

ECO/WKP(2021)5

21 January 2021

Unclassified English - Or. English

**ECONOMICS DEPARTMENT** 

### BOOSTING SMES' INTERNATIONALISATION IN POLAND

**ECONOMICS DEPARTMENT WORKING PAPERS No. 1654** 

By Antoine Goujard and Pierre Guérin

OECD Working Papers should not be reported as representing the official views of the OECD or of its member countries. The opinions expressed and arguments employed are those of the author(s).

Authorised for publication by Alvaro Pereira, Director, Country Studies Branch, Economics Department.

All Economics Department Working Papers are available at www.oecd.org/eco/workingpapers.

JT03470409

#### 2 | ECO/WKP(2021)5

OECD Working Papers should not be reported as representing the official views of the OECD or of its member countries. The opinions expressed and arguments employed are those of the author(s).

Working Papers describe preliminary results or research in progress by the author(s) and are published to stimulate discussion on a broad range of issues on which the OECD works.

Comments on Working Papers are welcomed, and may be sent to the Economics Department, OECD, 2 rue André-Pascal, 75775 Paris Cedex 16, France, or by e-mail to econ.contact@oecd.org.

All Economics Department Working Papers are available at www.oecd.org/eco/workingpapers

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

#### © OECD (2021)

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for commercial use and translation rights should be submitted to PubRights@oecd.org

#### **Boosting SMEs' internationalisation in Poland**

The rapid internationalisation of the Polish economy has helped develop competitive export-led manufacturing and services sectors fostering robust growth and productivity performance. However, the benefits of this development have been unequal. Many small and medium-sized enterprises (SMEs), some regions and social groups have lagged behind. Poland's integration into world trade has largely focussed on downstream activities of value chains and relatively labour-intensive products that incorporate little domestic value added. The coronavirus (COVID-19) crisis has put additional pressures on SMEs. A broad range of well-coordinated policies is required to boost SMEs' internationalisation and their productivity, while easing labour reallocation during the ongoing recovery. Providing stronger support for training programmes in smaller firms and within small firms' networks would help them upgrade the skills of their workforce, notably for their managers, and ease new technology adoption and internationalisation. Streamlining regulations on start-ups and limiting regulatory and tax barriers to firm expansion would raise firm entry and growth. Strengthening post-insolvency second chance policies for honest entrepreneurs would ease resource reallocation and the adaptation of SMEs to an uncertain and rapidly changing international environment. Improving transport and digital infrastructure would lower trade costs and raise productivity. Ensuring that innovation policies adapt to smaller firms would boost their innovativeness and ease their integration in national and international value chains.

This Working Paper relates to the 2020 OECD Economic Survey of Poland.

http://www.oecd.org/economy/poland-economic-snapshot/

Keywords: Poland, SMEs, Global Value Chains (GVCs), Productivity, Digitalisation.

JEL Classification: F1; F2; F6; L1; O3

\*\*\*\*

La rapide internationalisation de la Pologne a soutenu les secteurs industriels et de services compétitifs basés sur les exportations, favorisant une croissance robuste et les gains de productivité. Cependant, ces développements ont été inégaux. De nombreuses petites et moyennes entreprises (PMEs), certaines régions et certains groupes sociaux sont restés à la traîne. L'intégration de la Pologne dans le commerce mondial s'est concentrée sur les activités aval des chaînes de valeur et sur les produits à forte intensité de main-d'œuvre incorporant peu de valeur ajoutée nationale. La crise du coronavirus (COVID-19) a mis une pression supplémentaire sur les PMEs. Un large éventail de politiques bien coordonnées est nécessaire pour stimuler leur internationalisation et leur productivité, tout en facilitant la réaffectation de la main-d'œuvre pendant la reprise. Fournir un soutien renforcé aux programmes de formation dans les petites entreprises et au sein des réseaux de petites entreprises les aiderait à améliorer les compétences de leur main-d'œuvre, notamment celles de leurs dirigeants, et faciliterait l'adoption de nouvelles technologies et l'internationalisation. La rationalisation des réglementations sur les start-ups et la limitation des barrières réglementaires et fiscales à l'expansion des entreprises favoriseraient l'entrée des entreprises et la croissance. Le renforcement des politiques de seconde chance post-insolvabilité pour les entrepreneurs honnêtes faciliterait la réaffectation des ressources et l'adaptation des PMEs à un environnement international incertain et en évolution rapide. L'amélioration des infrastructures de transports et numériques réduirait les coûts de transaction et augmenterait la productivité. S'assurer que les politiques d'innovation s'adaptent aux petites entreprises renforcerait leur capacité d'innovation et faciliterait leur intégration dans les chaînes de valeur nationales et internationales.

Ce document de travail est lié à l'Étude économique de l'OCDE de 2020 consacrée à la Pologne.

http://www.oecd.org/fr/economie/pologne-en-un-coup-d-oeil/

Mots clés: Pologne, PMEs, Chaînes de valeurs, Productivité, Digitalisation

Classification JEL: F1; F2; F6; L1; O3

## **Table of contents**

Boosting SMEs' internationalisation in Poland	6
Poland's internationalisation has been remarkable but unequal	6
A bird's eye view of Poland's internationalisation and SMEs' landscape	11
Polish exports concentrate on medium and low-tech goods	11
Small size and low productivity hinder SME internationalisation	14
Boosting SMEs' internationalisation through a better business environment	19
Easing further administrative costs for potential exporters	19
Easing tax compliance and ensuring sound public support for SMEs	22
Increasing SMEs innovation, its diffusion and productivity	25
Trade facilitation has improved	26
Developing local clusters and SMEs' consortia could boost internationalisation	27
Increasing skills to foster integration in global value chains	30
Raising skills through better life-long training	30
Supporting better management skills for SMEs	35
Facilitating the immigration of skilled workers	36
Harnessing the benefits of digitalisation to support SMEs' exports	38
Developing high-quality digital infrastructure	39
Preparing SMEs for the digital transition	42
Encouraging the use of ICTs by SMEs	44
Improving transport infrastructure to boost internationalisation	48
The capacity and quality of transport infrastructure need to be enhanced	48
Maintenance and upgrading investments are needed to improve the quality of infrastructure	50
Investment in transport should better reflect environmental concerns	51
Developing multi-modal transport links to improve logistics' performance	52
Improving the governance of infrastructure	53
Supporting the tourism sector and its more equal regional development	53
References	57
Tables	
able 1. Tourism is concentrated in a few destinations	54
Figures	
Figure 1. Poland's internationalisation and export performance have been impressive	7
Figure 2. SMEs play a key role in the Economy	7
Figure 3. SMEs internationalisation has been heterogeneous Figure 4. SMEs have been hard hit by the coronavirus crisis	8 10
Figure 5. Polish exports have been robust, and well diversified	11
igure 6. The structure of Polish exports	12
igure 7. Foreign multinationals and exports are tightly linked	13
igure 8.Poland is specialised in low- and medium-tech exports	14
Figure 9. Smaller firms have low export intensity in manufacturing and services sectors	16
Figure 10. Micro-firms lag multiple forms of internationalisation	17
Figure 11. SMEs productivity is weak and young firms lack opportunities to grow Figure 12. Micro-firms account for a high share of employment	18 18
.ga account for a riigh chare of employmont	

#### ECO/WKP(2021)5 | **5**

Figure 13. SMEs' gaps have significant economic and social consequences	19
Figure 14. Selected features of the OECD product market regulation indicators	20
Figure 15. Some administrative procedures remain burdensome	21
Figure 16. Some services trade barriers remain important	21
Figure 17. Tax compliance costs remain elevated	22
Figure 18. Business and SMEs' support are heavily reliant on EU funds	23
Figure 19. SMEs lag R&D investment and innovation	25
Figure 20. Strengthening firms' cooperative linkages and clusters could support SMEs	27
Figure 21. The share of high-skilled adults and their contribution to GVCs is low	31
Figure 22. Shortages of skilled staff, demographic ageing and automation remain major issues	32
Figure 23. Training is low and insufficiently targeted, 2016	33
Figure 24. Public funding for training is low and small firms provide low access to training	35
Figure 25. Management skills appear lagging, notably for domestic firms	36
Figure 26. Poland's digital transition has been relatively lagging	38
Figure 27. SMEs lag in the adoption of more sophisticated digital technologies	39
Figure 28. Barriers to the deployment of digital infrastructure are elevated	40
Figure 29. The quality of Poland's digital network needs to improve further	41
Figure 30. Participation in e-commerce is low	43
Figure 31. SMEs' e-commerce export participation is low	43
Figure 32. Awareness of digital security by SMEs is weak	45
Figure 33. Poles lack advanced digital skills	46
Figure 34. Polish SMEs offer too little ICT training	47
Figure 35. There is room to improve trade logistics	48
Figure 36. Investment in transport infrastructure is sizeable, but regional disparities in infrastructu	re are large 49
Figure 37. Increasing road maintenance spending would be a good move	50
Figure 38. Rail freight transport needs a boost	51
Figure 39. Airport traffic expanded fast before the coronavirus crisis	52
Figure 40. International tourism was lagging before the coronavirus crisis	55

# Boosting SMEs' internationalisation in Poland

By Antoine Goujard and Pierre Guérin<sup>1</sup>

#### Poland's internationalisation has been remarkable but unequal

Poland's internationalisation has been a key driver of growth and income convergence since the transition process. Exports and imports in goods have outpaced GDP growth, notably through large exports and imports of intermediate goods (Eurostat, 2019). Services trade growth was also very strong, unlike in other Central and Eastern European (CEE) countries (Figure 1, Panels A and B). Exports of goods and services nearly quadrupled over the last two decades, and, export market share rose twofold. Competitive labour costs, proximity to European markets and the integration to global value chains (GVCs), as well as strong productivity gains explain the major part of the internationalisation and export performance (OECD, 2018a). Even during the 2011-16 global trade slowdown and until the coronavirus (COVID-19) crisis, Polish exports had continued to gather significant pace and raise their market share (Panel C). More than 40% of domestic employment nowadays depend on international markets (Panel D).

Poland's increasing trade openness and integration in GVCs, eased technology transfers and supported employment and productivity gains. During 1995-2011, Poland rapidly integrated into global value chains and received significant inward Foreign Direct Investment (FDI) in the manufacturing sector. Foreign affiliates played a key role in this development process and recent OECD estimates suggest that they are still responsible for 40% of GDP (Cadestin et al., 2019). As a result, the South-West of Poland, notably through the automotive sector, saw a rapid rise in GDP and incomes (Box 2). Indeed, the domestic sourcing of intermediates by foreign affiliates largely benefitted domestic firms, of which the majority are small and medium-sized enterprises (SMEs) (Hagemejer and Kolasa, 2011).

However, the development of SMEs' linkages with local, national and international networks could be reinforced and support further productivity and well-being gains. Poland's SMEs account for approximately 70% of persons employed in the business economy and around 51% of value added (Figure 2; OECD, 2019a). Yet, their internationalisation has been highly heterogeneous. Though a relatively large number of SMEs export directly (Figure 3, Panel A), SMEs still account for only a small share of direct exports (Panel B). They account for around 30% of direct exports, well below their share in employment or value-added. Moreover, most of these direct exports take place through medium-sized firms that, as large firms, saw a steep rise in their export intensity (Panel C).

-

<sup>&</sup>lt;sup>1</sup> Antoine Goujard (antoine.goujard@oecd.org) is a senior economist in the Economics Department of the OECD. Pierre Guérin (PGuerin@imf.org) was an economist in the Economics Department of the OECD. The views expressed are those of the authors and do not necessarily represent the views of the IMF, its Executive Board, or IMF management. The authors would like to thank Pierre Beynet, Priscilla Fialho, Isabell Koske, Patrick Lenain, Alvaro Pereira (all OECD Economics Department), Rafal Kierzenkowski (OECD Office of the Secretary General), Bert Brys (OECD Centre for Tax Policy and Administration), Renato Ferrandi (OECD Directorate for Financial and Enterprise Affairs), Jonathan Chaloff, Luca Marcolin and Marissa Plouin (OECD Directorate for Employment, Labour and Social Affairs) and Ben Game (OECD Centre for Skills) for useful comments and suggestions. The paper has also benefitted from comments by Poland officials and by members of the OECD Economic and Development Review Committee. Special thanks to Paula Adamczyk and Patrizio Sicari for excellent research and statistical assistance, and Alexandra Guerrero for editorial assistance and coordination (OECD Economics Department).

A. Goods internationalisation<sup>1</sup> B. Services internationalisation<sup>1</sup> Exports and imports over GDP, 1995=100 Exports and imports over GDP, 1995=100 350 260 CEEC<sup>2</sup> OECD3 CEEC<sup>2</sup> POI AND OFCD3 **POLAND** 240 300 220 250 200 200 180 160 150 140 100 120 50 100 80 0 2015 2013 2017 201 D. Share of domestic employment in foreign final C. Export market share has increased steadily % of world goods and services exports demand % of total economy, 2015 1.6 50 CEEC<sup>2</sup> POLAND 45 1.4 40 12 35 1.0 30 0.8 25 20 0.6 15 0.4 10 0.2 1999 2005 2001 2003 2007 2005 201 201 201 201 201

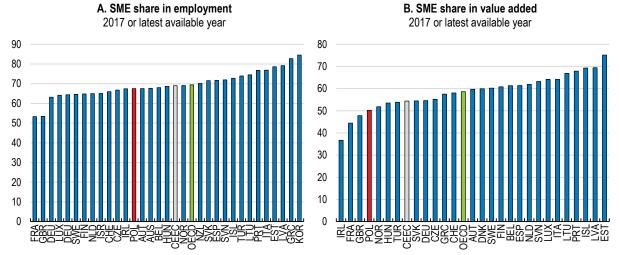
Figure 1. Poland's internationalisation and export performance have been impressive

- 1. Internationalisation is proxied by the share of exports and imports divided by GDP.
- 2. CEEC is the average of Hungary and the Czech and Slovak Republics.
- 3. The OECD average is the unweighted average of OECD countries.

Source: OECD (2020), National account database; OECD (2020) Trade in Employment database.

StatLink https://doi.org/10.1787/888934208621





Note: All sectors of the business economy are included, except financial and insurance activities. CEEC is the average of Hungary and the Czech and Slovak Republics.

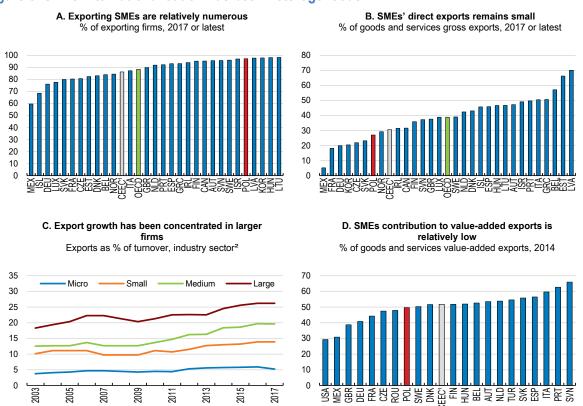
Source: OECD (2019), Structural Business Statistics.

#### 8 | ECO/WKP(2021)5

Poland's SMEs appear lagging in a number of forms of internationalisation. The share of SMEs in value-added exports is higher as SMEs export indirectly through upstream linkages with larger exporters, but the importance of SMEs for value-added export remains below the average level of Hungary and the Czech and Slovak Republics, or those of Italy, Portugal and Spain (Figure 3, Panel D). Indeed around 60% of SMEs' indirect exports reach foreign markets via large enterprises, the remaining 40% via other SMEs (OECD, 2018b). When they export directly, SMEs are more often occasional than persistent exporters and they export to closer markets (EC, 2018a; 2018b). SMEs engage less in imports of goods and services or may seek foreign suppliers, which could help them gain access to more sophisticated and competitively priced intermediates to enable productivity gains and upscale or upgrade production (López González and Sorescu, 2019). SMEs are also less likely to be the recipients of foreign direct investment (inward FDI) or to invest abroad (outward FDI).

This unequal internationalisation left behind some places that have high proportions of vulnerable people and low levels of economic activity. As in other OECD countries, exporting and foreign capital have been associated with faster productivity growth at the sector level, and internationalised firms, both through exporting and foreign direct investment, have performed better than non-internationalised firms (Szpunar and Hagemejer, 2018). This compounded the problems of lagging firms and regions, as long-term unemployment, poverty, and poor health and low social mobility often go hand in hand (OECD, 2019b).

Figure 3. SMEs internationalisation has been heterogeneous



<sup>1.</sup> CEEC is the average of Hungary and the Czech and Slovak Republics.

Source: OECD (2019), Structural Business Statistics, Trade by Enterprises Characteristics and National account databases; OECD (2018), "Accounting for firm heterogeneity in global value chains: The role of Small and Medium sized Enterprises", OECD Working Party on International Trade in Goods and Trade in Services Statistics, OECD publishing, Paris; OECD caclulations based on PARP (2019), Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce, Polska Agencja Rozwoju Przedsiębiorczości, Warsaw and Ministry of Economic Development, Labour and Technology "Entrepreneurship in Poland" 2010 and 2011 reports.

<sup>2.</sup> For micro firms, exports over turnover is backcasted based on small firms over 2003-2009.

The global coronavirus pandemic had a large initial impact on Polish trade and vulnerable groups and regions were disproportionally affected (Box 1). At the same time, some well-internationalised sectors such as the automotive and transport industry have been hard hit. Stalling global investment has seen demand for capital goods plunge, in particular for cars. As during other crises, the internationalisation of firms appears to have played a role in the propagation of economic shocks, but they also seem to have helped firms to recover faster (OECD, 2020e). Following the initial coronavirus shock, Poland's trade bouncedback over the summer 2020. From 2019Q4 to 2020Q2, Poland's exports and imports of goods and services appear to have been more resilient than in many other European countries. Yet, in 2020Q2, exports and imports remained well below their 2019Q4 levels.

In response to long-standing issues that have been stressed in the 2017 Strategy for Responsible Development, the authorities have undertaken reforms to ease administrative business and trade procedures and increase R&D and innovation activities, as well as to reach a more even territorial development (Box 2 and Box 3). The authorities have also put in place extensive support measures that helped to cushion the initial coronavirus shock (Box 1). Yet, further efforts to ease resource reallocation while maintaining viable firms will also be required to deal with renewed challenges.

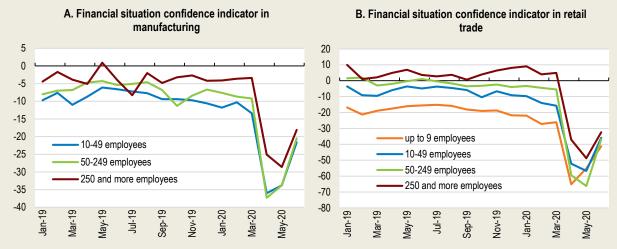
This paper analyses how Poland's internationalisation and the digital transformation offer new opportunities for SMEs to integrate directly and indirectly into the global economy, raise their productivity and grow. It then looks at how policies can create the best policy environment to help SMEs - and the many people they employ – to take advantage of these opportunities.

#### Box 1. The global (COVID-19) pandemic and its effects on international trade and SMEs

#### SMEs have suffered heavily from the crisis

Government lockdowns and border closure have affected the supply of domestic and foreign goods and services, and trade plummeted between March and May 2020. Though Poland's exports and trade have been relatively resilient (OECD, 2020), early business surveys and employment data point that Polish SMEs and regions that had the weakest business dynamics are among the most affected by the crisis (Figure 4 and OECD, 2020f).

Figure 4. SMEs have been hard hit by the coronavirus crisis



Source: Statistics Poland (2020), Business tendency in manufacturing, construction, trade and services, 2000-2020, June 2020 update.

StatLink https://doi.org/10.1787/888934208678

The initial coronavirus shock also hit hard SMEs and regions that were well integrated in GVCs. Demand for cars has plunged over 2020 and is projected to recover only partially in 2021 (OECD, 2020d). Given the weight of the automotive industry in Polish exports, the crisis and the high uncertainty around future demand for cars, will put this industry and its suppliers under severe strain. The crisis, therefore, adds to the existing challenges facing the car manufacturing industry, such as changes in mobility patterns.

#### **Policy responses**

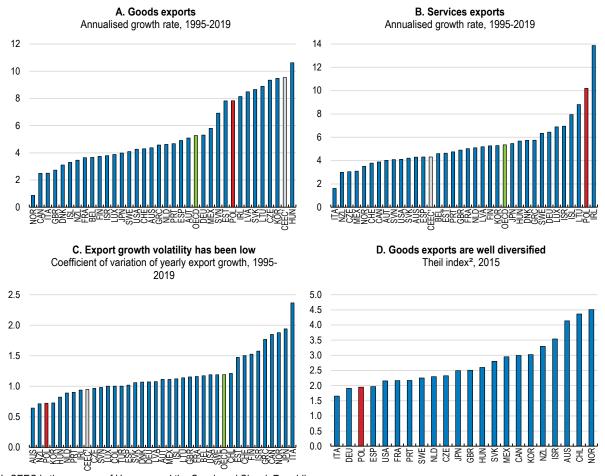
The Polish government took a series of early measures to limit the impact of the coronavirus crisis on SMEs. It increased their liquidity by announcing that micro enterprises (with less than 10 employees) experiencing a 50% drop in revenues would be exempted from social security contributions for three months, provided that their revenues in March would not exceed 300% of the average wage. Later, a 50% reduction was extended to small firms with less than 50 employees and revenues requirement dropped. It also eased their financing through an unprecedented loan scheme of PLN 100 billion launched in early April (OECD, 2020f) that was mainly targeted at SMEs, with ¾ of the funds dedicated to such firms and only ¼ available to large enterprises. Micro firms could receive up to PLN 324,000 and small and medium companies up to PLN 3.5 million each. The latest "anti-crisis package" established that micro loans of up to PLN 5,000, mostly concerning micro and small firms, would no longer need to be reimbursed as long as companies continued to operate for three months after the grant. It also suspended the statutory time limit to file for bankruptcy for firms affected by the coronavirus crisis and introduced new simplified restructuring procedures for all firms, which notably include a 4-month automatic stay on assets and out-of-court recovery proceedings, until 30 June 2021.

Source: OECD (2020), OECD Economic Outlook - June 2020, OECD publishing, Paris.

#### Polish exports concentrate on medium and low-tech goods

Polish exports are well diversified in terms of composition. The agricultural sector, auto parts industry, and aviation and shipbuilding sectors have well-developed exports (Figure 4). A wide range of other exporting industries includes cosmetics, furniture, machinery, minerals, plastics and textiles, as well as services (Figure 5). This diversified structure has helped to cushion disruptive shocks. Until the coronavirus crisis, sharp contractions in final demand, which happened due to the concentrated exposure to cyclical industries in Slovakia and Hungary in 2009, had not been observed in Poland that tend to exports more consumer goods that are less sensitive to the global economic cycle than other CEE countries. During the 2018-19 global slowdown, Polish exports had continued to grow strongly, supported by renewed FDI inflows.

Figure 5. Polish exports have been robust, and well diversified



<sup>1.</sup> CEEC is the average of Hungary and the Czech and Slovak Republics.

Source: OECD (2020), National account database; OECD calculations based on CEPII (2019), BACI Database.

StatLink https://doi.org/10.1787/888934208697

As in other OECD countries, foreign multinationals play a key role in internationalisation (Cadestin et al., 2018). Poland's location next to Germany; the availability of a low-cost but skilled labour force; its European union membership since 2004; all combined with an historically cautious budgetary and financial policy, have preserved a stable economic and social environment and strong competitiveness. Inward FDI, as a share of GDP, have increased. Foreign investments have a well-diversified industry structure, though they

<sup>2.</sup> Higher values of the index indicate higher concentration of export products. The Theil index is computed over export values in a 6-digit good classification (HS6 1992 classification) with 5,039 products per year.

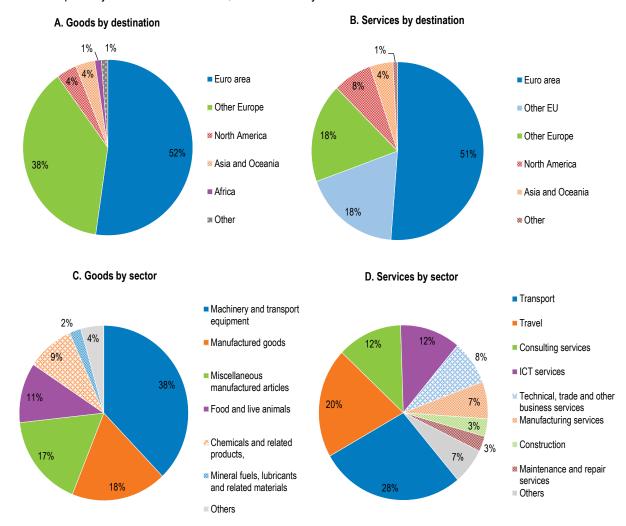
#### 12 | ECO/WKP(2021)5

are mostly concentrated in the capital region and the south-west of the country (Box 2). Thanks to these FDI inflows, mainly from the European Union (particularly from the Netherlands and Germany), Poland has become a significant exporter mainly through its integration into European GVC. For example, over 90% of automotive production in Poland is exported to Europe (mainly to Germany).

Multinationals supported the growth of services sectors. Jobs outsourced in business services (business processing, IT, and R&D) have nearly tripled over the past decade. Most of the growth has come from international companies' service centres that tend to be subsidiaries of the foreign companies using them (Box 2; McKinsey, 2015). In recent years, Poland also strengthened its position as a regional centre of logistics services, notably through importing consumer goods, such as clothing, footwear or electronics, from third countries into the EU, repackaging them in Polish warehouses and further distributing them to other European Union countries (Mroczek, 2019). The share of services in exports has increased rapidly from 16% in 1990 to more than 21% in 2018, but it remained below the OECD average of 30% in 2018.

Figure 6. The structure of Polish exports

Share of exports by sector and destination, 2019 or latest year available



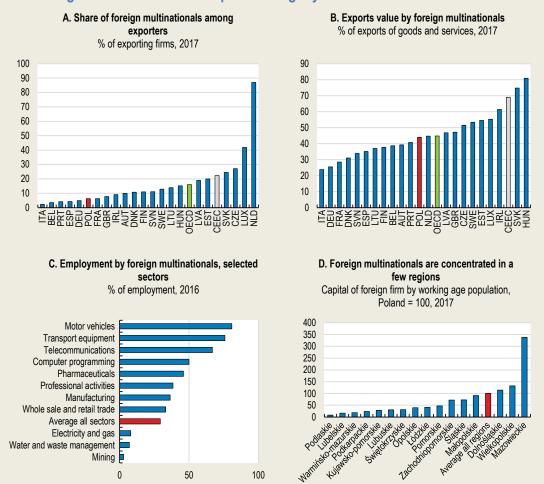
Note: Data on good exports refer to 2019, while data on services exports refer to 2018. In Panel C, Others include crude materials, beverages and tobacco, animal and vegetable oils, and commodities and transactions. In Panel D, Others include R&D services, financial services, insurance and pension, construction services, and cultural services.

Source: OECD (2020), International trade Statistics.

#### Box 2. The role of multinational enterprises in Polish exports and domestic value chains

Foreign firms play an important role in the Polish economy; they are responsible for around 30% of employment and around 44% of exports (Figure 7). The industries where foreign-owned firms produce more of the value added are often those that have a higher export orientation. On average, foreignowned firms in Poland are twice as export intensive (share of exports in turnover) as domestically owned firms, and their export intensity is higher than the OECD median (OECD, 2017). The manufacturing sector highlights this point, with a high share of value added by foreign-owned firms and a high export orientation. In the manufacturing sector, foreign MNEs' exports reach 65%. In particular, in motor vehicles, foreign-owned firms account for 80% of employment and 90% of exports in value-added terms.

Figure 7. Foreign multinationals and exports are tightly linked



Note: CEEC is the average of Hungary and the Czech and Slovak Republics. Source: OECD (2019), MNE database, Inward activity of multinationals and TEC database; Statistics Poland (2019), Entities with foreign capital participation.

StatLink https://doi.org/10.1787/888934208735

Foreign owned capital is concentrated in large firms, with a higher import content of exports and simultaneously relatively large upstream consequences, notably on smaller firms that act as supplier and indirect exporters. In Poland as in other OECD countries, domestic SMEs are the most important domestic suppliers to foreign affiliates (Cadestin et al., 2019).

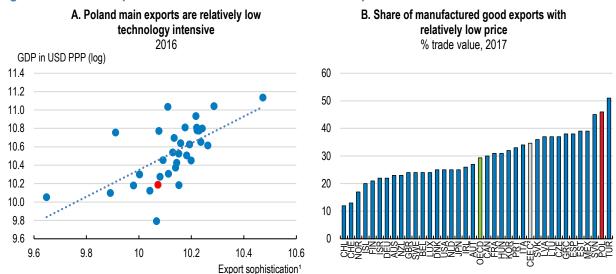
Source: Cadestin, C., et al. (2019), "Multinational enterprises in domestic value chains", OECD Science, Technology and Industry Policy Papers, No. 63, OECD Publishing, Paris; OECD (2017), "Trade and investment in Poland", International trade, foreign direct investment and global value chains, OECD Publishing, Paris.

#### **14** | ECO/WKP(2021)5

This increasing involvement in world trade has generated significant benefits. It has acted as a driving force for the economy, and this has been reflected in the strength of exports and the creation of value added from foreign demand since 1995. The sectors that are the most integrated into GVCs, and therefore the most export-focused, have developed comparative advantages, which have led to productivity gains that are stronger than in other sectors and other OECD countries (Miroudot and Cadestin, 2017; Berthou et al., 2015).

However, exports remained somehow specialised in relatively low-technology goods in 2017. The share of medium and high technology goods in Poland's export basket has doubled since 1995 (PARP, 2019a), but goods exports remain relatively less sophisticated than those of other CEE countries. Compared to Poland's level of development, its exports structure is tilted towards goods generally exported by lower-income countries (Figure 8, Panel A, Hausmann et al., 2007). Poland's exports' prices and quality, as proxied by trade unit values within narrowly defined type of goods, appears relatively low in the manufacturing sector (Panel B), which reflects a perceived specialisation in low-cost and low-quality goods (WEF, 2019). Original equipment manufacturers which operate globally still run largely labour-intensive and low value added production processes in Poland, and export few high-technology products. Poland's manufacturing exports are in the mature phase of their life cycle compared to many other OECD countries (Araujo et al., 2018), increasing the importance of innovation to sustain the future export performance of the economy.

Figure 8.Poland is specialised in low- and medium-tech exports



<sup>1.</sup> Export sophistication is defined as an average over exported goods as in Hausmann et al., (2007). For each good, a proxy for its sophistication is the average GDP per capita (in 2015 in PPP terms) of its destination markets. Computations use 180 destination countries and 6-digit good classification (1992 - HS6 classification).

Source: OECD (2019), National Accounts Database. OECD calculations based on CEPII (2017), BACI Database and World Bank (2017), World Development Indicators; Comtrade Database; CEPII (2019), The Trade Unit Value Database.

StatLink https://doi.org/10.1787/888934208754

#### Small size and low productivity hinder SME internationalisation

Internationalisation varies significantly by firm size and across sectors. The share of SMEs participating in direct exports is particularly low, notably for micro-firms. According to 2017 data, only about 12% of micro-firms participate in direct export activities in the manufacturing sector and less than 5% in key services sectors (Figure 9, Panels A and B). Moreover, their export intensity is relatively low and the average export value per exporting firm are smaller than in the average OECD country and other CEE countries (Panels C and F). The average exports of a Polish exporting firm are roughly 70% smaller in value terms

<sup>2.</sup> CEEC is the average of Hungary and the Czech and Slovak Republics.

than those of exporting firms in the average OECD country, though the gap varies from 80% for microfirms to 60% for large firms. This suggests that beyond fixed costs and the participation in global trade, lower productivity and higher variable costs play a key role in explaining the export gap of Polish SMEs.

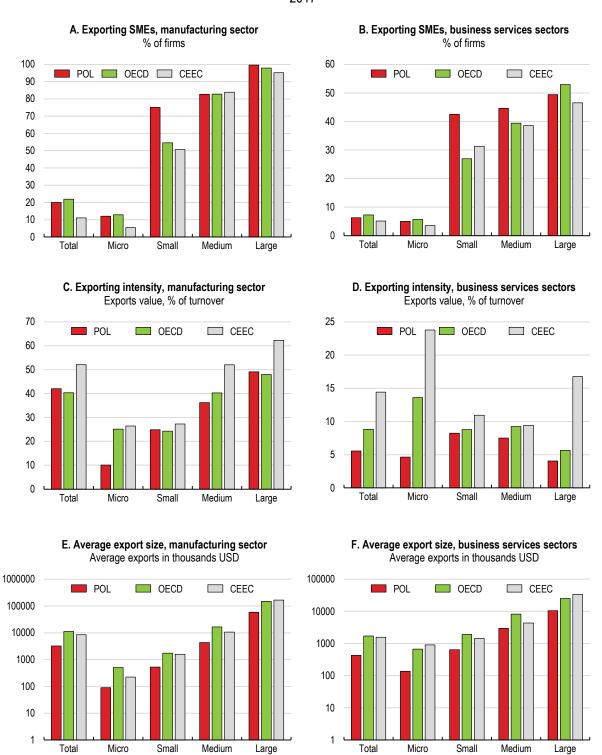
As in other OECD countries, only a few high-performing firms have become successful exporters. Exporters tend to be larger than non-exporting firms, more capital intensive and more productive (Albinowski et al., 2016; Szpunar and Hagemejer, 2018). The academic literature has traced this back to the existence of fixed costs of entering foreign markets, which only the most productive firms can recover once they become exporters (Melitz and Ottaviano, 2008). The geographical position of Poland is particularly favourable for potential exporters and firm internationalisation, as they benefit from rich neighbouring countries and enhanced access to markets through the European single market which reduces transaction costs. Yet, there remain barriers to cross-border activity hindering the European Single Market (Caldera Sánchez, 2018). And, as in other CEE countries, some fixed costs, such as the need to collect information about export markets, establishing commercial contacts, hiring multilingual staff or adapting products to be sold abroad, remain particularly binding for smaller firms (Morales et al., 2014).

Smaller firms face difficulties in becoming persistent exporters and scaling up their exports, which appears to be key drivers of productivity gains linked to internationalisation (Anderson and Löof, 2009). The costs of adjusting products and company procedures to differences in culture, laws and technology of foreign buyers are relatively higher. Moreover, uncertainty in export relationships is generally high, notably in services sectors, because of the difficulty to enforce contracts across borders and the information asymmetry and geographical distance between the exchange partners. The complexity of firm's operations tend to increase with the number of product-destination couples exported (Guillou and Treibich, 2019). This also holds for exchange rate movements and their volatility that affect mostly smaller exporters in Poland (Albinowski et al., 2016).

Poland's SMEs are lagging other forms of internationalisation. When they engage in direct exports they tend to focus on the EU market or other trading partners, but rarely combine both export destinations contrary to larger firms and comparable firms in CEE countries (Figure 10). Selling goods and services through foreign affiliates is also less frequent in Poland. Moreover, Poland's SMEs appear less engaged in imports than SMEs in other OECD Countries. Micro-firms have an importing intensity, as measured as the ratio of imports over turnover, twice below the OECD average, both in manufacturing and services sectors, and much smaller than that of larger firms. Poland's SMEs, in addition to facing barriers to export, have difficulties in overcoming some of the costs associated with importing – and integrating in GVCs – such as finding reliable suppliers and ensuring that the imported products have the right specifications.

The lagging internationalisation of SMEs reflects their weak productivity and small size. Polish SMEs have relatively low productivity, notably the numerous micro-enterprises, according to 2017 data. Their relative productivity is among the lowest in the OECD (Figure 11). Indeed, micro-enterprises account for a high share of employment in Poland compared to the OECD average and other CEE countries, in the services and manufacturing sectors (Figure 12). Before the coronavirus crisis, a plethora of start-ups experienced significant difficulties to survive and grow, despite a dynamic economy and the crisis legacy will compound these difficulties. The firm size distribution implies that a large share of firms face relatively higher costs and challenges than larger exporters due to their lower human resources and capital. These firms are disproportionally affected by barriers such as tariffs, quotas and stringent rules of origin, as applied in the whole European Union, due to fixed compliance costs that do not vary with the amount traded and the inability of SMEs to spread these costs over large export values (Rouzet et al., 2017).

Figure 9. Smaller firms have low export intensity in manufacturing and services sectors 2017



Note: CEEC is the average of Hungary and the Czech and Slovak Republics. Business services sectors include wholesale and retail trade, transportation and storage, information and communication, professional, scientific and technical activities and administrative and support service activities.

Source: OECD calculations based on OECD (2019), Structural Business Statistics, Trade by Enterprises Characteristics and National account databases.

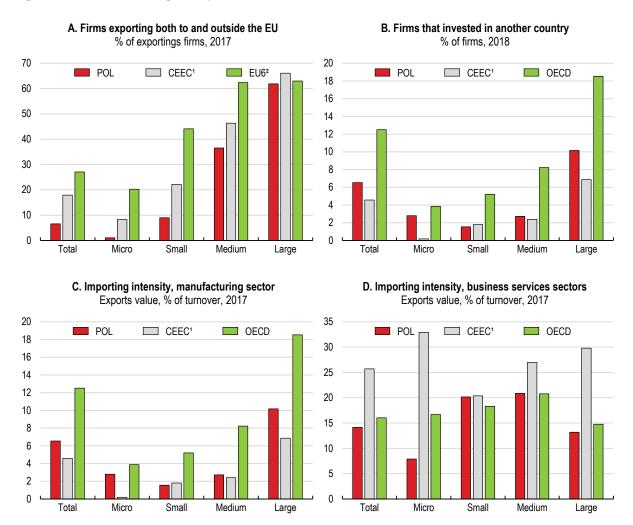


Figure 10. Micro-firms lag multiple forms of internationalisation

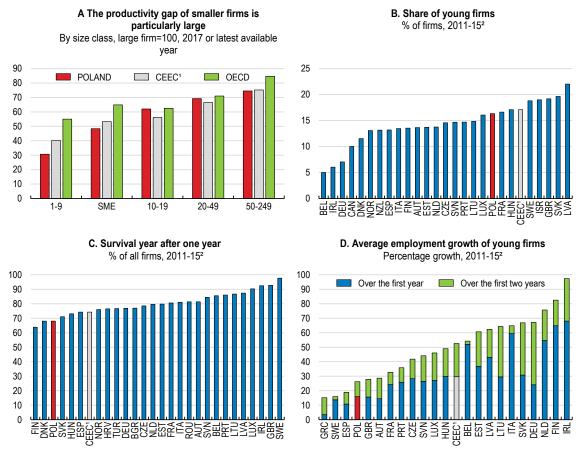
- 1. CEEC is the average of Hungary and the Czech and Slovak Republics.
- 2. EU6 is the average of Denmark, Germany, Italy, Netherlands, Portugal and Spain.

Source: OECD calculations based on OECD (2019), Structural Business Statistics, Trade by Enterprises Characteristics and National account databases; EIB (2019), EIB Investment Survey.

StatLink https://doi.org/10.1787/888934208792

The internationalisation and productivity gaps of smaller firms have large social and territorial implications. For example, micro firms pay on average salary that are only 50% the one of large firms (Statistics Poland, 2019). SMEs' employees have also lower employment opportunities, lower quality job and low training opportunities (see below). This also contributes to strong regional divides. Widely internationalised large and foreign-owned firms concentrate more than two thirds of their employment in 5 of the 16 Polish regions, while SMEs are more equally spread (Figure 13, Panel A). In particular, the share of micro and small firms in employment is strongly negatively associated with GDP per capita at the regional level (Panel B).

Figure 11. SMEs productivity is weak and young firms lack opportunities to grow



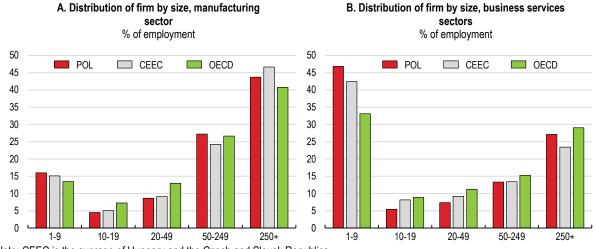
- 1. CEEC is the average of Hungary and the Czech and Slovak Republics.
- 2. Average of available years. Young firms are those less than two years old.

Source: OECD calculations based on OECD (2019), Structural Business Statistics, Trade by Enterprises Characteristics and National account databases; Eurostat (2019), "Structural Business Statistics", Eurostat Database.

StatLink https://doi.org/10.1787/888934208811

Figure 12. Micro-firms account for a high share of employment

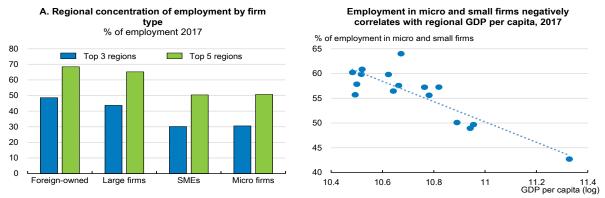
By size class, 2017



Note: CEEC is the average of Hungary and the Czech and Slovak Republics.

Source: OECD calculations based on OECD (2019), Structural Business Statistics.

Figure 13. SMEs' gaps have significant economic and social consequences



Note: Regions correspond to Poland's 16 regions (voivodeships).

Source: OECD calculations based on Statistics Poland (2019), regional accounts and non-financial entities database.

StatLink <a href="https://doi.org/10.1787/888934208849">https://doi.org/10.1787/888934208849</a>

#### Boosting SMEs' internationalisation through a better business environment

Policies that promote activities in which firms and workers are particularly competitive and that foster business dynamism and ease linkages between large exporters and smaller firms would help reap additional gains from trade (OECD, 2017a). Lowering the administrative burden that weighs especially on smaller and younger firms would reduce entry and fixed costs of participating in global trade. A broader firm internationalisation would result in greater diffusion of knowledge, technology and know-how, with positive effects on employment and labour market inclusiveness (Gal and Theising, 2015; Causa et al. 2016).

#### Easing further administrative costs for potential exporters

Improvement in product market regulation has been significant over the last decades, but several aspects of the business environment continue to harm SMEs performance, productivity and internationalisation (Figure 14). The authorities have recently implemented measures to ease business creation and growth, notably, lower administrative requirements for new and smaller firms and the possibility of a simplified joint stock company with low capital requirements to facilitate start-ups (Box 3 and Box 4). The measures also foresee more legal certainty for firms when it comes to paying taxes and audits, and a reduction of paperwork.

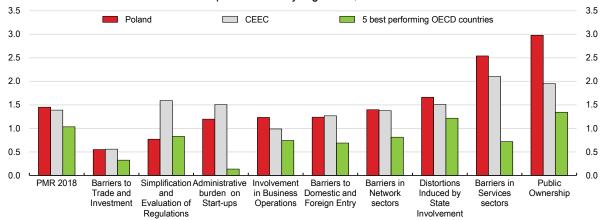
Despite these reforms, some administrative and regulatory procedures remain burdensome. In particular administrative requirements necessary to set up new firms, whether limited liability companies or personally owned enterprises, remained relatively burdensome in 2018-19. A large number of procedures have to be fulfilled (OECD, 2019c; World bank, 2019) and some related regulations could be streamlined. For example, in the Podkarpackie and Lubelskie regions (voivodeships), in 2017-18, more than five food inspection services had responsibilities to enforce food requirements, with little standardisation and coordination, which was significantly increasing compliance costs (Drozd et al., 2018).

Streamlining court proceedings could facilitate contract and payment enforcements, particularly important for SMEs and services, and raise productivity growth by shortening bankruptcy procedures. This would help to face the expected wave of insolvent firms when the government starts to withdraw if the recovery remains weak. Before the crisis, it took about three months more than the OECD average for a typical case, with substantial variations across cities leading to high uncertainty (World Bank, 2019). Courts and judges were often overburdened by small, non-litigious cases and the take-up of e-technologies had been low, despite high judicial spending and the 2015 reform easing ICT use for civil proceedings (CEPEJ, 2016; World Bank, 2013 and 2016). Moreover, bankruptcy procedures remained lengthy (OECD, 2018a).

Ensuring that sound firms are given a fair chance to survive the coronavirus crisis and that there is not a proliferation of 'zombie' firms and misallocation of resources is key to the recovery. This should be addressed in three phases (OECD, 2020a): *i)* preventing sound firms from entering insolvency proceedings, *ii)* ensuring insolvency regimes and other policies can deal with the wave of insolvencies, and *iii)* policies to address the debt overhang problem to enable a "fresh start" for individuals and firms. Poland took early action to avoid premature liquidations, create a breathing space for firms facing difficulties and ease procedures (Box 1). Yet, to prepare for the recovery, developing special insolvency procedures for SMEs, such as simplified or pre-packaged in-court proceedings or the possibility to have instalments in the payment of administrative expenses related to the insolvency proceedings, is also warranted, as SMEs are frequently unable to cover the costs of formal insolvency proceedings (Adalet McGowan et al., 2017). Moreover, limiting in the short and longer term, the burden of non-litigious cases on judges could free up some resources, as in commercial-court cases. Such measures would have positive side effects on payment delays, as frequent arrears are particularly harmful for SMEs and recent measures to limit their abuse rely on efficient court procedures (Lewiatan, 2019; MR, 2019a).

Figure 14. Selected features of the OECD product market regulation indicators

Index scale 0 to 6 from most to least competition-friendly regulation, 2018



Note: Information refers to laws and regulation in force on 1 January 2018. The USA and Estonia are not yet included in the PMR database. Source: OECD (2019), OECD 2018 PMR database.

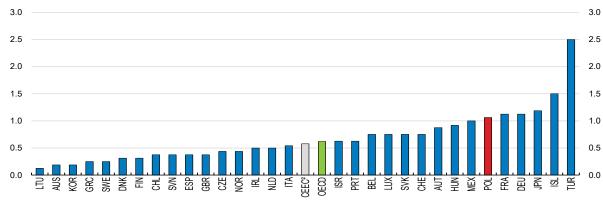
StatLink <a href="https://doi.org/10.1787/888934208868">https://doi.org/10.1787/888934208868</a>

Services regulations have also significant room for improvement, since services inputs are often sourced domestically and key to access foreign markets. Services account for 35% of gross exports, but 55% of value-added exports, indicating that Poland's exports of goods rely intensively on services inputs. However, some services professions still face relative high barriers to entry and, in the case of lawyers and notaries restrictions to their conducts (Figure 15 and Figure 16 Panel A). Occupational licensing and the lack of a temporary licensing system for foreign practitioners obstruct market entry and competition by professionals from outside the European Economic Area (OECD, 2019d).

The OECD Services Trade Restrictiveness Indicator (STRI) also highlights horizontal barriers to international trade in services. Labour market tests and quotas for natural persons seeking to provide services in the country on a temporary basis as intra-corporate transferees, contractual services suppliers and independent services suppliers tend to lower international mobility. Procedures to obtain business visas and register a company are all significantly more numerous, costly or longer than best practice (OECD, 2019d). Relatively weak regulatory transparency and complex administrative procedures tend to add to firm operational expenses (Figure 16, Panel B). This setting weigh particularly on SMEs and potential exporters, as larger firms are better equipped to succeed in complex regulatory environments because of their broader resources, in-house legal expertise, existing networks of business partners, and the benefits of scale to absorb overhead costs (Rouzet et al., 2017).

Figure 15. Some administrative procedures remain burdensome

Burden on new firms<sup>1</sup>, scale 0-6 from least to most restrictive, 2018



- 1. Administrative requirements to set up limited liability companies and personally-owned enterprises.
- 2. CEEC is the average of Hungary and the Czech and Slovak Republics.

Source: OECD (2019), OECD 2018 PMR database.

Digital netw

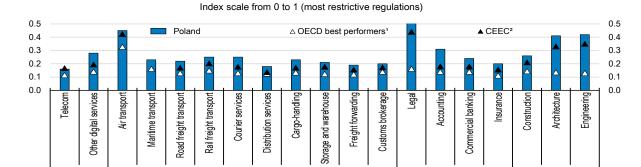
StatLink https://doi.org/10.1787/888934208887

Market bridging and supporting services

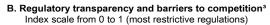
services

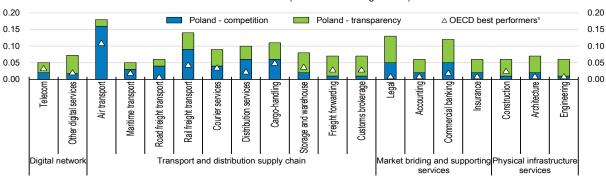
Figure 16. Some services trade barriers remain important

Services Trade Restrictiveness Index by sector, 2019



A. Overall service trade restrictiveness index





- 1. The OECD best performers is the average of the five countries with regulations the most conducive to trade.
- 2. CEEC is the average of Hungary, Czech and Slovak Republics.
- 3. Most of the measures recorded as barriers to competition and issues related to regulatory transparency apply equally to domestic and foreign firms

Source: OECD (2020), Services Trade Restrictiveness Index (database).

Strong regulatory governance is key to achieve further simplification. Poland has substantially improved its regulatory system (OECD, 2019c). Since 2015, public consultations are a general principle of the regulation making process, except for laws initiated by the Parliament. Existing consultations are often too quick or insufficiently taken into account (EC, 2019a; 2019b; and 2020). According to a recent exercise by the Supreme Audit Chamber, only a third of the impact assessments examined had been performed correctly (NIK, 2018a). Strengthening the role of consultations in the legislative process, allowing for sufficient time to gather relevant stakeholders' views and building on some ministries' best practices, would help lower the administrative burden resulting from frequent law changes (NIK, 2018a).

#### Easing tax compliance and ensuring sound public support for SMEs

Reducing further tax compliance costs for SMEs

Tax administration remains particularly cumbersome for smaller firms and potential exporters. While there are various methods for measuring tax compliance costs (Box 3), the widely used World Bank Doing Business Indicators suggest that paying taxes takes many more hours in Poland than other OECD countries, despite the increased digitalisation of tax procedures and pre-filling of information on tax returns if available (Figure 17). In particular, the system of reduced VAT rates – despite its ongoing simplification - remains overarching (OECD, 2020f). The payment of social security contributions also appears time consuming (World Bank, 2019).

The development of e-procedures could help to ease tax compliance. Although the process of reporting, paying and auditing taxes is now done electronically, time spent by a typical Polish company on meeting tax obligations has increased (EC, 2019a). Electronic Invoicing Systems could be streamlined to increase compliance and allow businesses to issue and receive invoices that are immediately available to the tax authorities. Such system could also provide, free of charge, a simplified and complete accounting framework to users. For example, in collaboration with software developers, Danish tax authorities embedded tax-related guidance and other functionalities in accounting software solutions targeted to small businesses.

Figure 17. Tax compliance costs remain elevated

Time needed to pay taxes<sup>1</sup>, hours per year, 2019 400 400 350 350 300 300 250 250 200 200 150 150 100 100 50 50 JPN AUT CAN DNK BEL FRA ISL

Source: World Bank (2019), Doing Business 2020.

<sup>1.</sup> The time to comply with tax laws measures the time taken to prepare, file and pay three major types of taxes and contributions: the corporate income tax, value added or sales tax and labour taxes, including payroll taxes and social contributions.

<sup>2.</sup> CEEC is the average of Hungary and the Czech and Slovak Republics.

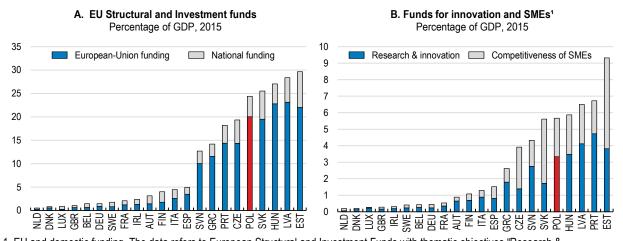
#### Ensuring appropriate fiscal support for smaller firms

Tax reliefs for smaller firms have been reformed recently. A reduced Corporate Income Tax rate and reformed Special Economic Zones aim to improve support for smaller firms both through a lower tax rate and through increase access for SMEs (Box 3). Special tax regimes for small and initially unprofitable firms, especially in a country with relatively high informality, can ease tax compliance and related fixed costs, particularly burdensome for SMEs (OECD, 2015). However, as shown by the experience of other OECD countries, reduced rates may also lead to misreporting of taxable income or size (Bergner et al., 2017), reducing incentives for dynamic firms to scale up and carry out exporting and innovative activities, like in France or Spain (Garicano et al., 2016; Almunia and Lopez-Rodriguez, 2013). The significant taxrate gap of 10 percentage points between SMEs and larger firms in Poland could increase these risks. In addition, international evidence tends to show that small firms' investment decisions are less sensitive to corporate taxes changes (OECD, 2010; OECD, 2015).

The costs and benefits of having such system should be reviewed – as planned - and, if needed, transitional measures should be introduced to smooth cliff edge effects when businesses transition from the preferential status. For example, employment-based or other thresholds could apply if reached for five consecutive years, as recently done in France. Yet, frequent tax and regulatory changes should be avoided as they induce significant adjustment costs for SMEs. Regional disparities create further difficulties, as the tax administration interpretations are only locally binding (OECD, 2018a).

Ex post evaluation efforts of fiscal measures for SMEs should also be strengthened, notably to include the full economic impact and incorporate more systematically rigorous research designs. Ex post evaluations can be required at the request of the Council of Ministers or subsidiary bodies (OECD, 2018x). They are also mandatory in several instances, notably for the heavily relied on EU-funded programmes (Figure 18). Yet, such efforts have been partly lacking (OECD, 2016a). For example, the agency in charge of business innovation subsidies has no obligation to monitor their effectiveness, though it granted support worth 0.3% of GDP in 2015 (NIK, 2016). Moreover, evidence about the effectiveness of the 2017 R&D tax break is also lacking though its take-up has increased rapidly. Defining ex ante the timing of the evaluation would have allowed a more efficient adjustment of the scheme and avoided incentives for firms to delay investments. More generally, systematically evaluating business support schemes would help to ensure that they are constantly improved based on experience and that the most effective programmes are strengthened in the longer term.

Figure 18. Business and SMEs' support are heavily reliant on EU funds



1. EU and domestic funding. The data refers to European Structural and Investment Funds with thematic objectives "Research & Innovation" and "Competitiveness of SMEs". For comparison across countries, the figure excludes some measures for technical assistance that represent 3.4% of expenditures under the Smart Growth operational programme in Poland. Source: European Commission (2016), ESIF Finance dataset.

#### Box 3. Recent policy initiatives and ongoing discussions to support SMEs

#### The 2018 Business constitution and "100 Changes for Enterprises"

The measures aims at reducing the administrative burden, as well as simplifying bureaucratic procedures, notably for small and medium-sized enterprises and foreign investors. Key changes include:

- Simplified registration procedures and an exemption for the smallest businesses (whose turnover does not exceed half the minimum wage). The threshold for full accounting obligations was also lifted from EUR 1.2 million turnover annually to EUR 2 million. In addition, new firms benefit from a "right to error" for a one-year period.
- Social security exemptions for the first six months of setting up a business. Entrepreneurs may benefit from reduced contributions, through the so-called "small ZUS" scheme over the next two
- Measures aimed at improving the administrative trust for businesses. Notably: presumption good faith and creation of the Ombudsman for small and medium-sized enterprises; ministries are required to publish simple explanations of administrative rules and tax laws; companies need to keep financial statements only for five years now rather than indefinitely.
- A new law also allows to prevent cessation of legal personality of an enterprise notably familyowned and smaller firms - in the case of death of the entrepreneur, by setting rules for temporary management of business activity after death of an entrepreneur.

#### The 2018 reform of special economic zones (SEZ)

The previous network of special economic zones (used mainly by larger industrial companies) was transformed into a countrywide investment tax credit with the view of boosting SMEs' take-up. The level of support depends notably on firm size, the local unemployment rate and other qualitative criteria, such as the assessed potential of sector, as well as the expected social and environmental effects. As a result, refundable tax credits for CIT and PIT (for non-legal entities) depend on the initial investment, the region and firm size. They amount to: i) 10% to 50% of the initial investment for large enterprises; ii) 20% to 60% for medium-sized enterprises, iii) 30% to 70% for micro and small enterprises.

#### The 2019 reduction in corporate income tax rate for SMEs

The authorities reduced the corporate income tax rate for SMEs to 9% (instead of 15% since 2016 and the standard rate of 19%). It applies to firms having annual turnover equal or less than EUR 1.2 million. In order to prevent tax optimisation, this reduced rate does not apply to taxpayers starting their activity, if their activity was created as result of transformation of one company into another company or of a company division.

#### The 2019 simplified joint stock company

The new simplified joint stock company (P.S.A.) will facilitate starting up a business in March 2021. It has low capital requirements, possibly only 1 PLN, simplified registration online within 24 hours and light procedures to dissolve the company.

#### The 2019 changes to the programme supporting investments of major importance over 2011-30

The reform aimed to ease access to SMEs by amending project requirements and introducing qualitative assessments. The minimum eligible costs and the job creation thresholds for R&D investments were lowered. Cash grant supplements can now be awarded in less developed regions and to cover training costs. In addition, the assessment of investment projects now includes qualitative objectives such as sustainable development, social responsibility and scientific development.

#### The 2020 regulation on late payments

The new regulation introduced legally binding deadlines for payments, which is set to help address arrears and support enterprises' financial liquidity.

#### The "Estonian CIT"

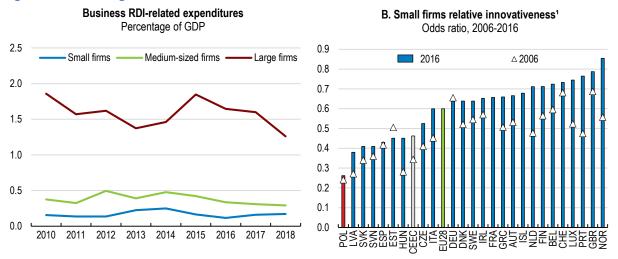
The authorities are considering the introduction of a new voluntary Corporate Income Tax (CIT) scheme for SMEs. Under the new measure, SMEs with revenues below PLN 50 million (approximately EUR 11 million), whose passive revenues do not exceed those from operating activities and whose shareholders are individuals, would not pay income tax as long as revenues are reinvested. CIT collection would only occur when these SMEs pay out dividends to shareholders. The scheme is expected to reduce obstacles for SMEs development, boost investment and employment.

#### Increasing SMEs innovation, its diffusion and productivity

Poland's business sector spends relatively little in the generation of knowledge-based capital. Both business research and development (as a percentage of GDP) and the number of patents (per capita) are in the OECD's lowest quadrant (OECD, 2018a). This partly reflects the dominance of SMEs in the economy. While many SMEs may be unlikely to develop radical innovations, empirical evidence suggests that performing research activity is important for their ability to demystify new technologies being developed abroad and adapt them to suit their production processes (Griffith, Redding and Reenen, 2004).

Stimulating private-sector research and innovation, which has been stable as a share of GDP could help raise SMEs internationalisation (Figure 19). Indeed, the low level of business R&D spending largely reflects little investment by local firms, especially SMEs, hindering the diffusion of innovation and GVC integration, which requires state-of-the-art producing processes. More than 70% of SMEs reported not to have state-of-the art machinery and equipment in 2018 (EIB, 2019).





1. Share of innovative firms among 10-49 employee firms divided by the share of innovative firms among firms with over 250 employees. Source: OECD calculations based on Statistics Poland (2017; 2019 and 2020), Expenditures on Innovation Activities, Statistics Poland, Warsaw and OECD (2020), National account database; Eurostat (2019), "Community Innovation Surveys (CIS) 2006-16", Eurostat Database.

StatLink https://doi.org/10.1787/888934208963

To stimulate research, development and innovation, public support for SMEs, start-ups and businesses has increased sharply. In particular, tax incentives have steadily increased through several reforms of the 2016 R&D tax allowance. For example, the tax-deductible proportion of R&D expenditure on labour increased from 30% to 100% over 2016-18. In 2017, the authorities also expanded the list of tax-deductible R&D spending, made the subsidy refundable for start-ups in the first year of business activity (two years for SMEs) and extended the credit carry-forward option from three to six years. As a result, the number of taxpayers using the relief increased significantly from 638 in 2016 to 1186 in 2017 (PIE, 2019).

However, the total amount spent in R&D support is still low, at 0.11% of GDP in 2017 (OECD, 2019e). Moreover, the average amount in claimed expenditures for tax credit remains high, suggesting small firms are taking less advantage. If take-up of the R&D tax relief by innovative SMEs remains low, making the tax credit refundable for SMEs operating more than two years and beyond the first year of a start-up could help boost SMEs' R&D spending. Developing standardised definitions for R&D expenditures, compiling a common list of qualified costs and offering services to assist firms in tax-claiming procedures (e.g. online information and simplified claims forms) would also help (OECD, 2018a).

The authorities could also give greater priority to direct support schemes. Grants are easier to monitor than general tax deductions, which require more checks. A well-designed and targeted strategy, based on closer co-operation between public research entities and businesses, could also help strengthen the country's research capacities. In fact, science-industry linkages remain generally weak (OECD, 2018a). Austria, for instance, is pursuing interesting initiatives thanks to the COMET (Competence Centres for Excellent Technology) programme and the Christian Doppler Laboratories (Comet, 2018; Cdg, 2018), which have been successful in promoting cooperation between companies and application-oriented research over the past two decades, especially in the automotive industry (Harms, 2018).

#### Trade facilitation has improved

Trade policies have successfully increased SMEs' ability to handle fixed costs associated with exporting and importing. According to the OECD Trade Facilitation Indicator, Poland exceeds or is close to the best performers in all areas (OECD, 2019f). Poland's performance has improved between 2015 and 2017 in terms of information availability and streamlining of procedures. Similarly, the cost of importing and exporting is low in international comparison (World Bank, 2019). Yet, the efficiency of custom clearance processes could still be improved (World Bank, 2017, OECD, 2019f). Expanding the use of pre-arrival processing and of Authorised Operators could help reduce variable costs, increase the value of imports and exports, as well as support timely delivery to consumers.

In a welcome move, the authorities recently reformed the exports promotion and investment framework to provide Polish companies with more help to expand into foreign market (Box 4). In 2017, the Polish Investment and Trade Agency (PAIH) replaced the Polish Information and Foreign Investment Agency (PAlilZ) as the main institution responsible for promotion and facilitation of foreign investment. The government has also extended the mandate of its investment promotion agency to export promotion and increased its resources significantly. Since 2017, Polish sectoral brands promotion programs have been launched in Asia, Africa and Latin America, helping particularly SMEs. To offer on-site direct assistance, PAIH also runs a network of Foreign Trade Offices that are notably focused on distant markets with rapid growth potential for Polish exporters and investors (Box 4). The Polish Investment and Trade Agency (PAIH) does not offer financial instruments (except Polish Tech Bridges), but help to get support for international expansion from other financial institutions belonging to the Polish Development Fund (PFR). Apart from the support from PAIH, the Ministry of Economic Development encourages SMEs' internationalisation. For example, since 2016, Polish sectoral brands promotion programs (BPPs) have been carried out, to promote selected industries (based on their estimated export potential). SMEs may also obtain support to cover part of the costs related to participation in fairs, trainings and economic missions as well as other specific information and promotion undertakings. In addition, the Ministry plans to launch a new online portal to facilitate and promote SMEs' exports. This strategy is welcome, as coherent export support services have been lacking so far, and evidence suggests that high-quality investment promotion services tend to translate into stronger FDI inflows (Harding and Javorcik, 2013) with potential benefits for innovation and productivity.

The regular organisation of business meetings and SME associations with Foreign Trade Offices of the Polish Investment and Trade Agency (PAIH) could be a useful mechanism for helping Polish SMEs to reduce search costs and overcome trust barriers, to adopt superior management practices, and to raise

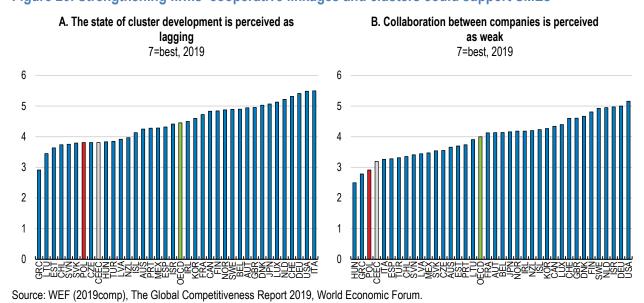
productivity. International evidence as shown that such business networks may have a causal impact on firm performance (Cai and Szeidl, 2018). The example of Germany's structured network of public and private organisations could help to strengthen the Polish framework in this direction. The German Chambers of Commerce Abroad act as a link between the local and regional levels and the federal Germany Trade and Invest network in Embassies and consulates through the domestic regional Chambers of Industry and Commerce. The public-private cofinancing of the German Chambers of Commerce Abroad also helps to ensure the relevance of their actions (EESC, 2018). Austria's internationalisation initiative "go-international", also targets SMEs and builds on public-private financing to establish export relationships for the first time, or to open up new markets abroad. The initiative provides various support measures through a collaboration between the Ministry for Digital and Economic Affairs and the Federal Economic Chamber.

#### Developing local clusters and SMEs' consortia could boost internationalisation

Export consortia appear to be rare (MR, 2019b) and collaboration between companies is perceived as weak (Figure 20). To promote knowledge exchange, notably of export markets, and agglomeration economies, Poland has tried to develop local clusters and sectoral consortia. For example, the Torun region provided seed funding to several companies to establish a cluster and compete as a unique group offering complete solutions to potential contractors in other countries (Filippaios, 2018). Scaling up such experience could create successful exporters and innovation hubs by promoting the cooperation of interconnected firms, suppliers and research institutions (Marchese et al., 2019), capitalising on the already strong spatial concentration of exporting and innovation activities in Poland (Albinowski et al., 2016).

SMEs could combine their human and financial resources by creating networks of small businesses or collaborating with larger firms for exporting activity or training (see below). Participating in an export consortium reduces the risks and costs involved in penetrating foreign markets for SMEs (Unido, 2005). This could be done by creating a new legal form to accommodate export consortia and incentivising the participation of small businesses with grants or tax benefits (OECD, 2017b). For example, the Italian Institute for Foreign Trade gives grants to export consortia to incentivise their development. In order to qualify, export consortia must comprise a minimum number of SMEs.

Figure 20. Strengthening firms' cooperative linkages and clusters could support SMEs



#### 28 | ECO/WKP(2021)5

Polish cluster initiatives are relatively recent, and few have proven effective so far. There are around 130 clusters in Poland (PARP, 2020). In particular, the 15 National Key Clusters (NKC) have to define a business strategy and provide business services for their members. Yet, in many cases, the clusters' innovative activity and orientation towards foreign markets is low and their financial viability without subsidies is questionable (OECD, 2018a). Many lack a common business strategy for their members and make insufficient use of mentoring, coaching and business development services. The management of these structures often lack information about innovative activity and economic results of the participating firms, precluding effective evaluation (NBP, 2016; NIK, 2016). PARP currently provides information on clusters activities every second year, investigating and benchmarking the activities of National Key Clusters and a sample of other clusters. A prerequisite could be to develop, as planned, a database of potential suppliers for exporters and large MNEs. This would ease the integration of SMEs into domestic and global value chains, as done in Czech Republic through the "CzechInvest" project, which connects foreign investors with potential suppliers.

Going forward, the government is focusing its support on a small group of 15 National Key Clusters selected competitively as the most promising initiatives in terms of size, management quality, innovative activity and presence in foreign markets. Public support is meant to help them expand further abroad. Given that little is known about effective policies to support clusters, it seems sensible to concentrate on framework conditions, such as internationalisation, investment in infrastructure and training. This should include efforts to improve cluster management in line with the requirement to have an explicit strategy, as well as links to research institutions. Publicly supported clusters, technology parks and similar initiatives should be required to set up a plan on how to increase own earnings. Those failing to gradually reach viability should eventually lose their subsidies. Beyond benchmarking exercises and the regulator monitoring of clusters, a robust evaluation framework is needed to better understand what works. National and local initiatives should be regularly evaluated, as international evidence on spillovers and productivity effects of place-based incentives has been mixed so far (Slattery and Zidar, 2020), despite studies showing positive agglomeration effects on innovation (Carlino and Kerr, 2015).

There is still scope to improve technical assistance and mentoring to small businesses at the local level. SMEs are often located in lagging regions (Figure 13). Building on the existing local business centres and contact points for EU funds, at the municipal or regional level, local support institutions could be strengthened. Such practices have been experienced for the development of business services centres in some medium-sized cities (Radom, Tarnów, Elbląg and Chełm) to help promote their attractiveness (MR, 2019c). To avoid making such centres excessively dependent on local budgets, some national financing from an earmarked subsidy of the state budget could facilitate cooperation between firms and local institutions.

#### The Polish Agency for Enterprise Development (PARP)

The Polish Agency for Enterprise Development (PARP) manages a wide range of instruments and programmes designed to support business development, innovation and SMEs:

- During the 2014-20 financial perspective for European Funds, PARP has been providing financial instruments to help SMEs in the promotion of product brands, support SMEs' internationalisation in Eastern Poland and promote the internationalisation of "National Key Clusters" (KKK). In 2020-22, new industry promotion programs have also been introduced.
- In 2018, it launched the SMEs' Development Centre. This web portal offer information and consulting services to SMEs.
- In 2019, to help small and young companies in gathering capital for their development, PARP introduced a new development loan for micro and small companies. The loan can be used for purchase and delivery of new fixed assets, purchase of software, integration of purchased software with an existing machine park or IT system.
- PARP also finances investment in management skills through a human resources programme
  co-funding training with firms, as well as the innovation manager academy, and a range of
  programme designed at boosting SME's innovativeness (Box 5).

#### The Polish Investment and Trade Agency (PAIH)

The Polish Investment and Trade Agency (PAIH) supports both the foreign expansion of Polish business and the inflow of FDI into Poland. Actions targeted towards SMEs include:

- A network of Foreign Trade Offices that are responsible for providing free-of-charge support for exporters and investors abroad.
- The 2018 Tech Bridges project, funded by the European Regional Development Fund, which supports foreign expansion of start-ups and SMEs with high potential.
- Networking events: in 2018, PAIH organised the first Support Forum for Polish Business Abroad
   PAIH Expo for SMEs which planned to or had already been pursuing foreign expansion. The event presented public services supporting participation in foreign markets.

#### The state-owned development bank (BGK)

The national promotional and development bank (BGK) promotes entrepreneurship and the development of micro companies and SMEs by offering guarantees, surety instruments, as well as loan and equity instruments:

- To ease access to bank loans, BGK grants de minimis guarantees in cooperation with commercial banks. In co-operation with the EIB group, BGK supports SMEs by providing portfolio guarantees to commercial banks counter-guaranteed by the guarantee of the European Investment Fund.
- BGK provides trade finance instruments and direct loans for larger transactions for SMEs and larger firms. The PAE programme launched in 2017 also offers guarantee against the risk of non-payment under letter of credits from commercial banks.
- For the implementation of the 2014-20 European Structural Investment funds, BGK operates funds of funds for 15 regional and 2 national programmes. These programmes provide preferential loans, guarantees and equity instruments for SMEs through financial intermediaries to address investment and innovation needs and financing gaps, as well as the impact of the coronavirus crisis.

BGK is also in charge of the "Loan for technological innovations" for SMEs financed through European Regional Development Fund (ERDF). BGK provides non-repayable support for loans granted by commercial banks that may reach up to 70% of total eligible costs of investment.

#### The Export Credit Insurance Corporation (KUKE)

The company provides export credit insurance with State Treasury backing, notably for markets exposed to higher political risk. Its operations focus on insuring trade receivables arising from the sales of goods and services with deferred payment, as well as providing bonds.

#### Increasing skills to foster integration in global value chains

#### Raising skills through better life-long training

With its relatively low wage costs, Poland has increased its exports and turned itself into an attractive market for foreign investors. The workforce is increasingly educated, suggesting significant opportunities for further internationalisation. Poland foreign language skills, in particular English, are generally well ranked in international comparison and have increased rapidly (EF, 2019). Yet, the internationalisation of Polish firms tends to rely on relatively low skills and few knowledge-intensive services compared to other OECD countries. In addition, the share of adults having a high-skill level is lower than neighbouring countries and the OECD average (Figure 21).

A vital condition for improving SMEs internationalisation is the existence of a sufficiently large pool of workers with a high level of education and skills. Before the coronavirus crisis, the unemployment rate was at a 20-year low and business surveys indicated labour shortages as a key factor limiting production, across firm size (Figure 22, Panels A and B). In the short term, the education and training system will face strong needs to facilitate the reallocation of displaced workers towards sectors and firms that have high potential. In the longer term, it will be important to strengthen the skills needed for the adoption of technological innovations (OECD, 2019g; Lang and Mendez Tavares, 2018). Indeed, automation is set to affect a significant share of jobs, while population ageing is set to lower labour supply (Panels C and D).

The high rate at which skills become obsolete makes it harder for seniors to find work, whereas demographic ageing requires better employability and working conditions of older workers. According to forecasts produced by the national statistics institute, if nothing changes, the active population growth rate will be only just over half that of the total population between 2017 and 2070. Seniors will therefore have to work until later in life, which means they need to fight against stereotypes and discriminations.

Digitalisation may accelerate skill depreciation for many workers, increasing inequality. Almost 50% of jobs in Poland could become redundant or risk changing substantially due to new technologies (Figure 22, Panel C). Automation and digitalisation are set to further reduce demand for manual and repetitive tasks, and increase demand for interpersonal and problem-solving skills to ensure machines' and workers' complementarity (OECD, 2018c).

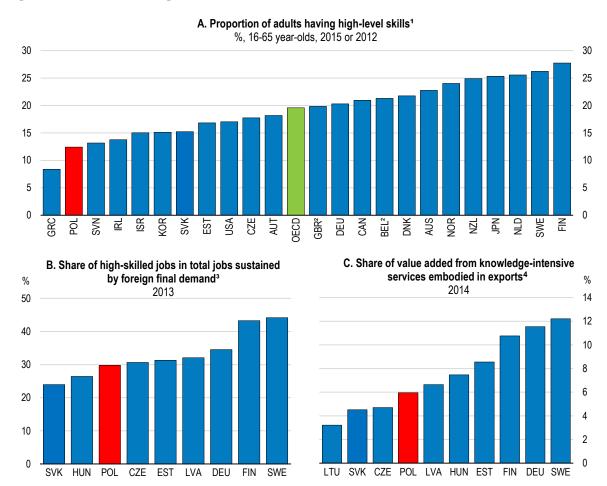


Figure 21. The share of high-skilled adults and their contribution to GVCs is low

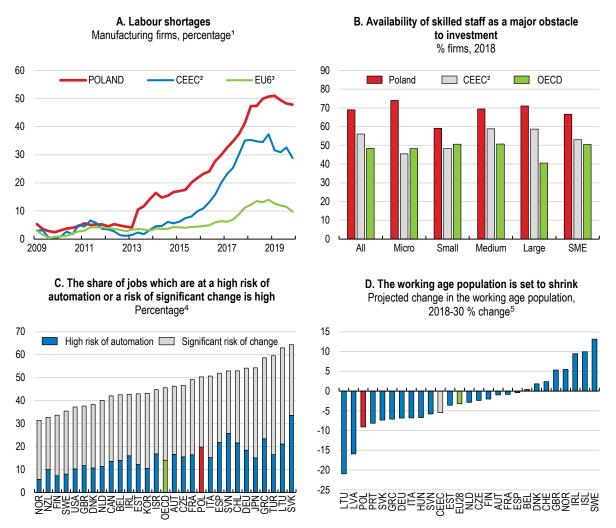
- 1. Average of percentage of adults scoring at PIAAC literacy or numeracy proficiency level 4 or 5, or scoring at problem solving in technology-rich environments level 2 or 3.
- 2. Data for Belgium refer only to Flanders, and data for the United Kingdom refer only to England.
- 3. OECD calculation of the decomposition of total employment sustained by exports into three groups of skills intensity defined according to major groups of the International Standard Classification of Occupations 2008: High-skilled occupations (ISCO-08 major Groups 1 to 3), medium-skilled (4 to 7) and low-skilled (8 and 9).
- 4. OECD estimates based on the OECD Inter-Country Input-Output (ICIO) table and the OECD Bilateral Trade Database by Industry and End-Use (BTDIxE).

Source: OECD (2017), Education at a Glance 2017: OECD Indicators; OECD (2017), Skills Outlook 2017: Skills and Global Value Chains; OECD/WTO (2016), Statistics on Trade in Value Added (database).

StatLink https://doi.org/10.1787/888934209001

Enhanced lifelong learning will be essential. The percentage of adults with little education attainment has increased and participation in continuous training is relatively low, despite the estimated high returns to job related training (Fialho et al., 2019). As in many OECD countries, low-skilled, unemployed and inactive workers struggle to access training, notably formal training courses (OECD, 2017c). Despite recent improvements, namely through the European Social Fund operational programme "Knowledge Education Development", which aims at promoting lifelong learning and is regularly assessed, there is still little evaluation of the quality and effectiveness of training programmes (OECD, 2019h).

Figure 22. Shortages of skilled staff, demographic ageing and automation remain major issues



- 1. Percentage of manufacturing firms pointing to labour shortages as a factor limiting production.
- 2. CEEC is the average of Hungary and the Czech and Slovak Republics. Jobs are at high risk of automation if the likelihood of their job being automated is at least 70%.
- 3. EU6 is the average of France, Germany, Italy, Spain, Denmark, and the Netherlands.
- 4. Jobs at risk of significant change are those with the likelihood of their job being automated estimated at between 50 and 70%. Data for Belgium correspond to Flanders and data for the United Kingdom to England and Northern Ireland.
- 5. Eurostat baseline projections including migrations, the working-age population refer to those between 15 and 64 years old. Source: European Commission (2019), Business and consumer survey database; EIB (2019); OECD calculations based on the Survey of Adult Skills (PIAAC) (2012); and Nedelkoska, L. and G. Quintini (2018), "Automation, skills use and training", OECD Social, Employment and Migration Working Papers, No. 202, , <a href="https://doi.org/10.1787/2e2f4eea-en">https://doi.org/10.1787/2e2f4eea-en</a>; Eurostat (2019), Population projections.

StatLink https://doi.org/10.1787/888934209020

Workplace training for SMEs is particularly costly (Figure 24, Panel A). There is fewer staff and resources, the retention rates are low and the risk of poaching by other firms is high (OECD, 2019i). Providing additional financial support and technical assistance to SMEs would help to increase work-based learning opportunities. Financial support for the development of programmes and cost reimbursement have proved to be the most effective initiatives in improving SMEs work-based learning (Strzebońska, 2017).

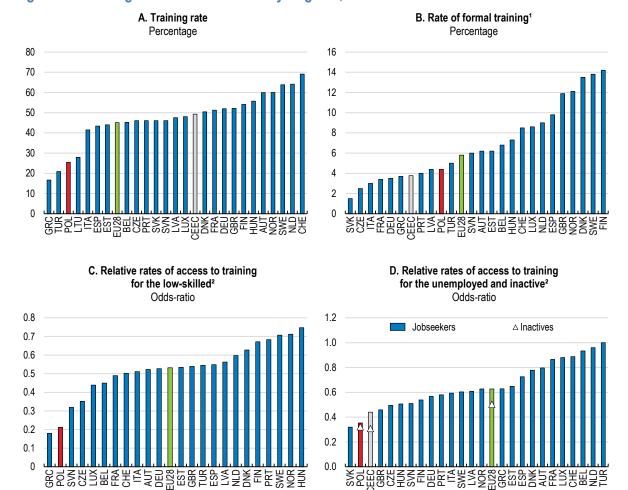


Figure 23. Training is low and insufficiently targeted, 2016

1. Adults aged between 25 and 64 enrolled in education or training during the last twelve months.

2. Participation rate of adults with education up to the first cycle of secondary education (unemployed or inactive in Panel D) compared to the participation rate of all adults.

Source: Eurostat (2019), "Adult training: Participation rate in education and training", Eurostat database.

StatLink https://doi.org/10.1787/888934209039

Public financing of training could offer more support for SMEs (Figure 24, Panel B). Co-financing of employees' training is mainly provided through the National Training Fund (NTF) and European funds. Any enterprise can apply to the KFS for an 80% refund of training costs, while micro-sized enterprises can apply for 100%, up to a maximum of 300% of Poland's average monthly salary per employee. In 2017, over 18 000 enterprises received KFS funds, half of which were micro-sized enterprises. However, uptake of the KFS has been limited and many applications are unsuccessful. In 2017, 32% of KFS applications were unsuccessful, because the funds were exhausted (OECD, 2019i).

Another important factor is the lack of awareness of current arrangements for work-based learning (OECD, 2019h). In addition, the available information often uses too technical and complicated language (Strzebońska, 2017). Workshops' and focus groups' participants confirmed that financial and informational barriers prevent SMEs from engaging in work-based learning. Poland could benefit from the experiences of other OECD countries in improving SMEs' participation in work-based learning (Box 5). For example, the Polish Agency for Enterprise Development (PARP) should continue to improve the Database of Development Services (BUR), which is widely used by SMEs, to make the portal more user-friendly and

#### **34** | ECO/WKP(2021)5

comprehensive in terms of the programmes included, user satisfaction data, career and development counselling, recognition of prior learning and available public funding (OECD, 2019h and Box 6).

Conditions to access training should be adapted to support the unemployed and non-standard workers. Though Public employment services (PES) focus on supporting unemployed people in adapting their skills to new labour market needs, they have limited funding and staffing (OECD, 2018a). The rapid turnover of workers on temporary contracts does not incentivise training participation. Adopting individual training accounts, as in France, would make the training rights "portable" from one job or employment status to another, and potentially improve access to lifelong learning for low-skilled workers. Yet, this would also require improved access to effective information and guidance to be fully effective (OECD, 2019j).

#### Box 5. Boosting SMEs participation in adult learning, international examples

#### Training associations in Switzerland

In Switzerland, the government established vocational training associations (Lehrbetriebsverbünde) in 2004. These associations of two or more training firms share apprentices, whose training is organised across several firms on a rotating basis. The aim is to enable the engagement of firms that lack the capacity and resources to provide the full training of an apprentice, and to lower the financial and administrative burden on individual firms. The Confederation subsidises the associations with initial funding during the first three years for marketing, administrative and other costs necessary to set up the joint training programme. After this initial support, the training associations are supposed to be financially independent. An evaluation found that the majority of firms participating in training associations would not have engaged in training otherwise.

#### Support for SMEs' training in Flanders (Belgium)

The SME Wallet (KMO-portefeuille) is targeted exclusively at SMEs and is designed to help them grow and become more competitive through training and advisory services. The SME Wallet covers 20-30% of training costs, depending on the size of the enterprise, with a maximum budget of EUR 7,500 per year. SMEs can apply for subsidies online to receive a direct transfer. Employers determine their own training needs and there is no targeting element (OECD, 2017[6]). A recent impact assessment determined that participating firms achieved higher growth than a control group.

Source: OECD (2019), OECD Skills Strategy Poland: Assessment and Recommendations, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/b377fbcc-en; OECD (2019), OECD Skills Strategy Flanders: Assessment and Recommendations, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264309791-en. Kuczera M., V. Kis and G. Wurzburg (2009), OECD Reviews of Vocational Education and Training: A Learning for Jobs Review of Korea 2009, https://doi.org/10.1787/9789264113879-en.

A. Small enterprises providing continuous B. Public spending on labour market training vocational training Percentage of GDP, 2017 Percentage of firms, 2015 100 0.50 90 0.45 80 0.40 70 0.35 60 0.30 50 0.25 40 0.20 30 0.15 20 0.10 0.05 10 0.00

Figure 24. Public funding for training is low and small firms provide low access to training

Note: Continuing vocational training (CVT) are training measures or activities which have as their primary objectives the acquisition of new competences or the development and improvement of existing ones and which must be financed at least partly by the enterprises for their persons employed who either have a working contract or who benefit directly from their work for the enterprise such as unpaid family workers and casual workers.

Source: OECD (2019) Employment and Labour Market Statistics: Labour market programmes: expenditure and participants; Eurostat (2019), Continuing vocational training in enterprises database.

StatLink https://doi.org/10.1787/888934209058

#### Supporting better management skills for SMEs

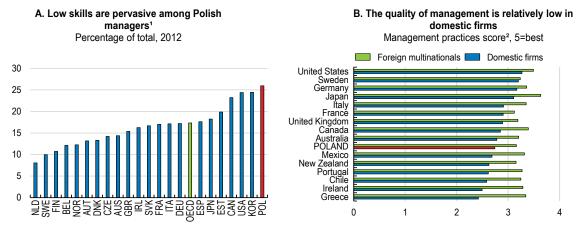
Many SMEs do not have strong human resource infrastructures to implement training policies and, more generally, internationalisation and growth strategies. A number of studies shows that management skills can be improved, with positive effects on internationalisation (Figure 25; Bloom et al., 2018). As in other CEE countries, SMEs with a structure that is favourable to innovation and its diffusion are underrepresented (Lorenz and Potter, 2019). The limited number of highly skilled managers is considered one of the main barriers to growth, and the lack of support from management is a barrier to innovation (Zadura-Lichota, 2015) including the adoption of digital tools (see below) or efficient energy management process (OECD, 2020f). For example, high-performance workplace practices are less frequent in medium than large companies (PARP, 2019b; OECD, 2017a).

New initiatives have contributed to develop managerial skills in SMEs at different stages of business expansion, notably to access foreign markets (Box 6). Yet, the government could play a stronger role in disseminating high-performing organisational and management practices. Another step would be to adopt such practices in public administrations and the numerous government-owned enterprises (Figure 14), with potential spillovers to the private sector (OECD, 2019i).

Several OECD countries, including Australia, the Netherlands, New Zealand and Sweden have implemented programmes to improve the managerial and organisational performance of firms. For example, the Finnish Workplace Development Programme (TYKE from 1996 to 2003, TYKES from 2004 to 2010, thereafter Liideri) aimed to disseminate new work and management practices, and to develop a "learning organisation" culture to counter sluggish productivity growth in many traditional industries. Networks played an increasing role and there was a strong emphasis on disseminating good practices and mutual learning. Qualitative evaluations suggest that the programmes did promote workplace innovation and productivity. Coaching, promoting best practices and disseminating these through the creation of networks of firms are also common features of other countries' programmes (OECD, 2019j).

Building on these international practices and the assessment of its own initiatives, the Polish authorities could consider establishing a co-operation network to identify and disseminate best practices for stimulating a learning culture in the workplace. Employers, unions and sectoral training providers, with support from the government, could establish this network. The chambers of commerce and group-based interventions can be particularly important, especially SMEs, to share good management practices (Lacovone et al., 2019).

Figure 25. Management skills appear lagging, notably for domestic firms



- 1. Share of managers with at least upper secondary education scoring below level 2 in at least one of the PIAAC proficiency scales, i.e. literacy, numeracy and problem-solving in technology-rich environments.
- 2. Scores are a measure of management practices across 5 key areas of management: operations management, performance monitoring, target setting, leadership management and talent management. Scores are scaled from 1 (worst practice) to 5 (best practice), 2012-2015. Source: OECD (2013), OECD Skills Outlook 2013 (database); N. Bloom, C. Genakos, R. Sadun and J. Van Reenen (2012), "Management practices across firms and countries", NBER Working Paper, No. 17850.

StatLink https://doi.org/10.1787/888934209077

#### Facilitating the immigration of skilled workers

Facilitating the immigration of skilled workers could play an important role in overcoming local skills shortages and improving SMEs' internationalisation. Immigrants' country and language knowledge may reduce uncertainty and improve the governance of foreign operations (Ottaviano et al., 2018). Over recent years, immigrants from Ukraine and other neighbouring countries have contributed to a surge in labour supply. They reached an estimated 5% of the Polish labour force in 2016, and their inflow helped cushion the decline in the working-age population that started in 2011. Immigration had an estimated contribution of about 11% of Poland's economic growth over 2013-18 (Growiec et al., 2019). Yet, most Ukrainian migration is still short term and such strong migration inflows are unlikely to become permanent, leaving SMEs and other firms with potential large skill shortages in the medium term.

To improve Poland's attractiveness as a workplace for third-country nationals, a clear migration strategy should be finalised. Such strategy should help to better monitor the labour market integration of foreigners and protect their rights, namely access to education and training for them and their children (OECD, 2018a). It is also necessary to increase the provision of legal stay and work to citizens from other countries: the current administrative procedures are not adapted to cope with the rapidly growing number of foreigners coming to Poland. The timing to process applications for resident permits has increased more than threefold: from 64 to 206 days over the last four years (NIK, 2019). There are common guidelines for applicants, but extending permits' period of validity could also help reduce the congestion. Updating and enforcing anti-discrimination policies, taking into account labour and housing markets barriers for immigrants, would help to confront ethnicity and nationality-based discriminations (UN, 2019).

# Box 6. Programmes by PARP that support management skills

## **SME Manager Academy**

Launched in 2018, the SME Manager Academy (Akademia Menadżera MŚP) is a programme administrated by PARP that finances training and advisory support for managerial staff in SMEs in the area of business management, including HR. Financial support provided covers up to 80% of the project, while the remaining 20% is covered by the SME.

#### The Innovation Manager Academy

The Innovation Manager Academy (Akademia Menadżera Innowacji, AMI) is a programme administrated by PARP that aims to increase the skills and expertise of companies in the field of developing and implementing innovations.

## Co-financing strategic management

PARP can co-finance strategic management in firms. The aim is to support the identification of development barriers and draw up a development plan for the company.

### **PARP Academy**

The PARP Academy, launched in 2006, is an e-learning platform that offers free-of-charge online training sessions, tailored to the needs of SMEs, in areas related to setting up and running a business.

## The succession of family business

PARP provides support for companies in preparation for succession through financing of advisers who will diagnose the situation of the company and will indicate its potential chances and threats.

#### New start- support for entrepreneurs (and their employees)

The competition is for the projects aimed at providing training and consultancy to entrepreneurs who have suffered a business failure in a previously run company and started their business activity again.

#### The database of Development Services for education and training offers (BUR)

PARP manages the Database of Development Services (BUR) since 2017. The BUR portal has recently become Poland's main online portal on adult learning opportunities. It contains a growing coverage of training courses and counselling for managers and employees of SMEs to improve their skills. It also distinguish between services that can be subsidised by the European Social Fund (ESF) and those funded through private funds.

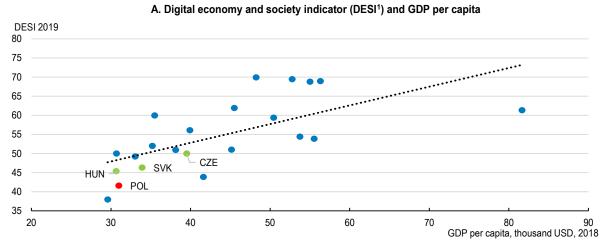
Source: OECD (2019), OECD Skills Strategy Poland: Assessment and Recommendations, OECD Skills Studies, OECD Publishing, Paris; PARP (2019), Polish Agency for Enterprise Development website, https://en.parp.gov.pl/.

At the same time, the government should continue to strengthen ties with the large expatriate community. In particular, as the United Kingdom prepares to exit the European Union, further efforts to attract Polish workers who have migrated to the United Kingdom could be envisaged. Returning emigrants could bring skills, networks and financial capital (Brandt, 2016). Many OECD countries provide online hubs for their citizens abroad advertising jobs, training, and business and research opportunities at home (OECD, 2013; DFA, 2015). A job fair was recently organised in London and the authorities also created a website that offers some guidance to Polish workers abroad. In addition, the authorities could consider the development of a diaspora skills database to directly connect potential returning migrants with employers, as done in Portugal with the "Global Professional Mobility Platform". Tailored counselling and general assistance related to employment, housing, education and administrative procedures to start a small business, as the Irish "Back to Business" mentoring programme, have also proved quite effective (EC, 2014).

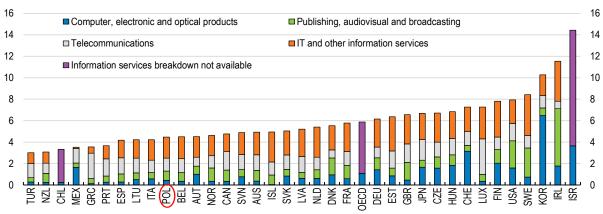
# Harnessing the benefits of digitalisation to support SMEs' exports

Poland's transition to a digital economy is lagging compared to similar economies (Figure 26). The diffusion of advanced digital technologies is limited, particularly for SMEs (Figure 27). Yet, there is evidence that firms using online tools are more likely to export to more countries and obtain larger shares of turnovers from exports (OECD, 2019k). Developing the use of high-performing digital tools would stimulate productivity and employment, particularly for start-ups (DeStefano et al., 2019). There is also evidence that access to high-speed internet would increase the ability of firms to find the right business partners abroad and import goods that meet their needs (Malgouyres et al., 2019).

Figure 26. Poland's digital transition has been relatively lagging



# B. Value added by information industries<sup>2</sup>, 2016 As a percentage of total value added



1. The Digital Economy and Society Index (DESI) is a composite index by the European Commission based on i) the deployment of broadband infrastructure and its quality; ii) endowment with ICT skills; iii) the variety of activities performed by citizens online; iv) the digitalisation of businesses and in particular SMEs; and v) the digitalisation of public services.

2. Information industries cover the following ISIC Rev.4 Divisions: Computer, electronic and optical products (26); Publishing, audiovisual and broadcasting (58 to 60); Telecommunications (61) and IT and other information services (62, 63). For Latvia, New Zealand, Poland, Portugal, Spain, Sweden and Turkey, the value added shares refer to 2015.

Source: European Commission, Digital Economy and Society Index (DESI) 2019; OECD (2019), National Accounts Statistics (database); and OECD (2019), Measuring Digital Transformation.

StatLink https://doi.org/10.1787/888934209096

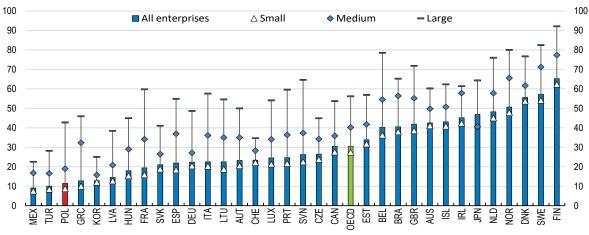
Poland is stepping up efforts to promote the use of digital public services, which can help stimulate digitalisation. Poland also performs well in terms of its open data policy relative to many EU countries (EC, 2019c). Yet, key challenges to digitalisation remain. The authorities need to facilitate the rollout of high-quality digital infrastructure, encourage the uptake of digital tools by SMEs and boost ICT skills.

# Developing high-quality digital infrastructure

High-quality digital infrastructure is a necessary condition to reap the full benefits of digitalisation and speed up firms' internationalisation. Poland's National Broadband Plan (*Naradowy Plan Szerokopasmowy*) aims at a full coverage of high-speed broadband internet (of at least 30 Mb/s) by the end of 2020 and its 2020 update define targets of higher speeds (of at least 100 Mb/s) as well as 5G connectivity in large cities by 2025. The "Digital Poland" programme, which is predominantly financed from EU structural funds, supports access to fast broadband in rural areas (EUR 2.5 bn or 0.5% of 2018 GDP). In addition, the authorities have set up a new national Broadband Fund in 2020 to accelerate the deployment of high-speed broadband in rural areas (PLN 140 million per year or 0.01% of 2018 GDP).

Figure 27. SMEs lag in the adoption of more sophisticated digital technologies

Enterprises using cloud computing services, by firm size, as a percentage of enterprises in each employment size class, 2018 or latest year available



Note: Cloud computing refers to ICT services used over the Internet as a set of computing resources to access software, computing power, storage capacity and so on. Data refer to manufacturing and non-financial market services enterprises with ten or more persons employed, unless otherwise stated. Size classes are defined as: small (10-49 persons employed), medium (50-249) and large (250 and more). Source: OECD (2019), ICT Access and Usage by Businesses (database).

StatLink https://doi.org/10.1787/888934209115

Poland's access to fast broadband has improved rapidly and the 2020 update of the National Broadband Plan is aligned with the European Commission's Digital Agenda for Europe. Yet, the deployment, access and use of very-fast broadband networks remain hampered by remaining regulatory barriers that are not conducive to private investment in higher-speed networks. In particular, Poland is still far from having achieved the foreseen connectivity of at least 30Mb/s for its whole population in 2020 (EC, 2020desi).

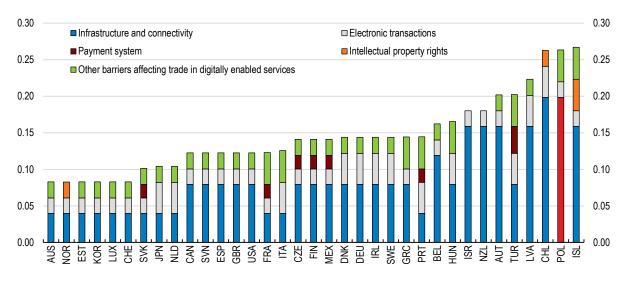
Restrictive regulations and the high cost of providing services in some geographical areas have hindered the rollout of high-quality digital infrastructure. Until January 2020 and the "Mega-Act" on broadband rollout, some local governments could demand hefty rental fees for the use of roads to set up digital infrastructure. Fees levied by local authorities have then be capped, a new Broadband Fund was created (see above), the monitoring of the existing infrastructure has improved and rules for building access have been amended. New welcome regulations have also aimed at making the usage limits of electromagnetic fields more flexible in 2019. Indeed, the strict electromagnetic field levels in Poland and the challenging spectrum coordination with neighbouring non-EU countries have also created barriers to digital investment (EC, 2017; 2020desi). Moreover, as other European countries, Poland had to postpone the assignment of the 5G spectrum auctions due to the coronavirus pandemic. To remove remaining obstacles to private investment, more could be done to ease regulation and reduce uncertainty in spectrum auctions by developing robust auction rules (Figure 28; EC, 2019c).

# 40 | ECO/WKP(2021)5

Adequate regulation can help promote private investment in digital infrastructure and expand coverage. Poland's telecommunications regulator, UKE, regularly intervenes to settle disputes over access to land and buildings, while preventing the need to duplicate infrastructure by different operators (UKE, 2019). To more systematically address these concerns, the German authorities introduced regulation to make it mandatory to lay fibre optic cables in the construction of new roads and it is already mandatory in Poland for the construction of new buildings. Poland could expand this requirement to speed up the deployment of fibre. Promoting further infrastructure sharing and the co-ordination of civil works between communication and utility operators can reduce costs for network and services providers, while promoting the development of new and innovative services for end users (OECD, 2019I). Co-investment arrangements are in place in countries such as the Netherlands, Spain and Switzerland to overcome large capital expenditures and share risks (OECD, 2019m).

Figure 28. Barriers to the deployment of digital infrastructure are elevated

Digital Services Trade Restrictiveness Index, 2018

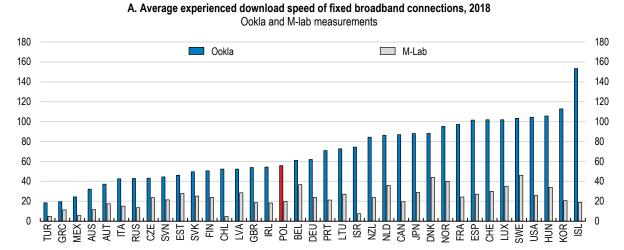


Source: OECD (2019), Digital Services Trade Restrictiveness Index (database).

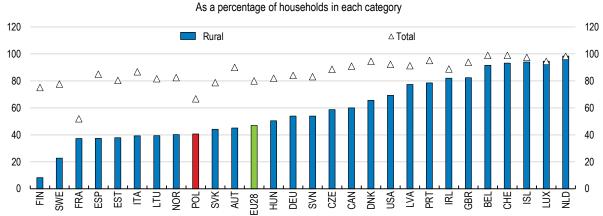
StatLink https://doi.org/10.1787/888934209134

Improving end-users information regarding broadband performance would strengthen incentives for private operators to upgrade the quality of their network. Broadband speed in Poland is broadly in line with the OECD average, but coverage of rural areas is weaker than in the average EU country (Figure 29). Beyond efforts to improve broadband networks and speed-up the deployment of high-speed mobile broadband, effective monitoring of broadband performance is key, since download speeds advertised by telecommunication operators may differ markedly from actual download speeds experienced by end-users. UKE provides information about broadband performance of the different operators, such as coverage and speed. It also certified an end-user mechanism that is available through applications to measure the speed of data transmission for fixed-line transmission in 2018. Yet, it could do more to provide timely information on broadband performance. The National Information Society Agency in Korea is a good example of an agency providing high quality information on broadband performance to end-users, reflecting official testing by regulators, self-evaluation by operators and quality evaluation by users (OECD, 2019l). Monitoring alternative metrics to evaluate broadband reliability such as latency – that is, the round-trip time for information between two devices of the network – will be necessary, since the latest digital applications require ultra-reliable broadband (OECD, 2019n).

Figure 29. The quality of Poland's digital network needs to improve further



# B. Households in areas where fixed broadband with a contracted speed of 30 Mbps or more is available, 2017



Source: OECD (2019), Measuring the Digital Transformation 2019, based on Ookla, October 2018 and M-Lab (Worldwide broadband speed league) as measured between June 2017 and May 2018; and OECD (2019), Measuring the Digital Transformation 2019, based on CRTC, Communications Monitoring Report, 2017 (Canada); EC, Study on Broadband Coverage in Europe 2017 (European Union) and FCC, 2018 Broadband Deployment Report (United States).

StatLink https://doi.org/10.1787/888934209153

Using and sharing big data between private and public sectors could help boosting the internationalisation and productivity of SMEs, as well as the development of new products, processes and organisational methods, notably through artificial intelligence and the Internet of Things. Access to data is crucial for competition and innovation in the digital economy (OECD, 2019o). Poland has made significant progress and ranks above the OECD average in terms of Open Government Data according to the OECD Open Useful Re-Usable data (OURdata) Index (OECD, 2019p). Yet, Polish SMEs still lag behind larger firms and SMEs in other European countries (Eurostat, 2020). Fixed costs and sometimes excessively restrictive access to data could partly explain this low take-up. Supporting the development of public data hubs and e-health could be encouraged further, while limiting the associated risks (Box 7). This would require bolstering SMEs' capacity in terms of data and cyber security (see below).

# Box 7. Good practices for enhancing data sharing and access

The OECD (2019a) has identified four approaches to enhancing data access and sharing, while balancing the benefits of "openness" with the risks; reinforcing trust and empowering users; and developing sustainable business models. These approaches are the following:

- Open data is the most frequently used approach for public sector data, though legitimate private and public interests may justify more restrictive approaches.
- Contractual agreements can enhance data access and sharing, especially if leveraged through data markets. Voluntary contract guidelines can reduce uncertainties and transaction costs by defining the default rights and obligations when negotiating data sharing agreements.
- Data portability promises to empower users by giving them more control over their data, but it
  may also expose them to new risks, such as confidentiality breaches.
- Restricted data-sharing arrangements are used if data are considered too confidential to be shared openly with the public or where legitimate (commercial and non-commercial) interests conflict with open sharing.

There are important opportunities to use health data for improving health care quality, surveillance, management and research. But to leverage this potential while managing risks that might come from the misuse of data that are personal, appropriate governance frameworks are needed (OECD, 2017; 2019b). Poland is developing integrated patient information and e-health solutions such as e-prescriptions and e-referrals (OECD, 2019c). Yet, further efforts could boost the use of these data. For example, the French government announced the creation of a Health Data Hub in 2019, with an expanded set of information, and enhanced regulated access to the datasets. The first selected projects included public institutions, start-ups and larger firms (MSS, 2019)

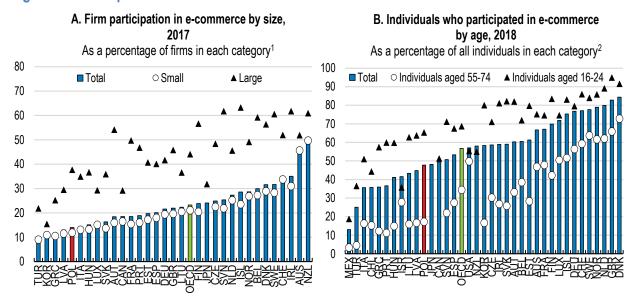
Source: OECD (2019a), Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-use across Societies, OECD Publishing, Paris; OECD (2019b), Using Routinely Collected Data to Inform Pharmaceutical Policies - Analytical Report for OECD and EU countries, OECD Publishing, Paris; OECD (2019c), Health in the 21st Century: Putting Data to Work for Stronger Health Systems, OECD Health Policy Studies, OECD Publishing, Paris; OECD (2017), Recommendation of the Council on Health Data Governance, OECD/LEGAL/0433; MSS (2019), HEALTH DATA HUB - Annonce des lauréats du premier appel à projets; Ministère des solidarités et de la santé.

#### Preparing SMEs for the digital transition

Promoting SMEs' participation in e-commerce would help spur their export capacity. Available evidence suggests that digital trade is becoming increasingly important, particularly for services. In this respect, SMEs are well positioned to benefit from business-to-consumer trade (OECD, 2019k). Online commerce has expanded fast in Poland, albeit the share of Polish firms participating in e-commerce is comparatively weak (PAIH, 2019; Figure 30). Survey-based evidence shows that, in Poland, the export participation of large firms involved in e-commerce is in line with the EU average, but lower in the case of smaller firms (Figure 31). This highlights the need to encourage the development of digital skills and the adoption of high-performance digital tools by SMEs (see below).

The development of e-commerce could expand the variety of inputs available to SMEs and encourage innovation in product distribution, while boosting cross-border online shopping. However, the emergence of dominant online platform operators can raise concerns about potentially anticompetitive behaviour and consumer protection. Such a situation can arise when a firm in a dominant position conducts business across multiple product segments and benefits from network effects and data collection advantages (OECD, 2018d). Poland's Office of Competition and Consumer Protection (UOKiK) is investigating a large e-commerce operator for discriminatory practices towards smaller and independent retailers. Moreover, the development of e-commerce heightens the need to safeguard privacy and personal data, and the OECD revised in 2016 its *Recommendations on Consumer Protection in E-commerce* (OECD, 2016b).

Figure 30. Participation in e-commerce is low

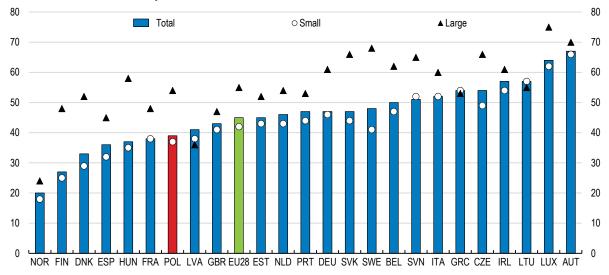


- 1. Only enterprises with 10 or more employees are considered, small firms are defined as companies with between 10 and 49 employees, and large firms as companies with 250 or more employees.
- 2. Data refer to the percentage of individuals that purchased online over the last 12 months. Source: OECD (2019Unpacking), OECD calculations based on OECD (2019), ICT Access and Usage by Businesses and ICT Access and Usage by Households and Individuals (databases).

StatLink https://doi.org/10.1787/888934209172

Figure 31. SMEs' e-commerce export participation is low

Enterprises that participated in e-commerce sales to other countries, as % of enterprises that received e-commerce orders over the last calendar year, 2016



Source: OECD (2019), OECD calculations based on Eurostat, Digital Economy and Society Statistics (database).

StatLink https://doi.org/10.1787/888934209191

Promoting digital security among SMEs would help bolstering the diffusion of digital technologies. Privacy concerns and digital security risks are often cited as barriers to the adoption of advanced digital technologies and to e-commerce participation, particularly for SMEs (OECD, 2017d). Few Polish SMEs have adopted a formally defined ICT policy (Figure 32, Panel A) and Poland' capacity for digital security risk management could be strengthened (Panel B). Developing reliable indicators of digital security

#### 44 | ECO/WKP(2021)5

incidents and digital risk management practice would be a good start. This would entail setting up a classification of incidents and putting in place a trusted public-private digital security incident repository (OECD, 2019l). Bolstering efforts to reach out to SMEs regarding digital security concerns would also be welcome.

#### Encouraging the use of ICTs by SMEs

Upgrading digital skills

Boosting workers' digital skills can help SMEs strengthen their position in global value chains (GVCs) by helping them to specialise in high-value added activities or to integrate in higher-value added segments (OECD, 2019q). Too many Poles have inadequate digital skills. According to the OECD Survey of Adult Skills, the share of adults with no computer experience is significantly above the OECD average, and Poles perform relatively poorly in ICT-related tests regardless of their educational attainment (Figure 33). Moreover, ICT specialists are in short supply and Polish employers face difficulties in finding ICT specialists (Cedefop, 2016).

The provision of computers per pupil is lower than in most OECD countries (OECD, 2019r) and the coronavirus epidemic has uncovered some challenges for the education system and distance learning (Gouëdard et al., 2020). Poland's National Education Network aims at connecting all schools to high-speed internet and the authorities have stepped up their efforts to increase teachers' training in ICT. In fact, developing teachers' training in ICT can encourage innovative pedagogical techniques to equip students with digital skills. Austria's "School 4.0" strategy is an example of policies aiming at developing digital competences of teachers and improving students' digital literacy (OECD, 2017e). Yet, an effective consultation with teachers is needed, since recent changes to curricula and other organisational changes to schools already require considerable efforts in teachers' training.

Boosting SMEs' involvement in the apprenticeship system, especially for professions affected by digitalisation, could help them find skilled workers. There are examples of Polish firms that strongly benefited from apprenticeship-type systems in the Łódź region or through the German-Polish Chamber of Commerce (OECD, 2018a). The authorities could build on these examples to promote the benefits from engaging into vocational education. Investing in "brokers", which aim at pooling the recruitment and placement of apprentices across SMEs, akin to Australia's Group Training Organisation, could also be helpful. Establishing training associations, as in Switzerland and Austria, would help to share the costs of organising apprenticeships among a group of SMEs (Box 4). The school governing authorities could consider targeted grants to encourage SMEs to offer work-based learning. The grants could vary depending on the characteristics of the learners and on their performance in final exams (OECD, 2019q).

0.0

A. Enterprises having a formally defined security policy As a percentage of enterprises in each employment class, 2015 100 100 Tota O SMFs 90 90 80 80 70 70 60 60 50 50 40 40 30 30 20 20 10 10 0  $\succeq$ FRA Ā 园 ₽ **EU28** 핆 CE SVN 3BR B. Global Cybersecurity Index1, 2018 1.0 1.0 0.9 0.9 0.8 0.8 0.7 0.7 0.6 0.6 0.5 0.5 0.4 0.4 0.3 0.3 0.2 02 0.1 0.1

Figure 32. Awareness of digital security by SMEs is weak

SVN SVK LVA PRT ISR ISR

움절

1. The Global Cybersecurity Index is computed based on the following pillars: legal (legal institutions and frameworks dealing with cybersecurity and cybercrime); technical (technical institutions and frameworks dealing with cybersecurity); organisational (policy co-ordination institutions and strategies for cybersecurity development at the national level); capacity building (the existence of research and development, education and training programmes, as well as; certified professionals and public sector agencies fostering capacity building), and co-operation (refers to partnerships, co-operative frameworks, and information-sharing networks).

Source: OECD (2019), Measuring the Digitial Transformation; and ITU (2018), Global Cybersecurity Index 2018, International Communications

SWE HUN BELL HUN AUT TA AUT TON KON ULD LUX AUS CAN USA GBR GBR GBR SWE BELL HUN AUS SWE SWE BELL HUN AUS SWE BELL HUN BELL HUN AUS SWE BELL H

StatLink https://doi.org/10.1787/888934209210

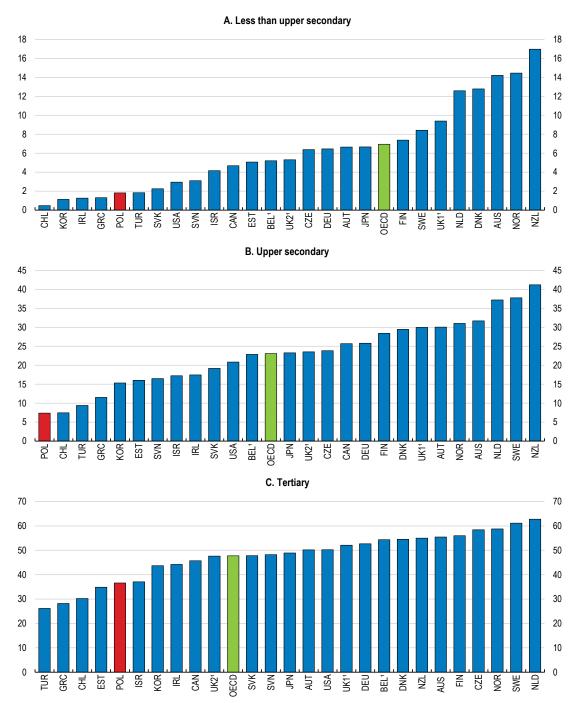
SMEs' engagement in ICT training, which is among the lowest in the OECD, should also be strengthened to help lagging regions (Figure 34). In fact, technology-intensive firms, and the high-paying jobs that go along, are drawn to regions with high-skilled workers (OECD, 2019g). Recent initiatives include the development of sectoral skills councils to involve businesses in training institutions, including universities. The Operational Program "Digital Poland 2014-20" – with EU funds worth EUR 145 million - has helped to finance actions in these directions. The authorities are also preparing the Digital Skills Development Program 2030, with sets of actions and targets for further enhancing and developing digital skills for all firms and households. Skillsnet Ireland is an example of a training intermediary with dedicated initiatives for upskilling in the ICT sector. Providing tax credit for on-the-job training, as done in Canada (Québec), is another option. Overall, targeted public funding is likely to be necessary for the most disadvantaged groups, for example, for adults with low-incomes or recent small businesses (OECD, 2019h).

0.0

Unit, Geneva.

Figure 33. Poles lack advanced digital skills

Percentage of adults scoring high in problem solving in technology-rich environments, by educational attainment, 2015

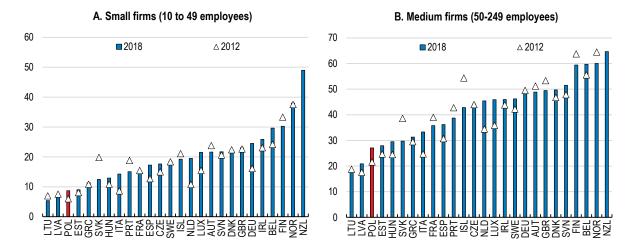


<sup>1.</sup> Flanders for Belgium (BEL), Northern Ireland (UK2) and England (UK1) for United Kingdom. Source: OECD (2016), Survey of Adult skills (PIAAC), Table A3.2 (I) and (N).

StatLink https://doi.org/10.1787/888934209229

Figure 34. Polish SMEs offer too little ICT training

Percentage of businesses providing ICT training to their employees by size class, 2018 compared to 2012



Note: Data refer to businesses with 10 or more employees that provided any type of training to develop the ICT related skills of their employees within the last 12 months. Data for New Zealand refer to 2016 and Iceland to 2014. Data for medium-sized firms in Portugal refer to 2017. Source: OECD (2019), ICT Access and Usage by Businesses (database).

StatLink https://doi.org/10.1787/888934209248

Modernising SMEs' business models by promoting the diffusion of ICTs

Low managerial quality and a lack of ICT skills curb digital technology adoption with knock-on effects on productivity growth (Andrews et al., 2018). Poland's business development agency (PARP) runs different programmes for upgrading managerial skills and promoting SMEs' innovation capacity, such as the SMEs' manager academy. However, these programmes have a limited take up, reflecting a lack of awareness of existing programmes along with limited ambition from businesses. The budget available for these programmes is also low (e.g., PLN 50 million for the SMEs' manager academy programme) and is not explicitly targeted at digital technologies. Going forward, boosting efforts to raise awareness and capacity building in ICT is warranted. Germany's "trusted cloud" training is an example of a programme which helps SMEs understand the benefits of cloud computing and its possible applications.

When designing policies to encourage the adoption of advanced digital tools, the authorities should increase collaboration with firms. Strong intermediaries offering brokerage, consulting or mentoring services can help improve the take-up and effectiveness of such programmes, since complex procedures can limit take-up by SMEs (OECD, 2018a). Against this backdrop, the authorities are launching "Digital Technology Hubs" to promote digital innovation and knowledge transfer to SMEs. Previous attempts to develop clusters have been hampered by weak ties with established research and training institutions, poor governance and lack of clear objectives. To get the most of the new "Digital Technology Hubs" programme, there should be a strong focus on identifying and overcoming obstacles specific to SMEs. Examples of clusters to foster digital innovation, knowledge transfer and help firms expand into foreign markets include Estonia's ICT Cluster and Canada's Digital Technology Supercluster.

Extending the model of regulatory sandboxes to other sectors could facilitate the experimentation of new technologies and ease the diffusion of new business models. Regulatory sandboxes provide a limited form of regulatory waiver, or flexibility for firms to test new products or business models with reduced regulatory requirements, while preserving some safeguards (e.g., to ensure appropriate consumer protection) (Planes-Satorra and Paunov, 2019). Poland had launched in late 2018 a FinTech regulatory sandbox supervised by the Polish Financial Supervision Authority (KNF) to promote innovation in financial services. However, KNF managed the selection process of firms participating in that scheme, which may potentially raise conflicts of interest if companies perceive that the financial supervisor endorses specific innovations or support some companies at the expense of others. The project has been suspended and is currently being remodelled. In this process, KNF could consider following the model chosen by Sweden's financial sector regulator (Finansinspektionen). Finansinspektionen followed a model of constant dialogue and information provided to any firms willing to benefit from the regulatory sandbox, thereby circumventing the problem of selecting firms (OECD, 2018f). Moreover, extending the regulatory sandbox approach to other heavily regulated services – e.g., health care or transport – could help promote the emergence of new goods and services.

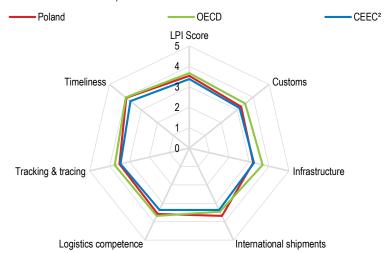
# Improving transport infrastructure to boost internationalisation

# The capacity and quality of transport infrastructure need to be enhanced

Efficient infrastructures are key drivers of integration in global value chains and well-being. They notably support productivity by making it easier for individuals to participate in the labour market, while strengthening business competitiveness, trade and competition, which in turn boost investment, productivity and wages. The quality of Poland's trade and transport infrastructure is comparatively low even though cost competitiveness of international shipments is high (Figure 35). Improving transport infrastructure could brighten export prospects, notably for SMEs in lagging regions since regional disparities in access to transport infrastructure are sizeable.

Figure 35. There is room to improve trade logistics





1. The logistics performance index (LPI) is a weighted average of six categories: Customs: Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs; Infrastructure: Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology); International shipments: Ease of arranging competitively priced shipments; Logistics competence: competence and quality of logistics services (e.g., transport operators, customs brokers); Tracking and tracing: ability to track and trace consignments; Timeliness: timeliness of shipments in reaching destination within the scheduled or expected delivery time.

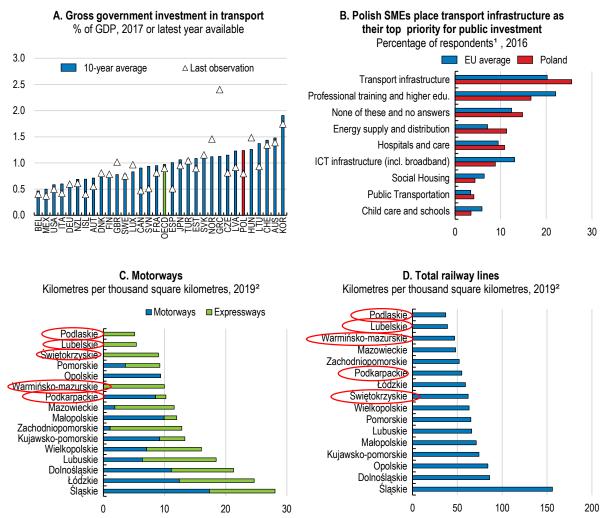
2. CEEC² refers to the average of Czech Republic, Hungary and the Slovak Republic.

Source: World Bank (2019), Logistics Performance Index.

StatLink https://doi.org/10.1787/888934209267

As in other catch-up countries, Poland makes sizeable investment in transport infrastructure, albeit it has shrunk since 2013 (Figure 36, Panel A) owing to the timing of disbursements of EU cohesion policy funds. The Polish expressway and motorway network remains underdeveloped compared with the average OECD country in that links to major cities have not all been completed. There are also sizeable discrepancies in transport infrastructure across regions (Panels C and D).

Figure 36. Investment in transport infrastructure is sizeable, but regional disparities in infrastructure are large



- 1. The question is formulated as "From your business' perspective, if you had to prioritise one area of public investment for the next 3 years, which one would it be?"
- 2. The five regions (voivodeships) with the lowest GDP per capita in 2017 (Podlaskie, Lubelskie, Świętokrzyskie, Warmińsko-Mazurskie, Podkarpackie) are circled in red.

Source: OECD (2019), Transport infrastructure investment and maintenance spending and National Account Statistics (databases); EIB (2017), Investment Survey, European Investment Bank, Luxembourg; and Statistics Poland (2020), Expressways and motorways per 1000 km2.

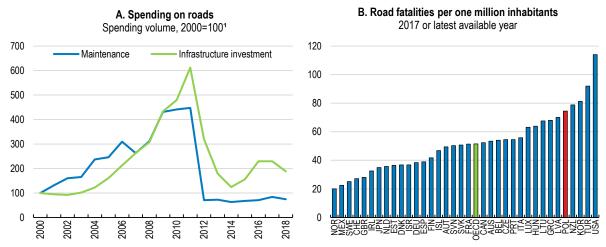
StatLink https://doi.org/10.1787/888934209286

Continuing to develop the capacity and quality of the transport network would help to reap the full benefits of Poland's participation in GVCs. Small businesses place transport as their top priority for public investment (Figure 36, Panel B). The coverage of public transport in large metropolitan areas is distant from the best performing European cities (ITF, 2019), pointing to investment needs in local public transport to better align the supply of labour with demand and generate sustained productivity gains. Moreover, regions (*voivodeships*) with the strongest exports as a share of GDP are clustered along the Western and South-Western Polish borders (World Bank, 2017), suggesting that enhancing transport infrastructure to lagging regions could help spur their exports. In this respect, addressing regional disparities in the access to international road connections, particularly in the north of Poland, would improve transport accessibility (EC, 2019a) with knock-on effects on the development of SMEs.

# Maintenance and upgrading investments are needed to improve the quality of infrastructure

A stronger focus on the maintenance of the road network could ease internationalisation and reduce trade costs. Well-functioning logistics reduces the time, cost and uncertainty involved in importing and exporting, and Poland's trade participation would benefit from an increase in international road connections (Braconier and Pisu, 2013). The quality of Polish motorways is sound, having benefited from large investments over the last 15 years. Yet, the perceived quality of trade- and transport-related infrastructure is rather weak (Figure 35). This may be related to the historically low maintenance and infrastructure spending and the rapid declining of the share of maintenance spending (Figure 37, Panel A), as well as the road fatalities that remain high by OECD standards (Panel B; NIK, 2018b).

Figure 37. Increasing road maintenance spending would be a good move



1. Deflated by the GDP deflator.

Source: OECD (2020), Transport infrastructure investment and maintenance spending (database); and OECD (2019), Transport Safety Statistics (database).

StatLink https://doi.org/10.1787/888934209305

Tasking an agency to monitor consistently the quality of the road network, including secondary roads, would help steer maintenance spending where it is most needed. France's National Road Observatory is an example of such an institution where different stakeholders (central and local governments as well as the private sector) meet to evaluate the quality and management of the road network and share best practices. For example, Poland could task the national road authority (GDDKiA) to collect information on the state of the secondary road network, and GDDKiA could expand its efforts to reach out to local governments for transferring its expertise. Moreover, the criteria for allocating the funds from the central government to the local authorities for the construction and modernisation of the local road network (Fundusz Dróg Samorządowych) would benefit from being more formalised and transparent.

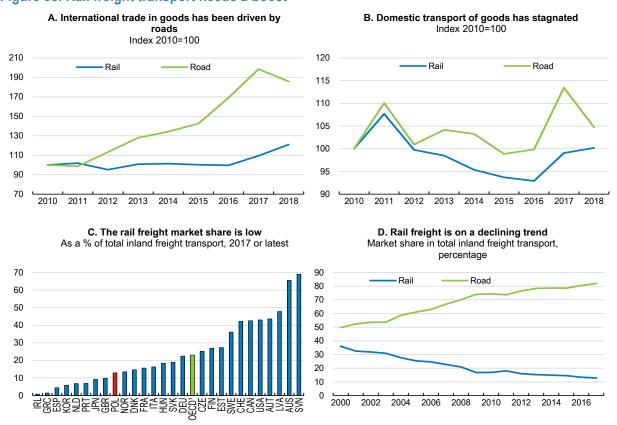
While in recent years the number of rail passengers has increased, there is also room to improve the quality of the rail network, notably travel times, and upgrading further the rolling stock. The density of the rail network is broadly in line with that of the average OECD country, but its quality has suffered from the priority given to road transport, hampering the efficiency of existing rail infrastructure (OECD, 2016b). Moreover, in the previous EU budgetary cycle, difficulties in the absorption of EU funds related to the weak administrative capacity of the infrastructure manager led to prioritising investments in rolling stocks rather than modernizing railway lines. Public perceptions on the quality of the rail network is low and the market share of rail in passenger transport is trending downwards even though it has increased in 2016-17.

The modernisation of railway infrastructure would benefit from a more efficient procurement process. A strong pick-up in demand for labour and raw materials towards the end of the EU cohesion funding cycle is increasing costs in the construction sector, hampering the efficient delivery of new or modernized railway lines, and creating challenges for SMEs. To address cost overruns in the delivery of rail infrastructure, the authorities revised criteria in public procurement and the documentation of tenders. Putting in place a system similar to Norway's "quality assurance process" for large transport projects whereby external consultants are hired to assess the accuracy of cost estimates could be helpful to limit cost overruns and improve infrastructure outcomes (Odeck et al., 2015). A stronger focus on the maintenance and upgrading of rail infrastructure would also require stepping up the monitoring of the quality of the rail network to best prioritize spending (NIK, 2018c).

# Investment in transport should better reflect environmental concerns

Stepping up maintenance and upgrading investment in the rail network is needed. Over recent year most of new international trade in goods occurred through roads (Statistics Poland, 2019). While international road transport of goods doubled since 2010, rail freight activity has been stagnant (Figure 38). The weak performance of rail freight transport reflects the insufficient adjustment of the rail infrastructure to transport needs, low speed and the low priority order granted to freight trains. Beyond investments for upgrading the quality of the network, ensuring a fair and non-discriminatory access to the rail infrastructure for the non-incumbent freight operators is also important to foster competition (European Court of Auditors, 2016). Moreover, expanding the coverage of the heavy vehicle fee for trucks – which only covers 15% of the Polish territory – would help stimulate the competitiveness of rail freight transport.

Figure 38. Rail freight transport needs a boost



1. average for 2015, computed excluding Belgium, Iceland and Israel, for which data are unavailable or incomplete. Source: ITF (2018), Inland Freight Transport (database), International Transport Forum, Paris.

StatLink https://doi.org/10.1787/888934209324

Investing in local public transportation could reduce congestion and enhance transport performance. Despite the use of EU Cohesion Funds for public transportation needs in 2014 – 2020, four of the five most congested small cities in the world in 2018 were located in Poland (Łódź, Kraków, Poznań and Wrocław), according to the TomTom Traffic Index . This suggests heavy investment needs in local public transportation. Better public transport services can reduce inequalities in distance-to-job opportunities and thereby have the potential to stimulate economic growth and social inclusion. Improved public transportation would also help improve air quality, since Poland's population exposure to particles is much higher than on average in the OECD. Yet, going forward, local governments will have to face the legacy of the coronavirus crisis and a tight budget constraint from ongoing personal income tax cuts (OECD, 2020f). If excessive cuts in public investment materialise, the central authorities could set up local investment grants to develop local public transports.

# Developing multi-modal transport links to improve logistics' performance

Air transport for both passenger and freight expanded strongly before the coronavirus crisis (Figure 39). The authorities are planning the construction of a major airport between Warsaw and Łódź. This is a major undertaking with a total estimated cost – including road and rail connections – of PLN 80 bn or 3.8% of 2018 GDP. This new airport facility would help alleviate projected capacity constraints in the long-term, although traffic will not immediately return to pre-crisis levels (IATA, 2018). Regulatory measures could help develop further airfreight transport such as the implementation of paperless cargo freight formalities (e-freight) (IATA, 2018).

Seaport freight activity has also developed strongly over the past decade, but further investments to improve seaports' accessibility, notably for railways, are needed. Large investments in maritime transportation infrastructure can translate into substantial population and employment growth at a local level (Brooks et al., 2018). A concern regarding the development of Polish seaports remains their imperfect accessibility, which hinders their development and can increase congestion and pollution in the surrounding cities. Against this backdrop, substantial investments are underway to improve the rail accessibility of the Szczecin, Gdynia and Świnoujście seaports and the road and rail access to the seaport of Gdańsk. A multiannual program for the improvement of seaports and their connectivity also sets up investment targets up to 2030. Yet, the Supreme Audit Office underlined that there are concerns regarding the capacity of local authorities to finance the last-mile road facilities to seaports and that investments to improve the sea access to the seaport of Szczecin are needed to accommodate heavier maritime traffic (NIK, 2018d).

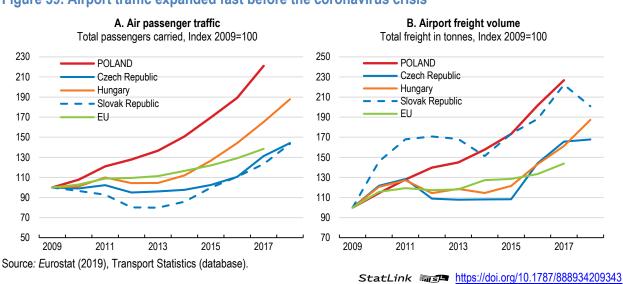


Figure 39. Airport traffic expanded fast before the coronavirus crisis

Polish exports by mode of transport concentrate on maritime and road transport with only a small share from air transport. An international comparison of governance infrastructure indicators reveals there is room for improvement, particularly in terms of infrastructure outcomes (Hertie School of Governance, 2016). Moreover, Polish firms view adequate transport infrastructure as a barrier to long-term investment more often than on average in the European Union (EIB, 2019). Key challenges include the completion of road and railway contracts on time and within the budget envelope, since the construction industry is currently facing rising costs for both labour and construction materials due to boom-bust cycles in public investment related to the timing of disbursements of EU structural funds. Multiple estimates show significant average delay (ranging from 12 to 20 months) and increase in costs relative to initial estimates (from 50 to 89%) (reference; PNB, 2019). These implementation problems are hindering the development of infrastructure the country needs.

Putting a stronger focus on thorough cost-benefit analyses would help to better prioritise investment projects and improve their delivery. A cost-benefit analysis is mandatory for all projects benefiting from EU structural funds. However, putting in place a unified framework for project selection, with an appropriate pricing of the shadow price of carbon to reflect environmental externalities, would help rank alternative projects and competing versions of the same project. This could be done by changing the methodology of the cost-benefit analyses or introducing a new system of project selection where the result of the current methodology would be one of the factors taken into account in addition of environmental concerns and regional disparities. This would be supported by Poland's effort to develop an Integrated Traffic Model for Transport demand – including multi-modal transport flows – and the 2021-27 EU cohesion policy.

Establishing a government-commissioned committee to define and update a harmonised methodology for cost-benefit analyses and provide support to project holders would also be helpful. Australia has an agency (Infrastructure Australia) in charge of running extensive cost-benefit analyses for all large infrastructure projects, which is an example of good practice for project selection and implementation of large investment projects. Poland could also adapt Norway's transport infrastructure planning framework, including comprehensive cost-benefit analysis. Norway issued cost-benefit analyses guidelines that are embodied in an official document ("Circular R-109") and explain how to measure the benefits of a project. The guidelines also require an analysis of the environmental impact (OECD, 2019icel). Moreover, making expost evaluations mandatory for all large transport projects would also be helpful, since past experience can provide accurate estimates of engineering costs, land acquisition and maintenance costs in future years.

Spreading good practices to all relevant stakeholders, including local governments, would strengthen the influence of social and economic efficiency considerations in project selection and improve project implementation. A more efficient procurement of transport projects can encourage SMEs to update their business models with knock-on effects on their productivity and exports. Local governments are responsible for most infrastructure projects, but often lack capacity for managing larger ones (OECD, 2016b). This suggests stepping up efforts to reach out to all relevant stakeholders for project appraisal, selection and management. For example, to facilitate the use of analytical methods, Denmark set up an easy to use spreadsheet to promote the use of cost-benefit analyses. Moreover, encouraging stronger cooperation between neighbouring municipalities regarding spatial planning would help formulate an integrated development of local public transport in large urban areas (Janas and Jarczewski, 2017).

# Supporting the tourism sector and its more equal regional development

The coronavirus crisis has curbed international travel. Despite government support, it hit hard Poland's most popular destinations and many SMEs that are the bulk of this industry (UNWTO, 2018). Before the pandemic, the direct contribution of tourism to the Polish economy appeared weak. It was largely linked to international visitors (OECD, 2020b), but their arrivals had lagged behind those of comparable economies

#### **54** | ECO/WKP(2021)5

(Figure 40). Moreover, tourism has remained geared towards Mazowieckie, Malopoiskie, and the Zachodniopomorskie regions (Table 1). As the tourism recovery remains uncertain, the expectation is that domestic tourism offers the main chance for driving recovery. Special support should target these firms and regions to preserve the industry (OECD, 2020c). Recent initiatives, such as the 2020 Polish Tourist Voucher and the extended reimbursement period for tourist events not held due to the pandemic, are expected to reduce the short-term sectoral impact. Other initiatives are currently under discussion, namely the creation of a guarantee fund to reimburse customers for cancelled events.

Table 1. Tourism is concentrated in a few destinations

Overnight stays of foreign tourist in tourist accommodation establishments

Tourism region (voivodeship)	Share of overnight stays of foreign tourists (in percent)
West Pomerania region (Zachodniopomorskie)	21.6
Kraków region (Małopolskie)	22.0
Warsaw region (Mazowieckie)	16.8
Gdańsk region (Pomorskie)	8.9
Lower Silesia region (Dolnośląskie)	8.8
5 regions with the lowest GDP per capita <sup>1</sup>	6.5
Other regions <sup>2</sup>	15.4

<sup>1.</sup> Sum of the shares of overnight stays of foreign tourists for the five regions with the lowest GDP per capita, which are all located in Eastern Poland (Podlaskie, Lubelskie, Świętokrzyskie, Warmińsko-Mazurskie, Podkarpackie).

Source: Statistics Poland, Tourism in 2019, Table II/14, Rzeszów 2020.

Over the long term, tourism could play a larger role in supporting small business dynamism and export revenues, while contributing to tackle regional disparities. Efforts should concentrate on strengthening infrastructure and developing a better branding as a tourist destination, as Poland's price competitiveness for tourism appears high (WEF, 2018). The Ministry of Economic Development, Labour and Technology (previously Ministry of Sport and Tourism), in charge of the tourism department, as well as the Polish Tourism Organisation, have launched several initiatives to promote Poland as a tourist destination, including the Polish Tourism Brands (*Polskie Marki Turystyczne*), which aims at developing a quality label system for tourist attractions. Yet, Poland's budget for tourism promotion appears small relative to other OECD countries such as Hungary (OECD, 2018h). Launching digital marketing campaigns such as Australia's "Experience Australia in 360°" or Korea's campaign to boost business tourism (meetings, incentives, conventions and exhibitions (MICE) market) could help. Additional funding could also support flagship projects and encourage SMEs to invest in tourism business akin to Austria's initiatives. This strategy could build on the promotion of the Polish UNESCO World Heritage Sites or nature-based tourism (for example, around the Great Masurian Lakes in North Eastern Poland) to attract high-spending international visitors and develop agro-tourism.

Formulating a long-term strategy and strengthening the governance structure would help to better coordinate tourism policies and develop tourism. Though such structure was adopted from 2007 to 2015, current inter-ministerial concertation and decisions on tourism bodies are on an ad-hoc basis. Poland's Strategy for Responsible Development also concentrates on health-related tourism, which is a marginal export category in most OECD countries (apart from Hungary where it represented 7% of travel exports in 2017). Such framework could be strengthened through the key existing institutions, the Ministry of Economic Development, as well as the Polish Tourism Organisation, and by involving on an ad-hoc basis other ministries and agencies, including non-government stakeholders. For example, the Tourism Policy Council of the United States is a working group of different federal agencies with the aim to promote tourism in federal decision-making Similarly, Switzerland's *Tourismus Forum Schweiz* is a platform for dialogue and coordination including federal and local governments as well as the private sector (OECD, 2018h).

<sup>2.</sup> Sum of the shares of overnight stays of foreign tourists for the six remaining regions (Kujawsko-Pomorskie, Lubuskie, Łódzkie, Opolskie, Śląskie, Wielkopolskie).

A. Direct contribution of tourism to GDP B. Inbound tourism As a percentage of GDP, 2016 or latest year Overnight visitors (tourist), Index 2013=100<sup>2</sup> available1 180 Czech Republic Hungary 10 160 POLAND Slovak Republic 8 140 6 120 100 80 60 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Figure 40. International tourism was lagging before the coronavirus crisis

1. Data for France refers to internal tourism consumption. Data for Germany refers to GVA. Data for Greece refers to tourism GVA of industries 55-56 or NACE Rev. 2. Data for Spain includes indirect effects.

2. Inbound tourism comprises the activities of a non-resident visitor within the country of reference. Source: OECD (2019), Tourism Statistics (database).

StatLink https://doi.org/10.1787/888934209362

Policies should ensure a sustainable tourism development. In selected Polish cities (e.g., *Kraków)*, there is some evidence that online accommodation platforms have negatively affect local residents through local housing markets (e.g., rising long-term rents). In this respect, online accommodation platforms should collect VAT on their sales (OECD, 2019r). Promoting the use of an occupancy tax – which is not commonly used by Polish municipalities – and implementing adequate regulation on urban planning and housing would be helpful. For example, Japan introduced regulations in 2018 for the owners of private lodgings used for short-term rentals and online platforms. Another example is Spain where municipalities (e.g. Madrid, Barcelona and Palma de Mallorca) enforced regulations such as the need for short-term vacation rentals to obtain a license. Moreover, developing programmes of sustainability certifications for businesses and destinations as done in Slovenia would help brand Poland as a sustainable tourist destination. Fully addressing the requests of the United Nations' World Heritage Committee regarding logging activities and other environmental concerns in the Białowieża forest – a large primary forest between Poland and Belarus – would also be a good move (UNESCO, 2019).

MAIN FINDINGS	RECOMMENDATIONS
(Key recommen	dations are in bold italics)
Easing further administrative	costs and improving export procedures
Tax procedures remain overly time consuming for SMEs.	Review tax expenditures and regulatory exemptions for smaller firms and envisage smoothing their effect once firms grow.
Smaller firms benefit from lower tax rates and regulatory exemptions. Yet, some regulations remain cumbersome which lower firm's ability to grow and access international markets.	Streamline administrative procedures without foregoing rules that are essential to ensure good environmental, social and economic outcomes.
Regulation and tax changes are numerous. Despite a dedicated framework for consultations, stakeholders do not perceive the existing ex-ante consultations as effective, which create higher	Involve stakeholders further in the design of regulations through early consultation procedures.  Conduct systematic ex-ante evaluations of regulations.
fixed and variable costs for SMEs.	
Tourism remains underdeveloped and concentrated in a few regions and sites which are threatened by the coronavirus crisis.	In the near term, continue to support the most affected firms and workers in the tourism industry.  Strengthen inter-ministerial cooperation focused on developing more
24 4 1 225	sustainable and regionally balanced tourism.
	management and workers skills
SMEs' managers appear to have significant skill gaps, which hinder internationalisation and productivity.	Provide financial support to develop workplace-based lifelong learning and the formation of training consortia by SMEs.
The participation of smaller firms in lifelong learning is weak.	Dedicate multi-annual co-financing schemes to build strong workplace-based vocational education programmes.
The coronavirus crisis will potentially imply strong shifts in economic structure. Vulnerable workers appear to make little use of lifelong training.	Strengthen lifelong learning opportunities notably for low-skilled workers, with a special focus on digital skills.
Information and guidance about programmes and their effectiveness is improving but remains partly lacking.	Expand further the new system to certify training providers and the public database detailing their quality and courses.
Encouraging a better integration of foreign workers would ease SMEs' internationalisation.	Develop a migration policy strategy that better monitor work integration of foreigners while protecting migrants rights.
Encouraging the	ne digitalisation of SMEs
The diffusion of advanced digital technologies among Polish SMEs is weak and hinder their participation in e-commerce.	Scale up existing programmes for SMEs with a focus on training and showcase best practices based on thorough impact analyses.
Digitalisation remains uneven. The use of big data is constrained which may limit productivity gains and evidence-based policymaking, in particular in the healthcare sector.	Develop data hubs providing companies and public services with access to large databases, notably in the healthcare sector, while ensuring digital security and privacy.
Privacy concerns and digital security risks are barriers to the adoption of advanced digital technologies for SMEs.	Increase further data protection, cyber security and consumer protection, notably by improving public awareness.
The National Broadband Plan targets will not be met in 2020.	Set up a monitoring system for the deployment of high-speed broadband network, with timelines and quantitative targets.
Unduly restrictive regulations can hinder the development of the most advanced digital technologies.	Promote the use of regulatory sandboxes in other sectors than in financial services.
Easing internationalisation	by improving transport infrastructure
Despite recent progress, the quality of Polish infrastructure is low in some regions hindering firm internationalisation.	Strengthen the role of ex ante cost-benefit analyses in project selection, for instance by establishing an independent evaluation body
Local governments are responsible for most of the infrastructure but lack information and capacity to manage large projects.	Systematically collect information on the performance of public assets to better enable transparent, evidence-based, prioritisation of future infrastructure.  Strengthen the share of maintenance in infrastructure spending
The criteria for allocating the funds from the control accommend to	Strengthen the share of maintenance in infrastructure spending.
The criteria for allocating the funds from the central government to the local authorities for the construction and modernisation of the local road network lack transparency.	Set up formal and transparent criteria in the allocation of funds to local authorities for their road network.
Congestion in Polish cities is high by international comparison which increase transport and trade costs.	Incentivise local authorities to develop public transport, for example through co-financing arrangements.  Encourage neighbouring municipalities to cooperate through common urbar mobility plans.
Before the coronavirus crisis, rail passenger transport growth was subdued and the market share of rail freight was declining.	Step up investment in the maintenance and upgrade of the rail network to develop more sustainable transport modes.

# References

- Adalet McGowan, M., D. Andrews and V. Millot (2017), "The Walking Dead? Zombie Firms and Productivity Performance in OECD Countries", OECD Economics Department Working Paper, No. 1372, OECD Publishing, Paris.
- Albinowski, M., J. Hagemejer, S. Lovo, and G. Varela (2016), "The role of exchange rate and non-exchange rate related factors in polish firms' export performance," Policy Research Working Paper Series 7899, The World Bank.
- Algan, Y. et al. (2018), "The Value of a Vacancy: Evidence from a Randomized Evaluation with Local Employment Agencies in France", Chaire sécurisation des parcours professionnels, No. 2018-05.
- Almunia, M. and D. Lopez-Rodriguez (2013), "Firms' responses to tax enforcement strategies: Evidence from Spain", MPRA Paper, No. 44153, University Library of Munich.
- Andersson, M. and H. Lööf (2009), "Learning-by-Exporting Revisited: The Role of Intensity and Persistence," Scandinavian Journal of Economics, Wiley Blackwell, vol. 111(4), pp. 893-916.
- Andrews, D., Nicoletti, G. and Timiliotis, C. (2018), Going Digital: What determines technology diffusion among firms?, Background Paper 2018 Global Forum on Productivity.
- Araújo, S., T. Chalaux and D. Haugh (2018), "Who's in your export market? The changing pattern of competition in world trade", *OECD Economics Department Working Papers*, No. 1526. OECD Publishing, Paris.
- Bailin Rivares, A., Gal, P., Millot, V., and Sorbe, S. (2019), "Like it or not? The impact of online platforms on the productivity of incumbent service providers", OECD Economics Department Working Papers, No. 1548.
- Braconier H. and M. Pisu (2013), Road Connectivity and the Border Effect: Evidence from Europe, OECD Economics Department Working Papers, No. 1073.
- Bergner, S. et al. (2017), "The Use of SME Tax Incentives in the European Union", ZEW Discussion Paper, No. 17-006, Centre for European Economic Research, http://dx.doi.org/10.2139/ssrn.2910339.
- Berthou et al. (2015), "Assessing European firms' exports and productivity distributions: the CompNet trade module", ECB working paper series 1788, May.
- Bloom, N., K. Manova, J. Van Reenen, S. Teng Sun and Z. Yu (2018), "Managing Trade: Evidence from China and the US," CESifo Working Paper Series 7113, CESifo Group.
- Brandt, N. (2016), "Making better use of skills and migration in Poland," OECD Economics Department Working Papers 1301, OECD Publishing, Paris.
- Brooks, L., N. Gendron-Carrier, and G. Rua (2018). "The Local Impact of Containerization," Finance and Economics Discussion Series 2018-045. Washington: Board of Governors of the Federal Reserve System.
- Cadestin, C., et al. (2018), "Multinational enterprises and global value chains: New Insights on the trade-investment nexus", *OECD Science, Technology and Industry Working Papers*, No. 2018/05, OECD Publishing, Paris.
- Cadestin, C., et al. (2019), "Multinational enterprises in domestic value chains", OECD Science, Technology and Industry Policy Papers, No. 63, OECD Publishing, Paris.
- Cai J. and A. Szeidl (2018), "Interfirm relationships and business performance", Quarterly Journal of Economics, Vol. 133(3), pp. 1229-1282.
- Caldera Sánchez, A. (2018), "Building a stronger and more integrated Europe", *OECD Economics Department Working Papers*, No. 1491, OECD Publishing, Paris.

- Carlino, G. and W.R. Kerr (2015), "Agglomeration and innovation" in G. Duranton, J.V. Henderson and W.C. Strange (eds.), Handbook of Regional and Urban Economics, Vol. 5, Elsevier, Amsterdam, Chap. 6, pp. 349-404.
- Causa, O., M. Hermansen and N. Ruiz (2016), "The Distributional Impact of Structural Reforms", OECD Economics Department Working Papers, No. 1342, OECD Publishing, Paris.
- Cdg (2018), Christian Doppler research organisation website, https://www.cdg.ac.at/en/
- Cedefop (2016), Poland Mismatch priority occupations, https://skillspanorama.cedefop.europa.eu/en/analytical\_highlights/poland-mismatch-priority-occupations.
- CEPEJ (2016), "European judicial systems' efficiency and quality of justice", CEPEJ Studies, No. 23, European Commission for the Efficiency of Justice.
- Comet (2018), "Comet K2 Digital Mobility", (Competence Centres for Excellent Technology), https://www.v2c2.at/cooperation/comet/
- DeStefano, T., Kneller, R., Timmis, J. (2019), Cloud Computing and Firm Growth, University of Nottingham Research Paper Series 2019/09, https://www.nottingham.ac.uk/gep/documents/papers/2019/2019-09.pdf
- Dewatripont, M. and Legros, P. (2005), Public-private partnerships: contract design and risk transfer, EIB Papers 1/2005, Vol. 10, pp. 120-145.
- DFA (2015), Global Irish: Ireland's Diaspora Review, Department of Foreign Affairs.
- Drozd, Maciej Adam; Kadziauskas, Giedrius; Ristic, Gordana; Zadernowski, Marek Ryszard; Vranic, Goran. 2018. Poland catching-up regions 2 Safer food, better business in Podkarpackie and Lubelskie (Polish). Washington, D.C.: World Bank Group.
- EC (2014), Good practices in the return and reintegration of irregular migrants, A study from the European Migration Network, Synthesis Report for the EMN Focussed Study, European Commission.
- EC (2017), Europe's Digital Progress Report 2017 Poland, Brussels, https://ec.europa.eu/transparency/regdoc/rep/10102/2017/EN/SWD-2017-160-F1-EN-MAIN-PART-55.PDF
- EC (2018a), Annual Report on European SMEs 2017/2018, Special Background Document on the internationalisation of SMEs, European Commission.
- EC (2018b), Annual Report on European SMEs 2017/2018 Growing beyond borders, European Commission.
- EC (2019a), 2019 European Semester: Country Report Poland, European Commission.
- EC (2019b), Environmental Implementation Review 2019 Poland, European Commission.
- EC (2019c), Digital Economy and Society Index (DESI), Country Report, European Commission, Brussels.
- EC (2020), 2020 European Semester: Country Report Poland, European Commission.
- EC (2020desi), Digital Economy and Society Index (DESI) 2020 Poland, European Commission.
- EESC (2018), Study on best practices on national export promotion activities, Europen Economic and Social Committee.
- EF (2019), EF English Proficiency Index A Ranking of 100 Countries and Regions by English Skills, Education First.
- European Court of Auditors (2016), Rail freight transport in the EU: still not on the right track, Report, Luxembourg, https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=36398.
- EIB (2019), EIB Investment Survey: Poland Overview, European Investment Bank, Luxembourg. https://www.eib.org/attachments/efs/eibis 2017 poland en.pdf

- Eurostat (2019), "Member States (EU28) trade by BEC product group since 1999" in International trade in goods (ext\_go\_agg) database.
- Eurostat (2020), Big data analysis database.
- Fialho, P., G. Quintini and M. Vandeweyer (2019), "Returns to different forms of job related training: Factoring in informal learning", OECD Social, Employment and Migration Working Papers, No. 231, OECD Publishing, Paris.
- Filippaios, F. (2018), "Cross region comparative study on the Internationalisation of Small and Medium Enterprises", *Comparative Cross-regional Study for Interreg Europe*.
- Gal, P. and A. Theising (2015), "The macroeconomic impact of structural policies on labour market outcomes in OECD countries: A reassessment", OECD Economics Department Working Papers, No. 1271, OECD Publishing, Paris.
- Garicano, L., C. Lelarge and J.Van Reenen (2016), "Firm size distortions and the productivity distribution: Evidence from France", American Economic Review, Vol. 106, pp. 3439-79.
- Gouëdard, P., B. Pont and R. Viennet (2020), "Education responses to COVID-19: Implementing a way forward", OECD Education Working Papers, No. 224, OECD Publishing, Paris
- Griffith R., S. Redding and J. Van Reenen (2004), "Mapping the Two Faces of R&D: Productivity Growth in a Panel of OECD Industries," The Review of Economics and Statistics, vol. 86(4), pages 883-895.
- Growiec, J. et al. (2019), The Contribution of Immigration from Ukraine to Economic Growth in Poland, <a href="http://www.nbp.pl/badania/seminaria/31x2019.pdf">http://www.nbp.pl/badania/seminaria/31x2019.pdf</a>
- Guillou, S. and T. Treibich (2019), "Firm export diversification and change in workforce composition", Review of the World Economy, Vol. 155, pp. 645-676.
- Hagemejer, J. (2018), "Trade and Growth in the New Member States: The Role of Global Value Chains", *Emerging Markets Finance and Trade*, Vol. 54:11, pp. 2630-2649.
- Hagemejer, J. and M. Kolasa (2011), "Internationalisation and Economic Performance of Enterprises: Evidence from Polish Firm-level Data," The World Economy, vol. 34(1), pages 74-100.
- Harding, T. and B. Javorcik (2013), "Investment Promotion and FDI Inflows: Quality Matters", CESifo Economic Studies, Vol. 59, pp. 337-59.
- Harms H. (2018), "The Funding Model of the Christian Doppler Research Association", powerpoint presentation at the OECD, Paris on 14 March.
- Hausmann, R., J. Hwang and D. Rodrik (2007), "What you export matters", Journal of Economic Growth, Vol. 12(1), pp. 1-25.
- Hertie School of Governance (2016). The Governance Report 2016: Infrastructure Governance Indicators, Hertie School of Governance: Berlin.
- lacovone, L., W. Maloney and D. Mckenzie (2019), "Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia," Policy Research Working Paper Series 8854, The World Bank.
- IATA (2018), Poland: Air Transport Regulatory Competitiveness Indicators, International Air Transport Association, Montréal.
- ITF (2017), Strategic Infrastructure Planning: International Best Practice, International Transport Forum, Paris. https://www.itf-oecd.org/sites/default/files/docs/strategic-infrastructure-planning.pdf
- ITF (2019), Benchmarking Accessibility in Cities: Measuring the Impact of Proximity and Transport Performance, International Transport Forum, Paris. https://www.itf-oecd.org/benchmarking-accessibility-cities
- ITF (2020), Competition for Infrastructure Projects: Traditional Procurement and PPPs in Europe, International Transport Forum, Paris.

- Janas, K., and W. Jarczewski (2017), Zarządzanie i współpraca w miejskich obszarach funkcjonalnych. Raport o stanie polskich miast, Obserwatorium Polityki Miejskiej IRM, Kraków.
- Lang, V. and M. Mendes Tavares (2018), "The Distribution of Gains from Globalization," IMF Working Papers 18/54, International Monetary Fund.
- Lewiatan (2019), *Jak przyspieszyć inwestycje prywatne w Polsce?*, Opracowanie zbiorowe pod redakcją dr. Grzegorza Baczewskiego.
- López González, J. and S. Sorescu (2019), "Helping SMEs internationalise through trade facilitation", OECD Trade Policy Papers, No. 229, OECD Publishing, Paris.
- Lorenz, E. et J. Potter (2019), « Workplace organisation and innovation in small and medium-sized enterprises », OECD SME and Entrepreneurship Papers, No. 17, OECD Publishing, Paris
- Malgouyres, C., Mayer, T., Mazet, C. (2019), Technology-induced Trade Shocks? Evidence from Broadband Expansion in France, CEPR Discussion Papers 13847, https://cepr.org/active/publications/discussion\_papers/dp.php?dpno=13847
- Marchese, M., et al. (2019), "Enhancing SME productivity: Policy highlights on the role of managerial skills, workforce skills and business linkages", OECD SME and Entrepreneurship Papers, No. 16, OECD Publishing, Paris.
- McKinsey (2015), Poland 2025: Europe's new growth engine, https://www.mckinsey.com/~/media/mckinsey/business%20functions/economic%20studies%20temp/our%20insights/how%20poland%20can%20become%20a%20european%20growth%20engine/poland%202025\_full\_report.ashx
- Melitz, M. and G. Ottaviano (2008), "Market Size, Trade, and Productivity", Review of Economic Studies, Vol. 75(1), pp. 295-316.
- Ministerstwo Infrastruktury (2019), Projekt Strategii Zrównoważonego Rozwoju Transportu do 2030 roku, Warsaw. https://www.gov.pl/web/infrastruktura/projekt-strategii-zrownowazonego-rozwoju-transportu-do-2030-roku2
- Miroudot, S. and C. Cadestin (2017a), "Services in Global Value Chains: Trade patterns and gains from specialisation", OECD Trade Policy Papers, No. 208, OECD Publishing, Paris.
- Morales, E., G. Sheu and A. Zahler (2014), "Gravity and Extended Gravity: Using Moment Inequalities to Estimate a Model of Export Entry", NBER Working Paper, No. 19916.
- MR (2019a), Ustawa o zatorach płatniczych z podpisem prezydenta RP, Ministerstwo Rozwoju, https://www.gov.pl/web/rozwoj/ustawa-o-zatorach-platniczych-z-podpisem-prezydenta-rp
- MR (2019b), Nowy projekt wspierający eksport polskich firm, Ministerstwo Rozwoju, https://www.gov.pl/web/rozwoj/nowy-projekt-wspierający-eksport-polskich-firm
- MR (2019c), Podsumowanie pilotażowego projektu "Centra usług biznesowych w miastach średnich", Ministerstwo Rozwoju, https://www.gov.pl/web/rozwoj/podsumowanie-pilotazu-projektu-centra-uslug-biznesowych-w-miastach-srednich.
- Mrozeck, W. (2019), Geograficzne zróżnicowanie handlu zagranicznego Polski, https://www.obserwatorfinansowy.pl/tematyka/makroekonomia/geograficzne-zroznicowanie-handlu-zagranicznego-polski/.
- NBP (2016), Potencjał innowacyjny gospodarki: Uwarunkowania, determinanty, perspektywy, Narodowy Bank Polski, Warsaw.
- NIK (2016), Działalność Ośrodków Innowacji, Najwyżsa Izba Kontroli, Warsaw.
- NIK (2018a), NIK o dokonywaniu oceny wpływu w ramach rządowego procesu legislacyjnego, Najwyższa Izba Kontroli, https://www.nik.gov.pl/aktualnosci/nik-o-dokonywaniu-oceny-wplywu-w-nbsp-ramach-rzadowego-procesu-legislacyjnego.html

- NIK (2018b), Niechciane drogi, Najwyższa Izba Kontroli, Warsaw. https://www.nik.gov.pl/aktualnosci/niechciane-drogi.html
- NIK (2018c), NIK o bezpieczeństwie przewozów kolejowych, Najwyższa Izba Kontroli, Warsaw. https://www.nik.gov.pl/aktualnosci/nik-o-bezpieczenstwie-przewozow-kolejowych.html
- NIK (2018d), Porty morskie "zatoną" bez lepszej infrastruktury transportowej, Najwyższa Izba Kontroli, Warsaw. https://www.nik.gov.pl/aktualnosci/infrastruktura/porty-morskie.html
- NIK (2019), Państwo niegotowe na cudzoziemców, Najwyższa Izba Kontroli, Warsaw.
- Odeck, J., Welde, M.; Volden, G. H. (2015), "The Impact of External Quality Assurance of Costs Estimates on Cost Overruns: Empirical Evidence from the Norwegian Road Sector", European Journal of Transport and Infrastructure Research, No. 15(3).
- OECD (2010), OECD Tax Policy Studies Tax Policy Reform and Economic Growth, OECD Publishing, Paris.
- OECD (2013), Coping with Emigration in Baltic and East European Countries, OECD Publishing, Paris.
- OECD (2014), "Wireless Market Structures and Network Sharing", OECD Digital Economy Papers, No. 243, OECD Publishing, Paris.
- OECD (2015), Taxation of SMEs in OECD and G20 Countries, OECD Tax Policy Studies, No. 23, OECD Publishing, Paris.
- OECD (2016a), Policy Priorities for Making Poland a More Inclusive and Knowledge-Based Economy, OECD Publishing, Paris.
- OECD (2016b), OECD Economic Surveys Poland, OECD Publishing, Paris.
- OECD (2017a), "How to make trade work for all" in OECD Economic outlook, OECD Publishing, Paris.
- OECD (2017b), SME and Entrepreneurship Policy in Canada, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris.
- OECD (2017c), Getting Skills Right: Good Practice in Adapting to Changing Skill Needs: A Perspective on *France, Italy, Spain, South Africa and the United Kingdom*, OECD Publishing, Paris.
- OECD (2017d), OECD Digital Economy Outlook 2017, OECD Publishing, Paris.
- OECD (2017e), OECD Economic Surveys: Austria 2017, OECD Publishing, Paris.
- OECD (2018a), OECD Economic Surveys: Poland 2018, OECD Publishing, Paris.
- OECD (2018b), "Accounting for firm heterogeneity in global value chains: The role of Small and Medium sized Enterprises", OECD Working Party on International Trade in Goods and Trade in Services Statistics.
- OECD (2018c), Putting a face behind the jobs at risk of automation, OECD policy brief, , OECD Publishing, Paris.
- OECD (2018d), Implications of E-commerce for Competition Policy Background Note, Paris. https://one.oecd.org/document/DAF/COMP(2018)3/en/pdf
- OECD (2018e), OECD Reviews of Digital Transformation: Going Digital in Sweden, OECD Publishing, Paris.
- OECD (2018f), OECD Tourism Trends and Policies 2018, OECD Publishing, Paris.
- OECD (2018g), Developing Robust Project Pipelines for Low-Carbon Infrastructure, Green Finance and Investment, OECD Publishing, Paris.
- OECD (2018x), Regulatory Policy: Poland, OECD Publishing, Paris.
- OECD (2019a), OECD SME and Entrepreneurship Outlook 2019, OECD Publishing, Paris.
- OECD (2019b), Regions in Industrial Transition: Policies for People and Places, OECD Publishing, Paris.
- OECD (2019c), Country note Poland, OECD Publishing, Paris.

- OECD (2019d), OECD Services Trade Restrictiveness Index (STRI): Poland 2019, OECD Publishing, Paris.
- OECD (2019e), "R&D Tax Incentives: Poland 2019", OECD Publishing, Paris.
- OECD (2019f), Poland Trade facilitation performance, OECD Publishing, Paris.
- OECD (2019g), OECD Skills Strategy Poland: Assessment and Recommendations, OECD Skills Studies, OECD Publishing, Paris.
- OECD (2019h), OECD Skills Strategy 2019: Skills to Shape a Better Future, OECD Publishing, Paris.
- OECD (2019i), Individual Learning Accounts: Panacea or Pandora's Box?, OECD Publishing, Paris.
- OECD (2019j), OECD Economic Surveys Estonia, OECD Publishing, Paris.
- OECD (2019k), Unpacking E-Commerce: Business Models, Trends and Policies, OECD Publishing, Paris.
- OECD (2019I), Measuring the Digital Transformation: A Roadmap for the Future, OECD Publishing, Paris.
- OECD (2019m), "Enhancing Access and Connectivity to Harness Digital Transformation", OECD Going Digital Policy Note, OECD, Paris.
- OECD (2019n), "The road to 5G networks: Experience to date and future developments", OECD Digital Economy Papers, No. 284, OECD Publishing, Paris, https://doi.org/10.1787/2f880843-en.
- OECD (2019o), Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Reuse across Societies, OECD Publishing, Paris.
- OECD (2019p), Government at a Glance 2019, OECD Publishing, Paris.
- OECD (2019q), OECD Skills Outlook 2019: Thriving in a Digital World, OECD Publishing, Paris.
- OECD (2019r), The Role of Digital Platforms in the Collection of VAT/GST on Online Sales, OECD, Paris.
- OECD (2019s), PISA 2018 Results (Volume I): What Students Know and Can Do, OECD Publishing, Paris.
- OECD (2019t), SME and Entrepreneurship Policy in Ireland, *OECD Studies on SMEs and Entrepreneurship*, OECD Publishing, Paris, https://doi.org/10.1787/e726f46d-en.
- OECD (2019icel), OECD Economic Surveys: Iceland 2019, OECD Publishing, Paris.
- OECD (2020a), Corporate and personal insolvency during the COVID-19 crisis, OECD Publishing, Paris.
- OECD (2020b), OECD Tourism Trends and Policies 2020, OECD Publishing, Paris.
- OECD (2020c), Tourism Policy Responses to the coronavirus (COVID-19), OECD Publishing, Paris.
- OECD (2020d), *OECD Economic Outlook, Volume 2020 Issue 1*, OECD Publishing, Paris, https://doi.org/10.1787/0d1d1e2e-en.
- OECD (2020e), COVID-19 and global value chains: Policy options to build more resilient production networks, OECD Publishing, Paris.
- OECD (2020f), OECD Economic Surveys: Poland 2020, OECD Publishing, Paris.
- Ottaviano, G., G. Peri, Giovanni and G. Wright (2018), "Immigration, trade and productivity in services: Evidence from U.K. firms," Journal of International Economics, vol. 112(C), pp. 88-108.
- PAIH (2019), Analiza potencjału internacjonalizacji polskich firm oraz promocji polskich branż priorytetowych na rynkach perspektywicznych poprzez kanały elektroniczne "E-EKSPORT" Raport końcowy 2019, https://www.trade.gov.pl/pl/niezbednik-eksportera/303217,eksport-przez-internet-raport-dla-przedsiebiorc-ow.html
- PARP (2019a), *Raport o stanie sektora małych i średnich przedsiębiorstw w Polsc*e, Polska Agencja Rozwoju Przedsiębiorczości, Warsaw, 2019.

- PARP (2019b), Aktywność zawodowa i edukacyjna dorosłych Polaków wobec wyzwań współczesnej gospodarki Raport podsumowujący VI edycję badania BKL w latach 2017–2018, Polska Agencja Rozwoju Przedsiębiorczości, Warsaw, 2019.
- PIE (2019), 15 years of Poland in the European Union, Polish Economic Institue, Warsaw.
- Planes-Satorra, S. and C. Paunov (2019), "The digital innovation policy landscape in 2019", OECD Science, Technology and Industry Policy Papers, No. 71, OECD Publishing, Paris, https://doi.org/10.1787/6171f649-en.
- PNB (2019), Construction Contracts Worth PLN 5 bn in Danger, Polish News Bulletin, June 19, Warsaw.
- Rouzet, D., S. Benz and F. Spinelli (2017), "Trading firms and trading costs in services: Firm-level analysis", OECD Trade Policy Papers, No. 210, OECD Publishing, Paris, <a href="https://doi.org/10.1787/b1c1a0e9-en">https://doi.org/10.1787/b1c1a0e9-en</a>.
- Slattery, S. and O. Zidar (2020), "Evaluating State and Local Business Tax Incentives", NBER Working Paper No. 26603.
- Sorbe, S., P. Gal and V. Millot (2018), "Can productivity still grow in service-based economies?: Literature overview and preliminary evidence from OECD countries", OECD Economics Department Working Papers, No. 1531, OECD Publishing, Paris.
- Statistics Poland (2019a),
- Statistics Poland (2019b),
- Szpunar, p. and J. Hagemejer (2018), "Globalisation and the Polish economy: macro and micro growth effects", BIS paper, No. 100, https://www.bis.org/publ/bppdf/bispap100\_r.pdf
- Thissen M., Ivanova O., Mandras G., Husby T. (2019), "European NUTS 2 regions: construction of interregional trade-linked Supply and Use tables with consistent transport flows", JRC Working Papers on Territorial Modelling and Analysis No 01/2019.
- UKE (2019), Report on the activities of the President of the Office of Electronic Communications for 2018, Urząd Komunikacji Elektronicznej, Warsaw.
- UN (2019), "Concluding observations on the combined twenty-second to twenty-fourth periodic reports of Poland", Committee on the Elimination of Racial Discrimination, International Convention on the Elimination of All Forms of Racial Discrimination, CERD/C/POL/CO/22-24, United Nations.
- UNESCO (2019), Decisions adopted during the 43rd session of the World Heritage Committee (Baku 2019), United Nations Educational, Scientific and Cultural Organization, Paris. https://whc.unesco.org/archive/2019/whc19-43com-18-en.pdf
- Unido (2005), Methodology: Development of SME Supplier Networks. Abridged Version, Unido.
- UNWTO, European Union Tourism Trends, United Nations World Tourism Organization, Madrid.
- WEF (2018), Travel and Tourism Competitiveness Report 2017, World Economic Forum, Geneva.
- WEF (2019), The Global Competitiveness Report 2019, World Economic Forum.
- World Bank (2013), The Status of Contract Enforcement in Poland, World Bank, Washington, DC.
- World Bank (2016), Doing Business 2017: Equal Opportunity for All, World Bank, Washington, DC.
- World Bank (2017), Poland Catching Up Regions Overview Report, Vol. 1, Washington, DC.
- World Bank (2018), Logistics Performance Index Country Score Card: Poland 2018, World Bank, Washington, DC.
- World Bank (2019), Doing Business 2020, World Bank, Washington, DC.