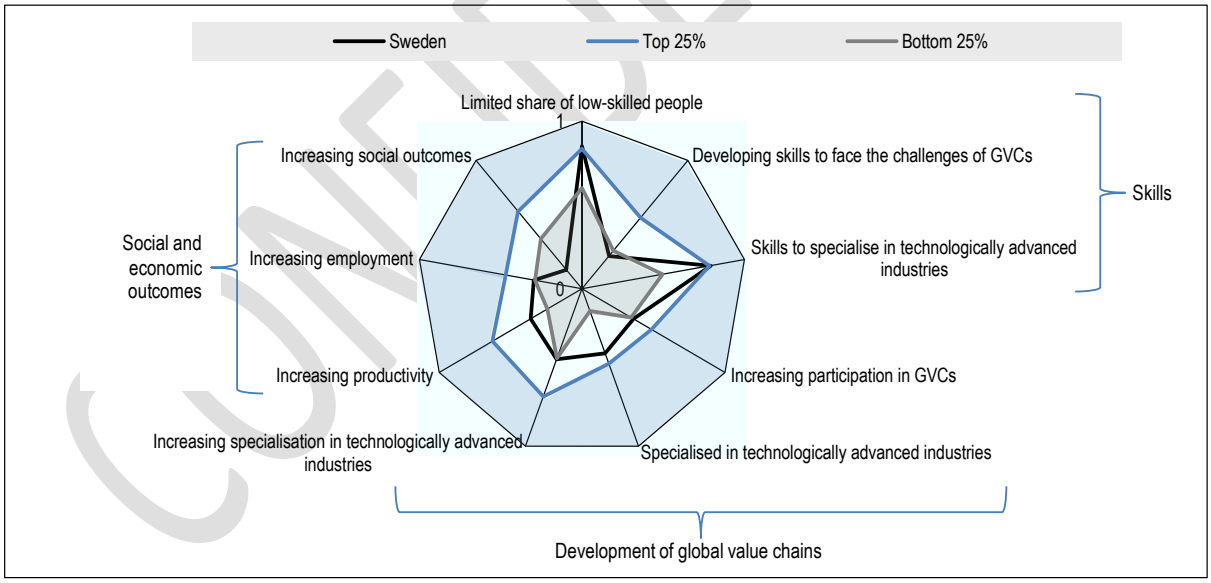
SKILLS OUTLOOK 2017
SKILLS AND GLOBAL VALUE CHAINS

How does Sweden compare?

OECD Skills Outlook 2017

The *OECD Skills Outlook 2017* shows that skills matter for global value chains. The 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, Sweden has increased its participation in global value chains less than many other OECD countries, but participation remains at the OECD average (Figure 1, Table A.1; OECD, 2017, pp. 41-44). In Sweden, 45% of jobs in the business sector are sustained by foreign final demand, because of direct links with trade partners or indirect ones when products reach final consumers through exports of third countries (OECD, 2017, Figure 2.9).
- Sweden is specialised in many technologically advanced industries, including complex business services and high- and medium/high-tech manufacturing, but specialisation has

decreased in some of these industries since 2000. The analysis shows that the country's skills characteristics support the country's specialisation in medium/high-tech manufacturing industries but do not fully support its increasing specialisation in high-tech manufacturing and complex business services (Figure 1; Table 1; OECD, 2017, pp. 107-115).

- Sweden's participation and specialisation pattern in global value chains has been accompanied by productivity growth over the last decade at the OECD average. But social outcomes have deteriorated more than on average in other OECD countries although these outcomes remain above the OECD average. Income inequalities increased more than the OECD average and the quality of the working environment decreased more than the OECD average over the last decade. The employment rate of older workers has increased substantially but the NEET rate for youth has also increased.

- Sweden has a relatively small share of low-skilled adults, a pool of high-skill performers, and a strong participation rate of adult learning according to the Survey of Adult Skills (PIAAC), which makes the country better prepared than many other OECD countries to benefit economically and socially from globalisation. However, the mathematics scores of 15-year-old students have declined since 2000 when the first round of the OECD Programme of International Student Assessment (PISA) took place, and reading scores have stagnated. More investment in skills might be necessary to ensure workers' skills are well aligned with the needs of the most technologically advanced industries to maintain and deepen specialisation in these industries.

Table 1. **Specialisation opportunities in technologically advanced industries**

From the alignment of Sweden's 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

- Sweden's workers are generally highly skilled. They have literacy, numeracy and problem solving skills in technology-rich environment well above the OECD average and some of the highest readiness to learn (OECD, 2017, Figures 3.2 and 3.3). On the job, they also perform ICT tasks and tasks requiring self-organisation, management and communication skills more frequently than workers in other OECD countries (OECD, 2017, Figure 3.3). However,

workers in Sweden are less likely to perform tasks involving accounting, marketing and STEM skills. High-tech manufacturing industries and some complex business services in which Sweden are specialised require workers with mixes of skills including problem solving skills and marketing and accounting skills. To preserve and enhance Sweden's comparative advantage in technologically-advanced industries, the country needs to ensure workers have skills mixes of cognitive and social and emotional skills aligned with the needs of these industries.

- To specialise in most technologically advanced industries, countries need pools of workers with qualifications that reliably reflect what they can do. This is the case in Sweden more than in many other OECD countries. Almost 90% of the country's recent university graduates have numeracy skills at level 3 or above, far exceeding the OECD average.
- 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. In addition, innovative teaching methods in schools and a 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

- Participation in adult learning is above the OECD average, according to the Survey of Adult Skills (OECD, 2017, Figure 4.16). As in all countries, those with low skills, the unemployed and the inactive are less likely to benefit from adult education than skilled workers. Policies need to support all workers at risk of displacement as well as those who have withdrawn from the labour market.

Make the best use of the skills pool

- Data suggest that the use of best management practices is more widespread in Sweden than in several other OECD countries and workers in Sweden, including those with less than upper secondary education, enjoy a good quality of the working environment – low job strain (OECD, 2017, Figures 2.21 and 4.9). These practices are a powerful tool for using effectively the skills assets, adjusting them to new needs, and thereby giving a country a comparative advantage in GVCs.

Participate in the global network of education, training and innovation

- Sweden's integration into global networks of education, training and innovation is slightly above the OECD average (OECD, 2017, pp. 144-45). International co-operation in research, particularly scientific publications co-authored with researchers from abroad, is above the OECD average and Sweden has attracted many international students at the Doctorate level (OECD, 2017, Figures 4.13). The provision of tertiary education programmes taught in English is more widespread than in many other non-English speaking European countries but could be developed further (OECD, 2017, Figures 4.14).
- Many policies affect countries capacities to be part of global education, innovation and research networks, underlining the need to adopt a comprehensive approach.

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**

Top 25% | Around average | Bottom 25% | Missing data

	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	Top 25%	Bottom 25%	Around average	Around average	Bottom 25%	Bottom 25%	Around average	Around average	Around average
Austria	Around average	Around average	Around average	Around average	Around average	Around average	Around average	Top 25%	Around average
Belgium	Around average	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Around average	Bottom 25%	Around average	Top 25%
Canada	Around average	Around average	Around average	Around average	Around average	Around average	Around average	Around average	Around average
Chile	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Top 25%	Top 25%	Missing data
Czech Republic	Around average	Around average	Around average	Bottom 25%	Around average	Top 25%	Top 25%	Around average	Around average
Denmark	Around average	Around average	Around average	Around average	Around average	Around average	Bottom 25%	Bottom 25%	Bottom 25%
Estonia	Around average	Top 25%	Around average	Bottom 25%	Around average	Top 25%	Top 25%	Around average	Around average
Finland	Top 25%	Bottom 25%	Top 25%	Around average	Around average	Bottom 25%	Around average	Around average	Around average
France	Around average	Around average	Around average	Around average	Around average	Bottom 25%	Around average	Around average	Around average
Germany	Around average	Around average	Around average	Top 25%	Around average	Around average	Around average	Top 25%	Top 25%
Greece	Bottom 25%	Around average	Bottom 25%	Around average	Bottom 25%	Around average	Bottom 25%	Bottom 25%	Around average
Hungary	Missing data	Around average	Missing data	Around average	Around average	Around average	Top 25%	Top 25%	Around average
Iceland	Missing data	Bottom 25%	Missing data	Top 25%	Bottom 25%	Around average	Around average	Bottom 25%	Top 25%
Ireland	Around average	Around average	Around average	Around average	Top 25%	Around average	Top 25%	Bottom 25%	Bottom 25%
Israel	Bottom 25%	Top 25%	Bottom 25%	Around average	Top 25%	Around average	Around average	Top 25%	Top 25%
Italy	Bottom 25%	Top 25%	Bottom 25%	Around average	Around average	Around average	Bottom 25%	Around average	Around average
Japan	Top 25%	Around average	Top 25%	Top 25%	Around average	Bottom 25%	Around average	Bottom 25%	Around average
Korea	Around average	Around average	Top 25%	Top 25%	Top 25%	Around average	Top 25%	Around average	Top 25%
Luxembourg	Missing data	Around average	Missing data	Bottom 25%	Top 25%	Around average	Bottom 25%	Top 25%	Bottom 25%
Mexico	Missing data	Around average	Missing data	Around average	Bottom 25%	Bottom 25%	Bottom 25%	Around average	Around average
Netherlands	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Around average	Top 25%	Bottom 25%	Around average	Bottom 25%
New Zealand	Top 25%	Bottom 25%	Around average	Bottom 25%	Bottom 25%	Top 25%	Around average	Around average	Around average
Norway	Top 25%	Around average	Top 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Bottom 25%	Around average
Poland	Around average	Top 25%	Around average	Top 25%	Around average	Top 25%	Top 25%	Around average	Top 25%
Portugal	Missing data	Top 25%	Missing data	Around average	Around average	Around average	Around average	Bottom 25%	Top 25%
Slovak Rep.	Around average	Bottom 25%	Around average	Bottom 25%	Around average	Top 25%	Top 25%	Top 25%	Around average
Slovenia	Bottom 25%	Top 25%	Bottom 25%	Around average	Around average	Around average	Around average	Around average	Bottom 25%
Spain	Bottom 25%	Around average	Bottom 25%	Around average	Around average	Top 25%	Around average	Around average	Bottom 25%
Sweden	Top 25%	Bottom 25%	Top 25%	Around average	Around average	Around average	Around average	Around average	Bottom 25%
Switzerland	Missing data	Around average	Missing data	Around average	Top 25%	Top 25%	Around average	Around average	Around average
Turkey	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Bottom 25%	Around average	Top 25%	Top 25%
United Kingdom	Around average	Around average	Around average	Around average	Top 25%	Around average	Around average	Around average	Around average
United States	Around average	Around average	Around average	Top 25%	Top 25%	Around average	Around average	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.