Strengthening FDI and SME Linkages in the Slovak Republic

OECD

Strengthening FDI and SME Linkages in the Slovak Republic

OECD
BETTER POLICIES FOR BETTER LIVES

This document, as well as any data and 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.

Note by the Republic of Türkiye
The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Please cite this publication as:
OECD (2022), *Strengthening FDI and SME Linkages in the Slovak Republic*, OECD Publishing, Paris, https://doi.org/10.1787/972046f5-en.

ISBN 978-92-64-47812-1 (print)
ISBN 978-92-64-60637-1 (pdf)
ISBN 978-92-64-89873-8 (HTML)
ISBN 978-92-64-83413-2 (epub)

Photo credits: © iStock / Getty Images Plus / mirovic.

Corrigenda to publications may be found on line at: www.oecd.org/about/publishing/corrigenda.htm.

© OECD 2022

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at https://www.oecd.org/termsandconditions.

Preface

Since the early 2000s, the Slovak Republic has experienced strong economic growth that contributed to a successful convergence towards OECD and EU average incomes. Like many other countries, the economic impact of the COVID19 pandemic has been severe, reflecting the Slovak Republic's large population of micro firms with limited capacity to adapt to the stringent economic environment, as well as its relatively high exposure to supply chain disruptions due to high integration into global value chains (GVCs). The war in Ukraine has further complicated these dynamics by weakening economic prospects and generating further uncertainty.

To support the economic recovery, there is considerable scope to boost the competitiveness of Slovak small and medium-sized enterprises (SMEs), which are responsible for 72% of employment and 56% of value added in the business sector. The Slovak economy has one of the highest start-up rates in the OECD area but also an SME economy that is largely made of micro enterprises and individual entrepreneurs with lower productivity compared to peers in other OECD economies. Building resilience to supply chain disruptions and adapting to the twin transition towards a greener and more digital economy will require domestic SMEs to improve their productivity and capacity to innovate.

Significant potential also exists to leverage the Slovak Republic' success in attracting foreign direct investment (FDI), which has been fundamental in boosting integration into GVCs over the past two decades. Building on the Slovak Republic's geographical proximity to EU markets, strong industrial base and low labour costs, FDI has contributed to the emergence of a competitive medium- and high-technology manufacturing industry, with a marked specialisation in the automotive sector. Foreign firms account for almost 60% of value added and 80% of exports in manufacturing, while the motor vehicles industry is responsible for about one third of total manufacturing investment.

Success in attracting FDI has not, however, translated into significant productivity spillovers for Slovak SMEs, questioning the nature of linkages between foreign and domestic firms, and the business and policy conditions that could enable greater innovation diffusion across the Slovak economy. To foster dynamic FDI-SME ecosystems, comprehensive and coherent policy approaches are needed that will consider the multidimensional aspects of FDI-SME linkages and the different levels where spillovers can take place. Maintaining past productivity improvements in the face of the green and digital transitions will also require the Slovak Republic to strengthen its own capacity to innovate, adopt new technologies and shift to a more diversified and environmentally sustainable economy.

Concerted action is needed, particularly now, as the Slovak Republic considers policy options to ensure a strong and resilient COVID19 recovery. The recently adopted Recovery and Resilience Plan, which lays out the country's strategic priorities and reforms for the next decade, aims to shift the economy towards high value-added activities, strengthen the digital capabilities of SMEs and increase public investment in research and innovation. Its successful implementation will require increased attention to policy coherence and coordination, and a whole-of-government approach to investment and business climate reform.

This report aims to support these reform efforts. It assesses the potential for FDI-SME spillovers in the Slovak Republic and provides policy recommendations on how to attract knowledge-intensive FDI, support

SME upgrading and boost productivity growth through FDI-SME linkages. The report also identifies policy reforms to reach a more even territorial development through FDI-SME ecosystems, including in economically weaker regions, and proposes a number of areas where subnational governments can play an active role.

The Government of the Slovak Republic and the OECD are very pleased to have joined forces in producing this study. We also acknowledge the support and assistance of the Ministry of Investment, Regional Development and Informatization in jointly coordinating the preparation of a regional perspective of the study based on the examples of the Košice and Banská Bystrica regions. Preparation of this study was part of a multi-year project supported by the European Commission to enhance productivity and innovation in EU countries and regions through stronger FDI-SME ecosystems.

We hope that this assessment will help lay the foundations of a more resilient and inclusive recovery.

Mgr. art. Veronika Remišová, M.A., ArtD

Minister of Investment, Regional Development and Informatization, Slovak Republic

Yoshiki Takeuchi

Deputy Secretary-General, OECD

Foreword

The global economy has suffered several shocks in a row due to the COVID-19 crisis and Russia's war in Ukraine. In their wake, global value chains (GVCs) have experienced major disruptions, and business conditions have tightened, with consequential impacts on firms, people and places. Against a backdrop of environmental challenges, but also other megatrends, such as the digital transition and demographic changes, there is stronger pressure than ever for more resilient, sustainable and inclusive growth.

Boosting productivity and innovation will be key, not least among SMEs, where, across OECD economies, significant gaps exist with their larger peers, in particular foreign owned firms. However, foreign direct investment (FDI) serves as a source of knowledge and capital, and so, there is considerable scope to leverage on the potential to reinforce SME-FDI linkages as a driver of productivity and innovation, including through knowledge spillovers, that benefit both SMEs and MNEs.

Seizing on that potential requires the right enabling frameworks, and, in particular, supportive business and policy conditions, including multi-level governance, that can both leverage on existing FDI and attract new quality FDI, whilst also improving SME performance and capabilities, and local ecosystem. The OECD with support of the European Commission (EC) is conducting a multi-year project to advise national and subnational governments on strengthening and developing FDI-SME ecosystems to drive resilient, sustainable and more inclusive growth.

This report is the second country assessment produced as part of that project. It provides a comprehensive review of the potential and conditions of productivity and innovation spillovers between FDI and SMEs in the Slovak Republic. It presents the institutional and policy environments that support FDI-SMEs ecosystems and identifies concrete areas of reforms at both national and regional levels to strengthen these linkages.

Chapter 1 presents the conceptual framework developed for the project and country assessments. It is abridged from *Strengthening FDI-SME ecosystems and spillovers. A Policy Toolkit* that synthesises early findings of the pilot phase.

Chapter 2 analyses the potential for FDI spillovers in the Slovak Republic, the absorptive capacities of local SMEs, and how broader economic and business conditions can enable FDI-SME linkages and spillovers.

Chapter 3 proposes a diagnostic of the effectiveness of FDI-SME linkages in the Slovak Republic, and innovation diffusion through value chains, strategic partnerships, labour mobility, and competition and imitation.

Chapter 4 looks at the Slovak institutional and public governance framework for enhancing FDI-SME linkages, including aspects related to multi-level coordination, policy evaluation and stakeholder engagement.

Chapter 5 analyses the Slovak policy mix for FDI-SME linkages, identifies possible blind spots and inconsistencies, and proposes a number of areas for policy improvements.

Chapter 6 gives a regional lens to the report by providing an additional assessment of two regions: Banská Bystrica and Košice.

The report was jointly developed by the OECD Committee on SMEs and Entrepreneurship and the OECD Investment Committee and contributes to their respective Programmes of Work. The report was approved by written procedure by the two Committees on 21 September 2022 [COM/CFE/DAF(2022)1].

Acknowledgements

The assessment of linkages between foreign direct investment (FDI) and small and medium-sized enterprises (SMEs) in the Slovak Republic is a joint report produced by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), led by Lamia Kamal-Chaoui, and the OECD Directorate for Financial and Enterprise Affairs (DAF), led by Carmine Di Noia. The report was prepared under the aegis of the OECD Committee on SMEs and Entrepreneurship (CSMEE) and the OECD Investment Committee (IC).

The report was prepared in close collaboration with a Slovak inter-ministerial taskforce created for the purpose of this assessment. It also benefited from consultations with the European Commission (EC) Directorate-General for Regional and Urban Policy (DG REGIO) and the OECD Regional Development Policy Committee. It is the second output of a multi-year OECD project conducted with EC support to develop policy recommendations on how national and subnational governments can strengthen FDI-SME linkages and increase the potential for productivity and innovation spillovers to local economies.

Sandrine Kergroach, Head of SME and Entrepreneurship Performance, Policy and Mainstreaming (CFE), and Martin Wermelinger, Head of Investment Qualities and Incentives (DAF), coordinated the overall project and supervised the assessment of the Slovak Republic. Céline Kauffmann Head of Entrepreneurship, SME and Tourism Division (CFE), and Ana Novik and Stephen Thomsen, respectively Head and Deputy Head of Investment Division (DAF) provided guidance.

Chapter 1 on “Scope of FDI spillovers on SMEs: Conceptual framework” is abridged from *Strengthening FDI-SME ecosystems and spillovers. A Policy Toolkit* that synthesises the findings of Phase I of the project.

Chapters 2, on “Enabling conditions for FDI and SME spillovers in the Slovak Republic”, and 3, on “FDI diffusion at play for Slovak SMEs” were prepared by Chiara Petroli (CFE).

Chapters 4, on “The institutional and governance framework for FDI-SME diffusion”, and, 5, on “The policy mix for FDI-SME diffusion” were prepared by Stratos Kamenis (DAF).

Chapter 6 on “Regional focus: Banská Bystrica and Košice” was prepared by Sandrine Kergroach and Chiara Petroli (CFE). Thanks are due to Alison Hunter (consultant) for her valuable input and José Enrique Garcilazo (CFE) for specific comments on this chapter.

Stratos Kamenis (DAF) coordinated consultations and cooperation with the Slovak taskforce and relevant national and regional institutions, as well as the policy surveys that were conducted in preparation of this assessment.

Robert Akam and Pamela Duffin (DAF), and Shayne Maclachlan and Pilar Philip (CFE) helped prepare the report for publication. Heather Mortimer Charoy (CFE) and Angèle N’Zinga (DAF) provided project and administrative assistance.

Table of contents

Preface 3

Foreword 5

Acknowledgements 7

Acronyms and abbreviations 12

Executive summary 15

1 Scope of FDI spillovers on SMEs: Conceptual framework 17
- 1.1. Context and motivation 18
- 1.2. Conceptual framework to assess FDI spillovers on domestic SMEs 18
- 1.3. Implementing the conceptual framework in this report 21
- References 21
- Notes 22

2. Enabling conditions for FDI and SME spillovers in the Slovak Republic 23
- 2.1. Summary of strengths, challenges and opportunities 24
- 2.2. Economic, structural and geographical characteristics of the Slovak Republic 25
- 2.3. Potential for FDI productivity spillovers 37
- 2.4. SMEs absorptive capacities 45
- References 55

3 FDI diffusion at play for Slovak SMEs 61
- 3.1. Summary of strengths, challenges and opportunities 62
- 3.2. Value chain linkages between foreign MNEs and domestic SMEs 63
- 3.3. Strategic partnerships between foreign firms and SMEs in the Slovak Republic 69
- 3.4. Labour mobility between FDI and domestic firms 73
- 3.5. Competition and imitation effects of FDI 78
- References 82

4 The institutional and governance framework for FDI-SME diffusion 85
- 4.1. Summary of findings 86
- 4.2. Overview of the Slovak governance framework for FDI-SME diffusion 87
- 4.3. Policy coordination across institutions and tiers of government 95
- 4.4. Evaluation of policy impact and engagement with stakeholders 102
- References 107

5 The policy mix for FDI-SME diffusion 111
5.1. Summary of findings and recommendations 112
5.2. Overall balance of the policy mix for FDI-SME diffusion 113
5.3. Policies acting upon the enabling environment 119
5.4. Policies acting upon the FDI-SME diffusion channels 139
References 147

6 Regional focus: Banská Bystrica and Košice 153
6.1. Summary of findings 154
6.2. Economic geography in Košice and Banská Bystrica 156
6.3. FDI spillover potential 168
6.4. SMEs absorptive capacity 172
6.5. Regional governance and policy mix for FDI-SME spillovers 177
References 190
Notes 196

FIGURES

Figure 1.1. Understanding FDI spillovers on domestic SMEs: Conceptual framework 20
Figure 2.1. International trade and GVC exposure 26
Figure 2.2. Share of Russian intermediate products in the Slovak Republic's total gross imports of intermediate products, 2018 27
Figure 2.3. Russia's share in total gross exports and imports of the Slovak Republic, 2018 28
Figure 2.4. Specialisation profile of the Slovak Republic 30
Figure 2.5. Structure of the Slovak economy and selected OECD countries 32
Figure 2.6. Structure of Slovak exports and selected OECD countries 34
Figure 2.7. Gini index of inequality of GDP per capita across regions[1], 2013 36
Figure 2.8. Inward FDI patterns in the Slovak Republic 38
Figure 2.9. Labour productivity performance, by firm ownership and size 40
Figure 2.10. Foreign firms' value added and exports in the Slovak Republic, 2006 and 2016 41
Figure 2.11. Sectoral distribution of the FDI stock in the Slovak Republic, 2015-2019 42
Figure 2.12. Sectoral distribution of greenfield FDI and cross-border M&A stocks 43
Figure 2.13. FDI concentration in terms of sectoral labour productivity and wages 44
Figure 2.14. Size of the micro, small and medium-sized business sector 46
Figure 2.15. Churn rate of employer enterprises in selected OECD countries (%), 2017 47
Figure 2.16. Employment by sectoral group and firm size, 2019 48
Figure 2.17. Innovative enterprises 49
Figure 2.18. Digital readiness of small firms in the Slovak Republic 50
Figure 2.19. Barriers to innovation among Slovak small, medium-sized and large firms 52
Figure 2.20. Obstacles to digitalisation by SMEs 53
Figure 2.21. Above basic digital skills 55
Figure 3.1. Foreign firms' output composition 63
Figure 3.2. Sourcing structure of foreign affiliates, by type of suppliers and country of origin, 2016 65
Figure 3.3. Sourcing of domestic and foreign firms by sectoral groups in the Slovak Republic, 2016 67
Figure 3.4. Use of outputs of foreign affiliates, by buyer type/origin, 2016 68
Figure 3.5. Enterprises that co-operated on R&D and innovation with other enterprises or organisations, 2018 70
Figure 3.6. Enterprises that purchased or licensed IP rights from other private business enterprises, by size class, 2018 71
Figure 3.7. Foreign technology licensing in the Slovak manufacturing sector, 2019 72
Figure 3.8. Job-to-job mobility of human resources in science and technology (HRST), 25-to-64-year-olds, 2010 and 2019 74
Figure 3.9. Foreign firms' wage premia relative to domestic firms in the Slovak manufacturing sector, 2019 75
Figure 3.10. Employees training in Slovak SMEs 76
Figure 3.11. Enterprises that co-operated on R&D and innovation with competitors or other enterprises of the same sector 79

Figure 3.12. Relative importance of competitors as a source of information for Slovak small firms' innovation activities 80
Figure 3.13. Importance of high competition as a barrier to innovation by Slovak firms, 2018 81
Figure 4.1. The institutional environment for FDI-SME diffusion in the Slovak Republic 88
Figure 4.2. Institutions enabling FDI-SME diffusion in Slovenia, Ireland and Portugal 91
Figure 4.3. Number of agency offices across Slovak regions in relation to their business population, innovation (R&D) intensity and EU funding support 93
Figure 4.4. The Slovak subnational government expenditure is among the lowest in the OECD 95
Figure 4.5. Collaborative policy design and implementation in the Slovak Republic 101
Figure 4.6. FDI-SME diffusion policies that have been evaluated in the Slovak Republic 103
Figure 4.7. Policy evaluations and stakeholder engagement in the Slovak Republic 104
Figure 5.1. Slovak policies and the FDI-SME diffusion channels and enabling factors they act upon 114
Figure 5.2. Policy instruments used in the Slovak Republic and peer EU Member States 116
Figure 5.3. Main policy initiatives implemented in the Slovak Republic and peer EU Member States 117
Figure 5.4. The Slovak Republic's performance in key regulatory framework areas 118
Figure 5.5. FDI restrictions in the Slovak Republic are low compared to other OECD economies 120
Figure 5.6. Restrictions to services trade are in line with those in other OECD economies 121
Figure 5.7. Policy instruments for productivity-enhancing FDI 122
Figure 5.8. Sectoral and value chain targeting of the Slovak Republic's overall policy mix 124
Figure 5.9. Policy instruments for SME absorptive capacities 125
Figure 5.10. Policies targeted to SMEs versus generic policies (% of policy initiatives) 126
Figure 5.11. Direct government funding and tax support for business R&D 127
Figure 5.12. Place-based policy implementation in the Slovak Republic 135
Figure 5.13. Policy instruments for value chain linkages and strategic partnerships 140
Figure 5.14. Strictness of employment protection legislation in the Slovak Republic 142
Figure 5.15. More pro-competitive regulation is needed in certain areas 145
Figure 5.16. Professional services are strictly regulated 146
Figure 6.1. Slovak regions and region capitals (TL3) 157
Figure 6.2. Sectoral specialisation of Banská Bystrica and Košice 159
Figure 6.3. Shifting specialisation of Banská Bystrica and Košice regions 161
Figure 6.4. Competitiveness performance across Slovak regions, 2019 162
Figure 6.5. Drivers of competitiveness in Central and Eastern Slovakia, 2019 163
Figure 6.6. Ageing in Slovak regions 164
Figure 6.7. Inter-regional migrations in the Slovak Republic 165
Figure 6.8. Education and skills in Slovak TL2 regions 166
Figure 6.9. Internet use by individuals in Slovak NUTS II regions, 2021 167
Figure 6.10. Digital infrastructure in Slovak regions, 2019 168
Figure 6.11. Slovak Republic FDI inward stock by region, 2019 169
Figure 6.12. Performance differences between foreign and domestic firms across regions, selected EU countries, 2019 171
Figure 6.13. Sectoral distribution of total inward greenfield investment in the Košice and Banská Bystrica regions in 2010-2020 172
Figure 6.14. Average size of employer firms, by sector, 2017 173
Figure 6.15. R&D capacity in Slovak regions, 2019 175
Figure 6.16. Business sector R&D in Slovak regions 176
Figure 6.17. Co-patenting in Slovak regions, 2015 177
Figure 6.18. Regional distribution of successful investment projects supported by SARIO over 2002-21 180
Figure 6.19. Innovation and entrepreneurship ecosystem in the Košice region 184

TABLES

Table 2.1. Strengths and challenges/opportunities of enabling conditions for FDI spillovers in the Slovak Republic 24
Table 2.2. Refugees fleeing Ukraine since 24 February 2022, by country of destination 29
Table 2.3 Sectoral grouping based on R&D-intensity 31
Table 2.4. Selected certified cluster initiatives in the Slovak Republic 35
Table 2.5. Number of firms by size 46
Table 3.1. Strengths and challenges/opportunities across FDI-SME diffusion channels in the Slovak Republic 62

Table 4.1. Findings and recommendations on the Slovak governance framework 86
Table 4.2. Key implementing institutions acting upon the FDI-SME diffusion policy areas 88
Table 4.3. Mandates and strategic policy objectives pursued by key Slovak institutions 90
Table 4.4. National strategic frameworks in the Slovak Republic 100
Table 4.5. Policy coordination in the Slovak Republic by institution and policy domain 102
Table 4.6. Most common coordination instruments used by Slovak institutions 102
Table 5.1. Findings and recommendations on the Slovak Republic's policy mix 112
Table 5.2. Main policies for productivity-enhancing FDI 125
Table 5.3. Main policies for SME absorptive capacities 130
Table 5.4. Policies for value chain linkages and strategic partnerships 141
Table 6.1. Key findings: Banská Bystrica and Košice 155
Table 6.2. Characteristics of TL3 regions, 2020 (or latest year available) 157
Table 6.3. FDI inward stock in Slovak regions: top- and bottom-10 districts, 2019 169
Table 6.4. SME and entrepreneurship activity by region, 2018 174
Table 6.5. Regional distribution of investment incentives in 2002-2021 181
Table 6.6. Ease of doing business in Slovak cities, 2018 186
Table 6.7. Regional governance and policy mix for FDI-SME spillovers: main findings and recommendations 189

BOXES

Box 2.1. Exposure of the Slovak economy to COVID-19 disruptions 25
Box 2.2. Russia's war against Ukraine and its possible impact on the Slovak economy 27
Box 2.3. Classification of economic activities 31
Box 2.4. The automotive value chain in the Slovak Republic 33
Box 3.1. Foreign affiliates' output, value added and sourcing: some concepts and definitions 63
Box 3.2. The Slovak automotive supplier network 66
Box 3.3. Slovak Innovation and Energy Agency (SIEA) survey on FDI and SMEs cooperation in the Slovak Republic, 2021 70
Box 3.4. Dual education initiatives by foreign affiliates in the Slovak Republic 77
Box 4.1. Institutional arrangements for FDI-SME diffusion policy areas in other EU Member States 91
Box 4.2. Policy coordination: principles, instruments and benchmarking 98
Box 5.1. The policy mix for FDI-driven productivity and innovation diffusion on domestic SMEs: a typology of policy instruments 115
Box 5.2. Findings from an empirical evaluation of the Regional Investment Aid scheme 123
Box 5.3. Insights on SMEs scale up finance in the Slovak Republic 128
Box 5.4. The role of Higher Education Institutions (HEIs) in fostering innovation diffusion through science-to-business collaboration 133
Box 5.5. Strengthening the competitiveness and internationalisation of industrial clusters: The automotive cluster in Portugal 138
Box 6.1. Territorial level classification and data limitations 154
Box 6.2. Mining tourism 160
Box 6.3. US Steel Economic Development Centre (EDC) in Košice 179
Box 6.4. Policy initiatives to support entrepreneurship and innovation in Banská Bystrica 182
Box 6.5. Košice IT valley and creative industry 188

Follow OECD Publications on:

http://twitter.com/OECD_Pubs

http://www.facebook.com/OECDPublications

http://www.linkedin.com/groups/OECD-Publications-4645871

http://www.youtube.com/oecdilibrary

OECD Alerts http://www.oecd.org/oecddirect/

Acronyms and abbreviations

ACEA	European Automobile Manufacturers' Association
AoA	Academy of Arts
BERD	Business Enterprise Research and Development
CEIP	Council for Export and Investment Promotion
CIM	Inter-municipal communities
CoG	Centre of Government
CSTI	Council for Science, Technology and Innovation
DESI	European Commission's Digital Economy and Society Index
DTF	Distance to frontier score
EC	European Commission
ECEI	European Cluster Excellence Initiative
EDF	US Steel Economic Development Centre
ERDF	European Regional Development Fund
ESCA	European Secretariat for Cluster Analysis
ESIF	European Structural and Investment Funds
EU	European Union
FAs	Foreign affiliates
FDI	Foreign direct investment
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GVCs	Global value chains
HEIs	Higher education institutions
HRST	Human resources in science and technology
ICT	Information and communication technologies
ISIC	International Standard Industrial Classification of all economic activities
IP	Intellectual property
IPA	Investment promotion agency
IPEEK	Ipel Energy Enviromental Cluster
IPO	Industrial Property Office
IT	Information technologies

IÚT	Regional integrated territorial strategy
JEREMIE	Joint European Resources for Micro to Medium Enterprises
JMO	Joint municipal offices
LDD	Least Developed Districts
MBU	Matej Bel University
M&A	Mergers and acquisitions
MESRS	Ministry of Education, Science, Research and Sport
MHSR	Ministry of Economy
MIRRI	Ministry of Investments, Regional Development and Informatisation
MNEs	Multinational enterprises
MoF	Ministry of Finance
MSMEs	Micro, small and medium-sized enterprises
MZV	Ministry of Foreign and European Affairs
NATO	North Atlantic Treaty Organization
NBC	National Business Centres
NEET	Not in education, employment or training
NPC	National Productivity Council
NUTS	European nomenclature of territorial units for statistics
OPII	Operational Programme Integrated Infrastructure
OP R&I	Operational Programme Research and Innovation
PCT	Patent Co-operation Treaty
RA	Research Agency
RCI	European Regional Competitiveness Index
R&D	Research and development
RIA	Regulatory impact assessment
RIS3	Smart Specialisation Strategy
SARIO	Slovak Agency for Investment and Trade
SAS	Slovak Academy of Science
SBA	Slovak Business Agency
SCCI	Slovak Chamber of Commerce and Industry
SCTI	Slovak Centre of Scientific and Technical Information
SDGs	Sustainable Development Goals
S&T	Science and technology
SIEA	Slovak Innovation and Energy Agency
SMEs	Small and medium-sized enterprises
SOPK	Slovak Chamber of Commerce and Industry
SPEs	Special Purpose Entities
SRDA	Slovak Research and Development Agency
SWOT	Strengths, weaknesses, opportunities, and threats analysis

TUKE	Technical University of Košice
TUZVO	Technical University in Zvolen
UFVL	University of Veterinary Medicine and Pharmacy
UPJŠ	Pavol Jozef Šafárik University
WB	World Bank

Executive summary

There is untapped potential for productivity spillovers from international investment in the Slovak Republic. In the last decades, significant foreign direct investment (FDI) inflows in export-oriented manufacturing (particularly the automotive industry) have fuelled economic growth and supported convergence towards higher-income OECD economies. However, much of that investment has concentrated in labour-intensive, low-wage, low-value added industrial activities (e.g. car assembly), with limited knowledge spillovers to the wider economy. Despite, therefore, large stocks of FDI by international standards (amounting to 58% of GDP in 2019), important productivity gaps between foreign affiliates (FAs) and local businesses remain. The gap was on average 65% in 2018, compared to 20% in Estonia or Slovenia, and has declined only marginally in recent years.

One factor that explains this is the high proportion of low productivity micro firms in the Slovak business population. These micro enterprises – with less than 10 employees, which represent 97% of employer firms and account for over 40% of business sector employment – engage little in research and development (R&D) and innovation, are less digitalised than peers in EU countries and have typically lower capacity to establish linkages that could support knowledge transfer. They also have lower capacity to adopt more advanced foreign technology and adapt to the higher quality standards of FAs.

Consequently, FDI-SME linkages remain too loose to enable effective spillovers. FAs in the Slovak Republic source less extensively from domestic suppliers than in other OECD countries, limiting the scope of spillovers through value chains. Multinationals' efficiency-seeking strategies target low-cost workforce for labour intensive activities, and proximity of European markets, rather than a strong supplier base. Moreover, huge wage differentials between FAs and SMEs tend to discourage labour mobility towards domestic firms, reducing spillovers and upskilling in strategic areas (e.g. digital skills), and exacerbating the limited training opportunities locally. Finally, Slovak SMEs perceive market competition as a barrier to innovation, which also reflects their scale up limitations. This points to competition by imitation as a poor FDI-SME diffusion channel.

There are however stronger channels that offer large potential of spillovers to the local economy. The small population of Slovak SMEs – with 10 or more employees – appear to be better integrated in innovation networks and more often involved in innovation co-operation within their supply chain than in other EU countries. The share of medium-sized and small innovative enterprises that co-operated with clients or customers on innovation (24% and 14% respectively in 2018) is higher than the EU average (16% and 12%). Local SMEs also show a high propensity to collaborate and exchange information with competitors in the same industry. Foreign employers often engage in local training initiatives, e.g. through dual education agreements with higher education institutions (HEIs) and vocational schools, which supports upskilling.

The Slovak FDI-SME policy system is fragmented. Many ministries and agencies are involved in FDI-SME policies, resulting in more bureaucracy and policy complexity. Policy coordination is a major challenge and a root cause of delayed reforms. Inter-agency collaboration is limited and takes place either informally or centrally through line ministries. Several high-level councils bring government actors together to identify priority areas where cross-ministerial planning is necessary, but their competences are not

always aligned with their tasks, leading to bottlenecks in coordination, especially linked to smart specialisation.

Policy coordination and streamlining FDI-SME governance should be a high priority. Due consideration should be given to horizontal coordination and restructuring the governance framework, e.g. through the merger of implementing agencies and joint programming in areas that require complementary expertise. Vertical coordination and inter-regional collaboration should also be improved. Currently, subnational governments have substantial responsibilities in areas affecting enterprises, but they lack organisational capacities and thus ability to support local FDI-SME ecosystems. FDI-SME policies should be better articulated with local development strategies and action plans. Indeed, although the main national agencies have established offices in regions, those often remain disconnected from the policy priorities and actions of subnational governments.

Recent reforms were directed towards diversifying the economy and FDI beyond low value-added manufacturing and strengthening domestic innovation capacity. A comprehensive set of assistance services support the internationalisation of Slovak SMEs and help foreign investors identify local suppliers and partners. Investment promotion efforts focus on investments that use smart industry technologies with higher potential for technology diffusion. However, incentives for innovation and R&D partnerships do not always involve foreign investors and their volume is low compared to EU peers. More impact could be obtained with systematic support for FDI-SME ecosystems in knowledge-intensive value chains, and sectoral action plans for growing industry clusters.

In parallel, the provision of SME development services by multiple agencies has contributed to increase the administrative burden on SMEs. There is scope to simplify procedures and raise awareness about the availability of public support. For instance, the R&D tax incentive could be simplified to become more attractive and accessible to smaller businesses, and the EU Structural and Investment Funds could be leveraged to help SMEs scale up their productive capacities, especially in knowledge-intensive value chains. Boosting SME performance will also require addressing skill gaps, including in FDI-intensive sectors, and incentivising investments in on-the-job training and human capital.

The need for pursuing place-based efforts is exemplified with the cases of Banská Bystrica and Košice. Despite improvements, regions in Central and Eastern Slovakia continue to lag behind in attracting FDI and benefit less from investment promotion policies. Banská Bystrica accounts for only 2% of the national FDI stock, with investment concentrated in a narrow number of manufacturing industries. In Košice, the FDI stock is larger and more diversified, e.g. in information and communication technologies, energy and other services, but the region concentrates almost 80% of the FDI stock of Eastern Slovakia. The proportion of investment projects supported by the Slovak Agency for Investment and Trade (SARIO) in Central and Eastern Slovakia has increased in recent years, but efforts should be intensified. Also, adequate evaluation should assess policy effectiveness in supporting regional development and convergence.

More developed local networks and clusters could enhance SME performance and entrepreneurship. In Banská Bystrica and Košice, most economic sectors are dominated by micro firms, with limited absorptive capacity and very low survival rates, but the well-developed network of HEIs and R&D institutions can drive local entrepreneurship and innovation. Local associations could also play a stronger role, e.g. by providing business support and networking services. Promising industrial clusters are emerging – sometimes with the support of formal cluster organisations (e.g. the Košice IT Valley) – which could stimulate regional SME development and entrepreneurship, and enhance attractiveness to investors.

1 Scope of FDI spillovers on SMEs: Conceptual framework

This introductory chapter describes the conceptual framework used in this report to assess factors influencing FDI spillovers on domestic SMEs and to identify opportunities for policies and institutional arrangements enhancing such spillovers. The chapter concludes by outlining how this conceptual framework is applied to the case of the Slovak Republic.

1.1. Context and motivation

Foreign direct investment (FDI) is an important source of finance for developed and developing countries and can play an important role in supporting a resilient and sustainable recovery from the COVID-19 crisis. Harnessing FDI for sustainable development, and particularly productivity and innovation, requires strong linkages with small and medium-sized enterprises (SMEs) in host countries. Foreign multinational enterprises (MNEs) do not just choose countries but locations in specific sub-national regions, and hence, FDI-SME linkages need to be considered and strengthened through place-based approaches.

SMEs contribute significantly to economic growth and social inclusion, and they can also play a key role in building resilience and more sustainable growth during the post COVID-19 recovery. In the OECD area, SMEs account for almost all enterprises, about two-thirds of total employment and 50-60% of value added (OECD, 2021[1]). To achieve their full potential, SMEs need to increase productivity and scale up innovation capacity. They are often less productive and innovative than larger firms where size is often identified as a major barrier to higher performance. Yet, some SMEs can be more productive and innovative than large firms, signalling that size is no fatality. In digital-intensive sectors, for example, smaller firms can show higher productivity levels (OECD, 2019[2]). SMEs play a key role in shifting innovation models by adapting supply to different contexts or user needs and responding to new or niche demand (OECD, 2018[3]).

Changes in the global trading and investment environment offer new opportunities for SME upgrading. Participation in global value chains (GVCs) enables SMEs to enhance productivity by absorbing technology and knowledge spillovers, upgrading workforce and managerial skills and raising innovation capacity (OECD, 2018[3]). This can be achieved by linking their business activities with foreign affiliates of MNEs (and domestic owned companies) and/or by directly integrating in GVCs as exporters, i.e. by supplying companies located abroad.

In this context, beyond the contribution to capital investment and employment generation, FDI can play an important role for knowledge and technology spillovers in host economies, resulting in increased productivity of local firms, especially SMEs. While productivity and innovation capacity of SMEs are influenced by a variety of market, policy and other factors (OECD, 2019[2]; OECD, 2021[1]), this report focuses on the specific role of FDI and related policies in the Slovak Republic. This introductory chapter introduces the conceptual framework to assess FDI spillovers on domestic SMEs and outlines how this framework is implemented for the case of the Slovak Republic (OECD, 2022, forthcoming[4]).[1]

1.2. Conceptual framework to assess FDI spillovers on domestic SMEs

Spillovers from FDI on domestic SMEs depend on a set of main enabling factors:

- **Potential for FDI spillovers:** FDI spillovers are possible as foreign firms are often more productive than domestic ones. Foreign MNEs are often larger than domestic firms, where size is found to be associated with higher productivity and a key determinant to overcome fixed costs for investment abroad (Helpman, Melitz and Yeaple, 2004[5]). Affiliates of foreign firms – through their links with parent companies – have typically greater access to technology, better managerial skills and more adequate resources for capital investment than domestic firms (Alfaro and Chen, 2012[6]). These capacity differences between foreign and domestic firms make it possible for SMEs to benefit from knowledge and technology transfers. The potential for FDI spillovers is further influenced by the volume of FDI inflows (i.e. the economy's relative dependence on FDI) and a number of FDI characteristics that illustrate to what extent FDI is effectively embedded in the local economy. These characteristics include (a) the sector in which the investment occurs and the activities that the foreign company undertakes, (b) the main motivations behind the FDI decision (e.g. market-seeking, resource-seeking, asset-seeking, efficiency-seeking), (c) the type of FDI (e.g. greenfield versus mergers and acquisitions), (d) the country of origin of the foreign investor,

including the geographical and cultural proximity to the receiving country and the degree of foreign ownership.[2]

- **Absorptive capacities of local SMEs:** Absorptive capacity refers to the ability of a firm to recognise valuable new knowledge and integrate it productively in its processes, i.e. to innovate (OECD, 2021[1]; 2019[2]). The stronger its absorptive and innovative capacity, the higher its chances to benefit from FDI. SME absorptive capacity depends on the firm's prior capital endowment and level of productivity, i.e. its level of financial, human and knowledge-based capital and its efficiency in creating value from it. Beyond existing endowments of these resources, absorptive capacity also depends on SMEs' ability to access strategic assets related to finance, skills and innovation as well as on the broader business environment. Not all SMEs are the same and their heterogeneity greatly contributes to explain their performance. SMEs vary in terms of age, size, business model, market orientation, sector and geographical area of operation. This means that different types of SMEs have different growth trajectories and therefore different chances to enter into knowledge sharing relationships with foreign multinational enterprises (MNEs) and to benefit from FDI spillovers.
- **Economic geography factors:** This refers to geographical and cultural proximity factors, where the latter is defined by factors such as the differences between home and host countries in terms of language, culture, political systems, level of education, and level of industrial development (Johanson and Vahlne, 1977[7]). The localised nature of FDI means that geographical and cultural proximity between foreign and domestic firms affects the likelihood of knowledge spillovers, which often involve tacit knowledge, and whose strength decays with distance. Thus, productivity spillovers from FDI on local firms are often concentrated in the same region of the investment. Agglomeration effects, notably through the presence of local industrial clusters, have also been reported to affect FDI attraction and FDI spillovers. Clusters embed characteristics such as industrial specialisation (through specialised skilled workers and suppliers) and geographical proximity that make knowledge spillovers more likely to happen, including from MNE operations.
- **Other economic and structural characteristics of the host country:** The degree to which FDI-SME spillovers materialise also depends on other economic and structural characteristics of the host country and its sub-national regions. These factors relate to the regional/national endowment as well as the macro-economic context, structure of the economy, sectoral drivers of growth, productivity and innovation as well as to the level of integration in the global economy, beyond FDI. These factors are often necessary conditions for FDI spillover potential, SME absorptive capacity and economic geography factors to turn into actual productivity gains for domestic SMEs.

While adequate enabling conditions are necessary, FDI spillovers only occur if domestic SMEs are exposed to MNE activities. Such exposure may occur through a set of diffusion channels:

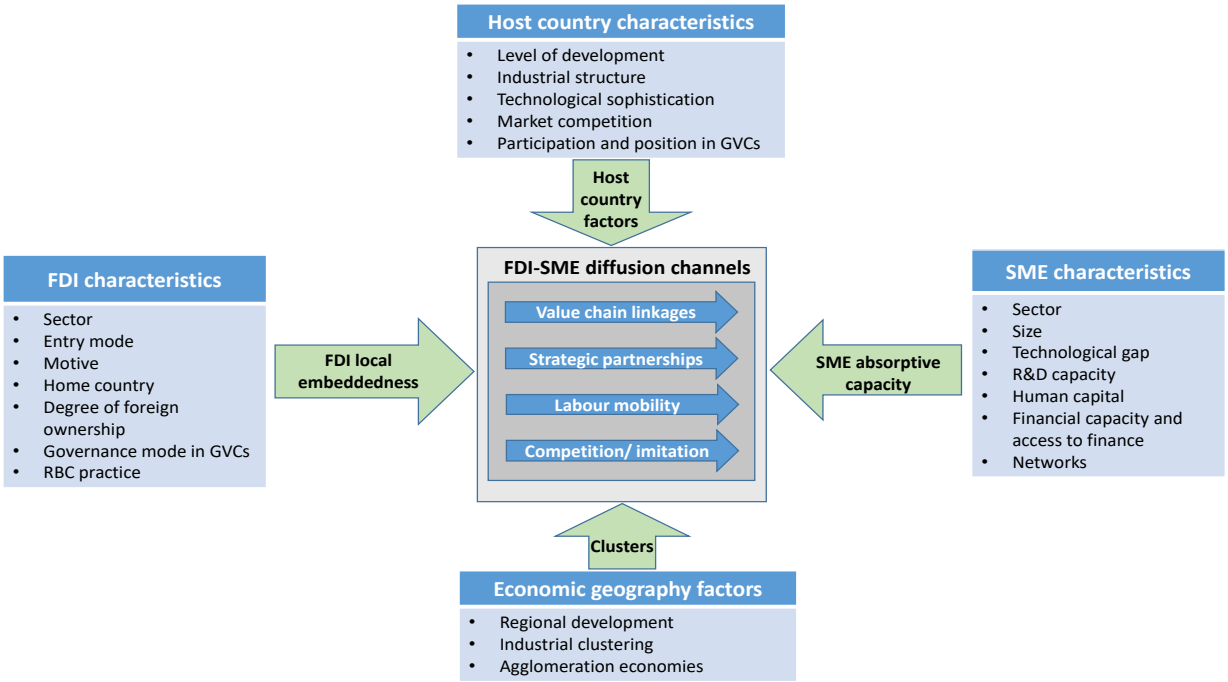
- **Value chain linkages** involve knowledge spillover from foreign MNEs to suppliers (upstream) and customers (downstream). Linkages help domestic companies extend their market for selling and raise the quality and competitiveness of their outputs. They can also generate knowledge spillovers when MNEs require better-quality inputs from local suppliers, particularly SMEs, and are therefore willing to share knowledge and technology with domestic companies to encourage their adoption of better practices.
- **Strategic partnerships** involve knowledge and capacity transfer in formal collaborations, for example in the area of R&D or workforce/managerial skills upgrading. These partnerships can take many forms, including joint ventures, licensing agreements, research collaborations, globalised business networks (i.e. membership-based business organisations, trade associations, stakeholder networks), and R&D and technology alliances.
- **Labour mobility** can be an important source of knowledge spillovers in the context of FDI, notably through the move of MNE workers to local SMEs – either through temporary arrangements such as detachments or long-term arrangements such as open-ended contracts – or through the

creation of start-ups (i.e. corporate spin-offs) by (former) MNE workers. Firms established by MNE managers are often more productive than other local firms. Similarly, workers who moved from foreign-owned to domestic firms retain skills and competences, including management skills, acquired in the foreign firms and thus contribute more to the productivity of their firm than workers without foreign firm experience.

- **Competition effects** occur with the entry of foreign firms, which heightens the level of competition on domestic companies and puts pressure on them to become more innovative and productive – not least to retain skilled workers. The new standards set by foreign firms – in terms of product design, quality control or speed of delivery – can stimulate technical change, the introduction of new products, and the adoption of new management practices in local companies, all of which are possible sources of productivity growth. This rising competitive pressure due to foreign firm entry and related productivity spillovers may also be associated with new incentives for workers to improve skills and SMEs to engage in skills upgrading.
- **Imitation effects** occur when foreign firms can also become a source of emulation for local companies, for example by showing better management practices. Imitation, reverse engineering and tacit learning can therefore become a channel to strengthen enterprise productivity at the local level. Foreign firms may also participate in innovation clusters and collaborative innovation activities where cross-fertilisation of ideas can increase productivity, both of domestic and foreign firms.

The scope for productivity and innovation spillovers on domestic SMEs is ultimately determined by the interaction of enabling factors and diffusion channels (Figure 1.1). Public policies aiming to enhance these spillovers address these different aspects and cut across a range of policy domains, including investment policy and promotion, SME development, innovation and regional development.

Figure 1.1. Understanding FDI spillovers on domestic SMEs: Conceptual framework



Source: OECD (2022, forthcoming[4]), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*.

1.3. Implementing the conceptual framework in this report

The next chapter assesses enabling conditions for FDI-SME diffusion in the Slovak Republic. It first looks at the Slovak Republic's economic context and integration in the global economy and then focuses on the potential for FDI spillovers, SME absorptive capacities and economic geography factors related to FDI and SME development. Whether or not FDI-SME diffusion channels are at play in the Slovak Republic is at the centre of discussion in this report and examined in Chapter 3.

Building on the diagnostic assessment of enabling conditions and channels of FDI-SME diffusion, the next two chapters focus on the institutional and governance framework (Chapter 4) and policy mix (Chapter 5) for FDI diffusion on SME productivity and innovation in the Slovak Republic. Chapter 4 provides an overview of the institutions that are currently in place to design and implement FDI, SME and entrepreneurship, innovation and regional development policies, and explores the multilevel policy coordination mechanisms to ensure coherence across policy domains, institutions and tiers of government. The chapter also looks at the monitoring and evaluation framework for policies related to FDI-SME diffusion in the Slovak Republic, and efforts to enhance stakeholder engagement. Chapter 5 reviews the mix of policies in place for fostering FDI spillovers on the productivity and innovation of Slovak SMEs. Closely following the conceptual framework, it identifies the FDI-SME diffusion channels and enabling factors that are supported by the Slovak Republic's policy framework, and the policy instruments used to promote FDI-SME linkages, noting areas for further policy development or a shift in the policy mix.

The last chapter examines the geographic and regional dimension relevant for FDI investments and its spillovers with the local and regional economy. The chapter also explores the role of subnational policies to complement national FDI and SME policies by examining two Slovak regions, Banská Bystrica and Košice, as case studies.

References

Alfaro, L. and M. Chen (2012), "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance", *American Economic Journal: Economic Policy*, Vol. 4(3): 30-55. [6]

Castro, F. (2000), *Foreign direct investment in the European periphery: The competitiveness of Portugal*, The University of Leeds, https://etheses.whiterose.ac.uk/2612/1/Castro_FB_LUBS_PhD_2000.pdf. [8]

Helpman, E., M. Melitz and S. Yeaple (2004), "Export Versus FDI with Heterogeneous Firms", *American Economic Review*, https://scholar.harvard.edu/files/melitz/files/exportsvsfdi_aer.pdf. [5]

Johanson, J. and J. Vahlne (1977), "The internationalization process of the firm - A model of knowledge development and increasing market commitments", *Journal of International Business Studies*, Vol. Vol. 8, No. 1. [7]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [1]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/d2b72934-en. [2]

OECD (2018), *Promoting innovation in established SMEs, OECD SME Ministerial Conference, Mexico City, Policy Note, 22-23 February 2018*, http://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf. [3]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*, OECD Publishing, Paris. [4]

Notes

[1] This conceptual framework has been developed as part of OECD-European Commission's cooperation on supporting EU Member States to harness FDI spillovers on SME productivity and innovation and its long version, including a review of literature, can be consulted at OECD (OECD, 2022, forthcoming[4]). Findings will contribute to OECD Investment Committee's FDI Qualities Initiative and the work on "Global value chains (GVCs): Seizing the opportunities for SMEs" of the OECD Committee on SMEs and Entrepreneurship.

[2] See (OECD, 2022, forthcoming[4]) and Castro (2000[8]) for a review of the literature.

2 Enabling conditions for FDI and SME spillovers in the Slovak Republic

This chapter assesses key enabling conditions for FDI spillovers on SMEs in the Slovak Republic as described in the conceptual framework in Chapter 1. It first examines the Slovak Republic's economic context, structure and geography and then moves to key factors related to the FDI spillover potential and SME absorptive capacities. The chapter points to the Slovak Republic's strengths, challenges and opportunities in these enabling conditions.

2.1. Summary of strengths, challenges and opportunities

The assessment of key enabling conditions for FDI spillovers on SMEs in the Slovak Republic reveals a number of strengths in current conditions and points to challenges and opportunities to further improve these fundamental conditions for spillovers to take place (Table 2.1). Chapters 4 to 6 pick up on these challenges and opportunities, identifying policy actions to address them.

Table 2.1. Strengths and challenges/opportunities of enabling conditions for FDI spillovers in the Slovak Republic

	Strengths	Challenges and opportunities
Economic context, structure and geography	• Strong pre-COVID economic growth performance, fueled by strong FDI inflows which supported industrial development and fast economic convergence, particularly until the 2008-09 global financial crisis. • Encouraging post-COVID economic outlook, with growth expected to resume in the 2022-23 biennium, supported by investment recovery and substantial inflows of EU funds. • Competitive export-led manufacturing industry, with a marked specialisation in the automotive sector. • Emergence of local agglomeration and clusters in diverse regions, with the potential to enhance SMEs ecosystems and regional attractiveness to international investors.	• Highly level of economic specialisation, with a high proportion of value added, investment, profits and wages concentrated in the manufacturing sector. • Strong reliance on a narrow range of exporting sectors, namely motor vehicle industry and other high-tech manufacturing. • Potential to increase the proportion of exports by Slovak SMEs, particularly to extra-EU destinations. • Significant regional disparities in terms of employment, output, foreign investment levels and business conditions. • Although the automotive industry was an important driver of the Slovak economic catch-up to higher income countries, its contribution to value added remains low relative to its output and employment shares. • At the time of drafting, high uncertainty due to Russia's war in Ukraine and possible impact on economic outlook and global value chains disruptions.
Potential for FDI spillovers	• Fair ratio of inward FDI stock to GDP by international standards and good attractiveness to incoming investment, historically due to several strengths such as geographic proximity to key EU markets and availability of relatively skilled and low-cost labour force. • Pronounced productivity premia of foreign firms over domestic, leaving room for FDI-SME spillovers. • Extensive operation of foreign MNEs in high-tech manufacturing through greenfield investment, which supports spillover potential.	• The productivity gap between foreign and domestic firms has remained substantially stable over time, suggesting limited spillovers to the local economy. • Limited diversification in terms of country of investment origin. • Prevalence of efficiency-seeking investment in labour intensive and low value-added industrial activities (e.g. car assembly), with low spillover potential.
Absorptive capacities of SMEs	• Fair balance of innovation and entrepreneurship skills among the adult population. • SMEs access to bank credit and other traditional means of financing on par with EU standard.	• Small proportion of SMEs ("missing middle") in the Slovak business population, which is rather dominated by a large share of low-productivity micro firms. • Low R&D expenditure in SMEs by international standards, despite recent improvements. • Scarce diffusion of alternative financing instruments (namely venture capital) among SMEs. • Emerging skill shortages in different areas, including digital skills. • Inefficiencies in market conditions and infrastructure.

Note: See Box 2.3 clarifying sectoral groupings (i.e. lower and higher technology manufacturing and lower and higher technology services) used in this table.

2.2. Economic, structural and geographical characteristics of the Slovak Republic

Before assessing other key enabling conditions of FDI-SME spillovers – namely the spillover potential of FDI and the absorptive capacities of Slovak SMEs – this section provides an overview of the economic, structural and geographical characteristics of the Slovak Republic. It examines (1) recent macroeconomic trends; (2) the structure of the Slovak economy and its main sectoral drivers of growth; (3) its level of integration in the global economy through trade; and (4) the economic geography factors that might affect the FDI-SME spillover potential.

The Slovak Republic's economy has been performing strongly until the COVID-19 crisis

In the Slovak Republic, the macroeconomic picture was positive as the country entered into the COVID-19 crisis, and so was the short-term economic outlook (OECD, 2019[1]). Over the last two decades before the pandemic, the Slovak Republic had ranked continuously among the fastest growing OECD economies (OECD, 2020[2]) and had been catching up with higher-income countries, while living standards converged towards the OECD average. The convergence process was particularly fast until the 2008-09 global financial crisis – which hardly hit the Slovak economy – and showed signs of moderating since then (OECD, 2022[3]). Nevertheless, GDP has grown steadily since 2008 at an average rate of over 3% per year. On the eve of the COVID-19 crisis, the labour market performance was also strong. Wages had been rising fast, although their level remained below the OECD average (OECD, 2020[2]). Unemployment had reached the historically low level of 7% (OECD, 2019[1]).

The economic impact of COVID-19 has been severe (Box 2.1). Despite the forceful policy measures deployed to contain the spread of the virus, GDP shrunk by over 6% in 2020. The economy rebounded in the second half of 2020, driven by the fast recovery of manufacturing output, but growth has slowed down since then, and GDP remained below the pre-crisis level in the third quarter of 2021 (OECD, 2022[3]). As the duration of the crisis remains uncertain, recovery is likely to be gradual (OECD, 2021[4]). The economy is projected to grow by 5% in 2022 and 4.8% in 2023, spurred by investment growth and the EU recovery and structural funds. However, a slower absorption of EU funds, or the adoption of new confinement measures prompted by a deterioration of the health situation, might slow down the recovery pace (OECD, 2022[3]) (OECD, 2021[4]).

Additionally, the recovery is also dependant on the future developments and the economic impact of the Russian invasion of Ukraine which started in the first quarter of 2022, exacerbating geopolitical tensions and contributing to the tightening of global market conditions (Box 2.2).

Box 2.1. Exposure of the Slovak economy to COVID-19 disruptions

The Slovak Republic was more vulnerable to lockdowns and business disruptions than other OECD countries due to: (1) the composition of its business population, characterised by a high proportion of highly exposed micro firms; (2) its economic structure, with large shares of employment in lower technology services, which were more hard hit by the crisis, and a marked concentration of production and exports in a limited number of industries (namely automotive); and (3) its position in global value chains (GVCs), as a small export-oriented economy highly exposed to shifts in foreign investment and demand, particularly from European trading partners.

The very large share of low-productivity micro-firms (see *infra* – SME absorptive capacity) accentuated the vulnerability of the Slovak business sector on the eve of the crisis. Smaller businesses were significantly impacted by the COVID-19 pandemic, with both their contribution to value added and employment dropping in 2020 (OECD, 2021[5]). The harsh impact of the COVID-19 crisis on smaller

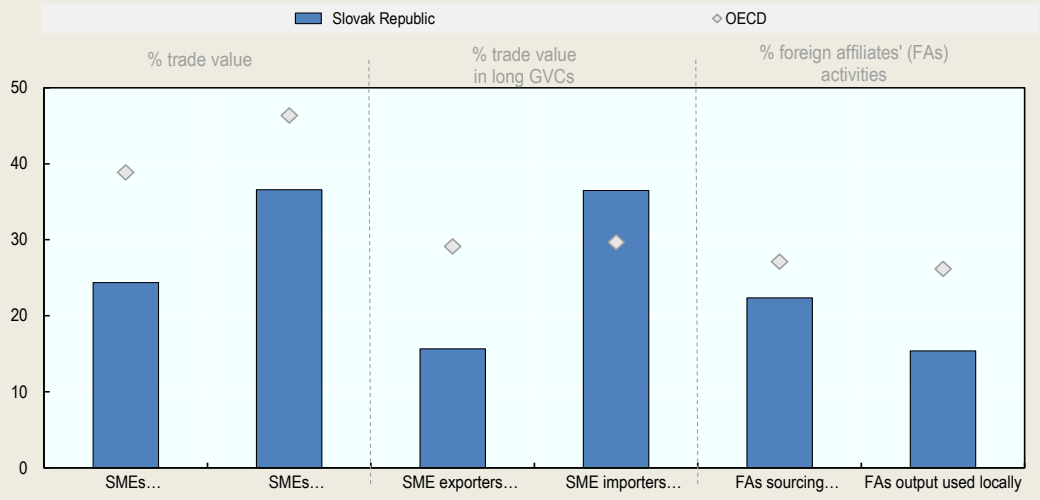
firms risks to exacerbate the duality of the Slovak economy, characterised by significant productivity differences between domestic micro, small and medium-sized firms, mostly operating in services, and the large, highly productive, often foreign-owned firms which dominate the manufacturing industry (OECD, 2022[3]).

From a regional standpoint, East Slovakia was the most exposed, with about 44% of jobs at risk (OECD, 2021[5]). This is due to the high regional concentration of lower technology services (e.g. wholesale and retail trade, construction, real estate services), which were more severely affected by lockdowns and business disruptions and experienced more pronounced job losses and economic downturn (OECD, 2021[5]). The manufacturing sector was less severely hit. Nonetheless, industrial production lost momentum and the recovery is likely to be gradual (OECD, 2022[3]) (OECD, 2021[4]). In the automotive sector, car production and exports rebounded in the second quarter of 2021 to slow down again in the third quarter, weighed down by supply-side disruptions (e.g. delayed suppliers deliveries, out-of-stock intermediate goods) (OECD, 2021[4]) (Guilloux-Nefussi, 2021[6]). Recovery is expected to resume from mid-2022, with the improvement of the health situation and the gradual easing of supply-side strains (OECD, 2021[4]) (Guilloux-Nefussi, 2021[6]).

The COVID-19 pandemic has raised new concerns about the vulnerability of GVCs and the potential reshoring of production near headquarters in key markets. The Slovak economy risks to be more exposed to such disruptions, due to its strong reliance on a small number of exporting sectors and the high share of domestic employment embodied in foreign demand (over 40% in 2015, i.e. one of the highest rates among OECD countries) (OECD, 2022[3]) (OECD, 2019[1]). If the limited engagement of Slovak SMEs in extra-European international trade reduces their exposure to potential disruptions in GVCs, their significant integration into long value chains as importers (about 37% against an OECD average of 30%) is a potential source of vulnerability (Figure 2.1) (OECD, 2021[5]).

Figure 2.1. International trade and GVC exposure

% of trade value, trade value in long GVCs and foreign affiliates' activities by firm size, 2015 or 2016



Note: See (OECD, 2021[5]), *SMEs and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, for the methodology behind this figure.
Source: (OECD, 2021[5]), *SMEs and Entrepreneurship Outlook 2021*, Country Profile: Slovak Republic, OECD Publishing, Paris.

Box 2.2. Russia's war against Ukraine and its possible impact on the Slovak economy

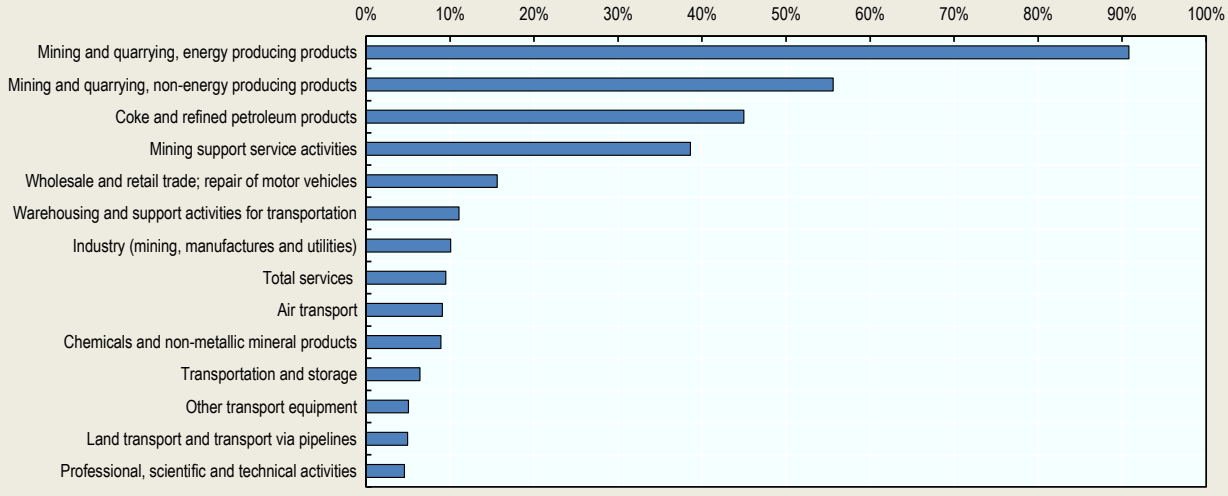
On 24 February 2022, Russia launched a military offensive at Ukraine, triggering a humanitarian crisis and massive economic and trade sanctions in response by Canada, the European Union, the United States and East Asian allies. As a NATO and EU member country, the Slovak Republic has backed the measures undertaken to deter the Russian offensive. As Russian forces advance to the west and fighting intensifies, the world plunges into high insecurity.

The war is likely to have a non-negligible impact on the economic outlook of the Slovak Republic due to the country's geographic proximity to the conflict and its multiple geopolitical and economic linkages with both Ukraine and Russia.

Russia is an important source of intermediate inputs for the Slovak economy, particularly the mining and quarrying industry, energy production and the manufacturing of coke and refined petroleum products (Figure 2.2). Exposure to Russia through international trade is high. Russia accounts for a 7.5% share of Slovak imports in industry (including mining, manufactures and utilities). In mining support services, the Russian share in total imports is about 35% (Figure 2.3). Russia is also an important export market for Slovak manufacturing products, particularly the motor vehicle industry which accounts alone for about half of total exports to Russia (OECD, 2021[7]).

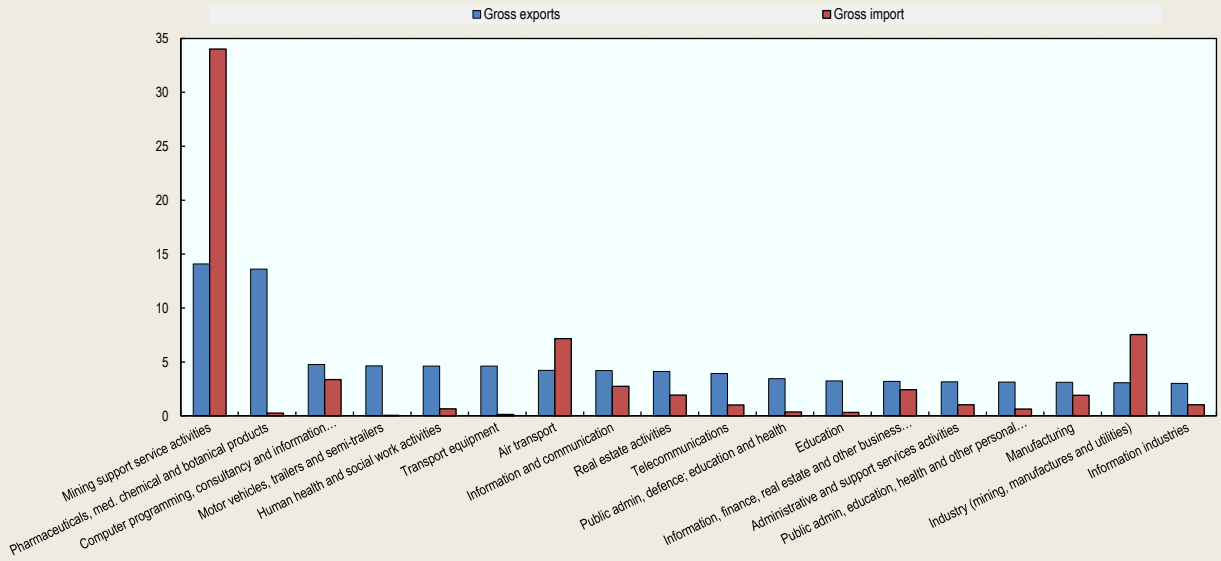
Supply chain and trade disruptions consequent to the Russia-Ukraine crisis are likely to have an asymmetric impact across Slovak regions. Eastern regions (with a traditional industrial specialisation in metallurgy, mining and chemical industries) risk to be more severely hit, overall putting more pressure on regional inequality (Chapter 6) (OECD, 2022[8]).

Figure 2.2. Share of Russian intermediate products in the Slovak Republic's total gross imports of intermediate products, 2018



Source: (OECD, 2021[7]), Trade in Value Added (TiVA) database, 2021 ed.: Principal Indicators.

Figure 2.3. Russia's share in total gross exports and imports of the Slovak Republic, 2018



Source: (OECD, 2021[7]), Trade in Value Added (TiVA) database, 2021 ed.: Principal Indicators.

Furthermore, as of April 2022 it is estimated that more than 5.3 million people have fled Ukraine since the invasion started, many crossing into neighbourhood countries, including the Slovak Republic (which borders Ukraine in the East) (UNHCR, 2022[9]). As of 1 May 2022, the Slovak Republic was the sixth destination as per number of arrivals, having welcomed around 6% of total Ukrainian refugees (Table 2.2).

In the first two days of the conflict, approximately 7 500 Ukrainian citizens crossed the Slovak-Ukrainian border, against an usual average number of 1 400 persons per day (Ministry of Interior of the Slovak Republic, 2022[10]). As an immediate response to the expected massive rise in migration inflows from Ukraine, the Slovak Government declared a state of emergency and established dedicated hotspots in several key locations along the eastern border, to facilitate checks and security operations by the police and military forces (Ministry of the Interior of the Slovak Republic, 2022[11]). The integration of incoming migrants into local communities and labour markets will also require quick policy responses, to prevent and mitigate longer-term economic and social challenges. In the presence of appropriate policy support, substantial inflows of skilled workers from Ukraine into the Slovak less developed regions might become a factor of development of local SMEs and entrepreneurial ecosystems and foster the emergence of new business opportunities in the aftermath of the crisis.

Reversely, the return of male Ukrainian workers to fight is unlikely to have strong impact on the labour market conditions and communities of the Slovak Republic, the population of Ukrainian-born immigrants living in the country (7 140 persons) being fairly limited compared to neighbouring countries such as Poland (308 274) or Hungary (22 212).

Table 2.2. Refugees fleeing Ukraine since 24 February 2022, by country of destination

Number of persons as of 1 May 2022*

Country of destination	Number of refugees (headcount)	% of total refugees
Poland	3 056 826	51.4%
Romania	825 874	13.9%
Russian Federation	681 156	11.5%
Hungary	530 157	8.9%
Republic of Moldova	447 604	7.5%
Slovak Republic	**379 447**	**6.4%**
Belarus	25 002	0.4%
Total	**5 946 066**	

Note: *Figure for Romania and the Russian Federation is of 30 April. Figure for Belarus is of 28 April. Where possible, statistics reflect further movements of refugees, to avoid double counting. The accumulated data in this table is higher than the total number of refugees fleeing Ukraine presented above since it also takes into account people crossing the border between Romania and Moldova
Source: UNHCR (2022), Operational Data Portal, Ukraine Refugee Situation, https://data2.unhcr.org/en/situations/ukraine (accessed 14 March 2022).

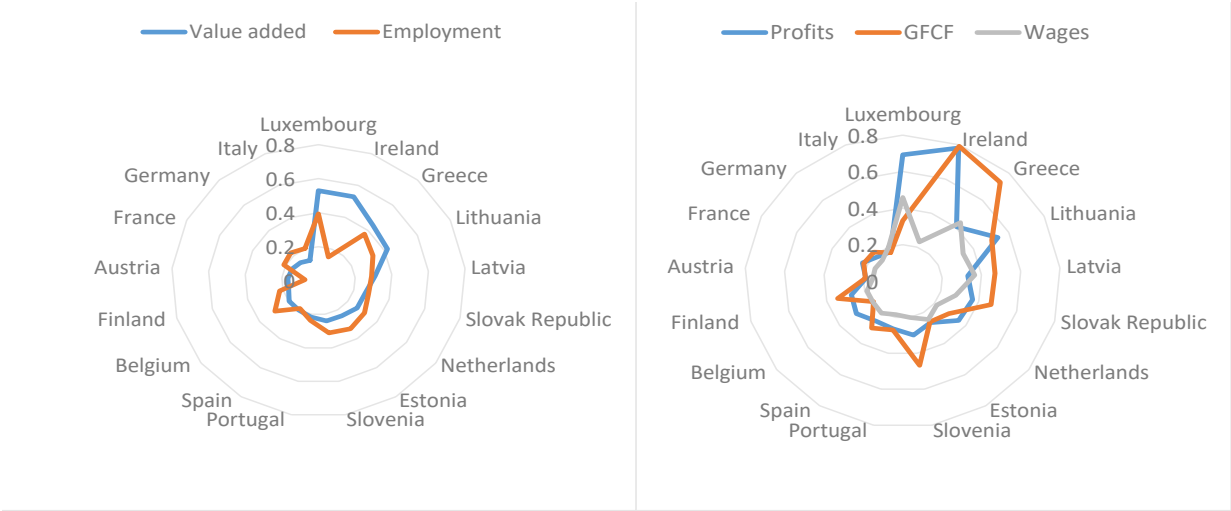
The Slovak economy is highly specialised, with a strong industrial base

The Slovak Republic shows a high level of economic specialisation (Figure 2.4). Most of the country's value added and employment, are concentrated in a couple of sectors, mainly in the manufacturing industry (which accounts for over 20% of total value added) and a number of low-tech sectors, such as wholesale and retail trade, real estate activities and construction. This distribution is consistent with the country's development stage. Manufacturing pays the largest share of wages (24%) followed by wholesale and retail trade (15%). A large proportion of wages is also paid by the public administration (10%) and a number of labour-intensive sectors, including accommodation and food services, agriculture, or administrative and support services where the productivity gains associated with digitalisation may have not been fully appropriated.

Profits and productive investments are even more strongly concentrated. Investment (as measured by the gross fixed capital formation – GFCF) is particularly more intense in manufacturing, real estate and transport and storage services, which together account for around half of the total. These sectors, together with construction and wholesale and retail trade, also generate in relative terms more profits as measured by gross operating surplus (roughly 10-20% each). This sectoral concentration of productive assets, i.e. profits that remain the first source of finance for most firms (i.e. SMEs) and tangible and intangible investments, signal limitations to the country's capacity to diversify economic structure and activities in a near term.

Figure 2.4. Specialisation profile of the Slovak Republic

Krugman indices of relative concentration of value added, employment, profits (gross operating surplus), gross fixed capital formation (GFCF), wages and salaries, selected EU countries, 2014-17



Note: The Krugman specialisation index is a standard index among the specialisation measures. It reveals countries' relative advantages in relation to a reference group. The higher the index, the more the economic structure of one country deviates from the reference group, i.e. from the average industry structure of the reference group of countries. As compared to absolute measures of specialisation, relative indices take into account that certain industries are naturally larger than others, also a sign of a vital, advanced economy, but this does not necessarily imply specialisation (Palan, 2010[12]). Selected EU countries are euro area countries.
Source: Based on STAN Database for Structural Analysis (ISIC Rev. 4 SNA08) 2020 ed. (accessed 05 January 2022).

The automotive industry drives the performance of Slovak manufacturing

In economies dominated by technology-intensive sectors, FDI-SME spillovers show greater potential to spur aggregate productivity and innovation. Figure 2.5 compares the structure of the Slovak economy with that of some selected OECD peers. Industries are grouped in four main categories (lower and higher technology manufacturing and lower and higher technology services) based on their technological intensity. Box 2.3 clarifies the sectoral classification that is used here, as well as in the remainder of this report. The purpose of this sectoral classification is to show the technological intensity of the Slovak economy, which is key to understand the potential for FDI-SME knowledge and innovation spillovers.

Box 2.3. Classification of economic activities

The conceptual framework described in Chapter 1 explains that FDI's local embeddedness and absorptive capacities of SMEs are key determinants for FDI spillovers on SME productivity and innovation to take place. They depend, among other things, on the economic sectors and activities in which investment takes place and SMEs are operating. Given the focus on productivity and innovation spillovers, the sectoral analysis in this and the following chapters is based on technology- or R&D-intensity. As such, most analysis based on sectors (e.g. regarding economic structure, including of SMEs; GVC integration both through trade and FDI; and FDI-SME diffusion channels) focuses on four main sectoral groupings based on R&D-intensity, which are adapted from Galindo-Rueda and Verger (Galindo-Rueda and Verger, 2016[13]): higher technology manufacturing, lower technology manufacturing, higher technology services and lower technology services. Table 2.3 provides an overview of the industries covered in these groupings. R&D-intensity is measured by the ratio of business R&D expenditure relative to gross value added in each industry covered in a given group. It is important to note that sectoral classifications may vary across data sources covered in this report. Table 2.3 lists industries based on ISIC Rev. 4 two-digit sectors, which is the classification applied for most of the data used (e.g. OECD and Eurostat data). Commercial datasets like Financial Times' fDi Markets and Refinitiv have their own classification of sectors but for the purpose of this report they were also classified according to the four groupings described above.

The classification has the caveat that R&D-intensity is an imperfect measure of innovation and innovation potential across industries. Not all firms that are successful at developing or implementing innovation are necessarily R&D performers. Many of these firms are successful adopters of technology that they have not developed. Measuring R&D intensity or embedded R&D in their purchases may not effectively characterise the innovative performance of firms or industries. Other OECD indicators measure skill intensity, patenting activities and innovation by industries that facilitate a more refined description of the overall knowledge intensity in different economic activities, although these measures are not always widely available across a majority of OECD countries and partner economies (Westmore and Adamczyk, 2019[14]). Another caveat of this classification is related to the fact that it is not entire sectors that involve either higher or lower technologies but it is specific activities or segments within these sectors that involve different technology intensities. This caveat needs to be considered for any conclusions made in this report.

Table 2.3 Sectoral grouping based on R&D-intensity

Economic grouping	Industries covered based on ISIC Rev. 4
Lower technology manufacturing	Food products, beverages and tobacco; Textiles, wearing apparel, leather and related products; Wood and products of wood and cork; Paper products and printing; Rubber and plastic products; Other non-metallic mineral products; Basic metals; Fabricated metal products
Higher technology manufacturing	Chemicals and pharmaceutical products; Computer, electronic and optical products; Electrical equipment; Machinery and equipment; Motor vehicles, trailers and semi-trailers; Other transport equipment; Other manufacturing; repair and installation of machinery and equipment
Lower technology services	Wholesale and retail trade; repair of motor vehicles; Transportation and storage; Publishing, audio-visual and broadcasting activities; Financial and insurance activities; Real estate activities
Higher technology services	IT and other information services; Professional, scientific and technical activities; Administrative and support service activities.

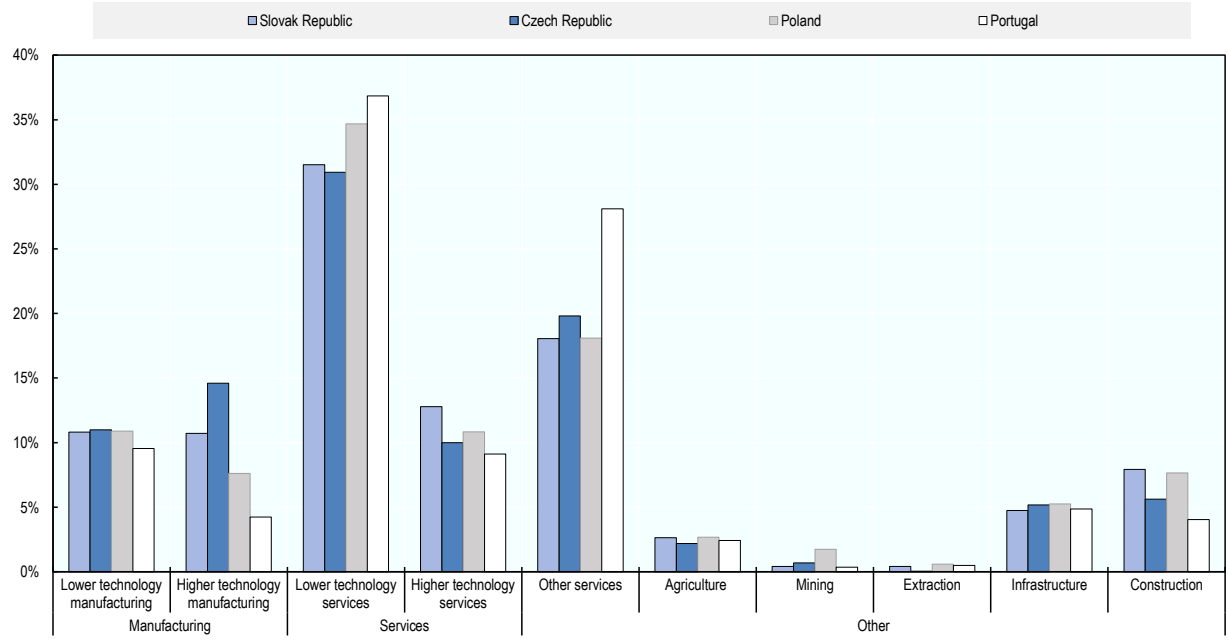
Note: A number of industries are not classified into these four groupings as the analysis in this report deliberately avoids focusing on these industries. They include: Mining and extraction (Mining and quarrying; Coke and refined petroleum products); Infrastructure (Electricity, gas, water supply, sewerage, waste and remediation services; Telecommunications); Other services (Accommodation and food services; Public administration and defence; Compulsory social security; Education; Human health and social work; Arts, entertainment, repair of household goods and other service activities). These industries are either highly specialised and would require a more focused analysis, or their role/potential for FDI-SME linkages and spillover is limited

Medium-tech industries make a large contribution to manufacturing value added. The share of manufacturing in the economy's total value added is 22%, which is higher than in Poland or Portugal (19% and 14% respectively) but lower than in the Czech Republic (26%), mostly because of a more limited contribution of higher-tech industries (see Figure 2.5). The motor vehicles industry alone is responsible for 20% of total manufacturing value added (and half of high-tech manufacturing value added), driving the country performance in this sectoral group. Machinery, electrical equipment and other high-tech manufacturing industries contribute a further 2% of total value added each. Lower technology manufacturing – mainly fabricated metal products; rubber and plastics; and wood and paper products and printing – account for 11% of total value added, a share similar to that reported by comparators.

The Slovak services sector is dominated by, at the two extremes of the tech spectrum, low- tech and knowledge-intensive activities. Wholesale and retail trade, real estate activities, and transport and storage overall account for almost 32% of the economy's total value added. This is comparable to what can be observed in some benchmarking countries like the Czech Republic, Poland and Portugal, which report a 30-40% share of all value added in lower technology services. The value added of higher technology services (e.g. IT and other information services) is 13% of the total, a larger share than in any of the selected comparators. Other services activities – including public administration and defence, health and social work and education – are responsible for an additional 18% of total value added.

Figure 2.5. Structure of the Slovak economy and selected OECD countries

% of total value added by key sectoral groups, 2018*



Note: For a clarification of the sectoral classification based on technology intensity used in this figure, as well as throughout the rest of this report, see Box 2.3. *Data for Portugal are of 2017.
Source: OECD STAN Database for Structural Analysis (ISIC Rev. 4 SNA08) 2020 ed. (accessed 05 January 2022).

Box 2.4. The automotive value chain in the Slovak Republic

The development of the automotive industry played a major role in Slovak recent economic growth. Over the past 10 years, the number of cars produced has increased steadily, making the Slovak Republic the leading per capita car producer in the world (OECD, 2019[1]). In 2018, the automotive sector accounted for about 27% of exports (compared to less than 8% in the EU) and 14% of total output, which is high for international standards and represents an increase of more than 5% since 2010 (EC, 2020[15]). Automotive also accounts for around 3.5% of total employment in the Slovak Republic (OECD, 2022[3]).

In its current configuration, the Slovak automotive sector is characterised by the presence of a few highly-productive and export-oriented multinationals, focussed on assembly activities (Volkswagen, Kia Motors, PSA Peugeot Citroën and Jaguar Land Rover). These are backed up by a number of local firms that supply car parts to foreign manufacturers and export to Germany and the other countries of the Central and Eastern European (CEE) automotive cluster. The western part of the country, and particularly the Žilina and Trnava regions, has received the most significant investment from the automotive industry and host the majority of car production activity. The European Automobile Manufacturers' Association (ACEA) estimates 301 automobile assembly and engine production plants operating in Europe in 2022, 194 of which are within the European Union (EU27) (ACEA, 2021[16]) (see note below). The Slovak Republic counts four plants for passenger car production and one for engine production. Neighbours such as Germany has 44, Poland 18, the Czech Republic 8, or Austria 5, placing the Slovak Republic at the heart of the European car industry. In addition, the Slovak Investment and Trade Development Agency (SARIO) estimates that a network of more than 350 automotive suppliers operates across the country, most being established in the Western regions (SARIO, 2022[17]).

Notwithstanding its significant contribution to the Slovak total output, the value added produced by the automotive industry reached only about 5% of the gross total in 2018. Also, this ratio has been slightly falling since 2008, in spite of the simultaneous increase in the number of cars produced. Therefore, the position of the Slovak Republic in the automotive global value chain does not seem to have significantly evolved, even though the size of the sector has been increasing in recent years globally, along with its labour productivity (OECD, 2019[1]). This situation is aligned with that of Hungary and the Czech Republic, but contrasts for instance with the qualitative improvements that could be observed in the German automotive industry, where productivity gains were accompanied by an increased in the ratio of value added to gross output (OECD, 2019[1]). In other words, over the last decade the Slovak automotive industry experienced a more quantitative than qualitative progression (OECD, 2019[1]).

This trend may be related to the prevalence of low value-added activities (fabrication and assembly of imported input) in Slovak automotive. Although foreign affiliates account for the largest share of R&D spending in the automotive sector, their investment tends to generate scarce local technology diffusion, which hampers the sector's potential to upgrade to more knowledge-intensive activities. In the long term, further obstacles to the sector's development and technological upgrade may stem from skilled labour shortages and difficulties to adjust to technological changes in the industry, including the increasing automation and the development of electric or hydrogen-powered cars (OECD, 2019[1]; OECD, 2022[3]).

Note: These numbers do not include automotive suppliers, smaller-sized vehicle and engine manufacturers, as well as custom bodybuilders.

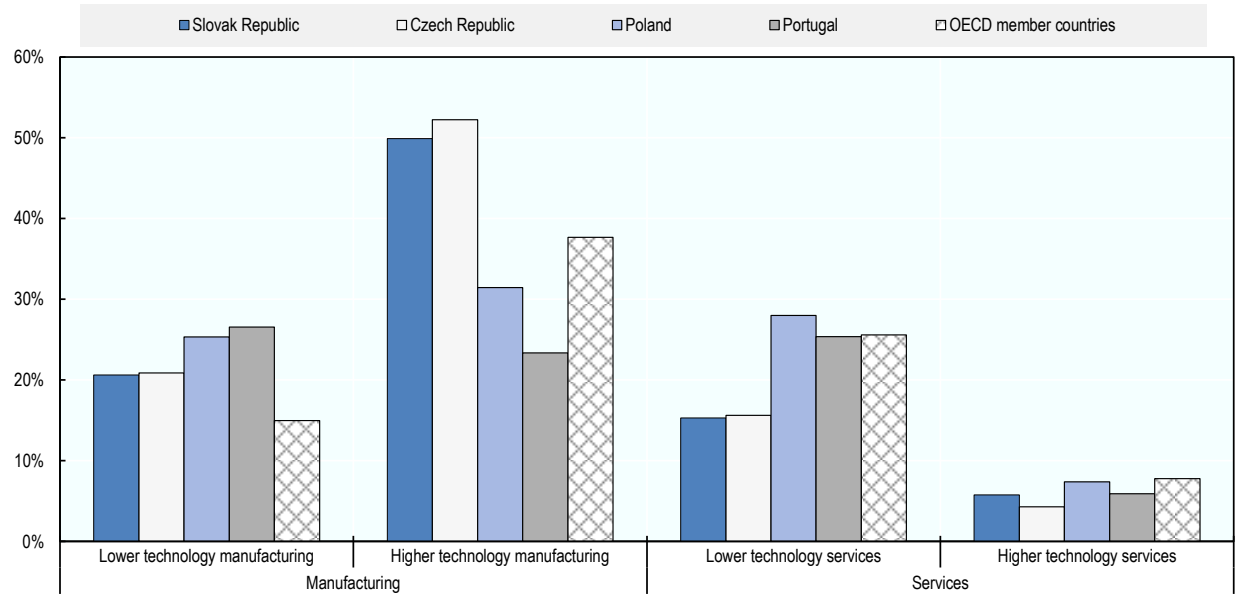
Half of total exports are high-tech manufactured products, especially motor vehicles

Foreign direct investment (FDI) was an important driver of Slovak growth in past decades (see *infra* – FDI spillover potential). Large FDI inflows contributed to the country's rapid integration into global value chains (GVCs), which in turn led to an increase of imports and exports. As a result, the country's openness to trade has increased steadily over the last twenty years. Slovak exports in relation to GDP stood at 92% in 2019, well above the EU average in the same year (49%) and higher than in peer economies like Hungary (81%), Lithuania (77%) or the Czech Republic (73%) (OECD, 2021[18]).

Exports are concentrated in high-tech manufacturing and the automotive industry drives the Slovak Republic's export performance. High technology manufacturing accounts for half of all exports in the Slovak Republic – a similar share as the Czech Republic, but much larger than in Portugal (23%). The motor vehicles industry alone is responsible for over one-quarter of total exports (OECD, 2021[7]), followed at a distance by machinery and equipment (6%), computer and electronic products (5%), and electrical equipment (4%). Lower technology manufacturing is responsible for over 20% of total exports, once again at par with the Czech Republic, but below the almost 30% share reported by Portugal. In line with the country's value added structure, exports of services are smaller and dominated by lower technology activities (15%). Services account for 24% of total exports, which is as much as in the Czech Republic but much less than in Portugal (44%) or Poland (37%).

Figure 2.6. Structure of Slovak exports and selected OECD countries

Key sectoral groups, % of total gross exports, 2018



Note: See Box 2.3clarifying sectoral groupings used in this figure.
Source: (OECD, 2021[7]) OECD Trade in Value Added Database (TiVA), 2021 ed. (accessed 05 January 2022).

Slovak SMEs contribute more to the country's international trade as indirect exporters. Available data from 2014 show that the direct contribution of SMEs to Slovak exports is limited by international standard. SMEs only account for 34% of gross exports in the Slovak Republic, below the average share in OECD countries (40%) and less than in comparator economies like Poland (38%) or Portugal (60%) (OECD, 2019[19]). The picture changes, however, when taking into account SMEs indirect exporting activities (e.g. provision of input to larger direct exporters): SMEs are indeed responsible for 56% of the total value added in Slovak exports – one of the highest shares in the OECD, more than in Poland (50%) or the Czech Republic (47%).

In other words, as it is commonly observed in OECD countries, looking only at direct exports by SMEs under-represents their actual engagement in the country's gross exports. The Slovak Republic has one of the most significant gaps between SMEs share in gross and value added exports in the OECD – 22%, against a 10% average difference in OECD countries for which data are available (OECD, 2019[19]). This indirect channel of GVC integration allows SMEs to access foreign markets without incurring trade related costs.

Slovak SMEs show a high propensity to export within the European single market, while they seem to face constraints in exporting to extra-EU destinations. In 2019, almost half of Slovak small firms exported within the EU, the highest share among OECD countries (OECD, 2022[20]) (OECD, 2021[21]). The share of medium-sized intra-EU exporters is also comparatively high across the OECD (almost 70% in 2019, compared to 46% in Portugal and 43% in the Czech Republic). However, Slovak SMEs rank lower across OECD countries in terms of extra-EU exports. In 2019, only 9% of small firms and 30% of medium-sized firms exported outside the EU compared to an OECD average of 15% and 38% respectively (OECD, 2022[20]) (OECD, 2021[21]). Exporting to farther destinations may imply higher costs and risks, but could also be an opportunity to diversify trading partners and increase resilience. Slovak SMEs might build on their pre-existing intra-EU export experience to reach more distant markets and increase profitability (OECD, 2021[5]).

A number of promising regional industry clusters have emerged…

Recent years witnessed the successful rise of diverse regional clusters in the Slovak Republic (OECD, 2021[21]). These often emerged spontaneously from the bottom up, triggered by FDI and the regional entrepreneurial ecosystems. Some industry clusters are certified and supported by formal organisations, as in the case of the IT Valley in Košice; the Automotive Cluster West Slovakia in Trnava; the Electrotechnical Cluster in Galanta; and the Slovak Plastic Cluster in Nitra (see Table 2.4). In other cases, such as the emerging aluminium processing cluster in the Banská Bystrica region, the cluster network is not yet formalised (OECD, 2021[21]). Industry agglomeration and clustering is currently one of the most promising areas for regional entrepreneurship and SMEs development in the Slovak Republic, and may contribute to reinforce tacit knowledge transfer and spillovers from foreign MNEs and local SMEs by facilitating their geographic proximity (OECD, 2021[21]) (OECD, 2022, forthcoming[22]).

Table 2.4. Selected certified cluster initiatives in the Slovak Republic

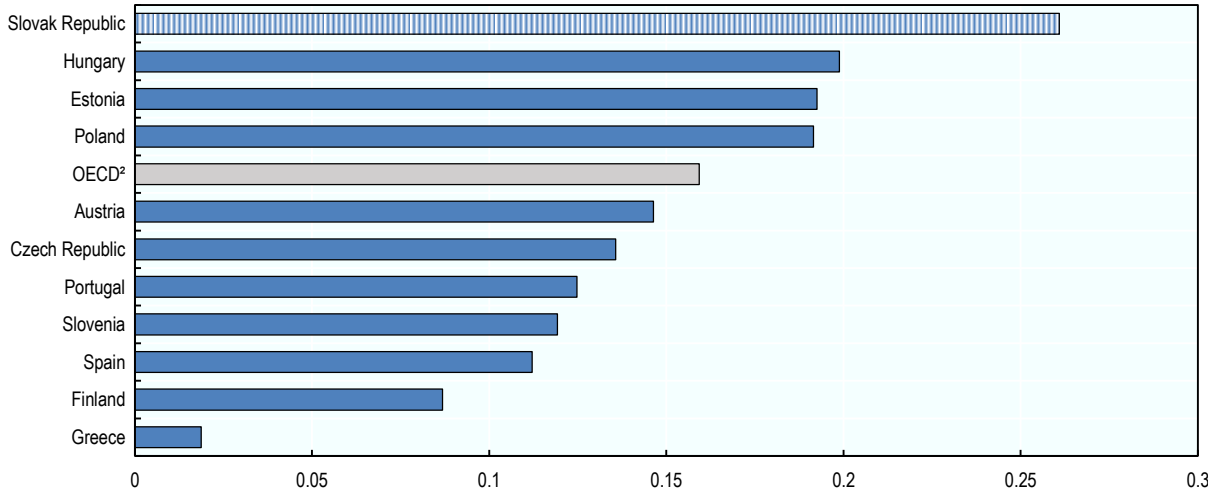
Cluster	NUTS III Region	NUTS II Region	Sector
Košice IT Valley	Košice	Eastern Slovakia	ICT
Electrotechnical Cluster	Trnava	Western Slovakia	ICT
Cyber Security Cluster	Žilina	Central Slovakia	ICT
Automotive Cluster West Slovakia	Trnava	Western Slovakia	Automotive
Slovak Plastic Cluster	Nitra	Western Slovakia	New materials and chemistry
Bioeconomy Cluster	Nitra	Western Slovakia	Biotechnology
Energy Cluster of Prešov Region	Prešov	Eastern Slovakia	Energy
NEK - National energy cluster	Bratislava	Bratislava Region	Energy
Slovak Association of Photovoltaic Industry (SAPI)	Bratislava	Bratislava Region	Energy
Energy Environmental Cluster from Ipel region	Banská Bystrica	Central Slovakia	Energy
Regional Innovation Industrial Cluster Rimavská Kotlina (REPRIK)	Banská Bystrica	Central Slovakia	Circular economy
House of Events Innovation (HEI)	Bratislava	Bratislava Region	Creative industries
Slovak Smart City Cluster	Prešov	Eastern Slovakia	Smart cities
KRR - Cluster of regional development	Trnava	Western Slovakia	Sports, leisure and tourism
Industry Innovation Cluster	Žilina	Central Slovakia	Production and engineering

Notes: The table refers to the current EU NUTS classification (Nomenclature of territorial units for statistics) 2021.
Source: Union of Slovak Clusters (http://uksk.sk); European Secretariat for Cluster Analysis (ESCA) (www.cluster-analysis.org/).

… that could help reduce regional economic disparities

As it is discussed in more details in Chapter 6 of this report, economic imbalances between Slovak regions are among the sharpest observed in OECD countries (Figure 2.7). There are particularly important disparities in terms of employment and income between the Bratislava region, and to some extent the whole of the west of the Slovak Republic, and the centre and east of the country. These disparities have deepened in the last two decades, in spite of the favourable national macroeconomic development (OECD, 2021[21]). Factors underlying regional economic disparities include the industrial decline and shift in regional production experienced by some regions (e.g. Košice and Banská Bystrica, both affected by the downturn of production and employment in heavy industries like mining and chemicals – see also Chapter 6 on the industrial profile of these regions). Skill shortages in the eastern regions, jointly with poor labour mobility between regions, also contribute to economic disparities. Furthermore, the uneven quality of transport infrastructure affects regional development, exacerbating the difficulties of the east (OECD, 2021[21]).

Figure 2.7. Gini index of inequality of GDP per capita across regions[1], 2013



Note: 1. The Gini coefficient is calculated for GDP per capita across regions with equal weight to each region regardless of its size, and it has a range from zero (no disparity) to one. Increasing values of the Gini coefficient thus indicate higher inequality in regions. 2. Unweighted average.
Source: (OECD, 2021[21]) based on OECD (2017), *OECD Economic Surveys: Slovak Republic 2017*, OECD Publishing, Paris.

Slovak regions also differ in their attractiveness to foreign investors. Traditionally, FDI has been concentrated in the west, and particularly in the Bratislava region (which roughly accounts for 60-70% of total FDI), reinforcing economic disparities with the centre and east of the country (OECD, 2021[21]). Since 2017, there has been some increase in FDI in Central and Eastern Slovakia, but the performance gap with the west remains significant. The recent development of local clusters in the automotive and electronics sectors further increased the attractiveness of Western Slovakia as an FDI destination relative to the rest of the country. Key factors behind the stronger performance of western regions in terms of FDI attraction are their better entrepreneurial environment, skills endowment and infrastructure, including the proximity of the Vienna airport (OECD, 2021[21]) (OECD, 2022[8]).

SMEs and entrepreneurial activity also varies significantly across Slovak regions and local districts, reflecting local disparities in employment, output and foreign investment levels. There are important gaps in business conditions among Slovak regions, including entrepreneurial attitude, the quality of local regulation, and the availability of R&D and innovation infrastructure (OECD, 2021[21]). Western and northern regions have higher SMEs density compared to eastern and southern-central regions (OECD, 2021[21]). Some regions (e.g. Košice) also have important internal differences across local districts, with

areas of high entrepreneurial activity (OECD, 2021[21]). In the stronger economic areas of the country, SMEs and entrepreneurship development face specific constraints, which are mostly related to skill shortages. The Bratislava region, for instance, has a far better entrepreneurial ecosystem than any of the other regions and has developed into a key national technology hub: however, the region struggles to enhance the local skills endowment and to retain the most talented workers from looking for better opportunities abroad (OECD, 2021[21]). The city of Košice is also starting to emerge as a national entrepreneurial hub, and is likely to face some of the same issues as Bratislava (OECD, 2021[21]).

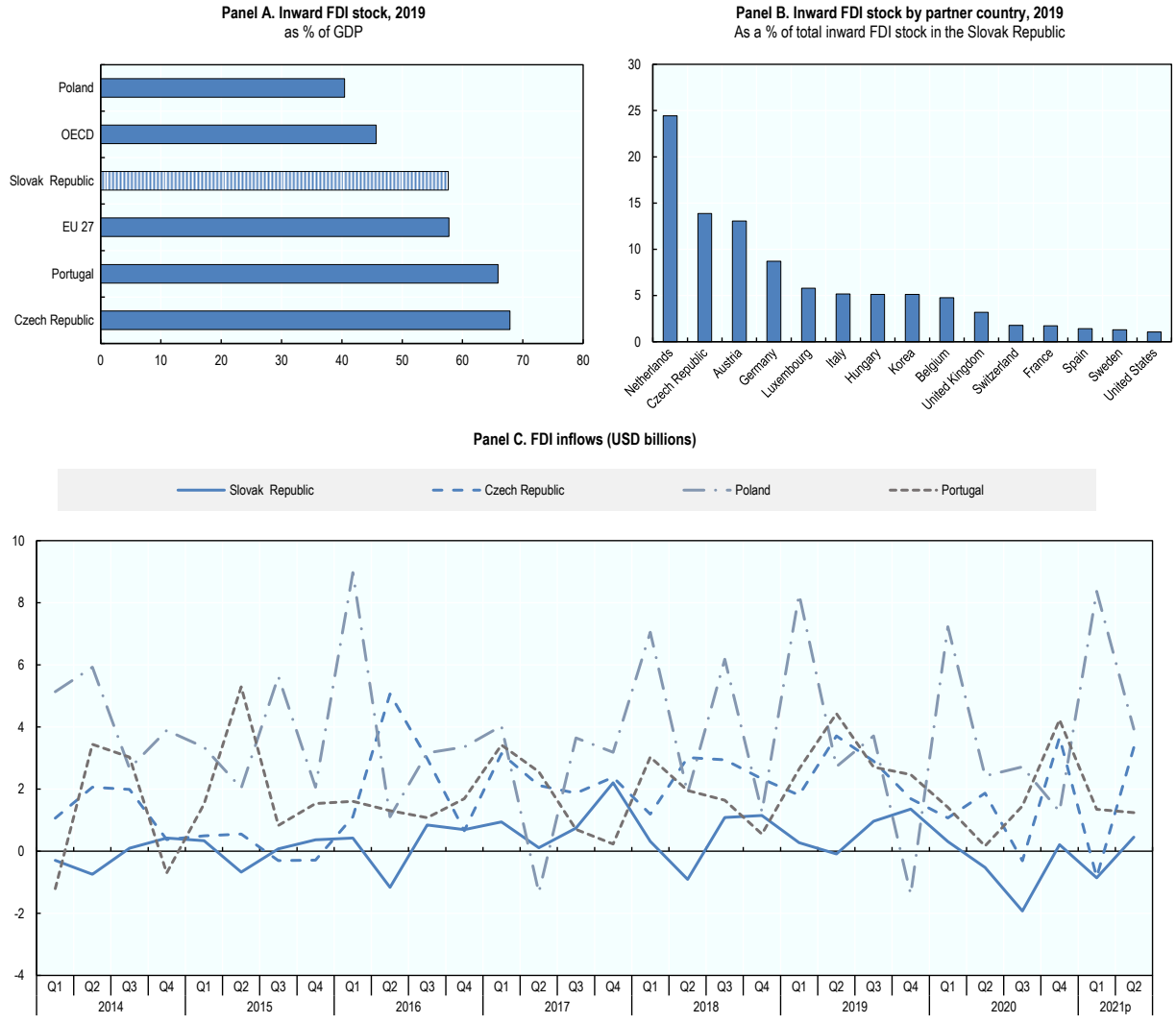
2.3. Potential for FDI productivity spillovers

This section assesses the spillover potential of FDI in the Slovak Republic. First, it evaluates the volume of FDI inflows and the main inward FDI trends. Then it looks at the productivity gap between foreign affiliates and domestic SMEs, which is a key determinant of the FDI-SME spillover potential. Subsequently, this section assesses the level of embeddedness of FDI in the Slovak economy by looking at relevant characteristics such as the FDI prevalent type, motives, country of origin, and regional and sectoral distribution.

FDI inflows were a key driver of the Slovak Republic's economic catch-up to higher income countries

Despite some signs of a recent inflection, the Slovak Republic remained successful in attracting FDI. FDI was an important driver of the Slovak growth in past decades. In the 2000s, large FDI inflows contributed to the Slovak Republic's rapid integration into GVCs and international trade, helping to transform the country into a key European exporting platform, with benefits to the whole economy (OECD, 2019[1]). FDI inflows became more subdued in the years following the 2008 global financial crisis. Nevertheless, the FDI stock represented 58% of GDP in 2019 (Figure 2.8, Panel A) – a share comparable to that of the EU 27 (58%), as well as to other OECD economies like Sweden (59%), Hungary (57%) and Spain (52%) (OECD, 2021[23]; OECD, 2021[24]). Key factors of the Slovak Republic's success in attracting FDI include its geographic proximity to the most developed European markets and the availability of a relatively skilled but low cost labour force. Euro membership since 2009, and a cautious budgetary, financial and tax policy also contributed to improve the investment climate and boost inward FDI (OECD, 2019[1]).

Figure 2.8. Inward FDI patterns in the Slovak Republic



Notes: p: Preliminary data
Source: Panel A and C: OECD, FDI in Figures, 15 October 2021, www.oecd.org/investment/statistics.htm (accessed 20 January 2022). Panel B: OECD International Direct Investment Statistics (19 May 2021 update) (accessed 17 December 2021).

The COVID-19 crisis severely affected FDI inflows into the Slovak Republic. Year 2020 witnessed massive disinvestment with FDI inflows falling by almost 180% relative to 2019 (Figure 2.8, Panel C). This decline was significantly higher than in other OECD-EU economies, like for instance the Czech Republic, where the year-to-year decline of FDI inflows in 2020 remained below 40%. FDI inflows rebounded in the last quarter of 2020 as the Slovak economy showed signs of recovery (see *supra* – Economic, structural and geographical characteristics of the Slovak Republic), but slowed down again with the new year. Future trends in foreign investment inflows to the Slovak Republic will also depend on the gradual recovery of European neighbouring economies, including key source markets of Slovak FDI like Germany and the Czech Republic. The Russia-Ukraine crisis started in the first quarter of 2022 is also likely to weigh on inward investment trends, as well as on the broader economic Outlook of the Slovak Republic (Box 2.2).

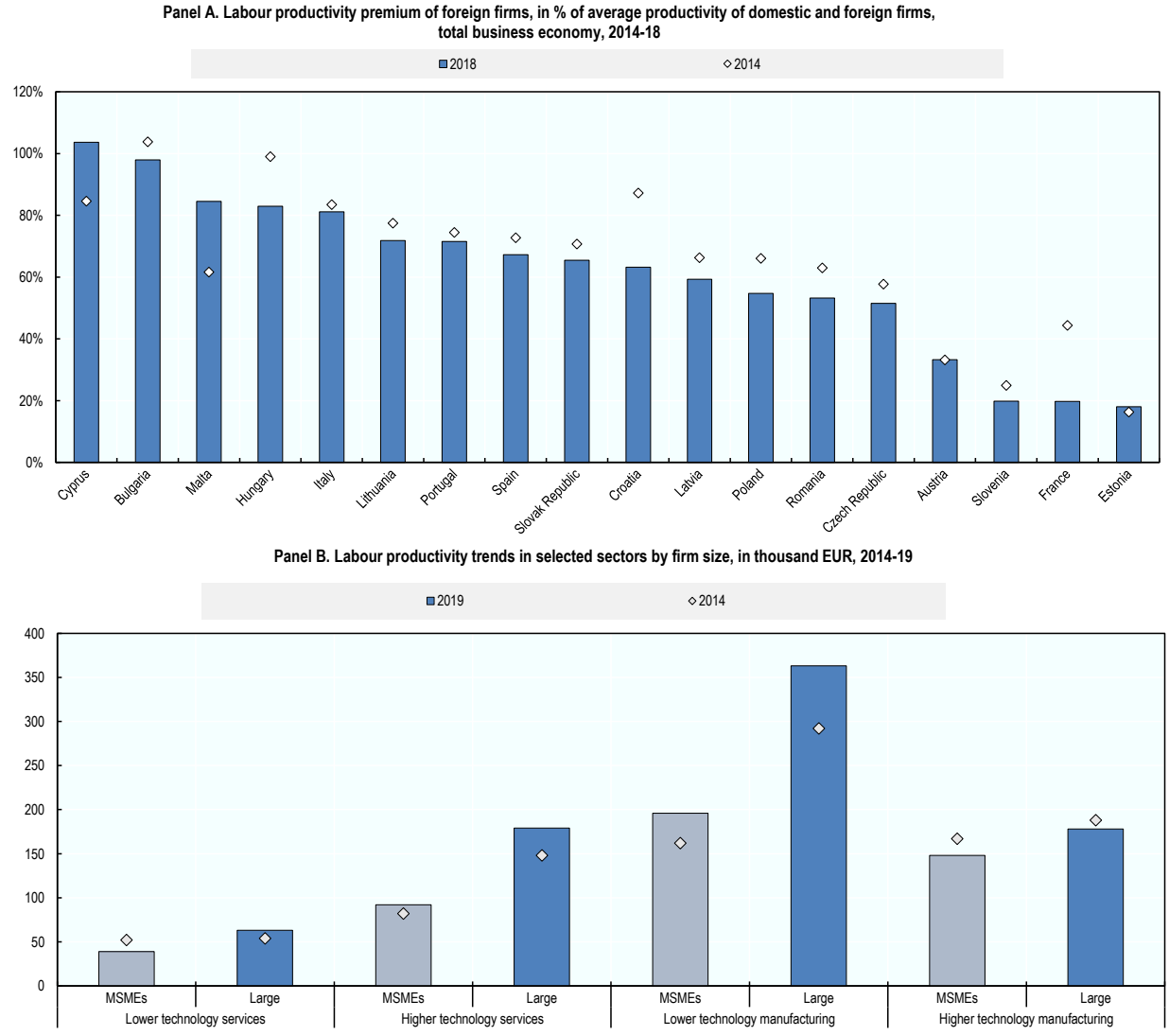
There is an important productivity gap between foreign and domestic firms

Foreign firms are on average more productive than domestic firms, because they tend to be larger, more export-oriented, and better equipped with finance, skills and innovation assets: all features that are associated with higher labour productivity levels (OECD, 2022, forthcoming[22]). FDI-SME spillovers are made possible by the existence of such productivity gap between foreign MNEs and domestic SMEs (OECD, 2019[25]) (OECD, 2022, forthcoming[22]). If the productivity gap is too large, however, this may hamper the capacity of local firms to benefit from spillovers. Assessing the productivity premia of foreign firms over domestic firms is thereby important to estimate the existing FDI-SME spillover potential.

Significant productivity premia of foreign firms over average firms in the economy (including domestic and foreign firms) are a common feature in EU economies, ranging from 98% in Bulgaria to approximately 20% in economies in Estonia, France or Slovenia (Figure 2.9, Panel A). In the Slovak Republic, the gap in the productivity performance of foreign and domestic firms is quite pronounced, with affiliates of foreign multinationals being on average 65% more productive than Slovak firms. The gap has declined only marginally in recent years, if compared with other economies. Since 2014, the productivity premium of foreign firms fell by only 5% in the Slovak Republic, which is fairly limited relative to the approximately 25% decrease observed in France or Croatia. The very high capacity gap between foreign and domestic firms and its relative stability over time points to scarce spillover effects on local firms.

There is also a pronounced divergence in the productivity performance between large companies (which are often foreign owned) and the sector of micro, small and medium-sized firms (MSMEs). The productivity of Slovak smaller firms indeed remains comparatively low across OECD countries and has been stable across all sectors of the economy in recent years (see *infra* – SMEs absorptive capacity). The disparity in labour productivity levels between MSMEs and large firms has been increasing across almost all industrial sectors since 2014, and especially in high-tech manufacturing and low-tech services (OECD, 2021[21]) (Figure 2.9, Panel B). This widening gap suggests that spillovers from larger foreign companies and domestic SMEs have been limited.

Figure 2.9. Labour productivity performance, by firm ownership and size



Note: See Box 2.3 clarifying sectoral groupings used in this figure. MSMEs: firms with 1 to 249 employees
Source: Panel A: OECD based on Eurostat's FATS data, 2020. Panel B: OECD Structural and Demographic Business Statistics Database, 2021 (http://dx.doi.org/10.1787/sdbs-data-en) (accessed: 21 January 2022).

Further diversification in FDI's geographic origin could help foster spillovers

The largest foreign investors in the Slovak Republic are from EU countries (Figure 2.8, Panel B). The Netherlands alone accounts for almost one-quarter of total inward FDI stock in the Slovak Republic (although this share may partly reflect the activity of Special Purpose Entities (SPEs) rather than genuine investment activities of the reporting country itself). The Czech Republic, Austria and Germany are other leading countries of origin of FDI. Extra-European FDI account for a lower share, mostly coming from Korea (5%) and the United States (1%). It should be noted, however, that official FDI statistics based on the ultimate investor ownership could underestimate the actual presence and weight of non-EU foreign investors (particularly US MNEs) in the Slovak Republic, as they do not capture investment channelled through existing European affiliates.

With almost all the inward FDI stock having its origin within Europe, and more than 50% of it coming from 4 countries (Netherlands, Czech Republic, Austria and Germany), diversification in terms of investment origins is limited and could be improved. Indeed, if there is evidence in literature that the cultural and geographic proximity of foreign investors can help enhance FDI benefits to the local economy (OECD, 2022, forthcoming[22]), research has also shown that heterogeneity in the country of origin of FDI increases their overall positive effect on the productivity of domestic SMEs (Zhang, 2010[26]).

Inward FDI is concentrated in higher technology manufacturing

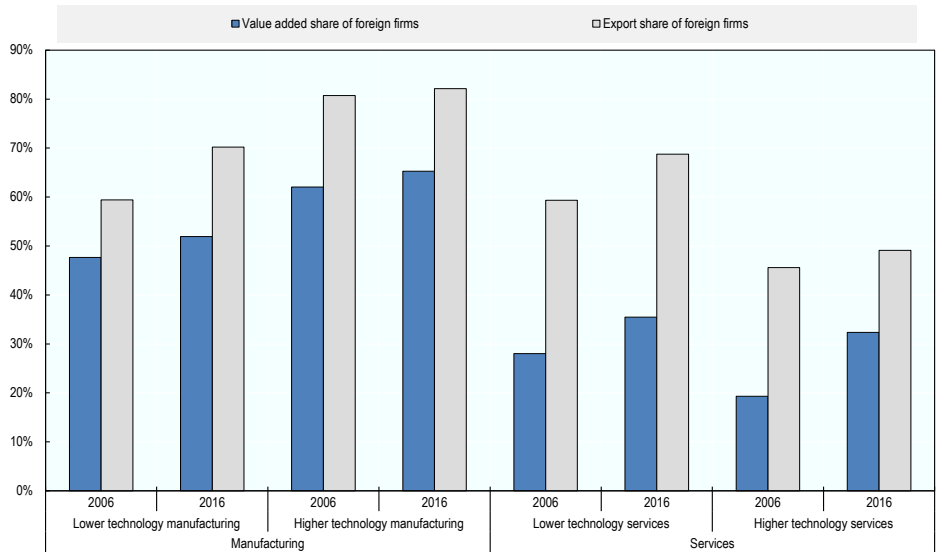
The significant share of foreign firms in the country's value added and export corroborates the pivotal role of FDI in the Slovak economy (Figure 2.10). This is true across all sectors. FDI operations, however, are concentrated in manufacturing, where they accounted for almost 60% of value added and 80% of exports in 2016. In higher technology manufacturing (including the key electronic equipment and motor vehicle industries), they were responsible for 65% of value added and 82% of exports in 2016 – and these shares had remained stable over the previous ten years (Figure 2.10).

Foreign firms are less active in the services sector. In 2016, foreign MNEs accounted for 24% of total value added and almost 60% of exports in services. Their contribution in terms of exports and value added is more significant in lower technology services – namely wholesale and retail trade and real estate activities – than in higher-technology services (e.g. IT services) (Figure 2.10).

Since FDI spillovers tend to be stronger in high-tech than low-tech and labour intensive industries (see for instance (Nicolini, 2010[27]) (Keller, 2009[28])), the concentration of Slovak FDI in high-tech manufacturing may be regarded as favourable to their spillover potential. Even in high-tech sectors however, knowledge and technology spillovers ultimately depend on the FDI linkages with the rest of the economy, and remains limited if the latter are not sufficiently developed (OECD, 2022, forthcoming[22]). The scarce representation of SMEs in Slovak high-tech manufacturing (where employment is dominated by large firms – see *infra*, SMEs absorptive capacity), could be a hampering factor of FDI spillover potential in such sector.

Figure 2.10. Foreign firms' value added and exports in the Slovak Republic, 2006 and 2016

As % of total value added and export, by sectoral groups*

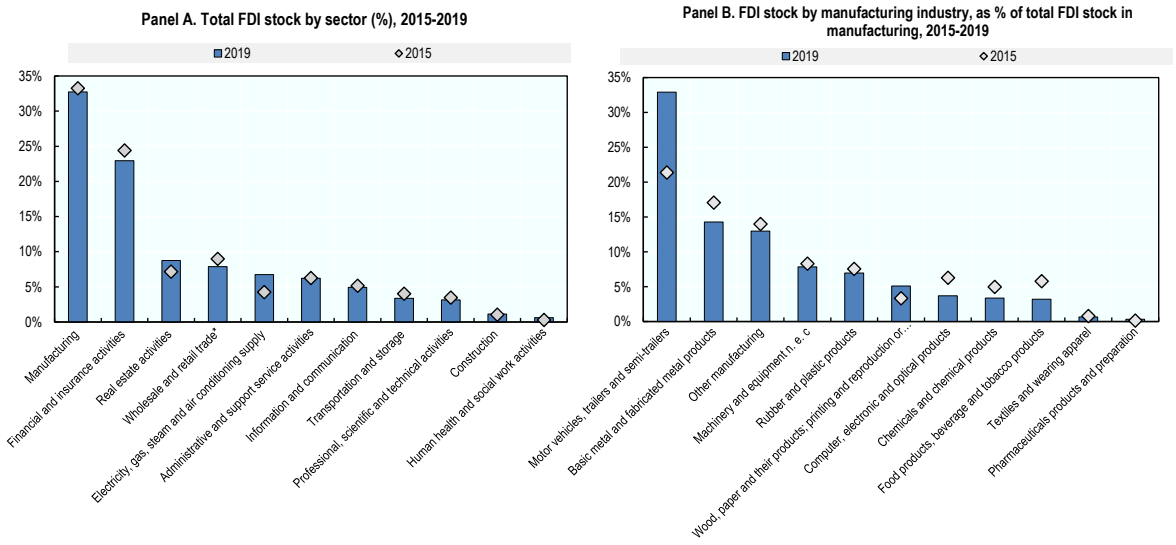


Note: Total value added and export in this figure refers to the total of the four industrial groupings covered. See Box 2.3 clarifying sectoral groupings used in this figure.
Source: OECD Analytical AMNE database 2021, www.oecd.org/sti/ind/analytical-AMNE-database.htm (accessed 17 December 2021).

Non-automotive manufacturing industries are responsible for a significant share of the total FDI stock in the Slovak republic. Manufacturing accounts alone for 33% of the total FDI stock in the Slovak Republic (National Bank of Slovakia (NBS), 2022[29]). The motor vehicles industry is responsible for about one third of total manufacturing investment (Figure 2.11, Panel B). Other high-tech manufacturing industries such as machinery and equipment; computer, electronic and optical products; chemicals; and pharmaceuticals overall account for an additional third. The remaining manufacturing FDI stock is distributed across a range of lower technology industries such as basic metals and fabricated metal products (14% of total manufacturing investment), rubber and plastics (7%) or wood and paper products (5%). The overall significant share of FDI attracted by manufacturing industries beyond automotive may be conducive to the development of FDI-SMEs ecosystems in a larger and more diversified range of industrial sectors, with benefits to aggregate growth and productivity.

There are signs of FDI dynamism in low-tech services and non-manufacturing industries. Outside manufacturing, financial and insurance activities account for the second largest share in total FDI stock in the Slovak Republic (23%) (Figure 2.11, Panel A). Other lower technology services such as real estate and wholesale and retail trade and repair of motorvehicles also account for 8-9% of total FDI each. Real estate is also one of the services sectors that registered the largest absolute increase in FDI stock between 2015 and 2019 (56%). Over the same period, important increases in FDI stock were also observed in non-manufacturing sectors such as electricity, gas, steam and air conditioning supply (+103%) and construction (+40%). The FDI presence and activity in low-tech services and non-manufacturing activities signals some dynamism and potential of these sectors in terms of FDI attraction, and may be conducive to productivity spillovers, given the larger SMEs employment share in these sectors (see *infra* – SMEs absorptive capacities).

Figure 2.11. Sectoral distribution of the FDI stock in the Slovak Republic, 2015-2019



Note: The figure does not include sectors accounting for a less than 1% share of FDI stock.
Source: (National Bank of Slovakia (NBS), 2022[29]) (accessed on 5 May 2022).

The predominance of greenfield FDI in higher technology manufacturing is likely to facilitate productivity spillovers

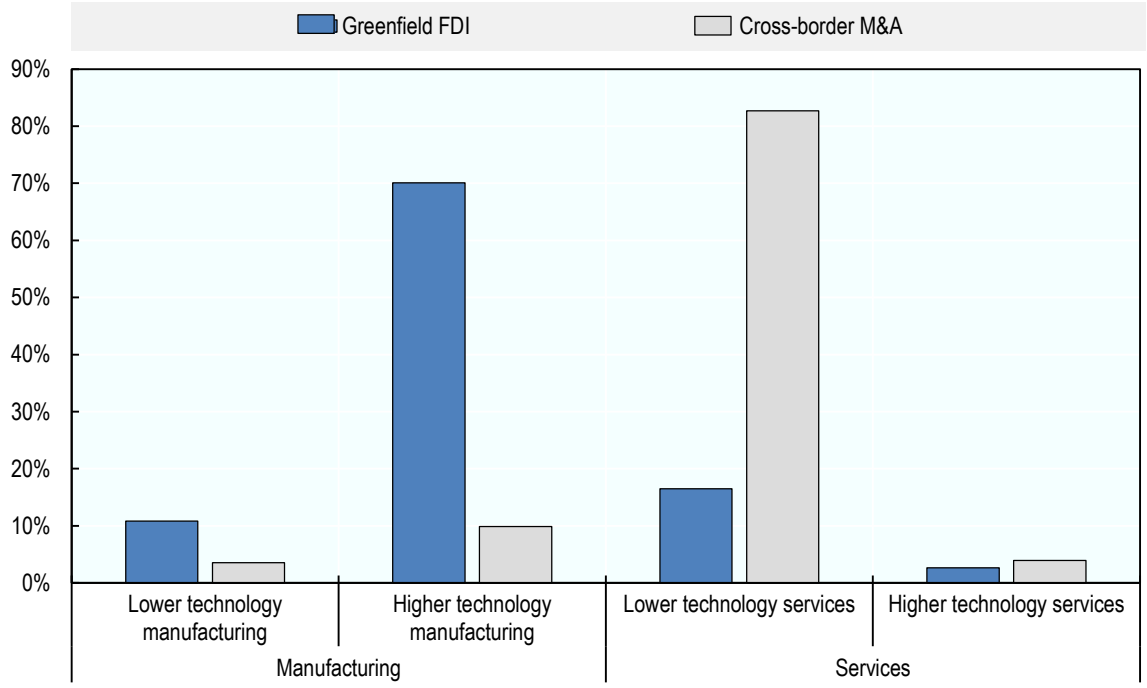
Greenfield investment is more likely to generate knowledge and technology transfer to the local economy. Greenfield investment, i.e. establishment of subsidiaries of foreign MNEs, is indeed more likely to involve the implementation of foreign technology in the host country and thereby drive tacit and formal knowledge

and technology transfer (OECD, 2022, forthcoming[22]). Mergers and acquisitions, by contrast, tend to be associated with a more gradual implementation of foreign technology in the host economy, making knowledge spillovers less likely in the short-term (although they may still occur in the longer term) (OECD, 2022, forthcoming[22]). Observing the distribution of different types of FDI (e.g. greenfield investment versus mergers and acquisitions) across sectors of the host economy can provide interesting insights on the spillover potential of foreign MNEs to local SMEs.

In the Slovak manufacturing sector, greenfield investment is more common than mergers and acquisitions. This is particularly true in higher technology manufacturing, which attracted 70% of all greenfield investment made between 2003 and 2021, while accounting for only 10% of all acquisitions made over the same period (see Figure 2.12). Mergers and acquisitions, by contrast, are more prevalent in lower technology services, where more than 80% of all deals have occurred since 2003.

Figure 2.12. Sectoral distribution of greenfield FDI and cross-border M&A stocks

% total capital investment (greenfield FDI) and total M&A deal values over 2003-2021 [potentially add benchmark]



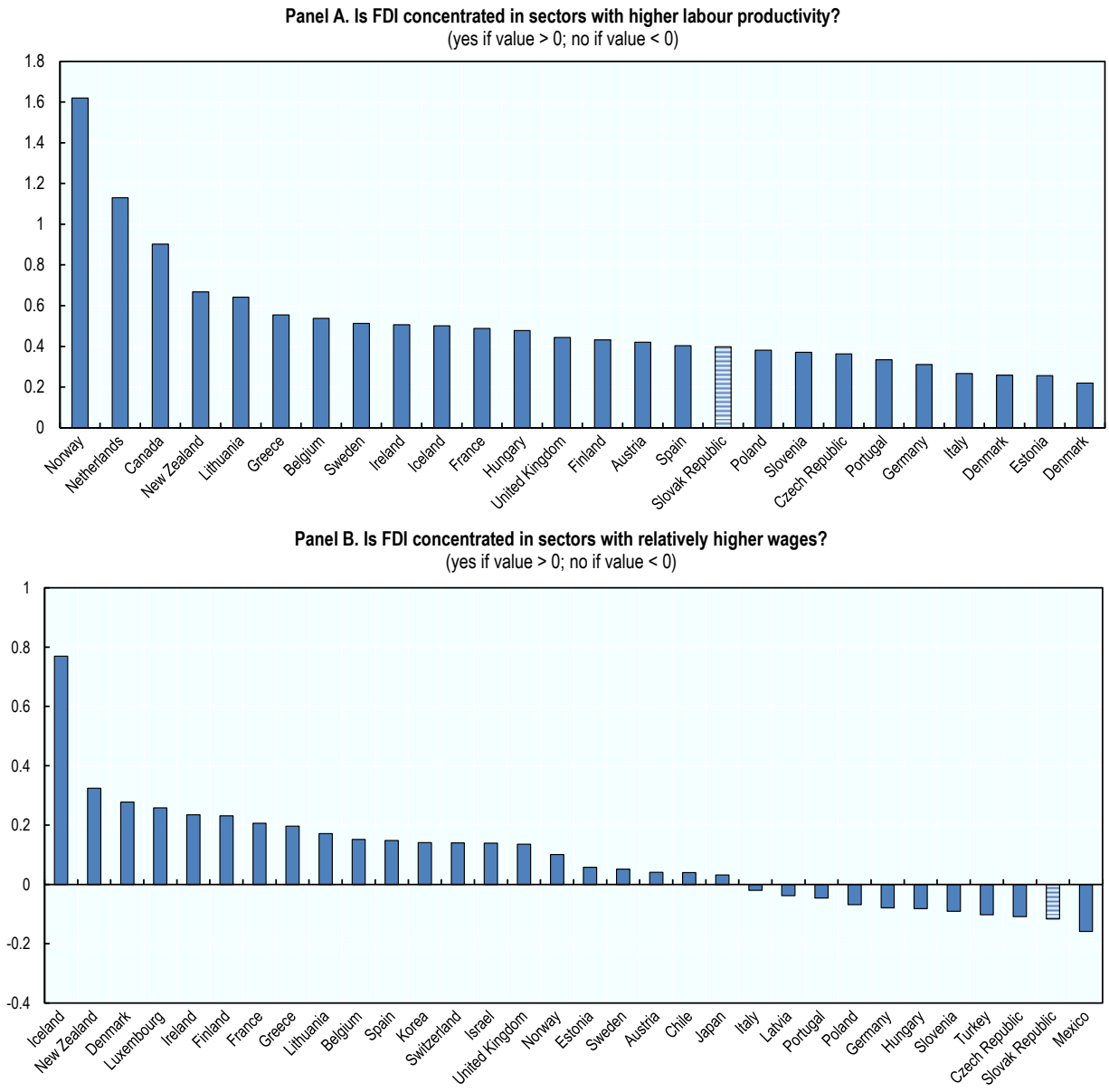
Note: See Box 2.3 clarifying sectoral groupings used in this figure. Detailed sector/activity classifications from Financial Times' fDi Markets and Refinitiv data underlying the analysis in this figure differ marginally from standard classifications based on ISIC Rev. 4 used in other figures in this report.
Source: OECD based on (Financial Times, 2021[30]) Financial Times fDi Markets database and Refinitiv (accessed: 12 July 2021).

Efficiency-seeking FDI in low value-added GVC activities remains prevalent

The Slovak Republic is an attractive destination for efficiency-seeking FDI. Over the past decades, the availability of relatively skilled and low-wage labour was a country's comparative advantage for attracting FDI targeting assembly and fabrication activities within GVCs (Pellény, 2020[31]). Recent evidence on FDI concentration in terms of sectoral productivity and wages seems to confirm the dominance of efficiency-seeking investment attracted by the balance between labour force skills and cost. FDI indeed tend to concentrate in sectors with higher average labour productivity (Figure 2.13, Panel A) and lower wage levels (Figure 2.13, Panel B) relative to the rest of the economy.

Foreign investors in the Slovak Republic tend to target labour-intensive activities, particularly the assembly of intermediate goods (OECD, 2019[1]). These activities typically require limited interaction with local suppliers and do not necessarily imply the development of strong supply relationships with domestic companies. Therefore, in such a configuration, the potential for knowledge and technology spillovers to local firms appears to be limited. In the automotive sector, for instance, the specialisation of the Slovak economy in low value-added GVC activities has not significantly changed over recent years (OECD, 2019[1]) (Box 2.4).

Figure 2.13. FDI concentration in terms of sectoral labour productivity and wages



Note: See (OECD, 2019[25]) for a description of the methodology and data. Labour productivity = value added per employee; wages = wage per employee.

Source: (OECD, 2019[25]) OECD FDI Qualities Indicators based on Financial Times' fDi Markets database, 2020, OECD National Accounts and OECD MSTI database, 2020.

2.4. SMEs absorptive capacities

This section assesses the absorptive capacity of Slovak SMEs. Absorptive capacity is defined as the ability of a firm to recognise valuable knowledge and use it productively to innovate (OECD, 2022, forthcoming[22]). The stronger a firm's absorptive capacity, the higher its chances to benefit from FDI knowledge and technology spillovers. The absorptive capacity of SMEs is related to firm-specific characteristics such as their level of productivity, sector of operation, age, size, and geographic location. It also depends on SMEs' ability to access the strategic resources that are needed to innovate, namely finance, skills and innovation assets.

This section first provides an overview of the Slovak SMEs sector and its contribution to the Slovak economy, focussing on (1) the structure of the Slovak business population and its productivity performance; (2) relevant business demography trends; and (3) SMEs sectoral distribution across the economy. Subsequently, this section evaluates the endowment of Slovak SMEs in R&D and innovation assets, skills and financial resources, which in turn affect their chances of participating and benefitting from FDI knowledge and technology spillovers (OECD, 2022, forthcoming[22]).

The Slovak business population is dominated by myriad low-productivity micro firms

The Slovak business population is relatively polarised between a large number of micro firms of less than 10 employees, on the one hand, and a few large firms, including affiliates of multinationals, on the other hand (OECD, 2021[5]). The micro, small and medium-sized enterprises (MSMEs) sector accounts for more than 99% of enterprises in the Slovak Republic and is responsible for 72% of employment and 56% of value added (against an OECD average of 68% and 59%) (OECD, 2021[5]). The share of micro firms in the total business population is higher than in any other OECD economies (OECD, 2021[21]). In 2019, 97% of employer firms had fewer than 10 employees (OECD, 2021[21]) (see Table 2.5). Micro firms also account for the largest share of employment and value added within the broader population of micro, small and medium-sized firms. In turn, employment in larger SMEs is low relative to other OECD countries (Figure 2.14). On the opposite side of the business spectrum, large firms represent only 0.1% of the business population, but contribute around 28% of employment and 44% of value-added (in line with the OECD average of 31% and 40% respectively) (Figure 2.14) (OECD, 2021[5]).

Such evidence suggests the existence of a "missing middle" of SMEs (i.e. firms between 10 and 249 employees) in the Slovak business population (OECD, 2021[21]). This phenomenon is not recent. The relative shares of micro, small and medium-sized firms remained substantially stable between 2015 and 2019, even slightly increasing for micro firms (see Table 2.5). In terms of employment, the gap has even been widening: employment in micro firms grew by 21% between 2010 and 2017, compared to a growth of only 7% in mid-sized firms (OECD, 2021[21]). The low proportion of SMEs relative to micro firms in the Slovak business population impedes the local embeddedness of foreign MNEs: larger firms are more likely than micro firms to establish linkages with foreign MNEs and eventually capture knowledge and technology from them.

Table 2.5. Number of firms by size

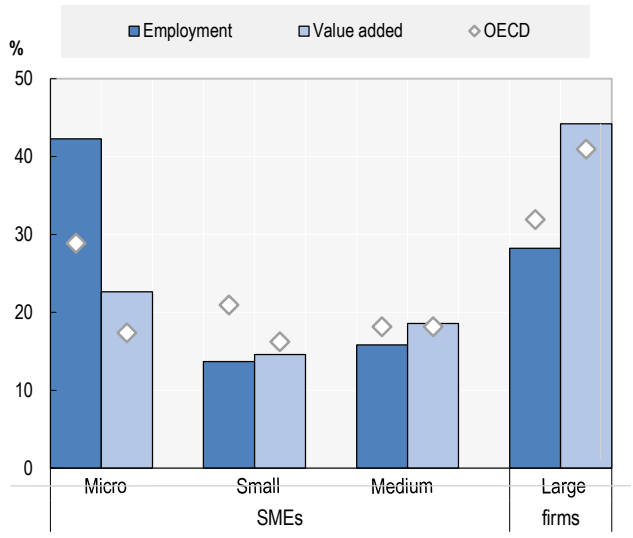
Business economy, except financial and insurance activities

	2015	%	2016	%	2017	%	2018	%	2019	%
Micro (1-9 persons employed)	411,765	96.7%	429,999	97.1%	454,450	97.0%	475,956	97.1%	494,750	97.3%
Small (10-49 persons employed)	11,203	2.6%	10,011	2.3%	11,112	2.4%	11,193	2.3%	10,927	2.1%
Medium (50-249 persons employed)	2,264	0.5%	2,396	0.5%	2,460	0.5%	2,490	0.5%	2,459	0.5%
Total MSMEs (1-249 persons employed)	425,232	99.9%	442,406	99.9%	468,022	99.9%	489,639	99.9%	508,136	99.9%
Large (250+ persons employed)	531	0.1%	555	0.1%	581	0.1%	599	0.1%	594	0.1%
Total	425,763		442,961		468,603		490,238		508,730	

Source: SDBS Structural Business Statistics ISIC Rev 4 (accessed 21 December 2021).

Figure 2.14. Size of the micro, small and medium-sized business sector

% of total employment and value added, by firm size, 2018



Note: See methodology in (OECD, 2021[5]), OECD SME and Entrepreneurship Outlook 2021.
Source: (OECD, 2021[5]), OECD SME and Entrepreneurship Outlook 2021.

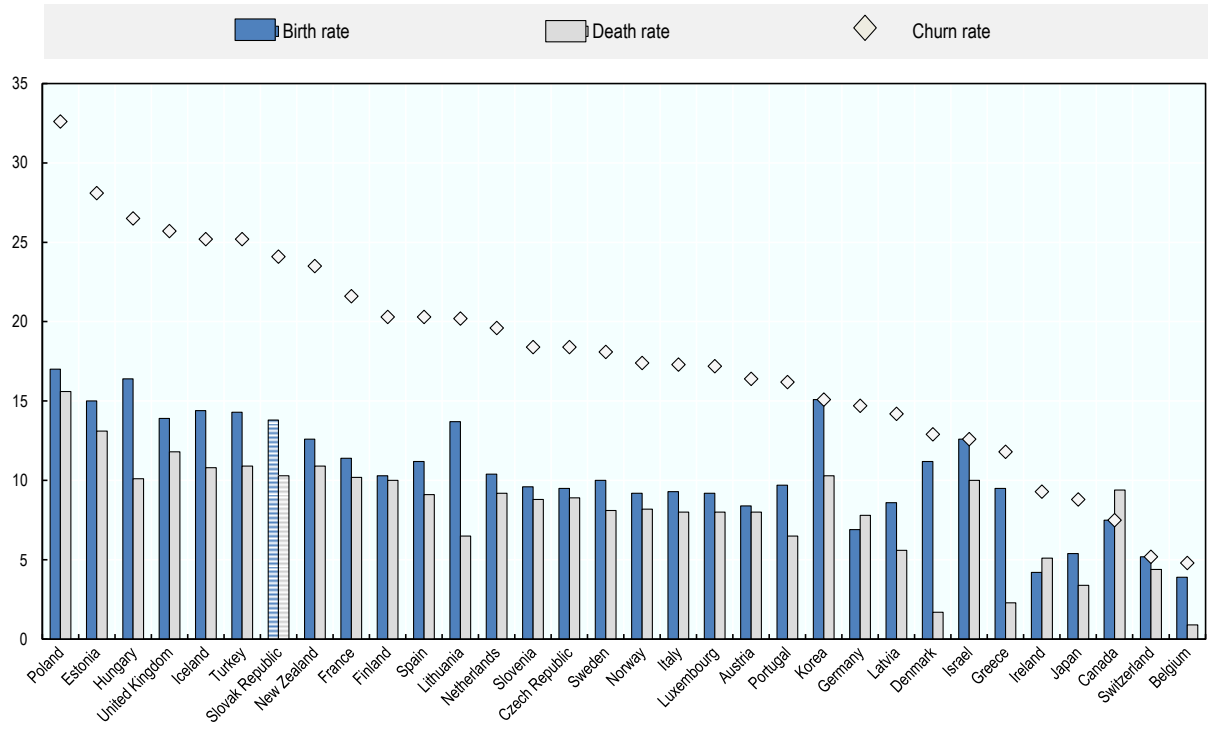
The labour productivity of smaller businesses is low compared to most other OECD countries (OECD, 2021[21]). Against an employment share of 42%, micro firms produce only 23% of value added (OECD, 2021[5])(Figure 2.14). Given their high share in the total business fabric, low-productive micro firms weigh down the aggregate productivity of the economy, pointing to the need of a policy focus on scaling up the innovation potential of smaller businesses (OECD, 2021[21]). The productivity of larger small and medium-sized businesses, albeit higher, still remains comparatively low among OECD countries (OECD, 2021[21]). Additionally, except for some increase in lower technology manufacturing, the productivity of Slovak MSMEs stagnated or declined across all sectors between 2014 and 2018 (OECD, 2022[20]).

The very high business dynamism may reflect a lack of scale up capacity in smaller firms

Business dynamism is very high in the Slovak Republic, with high business birth and death rates. Business creation is one of the highest in the OECD area (Figure 2.15). By the end of 2017, almost 14% of all firms were created in that year, a rate above the OECD average (10.6%) (OECD, 2021, p. 20[21]). High business creation is combined with a high share of enterprise death. In 2017, 11% of enterprises exited the market, against an OECD average of around 8%. Also, only about 27% of Slovak start-ups were still operating in their fifth year, one of the lowest new enterprises survival rate in OECD countries (OECD, 2022[20]). As a result, the Slovak Republic is among the OECD countries with the highest enterprise churn rate (24% in 2017).

However a high churn rate can also signal the existence of barriers preventing SMEs to scale up their innovation and productivity capacity. Churn rates, calculated as the sum of birth and death rates of all enterprise firms, may be associated with an efficient reallocation of resources from less productive to more productive firms, with positive effects on aggregate productivity. In other cases, however, it can rather reflect firms' difficulties in innovating and scaling up – for instance, when economies of scale cannot be materialised through firm growth, or a lack of scale limits investment in employee skills development and knowledge that are yet critical to innovate (OECD, 2017[32]) (OECD, 2021[21]) (OECD, 2022, forthcoming[22]). The very high share of low productive micro firms in the Slovak business population suggests limited efficiency of resources reallocation across firms. In a similar scenario, a high churn rate can be a symptom of difficulties in business growth, for instance in hiring the first employee.

Figure 2.15. Churn rate of employer enterprises in selected OECD countries (%), 2017



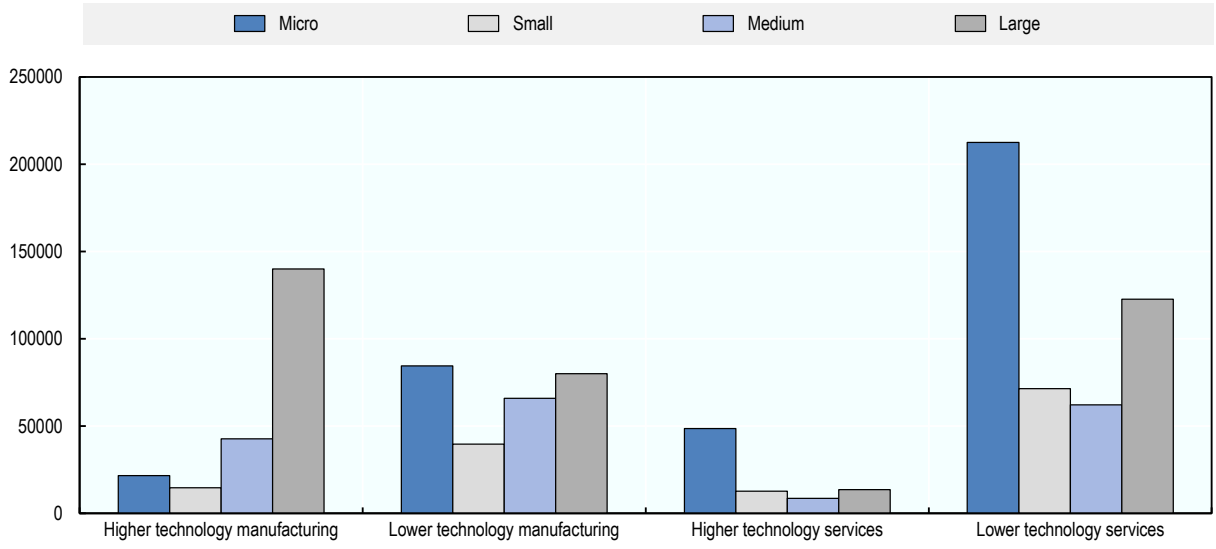
Notes: Birth and death rates are given for all employers enterprises. The churn rate is calculated as the sum of birth and death rates. Death rate data for Korea and Canada are of 2016. Death rate data for Israel and Switzerland are of 2015.
Sources: OECD Structural and Demographic Business Statistics Database (http://dx.doi.org/10.1787/sdbs-data-en) (accessed 19 September 2021).

SMEs are more present in the less technology-intensive sectors

In terms of employment, Slovak SMEs tend to be more present in the less technology- and knowledge-intensive sectors, characterised by lower productivity and value added and higher labour intensity (Figure 2.16). Lower technology services have the highest number of SME employees – around 134 000, representing 28% of the total sector employment. The services sector also accounts for larger employment shares in micro enterprises, while the manufacturing sector has a higher concentration of larger SMEs (SBA, 2020[33]). In manufacturing, the SME employment share is larger in lower technology industries (where 38% of the persons employed work in SMEs, i.e. 105 000 workers) while employment in higher technology manufacturing is dominated by large firms. Overall, the underrepresentation of SMEs in higher technology industries, characterised by stronger FDI activity (see *supra* – FDI spillover potential) may hamper their access to foreign firms input and technology, thereby partly explaining their slow productivity growth.

Figure 2.16. Employment by sectoral group and firm size, 2019

Number of persons employed, 2019



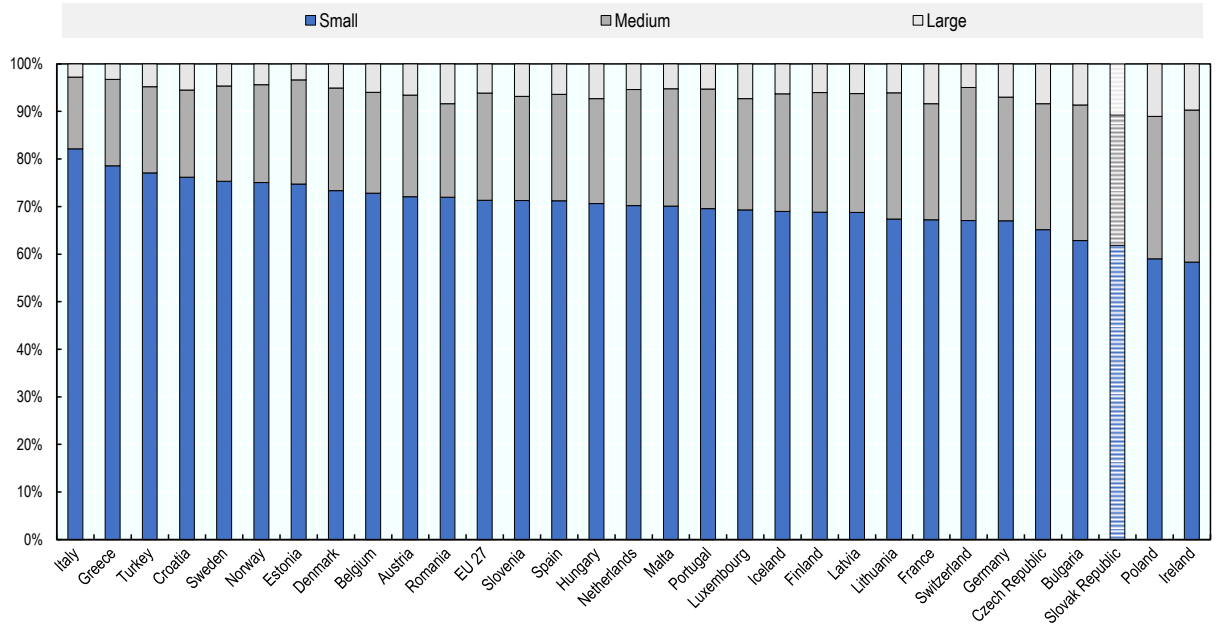
Note: See Box 2.3 clarifying sectoral groupings used in this figure. Micro = 1 to 9 employees. Small = 10 to 49 employees. Medium = 50 to 249 employees. Large = 250+ employees.
Source: OECD Structural and Demographic Business Statistics Database (http://dx.doi.org/10.1787/sdbs-data-en) (accessed 23 December 2021).

The SME sector still underperforms in R&D and innovation

The Slovak innovation system is not conducive to innovation in SMEs (OECD, 2021[21]).The European Innovation Scoreboard 2021 classifies the Slovak Republic as an “emerging innovator” (i.e. performing well below the EU average) and reports a slight decline in the country’s innovation performance relative to the EU between 2020 and 2021 (-0.6% points) (EC, 2021[34]). The Slovak Republic also ranks low across OECD countries on innovation system measures (OECD, 2021[21]). In terms of innovative entrepreneurship, the share of small businesses (10 to 49 employees) in the total population of innovative enterprises is one of the lowest across EU countries (Figure 2.17).

Figure 2.17. Innovative enterprises

% of small, medium and large businesses in total innovative enterprises, 2018

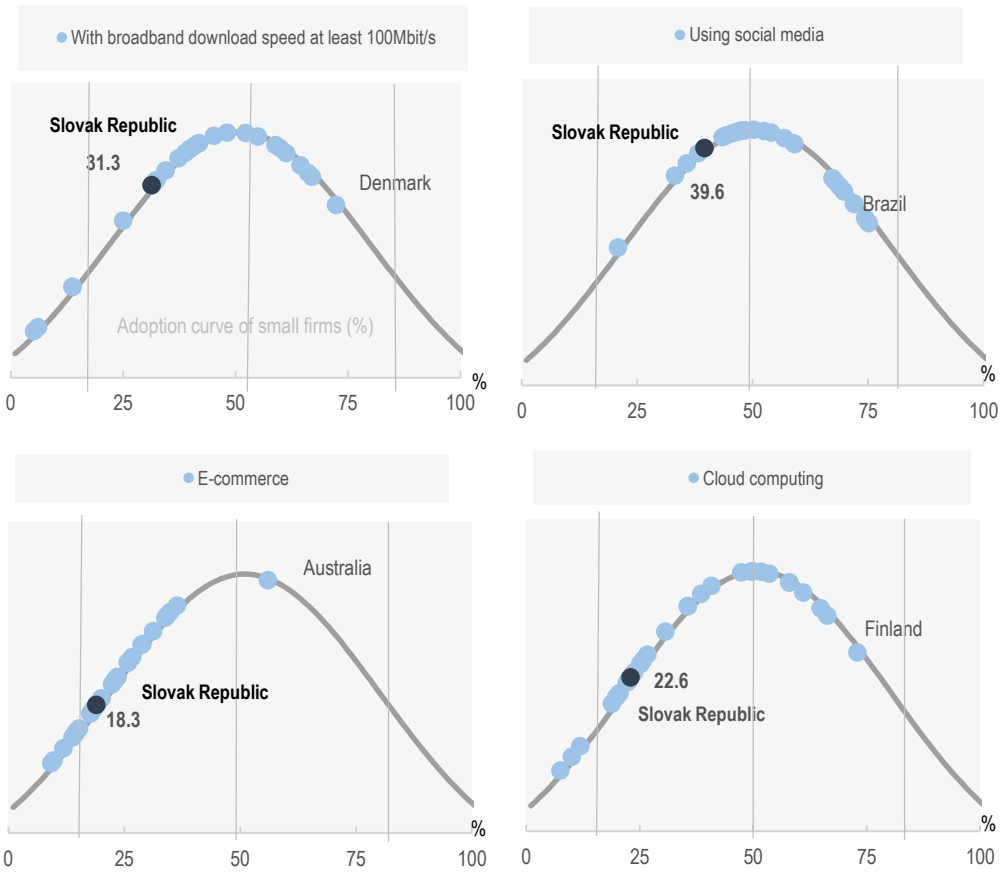


Notes: The enterprise is considered as innovative (INN) if during the reference period it introduced successfully a product or process innovation, had ongoing innovation activities, abandoned innovation activities, completed but yet introduced the innovation or was engaged in in-house R&D or R&D contracted out. Non-innovative (NINN) enterprises had no innovation activity mentioned above whatsoever during the reference period.
Sources: Eurostat, Community innovation survey 2018 (accessed 20 September 2021).

Digitalisation in the Slovak Republic is also relatively low. In 2020, the European Commission's Digital Economy and Society Index (DESI) (EC, 2020[35]) ranked the country 22nd among the 28 EU member states (OECD, 2021[21]). The digital uptake of Slovak SMEs remains below the OECD average in different areas, including the use of social media and e-commerce, that could nonetheless be entry points to their digital transition (Figure 2.18) (OECD, 2021[5]) (OECD, 2021[36]). Indeed SMEs tend to digitalise general administration or marketing functions first. Business surveys on ICT use show that the digital gap is smaller between SMEs and large firms in their online interactions with the government, in electronic invoicing or in using social media or selling online. SME gaps in adoption increase when technologies become more sophisticated (e.g. data analytics) or scale matters for implementation (e.g. enterprise resource planning for process integration). Likewise, the Slovak SMEs lag behind in using cloud computing solutions, despite the potential of "pay-as-you-go" these services could bring them to raise IT capacity.

Figure 2.18. Digital readiness of small firms in the Slovak Republic

Adoption rate, selected technologies, 2020 or latest year available



Note: Distribution of country adoption rates along a stylised curve of adoption. Percentage of small businesses [10-49 employees] with a broadband download speed at least 100 Mbit/s (%), using social media (%), receiving orders over computer networks (%), or purchasing cloud computing services (%). All activities in manufacturing and non-financial market services. See (OECD, 2021[36]) for methodology.
Source: (OECD, 2021[5]), *SMEs and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, based on OECD ICT Use by Businesses data; (OECD, 2021[36]), *The Digital Transformation of SMEs*, OECD Publishing, Paris.

R&D spending levels of SMEs in the Slovak Republic are low by international standards (OECD, 2021[21]). The gap in R&D investment is a constant feature of Slovak SMEs, across all size classes, especially among the medium-sized ones. At 0.14% of GDP in 2018, SMEs expenditure on R&D is less than half the EU average of 0.3% (EC, 2020[15]). In 2019, Slovak small and medium-sized firms spent respectively EUR 5 and EUR 13.5 per inhabitant in R&D, which is very low compared to more R&D-intensive economies like Finland (where in 2019 small and medium-sized firms spent in R&D EUR 67 and EUR 100 per inhabitant respectively), but also Portugal (EUR 19 and EUR 33) and the Czech Republic (EUR 11 and EUR 26) (EC, 2021[37]). In the same year, Slovak micro firms only spent EUR 1.5 per inhabitant in R&D, one of the lowest amounts among EU countries for which comparable data is available (EC, 2021[37]). There is also a particular gap in R&D spending among medium-sized enterprises. The Slovak Republic is one of the few EU countries where medium-sized enterprises invest in R&D less frequently than their smaller counterparts: in 2016, 17% of small businesses reported engaging in R&D spending on a continuous basis (EU average: 20% approximately) against 16% of medium-sized firms (EU average: 33%) (OECD, 2021[21]).

R&D expenditure by large firms is also comparatively low. In 2019, firms with 500 employees or more spent only 0.24% of GDP in R&D compared to 0.42% in the Czech Republic and 0.49% in Hungary (EC, 2021[37]). The configuration of the Slovak business sector – with few high-productivity affiliates of foreign MNEs and numerous small domestic low-productivity companies – has favoured technology imports rather than domestic R&D investment (OECD, 2019[19]) (OECD, 2016[38]). Even MNEs operating in the country undertake little R&D compared to other OECD and neighbouring countries, reflecting the role of the Slovak Republic as an assembly hub of intermediate imported inputs (OECD, 2021[21]). In addition to the R&D departments of MNEs, domestic business R&D (BERD) is concentrated in the few large domestically-owned companies operating in the automotive and ICT sectors, while domestic SMEs continue to compete based on low production costs (OECD, 2021[21]). Also, domestic business R&D is driven by medium- to low-tech manufacturing industries which make a larger contribution to total BERD than firms in high-tech manufacturing and knowledge intensive services (OECD, 2019[19]).

Recent trends show some improvements: Slovak SMEs have been catching up on R&D spending. R&D expenditure in Slovak SMEs has doubled over the past decade. By 2020, Slovak small firms spent 4 times the 2011 amount, while medium-sized firms increased their spending by more than 2-fold over the same period (EC, 2021[37]) (OECD, 2021[21]).

These results are consistent with the existence of a missing middle of businesses in the country, and the greater difficulties micro firms face to scale up.

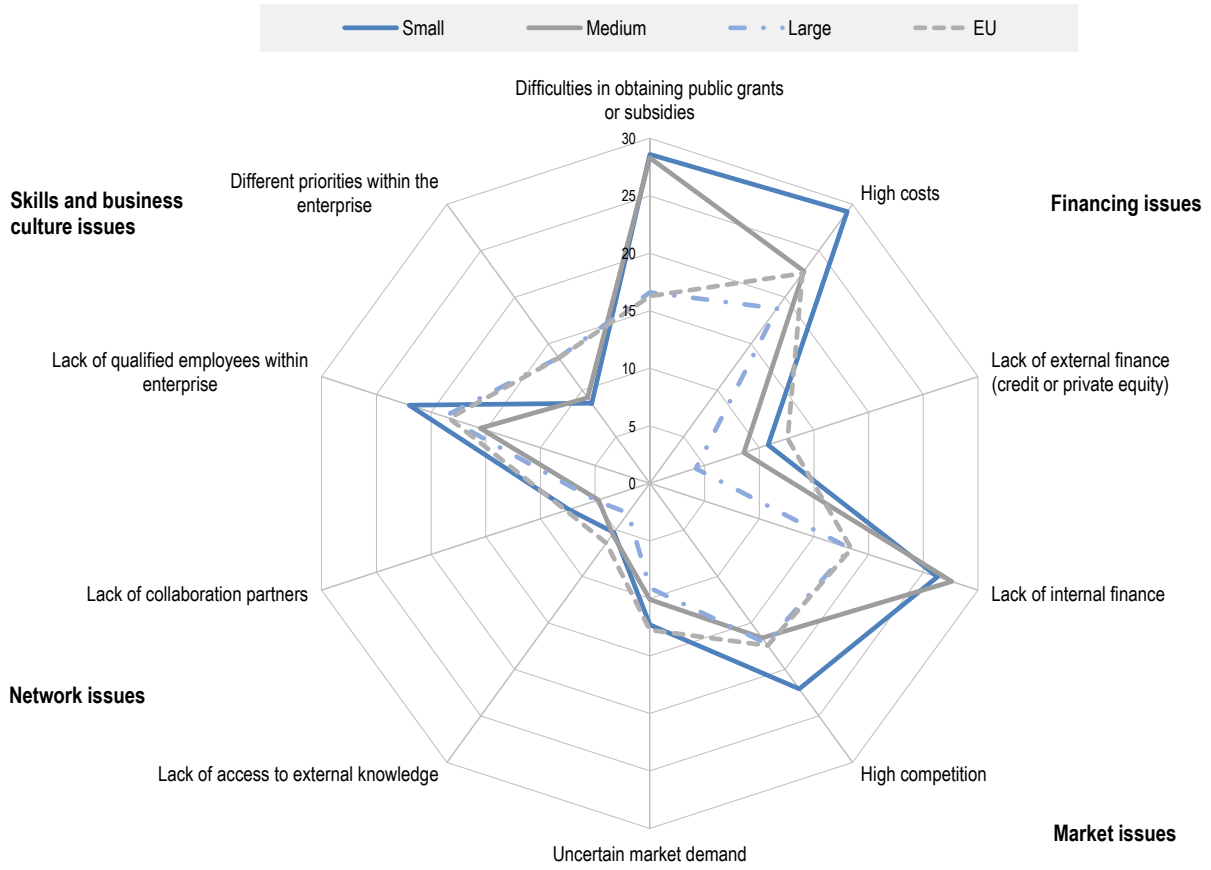
Difficult access to strategic resources and inefficient business conditions weigh down on SME innovation capacity

Further diversifying SME sources of finance could help address the financing gap for innovation

High costs and high risks when associated with difficult access to external sources of finance may typically prevent productive investments. High costs are one of the main barriers to innovation in Slovak small firms, combined with a reported lack of internal finance and difficulties in obtaining public grants and subsidies (Figure 2.19). 29% of innovative small firms in the Slovak Republic report high costs to be a major hampering factor to their innovation activities. Difficulties in obtaining public funding (grants or subsidies) are perceived as an important barrier to innovation by over 28% of small firms. Lack of internal finance is reported to be a challenge by 26% of innovative small firms (Eurostat, 2018[39]). Likewise, factors hampering the adoption of digital technologies by SMEs include scarce availability of financing for digital investment (OECD, 2021[21]) (Figure 2.20).

Figure 2.19. Barriers to innovation among Slovak small, medium-sized and large firms

Percentage of innovative firms by type of barriers hampering innovation activities (reported as of high importance), 2018



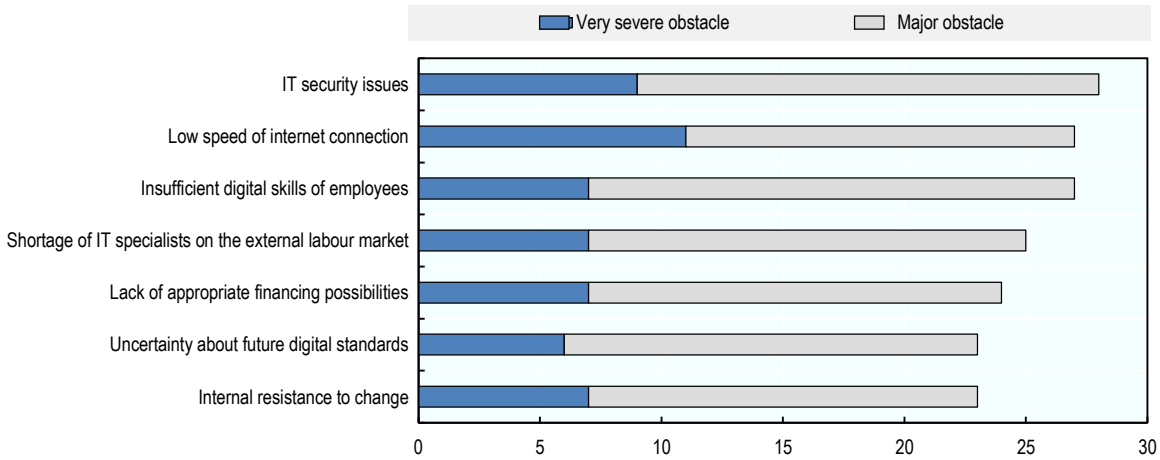
Note: Large, medium and small: % of innovative firms in innovation core activities (Com.Reg. 995/2012) rating the importance of a barrier as "high", by size class. Small firms = from 10 to 49 employees. Medium-sized = from 50 to 249 employees. Large = 250 employees or more. Micro firms with less than 10 employees are not included. EU: average % of innovative firms of all sizes in innovation core activities (Com.Reg. 995/2012) rating the importance of a barrier as "high". The following EU countries are included: Austria, Bulgaria, Croatia, Cyprus*, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Republic of Türkiye.

* Note by the Republic of Türkiye: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Source: Eurostat Community Innovation Survey (CIS) 2018 (accessed 8 November 2021).

Figure 2.20. Obstacles to digitalisation by SMEs



Sources: (OECD, 2021, p. 201[21]), *SME and Entrepreneurship Policy in the Slovak Republic*, OECD Publishing, Paris, from (Abel-Koch et al., 2019[40]), "Going Digital: The Challenges Facing European SMEs", European SME Survey 2019, www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Studien-und-Materialien/PDF-Dateien-Paper-and-Proceedings-(EN)/European-SMESurvey-2019.pdf.

The lack of external finance (credit or private equity) seems to be less of an issue, as the share of firms reporting it as an obstacle to undertaking innovative activities is lower (10%) (Figure 2.19). Overall, the Slovak Republic performs in line with the EU average for SMEs access to finance (EC, 2021[41]). Total SME lending has been increasing since 2012 and credit conditions for SMEs have been gradually improving (OECD, 2019[19]). As in other countries, however, Slovak SMEs tend to rely on traditional means of financing, such as bank loans, savings or family funds, while alternative forms of financing are less diffused. This may be an issue as traditional debt is often less appropriate to finance innovative, risk and uncertain endeavours, requiring a broader range of finance solutions to be developed in order to help SMEs scaling up (OECD, 2022, forthcoming[42]).

Slovak SMEs make little use of alternative financing instruments. The equity market is poorly developed (EC/EIB, 2019[43]) and the share of venture capital investment in GDP is among the lowest in the OECD area (0.0046% of GDP in 2018, against an OECD average of 0.06%) (OECD, 2021[21]). After a sharp decline in 2017, following the closure of funding support under the EU and European Investment Bank Group's initiative "Joint European Resources for Micro to Medium Enterprises" (JEREMIE) for the 2007-13 programming period, the volume of venture and growth capital recovered up to EUR 5.4 million in 2018. The majority of investments targeted established SMEs and focussed on the expansion of production capacities and market potential or product and service development. However, the amount of venture capital invested in 2018 remains negligible if compared to bank financing (OECD, 2020[44]).

In addition to supply-side barriers in the finance market, financial literacy among the Slovak population is generally low and there are signs that it has been declining in recent years (OECD, 2021[21]).

Competition conditions and infrastructure deficiencies raise obstacles to SME innovation

For 22% of innovative small firms in the Slovak Republic, the high level of market competition is a highly important factor hindering their innovation activities – which compounds with a perception of uncertain market demand (Figure 2.19). The situation differs significantly for medium-sized firms which face competition conditions to the same extent as larger firms or average EU firms do. The diffused perception of high market competition as a barrier to (rather than a trigger of) innovation among smaller Slovak firms

is probably related to the particular challenges they face in scaling up and coping with evolving product standards and market demand.

SMEs also report challenges in the adoption of digital technologies, i.e. the management of IT security issues, low Internet connection speed and insufficient digital infrastructure development (OECD, 2021[21]) (Figure 2.20). High-speed broadband is key for SMEs digital transformation, as it allows to fully exploit existing Internet services and to foster the diffusion of new ones (OECD, 2017, p. 23[45]) (OECD, 2021[36]). Differences in speed levels are important for customers but also for businesses, for instance for the exchange of data within value chains and for just-in-time production. The Slovak Republic has one of the lowest rate of adoption of high-speed broadband in the OECD area (Figure 2.18). 36% of all firms with at least 10 employees had a download speed connection at least 100 Mbit/s (i.e. fibre) in 2021, 35% of small firms and 38% of medium-sized firms – i.e., about half the share observed in Portugal or Sweden (71-72%). IT security is also a relatively common challenge for Slovak firms. 14% of all firms with at least 10 employees experienced ICT incidents (security breaches) in 2018, which is less than in the Czech Republic (21%) but much more than in Portugal (8%). While Slovak investment in transport infrastructure has been relatively high in recent years, ICT investment has remained low by OECD standards (OECD, 2019[19]).

Emerging skill shortages hamper the innovation performance of Slovak SMEs

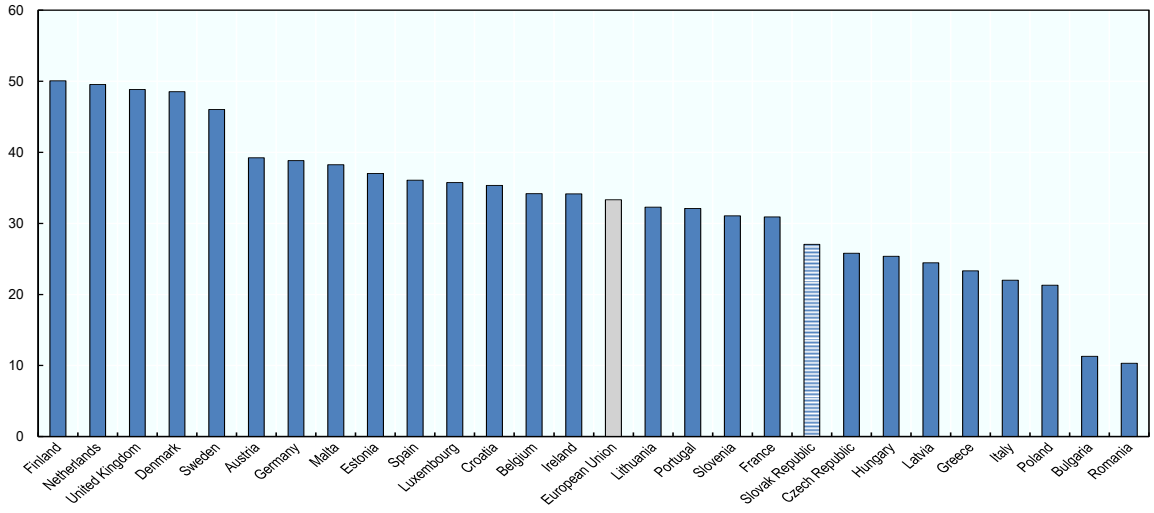
The lack of qualified staff is reported as another major barrier to innovation, pointed out by 22% of innovative small firms (Figure 2.19). A lack of workforce skills and IT specialists is also perceived as hampering the digital uptake by SMEs (OECD, 2021[21]) (Figure 2.20).

In spite of a fairly educated labour force, emerging shortages of high-level skills in specific areas may affect the performance of Slovak SMEs, which like in other countries face difficulties in attracting and retaining talent (OECD, 2021[5]). Overall, there is a fair balance of innovation skills on the Slovak labour market and a fair perception of entrepreneurial capabilities among adults (OECD, 2021[5]). If the share of the adult population with a university degree is very low (only 25% of adults compared to an OECD average of 37%) (OECD, 2016[38]) (OECD, 2021[21]), the country does score high in terms of doctoral graduates in science and engineering (OECD, 2016[38]). Nonetheless, emerging shortages can be observed in relation to electronics skills, science-based knowledge, administrative and management skills, and soft skills such as oral expression (OECD, 2021[21]). Also, according to the EC DESI, only 27% of Slovaks have “above basic” digital skills (Figure 2.21), which points to a shortage of qualified workers to support the digital catch-up of Slovak businesses (EC, 2020[35]) (EC, 2021[41]). Developing and upgrading the domestic talent pool is a key challenge in the context of technological change – particularly job automation, given the very high share of jobs potentially concerned in automobile and electronics manufacturing (OECD, 2020[46]) (OECD, 2022[47]).

There is room to improve staff training efforts in the Slovak SMEs sector. In 2019, only 8.5% of Slovak small firms had provided any type of ICT training for employees not ICT specialists in the course of the previous year – much less than in comparators like the Czech Republic (17.7%), Portugal (16.8%) or Poland (11.5%) (OECD, 2022[48]). ICT training for non-specialist staff is more common in medium-sized firms (28.6%), at par with Poland (28.7%) but still less than in the Czech Republic (43.9%). Outsourcing of ICT activities is also quite common among Slovak SMEs by international comparison. The share of SMEs where ICT functions are mainly performed by external suppliers (as opposite to own staff, or parent or affiliates enterprises staff) was over 57% in 2018, above the EU average of 53.5% (EC, 2022[49]).

Figure 2.21. Above basic digital skills

% of all individuals aged 16-74 having carried out activities requiring "above basic" digital skills in the previous three months, 2020



Notes: People with "above basic" digital skills in each of the following four dimensions: information, communication, problem solving and software for content creation (as measured by the number of activities carried out during the previous 3 months). Selected activities are related to internet or software use. It is assumed that individuals having performed certain activities have the corresponding skills. Therefore, the indicator can be considered as proxy of the digital skills of individuals. According to the variety or complexity of activities performed, two levels of skills ("basic" and "above basic") are computed for each of the four dimensions. Further information available at: https://ec.europa.eu/eurostat/cache/metadata/en/tepsr_sp410_esmsip2.htm.

Sources: EC Digital Economy and Society Index (DESI), https://digital-agenda-data.eu/datasets/desi/visualizations (accessed 28 September 2021).

References

Abel-Koch et al., D. (2019), "Going Digital: The Challenges Facing European SMEs", *European SME Survey 2019*, http://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Studien-und-Materialien/PDF-Dateien-Paper-and-Proceedings-(EN)/European-SMESurvey-2019.pdf. [40]

ACEA (2021), *Automobile assembly and production plants in Europe*, https://www.acea.auto/figure/interactive-map-automobile-assembly-and-production-plants-in-europe/. [16]

Alfaro, L. and M. Chen (2012), "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance", *American Economic Journal: Economic Policy*, Vol. 4(3): 30-55. [55]

Castro, F. (2000), *Foreign direct investment in the European periphery: The competitiveness of Portugal*, The University of Leeds, https://etheses.whiterose.ac.uk/2612/1/Castro_FB_LUBS_PhD_2000.pdf. [57]

EC (2022), *Digital Scoreboard: Enterprises where ICT functions are mainly performed by external suppliers*, European Commission, https://digital-agenda-data.eu/charts/analyse-one-indicator-and-compare-countries#chart={%22indicator-group%22:%22ict-specialist%22,%22indicator%22:%22e_it_mext%22,%22breakdown%22:%22ent_all_xfin%22,%22unit-measure%22:%22pc_ent%22,%22ref-area%22:[%22BE%22. [49]

EC (2021), *2021 SME Country Fact Sheet: Slovakia*, European Commission, https://ec.europa.eu/docsroom/documents/46089. [41]

EC (2021), *European Innovation Scoreboard 2021*, European Commission, https://ec.europa.eu/growth/industry/policy/innovation/scoreboards_en. [34]

EC (2021), *Eurostat BERD database*, https://ec.europa.eu/eurostat/web/science-technology-innovation/data/database (accessed on 13 December 2021). [37]

EC (2020), *Country Report Slovakia 2020*, European Commission, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0524&from=EN. [15]

EC (2020), *Digital Economy and Society Index (DESI)*, https://digital-strategy.ec.europa.eu/en/policies/desi. [35]

EC/EIB (2019), *Gap analysis for small and medium-sized enterprises*, http://www.fi-compass.eu/sites/default/files/publications/Gap%20analysis%20for%20small%20and%20medium-sized%20enterprises%20financing%20in%20the%20European%20Union.pdf. [43]

Eurostat (2018), *Community Innovation Survey*, https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm. [39]

Financial Times (2021), *fDi Markets database*, https://www.fdiintelligence.com/fdi-markets. [30]

Galindo-Rueda, F. and F. Verger (2016), "OECD Taxonomy of Economic Activities Based on R&D Intensity", *OECD Science, Technology and Industry Working Papers*, No. 2016/4, OECD Publishing, Paris, https://doi.org/10.1787/5jlv73sqqp8r-en. [13]

Guilloux-Nefussi, S. (2021), *Supply-side disruptions are dragging down the automotive sector*, https://oecdecoscope.blog/2021/12/22/supply-side-disruptions-are-dragging-down-the-automotive-sector/. [6]

Helpman, E., M. Melitz and S. Yeaple (2004), "Export Versus FDI with Heterogeneous Firms", *American Economic Review*, https://scholar.harvard.edu/files/melitz/files/exportsvsfdi_aer.pdf. [54]

ISA (2019), *Report on productivity and competitiveness of the Slovak Republic 2019*, https://ec.europa.eu/info/sites/default/files/economy-finance/7814_report-on-productivity-and-competitiveness-of-the-slovak-republic-npb-isa-final2.pdf. [59]

Johanson, J. and J. Vahlne (1977), "The internationalization process of the firm - A model of knowledge development and increasing market commitments", *Journal of International Business Studies*, Vol. Vol. 8, No. 1. [56]

Keller, W. (2009), "Multinational Enterprises, International Trade, and Productivity Growth: Firm-Level Evidence From the United States", *The Review of Economics and Statistics*, Vol. 91/4, pp. 821-831, http://www.mitpressjournals.org/doi/pdf/10.1162/rest.91.4.821. [28]

Ministry of Interior of the Slovak Republic (2022), *Press Release, 25 February 2022*, https://www.minv.sk/?tlacove-spravy&sprava=ministerstvo-vnutra-uz-eviduje-prve-ziadosti-o-poskytnutie-ochrany-od-ukrajincov-utekajucich-zo-svojich-domovov (accessed on 14 March 2022). [10]

Ministry of the Interior of the Slovak Republic (2022), *Situation in Ukraine - Information and assistance*, https://www.minv.sk/?ukraine-information-assistance (accessed on 14 March 2022). [11]

National Bank of Slovakia (NBS) (2022), *"Foreign Direct Investment"*, http://www.nbs.sk/sk/statisticke-udaje/statistika-platobnej-bilancie/priame-zahranicne-investicie. [29]

Nicolini, M. (2010), "FDI spillovers in new EU member states", *Economics of Transition and Institutional Change*, Vol. 18/3, pp. 487-511, https://doi.org/10.1111/j.1468-0351.2009.00379.x. [27]

OECD (2022), *Database on Immigrants in OECD Countries (DIOC)*, http://dotstat.oecd.org/Index.aspx?DataSetCode=DIOC_CITIZEN_AGE# (accessed on 15 March 2022). [58]

OECD (2022), *Future-proofing Adult Learning in Cities*, https://www.oecd.org/cfe/leed/future-proofing-adult-learning-cities/ (accessed on 7 November 2022). [47]

OECD (2022), *ICT Access and Usage by Businesses database*, https://stats.oecd.org/Index.aspx?DataSetCode=ICT_BUS. [48]

OECD (2022), "Measuring the attractiveness of regions", *OECD Regional Development Papers*, No. 36, OECD Publishing, Paris, https://doi.org/10.1787/fbe44086-en. [8]

OECD (2022), *OECD Economic Surveys: Slovak Republic 2022*, OECD Publishing, Paris, https://doi.org/10.1787/78ef10f8-en. [3]

OECD (2022), *Structural and Demography Business Statistics database (ISIC Rev. 4)*. [20]

OECD (2021), *FDI in figures April 2021*, http://www.oecd.org/investment/statistics.htm. [23]

OECD (2021), *FDI in Figures October 2021*, http://www.oecd.org/investment/statistics.htm. [24]

OECD (2021), *OECD Economic Outlook, Volume 2021 Issue 2*, OECD Publishing, Paris, https://doi.org/10.1787/66c5ac2c-en. [4]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [50]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [5]

OECD (2021), *SME and Entrepreneurship Policy in the Slovak Republic*, OECD Publishing, Paris, https://doi.org/10.1787/9097a251-en. [21]

OECD (2021), *The Digital Transformation of SMEs*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/bdb9256a-en. [36]

OECD (2021), *Trade in goods and services* (indicator), https://doi.org/10.1787/0fe445d9-en (accessed on 16 September 2021). [18]

OECD (2021), *Trade in Value Added (TiVA) database*. [7]

OECD (2020), *20th anniversary of the Slovak Republic's OECD membership. Achievements and remaining challenges*. [2]

OECD (2020), *Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard*, OECD Publishing, Paris, https://doi.org/10.1787/061fe03d-en. [44]

OECD (2020), *OECD Skills Strategy Slovak Republic: Assessment and Recommendations*, OECD Publishing, Paris, https://doi.org/10.1787/bb688e68-en. [46]

OECD (2019), *FDI Qualities Indicators: Measuring the sustainable development impacts of Investment*, OECD Publishing, Paris, http://www.oecd.org/investment/fdi-qualities-indicators.htm. [25]

OECD (2019), *OECD Economic Surveys: Slovak Republic 2019*, OECD Publishing, Paris, https://doi.org/10.1787/eco_surveys-svk-2019-en. [1]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/34907e9c-en. [19]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/d2b72934-en. [51]

OECD (2018), *Promoting innovation in established SMEs, OECD SME Ministerial Conference, Mexico City, Policy Note, 22-23 February 2018*, http://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf. [52]

OECD (2017), *Entrepreneurship at a Glance 2017*, OECD Publishing, Paris, https://doi.org/10.1787/entrepreneur_aag-2017-en. [32]

OECD (2017), *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*, OECD Publishing, Paris, https://doi.org/10.1787/9789264268821-en. [45]

OECD (2016), *Science, Technology and Innovation Outlook*, OECD Publishing, Paris. [38]

OECD (2022, forthcoming), *Data governance and Diversified Finance: Helping SMEs Scale Up*. [42]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*, OECD Publishing, Paris. [53]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper, CFE/SME(2020)13/REV1*. [22]

Palan, N. (2010), "Measurement of Specialization. The Choice of Indices", *FIW Working Paper*, Vol. No. 62/FIW - Research Centre International Economics, Vienna, p. 39, http://hdl.handle.net/10419/121065. [12]

Pellény, G. (2020), *The Role of Central & Eastern Europe in Global Value Chains: Evidence from Occupation-Level Employment Data*, European Commission, https://ec.europa.eu/info/publications/role-central-and-eastern-europe-global-value-chains-evidence-occupation-level-employment-data_en. [31]

SARIO (2022), *Automotive sector in Slovakia*, https://sario.sk/sites/default/files/sario-automotive-sector-in-slovakia-2022-03-14.pdf (accessed on 22 March 2022). [17]

SBA (2020), *Report on the state of SME in 2019*. [33]

UNHCR (2022), *Operational Data Portal. Ukraine Refugee Situation*, https://data2.unhcr.org/en/situations/ukraine. [9]

Westmore, B. and P. Adamczyk (2019), "Public policy reforms to further improve Portuguese export performance", *OECD Economics Department Working Papers*, No. 1556, OECD Publishing, Paris, https://doi.org/10.1787/4d416a6b-en. [14]

Zhang, Y. (2010), *FDI spillovers in an emerging market: the role of foreign firms' country origin diversity and domestic firms' absorptive capacity*, pp. 969-989. [26]

3 FDI diffusion at play for Slovak SMEs

This chapter studies the extent of FDI-SME diffusion in the Slovak Republic based on the conceptual framework introduced in Chapter 1. It examines where the Slovak Republic stands in the core channels of FDI diffusion – value chain relationships; strategic partnerships; labour mobility and skills effects; and competition and imitation effects – also relative to peers in the OECD and the European Union and across economic activities.

3.1. Summary of strengths, challenges and opportunities

The diagnostic assessment of key channels through which FDI diffusion and spillovers on Slovak SMEs can take place reveals a number of strengths and points to challenges and opportunities (Table 3.1). Subsequent chapters (Chapters 4 to 6) notice these challenges and opportunities, identifying policy actions to address them.

Table 3.1. Strengths and challenges/opportunities across FDI-SME diffusion channels in the Slovak Republic

	Strengths	Challenges and opportunities
Value chain linkages	• Local suppliers in high-tech manufacturing benefit most from the demand of foreign MNEs (in USD volume), increasing the chances for spillovers. • Relatively high sourcing of foreign affiliates from other foreign firms operating locally, signaling local clustering of foreign MNEs.	• Limited sourcing of foreign affiliates from domestic supplier firms compared to OECD peers. • Strong export-orientation of foreign MNEs, limiting opportunities for spillovers from forward linkages with domestic buyers.
Strategic partnerships	• Broad diffusion of R&D and innovation collaboration with buyer and supplier firms among Slovak SMEs, pointing to some spillover potential in this area. • In manufacturing, technology licensing from foreign firms is more common than in other OECD economies.	• Recent firm-level evidence points to limited intensity of FDI-SME partnerships and difficulties of domestic SMEs in complying with FDI demand for higher quality standards. • Scarce diffusion of IP purchase or licensing among firms of all size.
Labour mobility and skills effects	• Direct engagement of foreign MNEs in workforce training initiatives, e.g. dual education programmes implemented jointly with domestic vocational institutions. • Rising competition for talent with foreign MNEs may put pressure on domestic SMEs to improve their attractiveness to skilled labour.	• Job-to-job mobility of Slovak S&T workers is low by international standards, pointing to limited potential for spillovers through skilled labour mobility between foreign MNEs and domestic SMEs. • High wage gap between foreign and domestic manufacturers, which is likely to discourage mobility towards domestic SMEs. • The lack of training and learning opportunities in the Slovak SMEs sector may reduce its attractiveness to foreign MNEs staff.
Competition and imitation effects	• Collaboration and exchange of information with competitors operating in the same industry may increase opportunities for imitation and tacit knowledge in the FDI-SME sector.	• Strong perception that market competition prevents innovation (rather than triggering it) among Slovak SMEs.

Note: See Chapter 2, Box 2.3 clarifying sectoral groupings (i.e. lower and higher technology manufacturing and lower and higher technology services) used in this table. This report primarily uses the Czech Republic, Portugal and Poland as comparators/peers.

3.2. Value chain linkages between foreign MNEs and domestic SMEs

Value chain linkages between foreign MNEs and domestic SMEs have the potential to generate knowledge and technology spillovers to domestic SMEs, with positive effects on their productivity and innovation performance. Value chain linkages can be backward, i.e. between foreign MNEs and their domestic suppliers, or forward to domestic buyers. This section attempts to analyse the quality and strength of these vertical buyer/supplier relationships in the Slovak Republic, to gain some insights on their spillover potential.

Foreign MNEs source less domestically than their peers in other OECD economies

FDI-SME spillover diffusion may happen through backward linkages of foreign MNEs with their domestic suppliers of intermediate inputs. The more foreign MNEs source inputs for their production from domestically-owned firms – as opposed to sourcing from other foreign affiliates operating locally, or importing inputs from abroad – the higher the potential for vertical spillovers to domestic SMEs. Box 3.1 clarifies the relationship between foreign firms' sourcing, value added and output, underlying the analysis in this section.

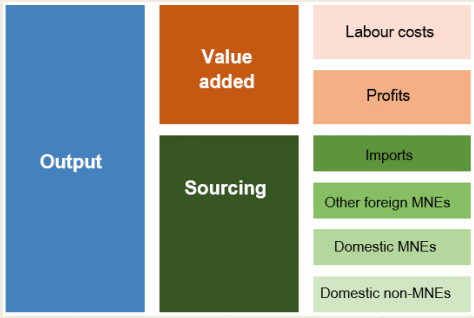
Box 3.1. Foreign affiliates' output, value added and sourcing: some concepts and definitions

To understand buyer/supplier linkages between foreign affiliates (FAs) and local firms, it is important to clarify how firm output, value added and sourcing relate to each other. Foreign firms' output can be split into value added and sourcing of intermediate inputs (Figure 3.1).

This section focuses on the extent to which foreign firms source intermediates directly from firms established in the Slovak Republic as opposed to sourcing of inputs from abroad through imports. In particular, the section looks at the extent of sourcing from domestic firms, i.e. Slovak domestically-owned firms. The domestic sourcing structure is therefore further split into sourcing from other foreign affiliates established in the Slovak Republic, domestic MNEs (i.e. Slovak firms with establishments abroad) and domestic non-MNEs (i.e. Slovak firms with no establishments abroad).

The section does not specifically focus on better understanding to what extent value added generated by foreign affiliates stays in the Slovak Republic or may be repatriated to home economies, which is also of key interest in the context of direct contributions of foreign firms have to host economy growth and development. Part of foreign affiliates' value added is used to pay salaries of their (mostly local) employees and therefore "stays" in the domestic economy. The remaining part, including earnings, may or may not leave the host economy. The latter is particularly important in the context of tax policy.

Figure 3.1. Foreign firms' output composition



Source: OECD based on (Cadestin et al., 2019[1])

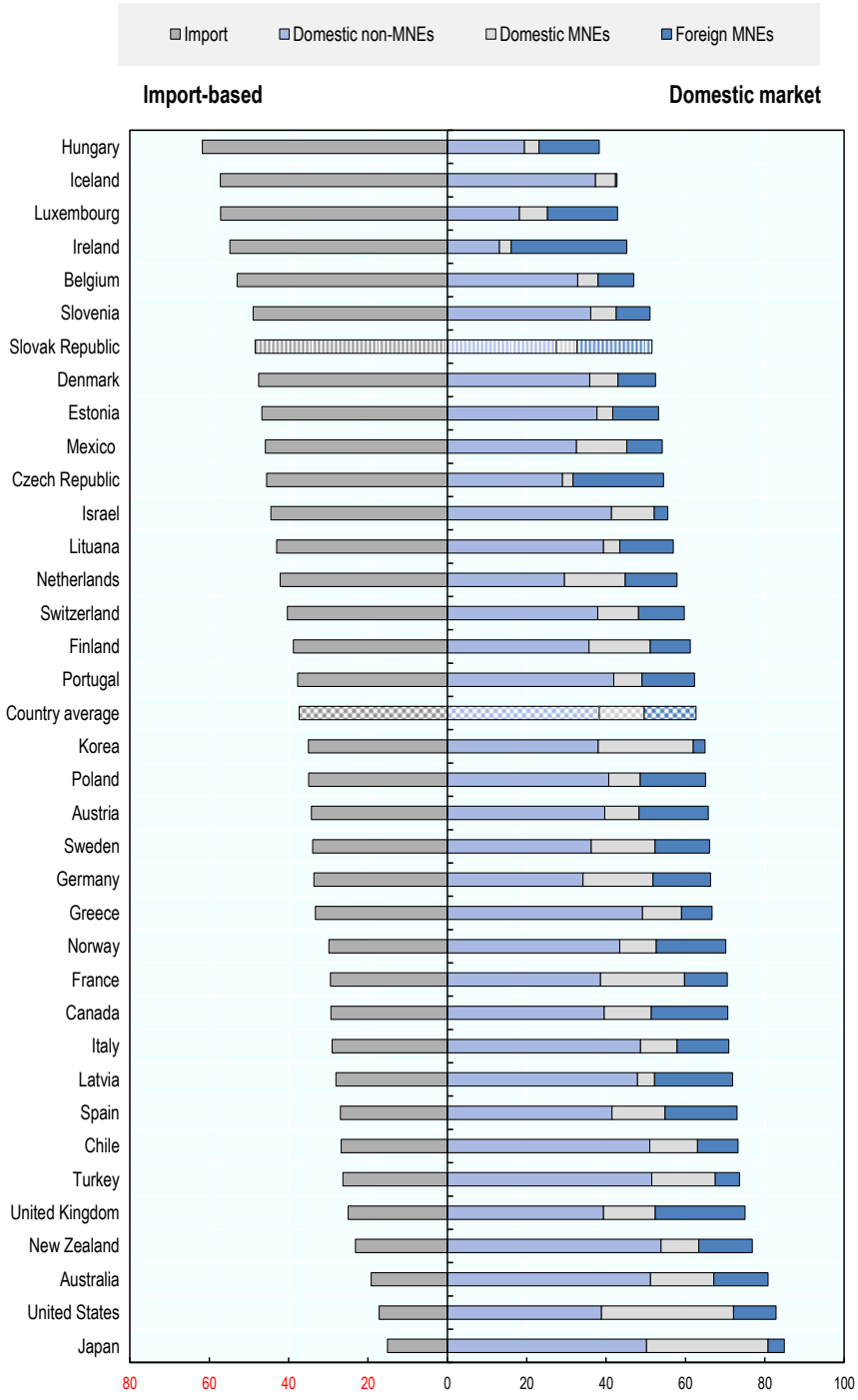
Foreign affiliates in the Slovak Republic tend to rely less on local suppliers to source inputs compared to their peers in other OECD economies. In 2016, about half of foreign MNEs total sourcing was imported from abroad, against an OECD average of less than 40%. Similar shares are reported for foreign MNEs in other small open economies like Denmark or Slovenia (Figure 3.2). By contrast, foreign affiliates in larger economies like the United Kingdom or France tend to purchase more from local suppliers, also reflecting the size of domestic markets and the availability of a larger variety of intermediate goods and services locally.

A large share of FA input is sourced from abroad, pointing to potentially weak supply chain linkages with the local economy. Domestic non-MNEs (e.g. Slovak firms with no establishment abroad) account for less than 30% of total sourcing of foreign affiliates operating in the Slovak Republic, which is one of the lowest shares across OECD economies. The share of domestic MNEs (5%) is also only half the average OECD share (11%). Data do not allow to distinguish between domestic large firms and SMEs. However, the scarce propensity of foreign affiliates to source from domestic firms, either or not multinationals, can be interpreted as a sign of weak supplier linkages between foreign affiliates and domestic businesses, particularly SMEs. In this context, opportunities for smaller domestic suppliers to benefit from knowledge and technology spillovers via backward value chain linkages with foreign MNEs appear to be limited. A closer observation of the supplier chain in the Slovak automotive industry (Box 3.2) provides further evidence to back up this assumption (on the automotive GVC in the Slovak Republic, see also Chapter 2, Box 2.4).

By contrast, sourcing from other foreign affiliates established in the Slovak Republic seems to be relatively common and similar to that of foreign firms established in Canada, Spain and the United Kingdom. Slovak foreign affiliates purchase almost 20% of their total input from other foreign multinational firms operating in the country, which is higher than the OECD average of 13%, suggesting some clustering of foreign affiliates which tend to buy from and supply to each other.

Figure 3.2. Sourcing structure of foreign affiliates, by type of suppliers and country of origin, 2016

% in total FA sourcing of goods and services



Note: Foreign MNEs = foreign affiliates of multinational enterprises; domestic MNEs = domestically owned firms with foreign affiliates abroad; domestic non-MNEs = domestically owned firms with no operations abroad.
Source: OECD Analytical Activity of Multinational Enterprises (AMNE) database, 2016, www.oecd.org/sti/ind/analytical-AMNE-database.htm (accessed 8 October 2021).

Box 3.2. The Slovak automotive supplier network

Apart from the lead foreign car manufacturers (Volkswagen, Kia Motors, PSA Peugeot Citroën and Jaguar Land Rover – see Chapter 2, Box 2.4), a network of more than 350 automotive suppliers operates in the Slovak Republic, most of which is established in the Western regions (although further development of the supplier network is expected in the Central and Eastern parts of the country in the medium term) (SARIO, 2021[2]). Foreign-owned companies represent the majority of Tier 1 and 2 suppliers – i.e., the closest partners to the lead foreign producers in the supply chain. Of the 40 largest automotive suppliers in the automotive sector in 2014, only 2 were domestically owned companies (Železiarne Podbrezová (3 229 employees) and Matador Automotive Vráble (685 employees)) (SARIO, 2017[3]). Both are domestically-owned multinational enterprises with affiliates abroad.

The automotive supply chain in the Slovak Republic seems to be organised according to a hierarchical model which is typical of this industry. In such a configuration, lead car manufacturers (mostly MNEs) are responsible for design, branding and final assembly and Tier 1 suppliers support them by producing complete subsystems in co-operation with a large network of lower-tier suppliers (OECD, 2022, forthcoming[4]). Sometimes Tier 1 suppliers may have a larger role in the production process (e.g. being involved in design activities) and hold IP for car components (OECD, 2022, forthcoming[4]). In this context, the potential for knowledge diffusion mainly resides in value chain linkages between the lead car producer and its Tier 1 suppliers, while spillovers to lower-tier firms can vary depending on their function in the value chain (OECD, 2022, forthcoming[4]). Given the very high share of foreign firms among Tier 1-2 suppliers and the lower position of domestic firms in the Slovak automotive GVC, the spillover potential to domestic supplier firms appears to be limited.

An empirical study on the quantity and quality of supplier linkages in the Slovak automotive industry which was conducted between 2010 and 2015 among 183 automotive firms (both foreign-owned and domestic) corroborates such conclusion (Pavlínek, 2017[5]). The study points to weak backward and forward linkages between foreign subsidiaries and domestic firms, and high dependence of both on imports of parts and components, which undermines the potential for technology and knowledge transfer from foreign MNEs to the domestic economy.

The weak supplier linkages of foreign affiliates in the Slovak automotive sector are likely to be related to the prevalence of investment motivated by cost-cutting reasons, particularly the low cost of the labour force relative to its skills endowment ("efficiency-seeking" investment). As pointed out in Chapter 2 indeed, in the Slovak Republic the prevalence of efficiency-seeking FDI in labour intensive and low value added industrial activities (e.g. car assembly), with low spillover potential, undermines the opportunities for knowledge and technology transfer to the domestic economy.

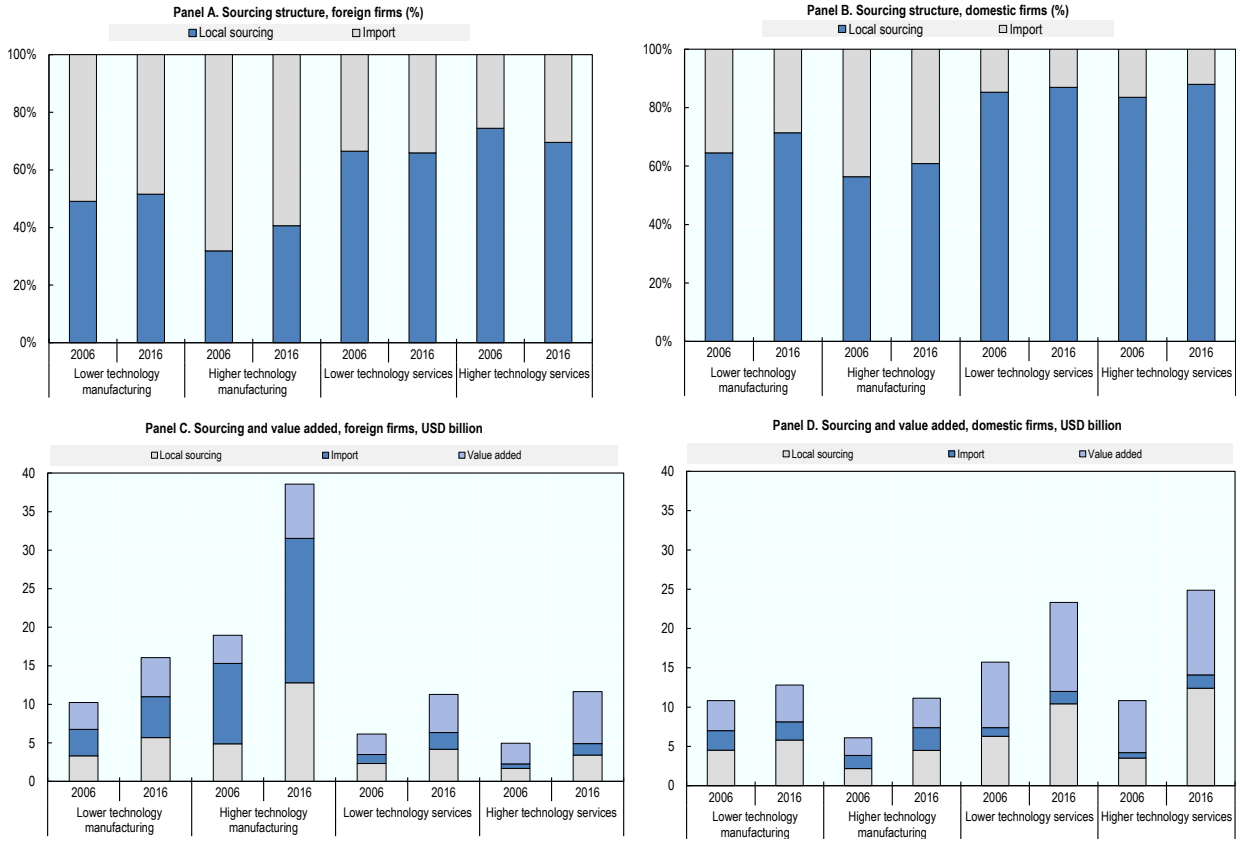
A more granular analysis by sector shows that Slovak foreign affiliates operating in the services sector source more locally compared to those operating in manufacturing (Figure 3.3, Panel A). In high- and low-tech services respectively, around 70% of FA input is sourced from local providers against 40-50% in high- or low-tech manufacturing.

The proportion of FA affiliates local sourcing in the services sector remained substantially unchanged between 2006 and 2016, while it increased by 9 percentage point in high tech manufacturing over the same period. Furthermore, in absolute values, domestic suppliers in manufacturing benefit more from the demand of FA compared to those in other sectors. In the sole high tech manufacturing, the value of FA local sourcing was USD 13 billion in 2018 – against USD 8 billion in the whole services sector (including low and high-tech activities) (Figure 3.3, Panel C).

Domestic firms have a different sourcing pattern, with larger shares of local inputs (Figure 3.3, Panel B). Domestic firms purchased almost 90% of their inputs in high- and low-tech services and 60-70% in high-

and low-tech manufacturing locally in 2016, i.e. a larger share than FA across all sectors. Also, their proportion of local sourcing increased between 2006 and 2016 across all sectors, especially in low and high-tech manufacturing.

Figure 3.3. Sourcing of domestic and foreign firms by sectoral groups in the Slovak Republic, 2016



Source: OECD Analytical Activity of Multinational Enterprises (AMNE) database, 2016, www.oecd.org/sti/ind/analytical-AMNE-database.htm (accessed 29 October 2021).

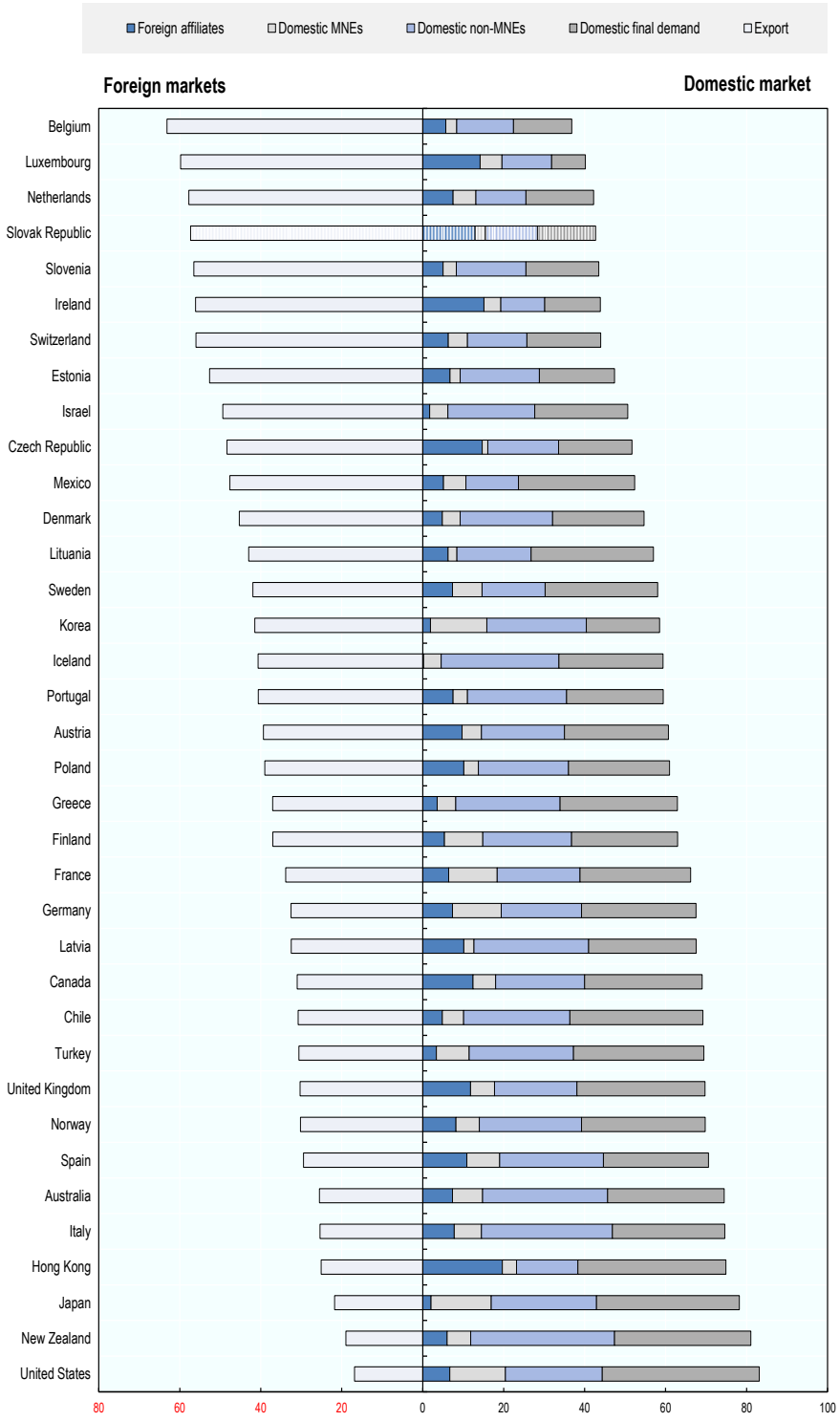
Foreign MNEs export most of their output, with only a limited share used by domestic SMEs

FDI-SME knowledge and technology spillovers may also occur via forward linkages between foreign MNEs and their local suppliers. The extent to which the output of foreign firms is used for the production of domestically owned SMEs – as opposed to being exported, or feed private consumption – determines the spillover potential of this particular diffusion channel.

In the Slovak Republic, almost 60% of FA output is destined to international markets (through direct exports), meaning that only a limited share feeds back into domestic value chains. At less than 30%, the share of foreign MNEs' total output that is used in the production of firms operating in the Slovak Republic – either domestic multinational, domestic non-multinational or foreign-owned – is one of the lowest across OECD countries (Figure 3.4). This situation reduces the chances of local firms (especially the smaller ones) to benefit from knowledge and technology spillovers through forward value chain linkages with foreign MNEs.

Figure 3.4. Use of outputs of foreign affiliates, by buyer type/origin, 2016

% in total output of foreign affiliates



Notes: Foreign affiliates = foreign affiliates of MNEs; domestic MNEs = domestically owned firms with foreign affiliates abroad; domestic non-MNEs = domestically owned firms with no operations abroad.
Source: OECD Analytical Activity of Multinational Enterprises (AMNE) database, 2016, www.oecd.org/sti/ind/analytical-AMNE-database.htm (accessed 29 October 2021).

3.3. Strategic partnerships between foreign firms and SMEs in the Slovak Republic

Foreign MNEs and domestic SMEs can establish strategic partnerships around the development of joint R&D and innovation projects, which can create opportunities for technology transfer, especially in high-technology and knowledge-intensive industries. These partnerships can take many forms, including joint ventures, licensing agreements, research collaborations, globalised business networks (i.e. membership-based business organisations, trade associations, stakeholder networks), and R&D and technology alliances. Strategic partnerships between affiliates of foreign MNEs and domestic SMEs have the potential to contribute extensively to knowledge and technology spillovers. This section provides some insights on strengths and opportunities related to strategic partnerships in the Slovak Republic.

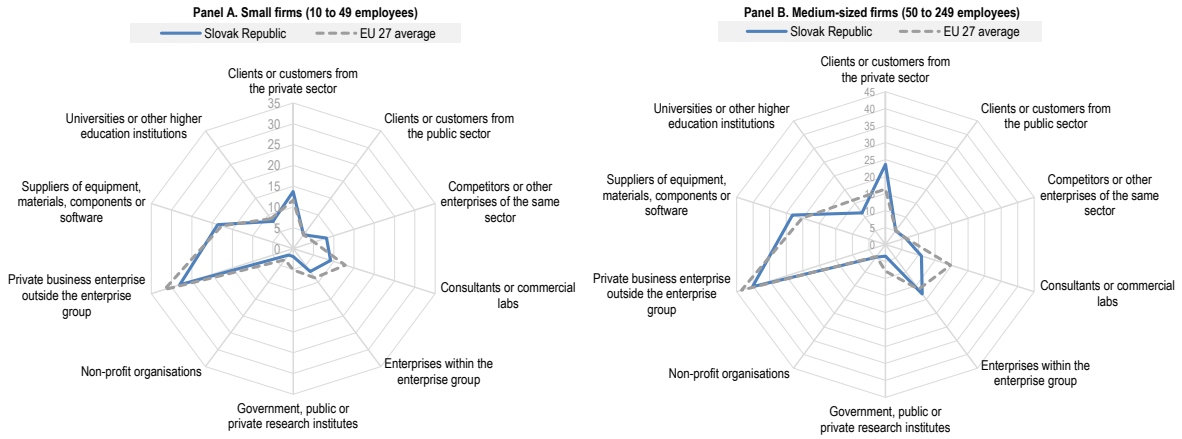
R&D and innovation collaboration is relatively common among Slovak SMEs, especially with buyer and supplier firms

Slovak innovative SMEs collaborate for innovation as much as their European peers. In the Slovak Republic, 25% of small and 38% of medium-sized innovative businesses report being engaged in co-operation on R&D and innovation activities with other enterprises or organisations, in line with the EU-27 average of 26% and 36% respectively (Figure 3.5).

Slovak small and medium-sized innovative businesses mostly undertake co-operation with private business partners outside their own enterprise group. Most interestingly, R&D and innovation co-operation with buyer or supplier firms appears to be more common than in other European countries. The share of Slovak innovative small and medium-sized firms co-operating with private sector clients or customers exceeds the EU-27 average, and so does the share of innovative SMEs reporting to co-operate with suppliers. Although data do not allow distinguishing among foreign-owned and domestically-owned partner firms, the fact that R&D collaboration is a relatively common practice among Slovak innovative SMEs, especially within their network of buyers and suppliers, may suggest some potential for spillovers in this area.

Figure 3.5. Enterprises that co-operated on R&D and innovation with other enterprises or organisations, 2018

% of innovative SMEs*, by kind of co-operation partner



Notes: *The enterprise is considered as innovative if during the reference period it introduced successfully a product or process innovation, had ongoing innovation activities, abandoned innovation activities, completed but yet introduced the innovation or was engaged in in-house R&D or R&D contracted out. Non-innovative enterprises had no innovation activity mentioned above whatsoever during the reference period. Innovative enterprises represented 30.5% of total enterprises in innovation core activities (Com.Reg. 995/2012) in 2018 (Eurostat [inn_cis11_bas] 2018). Small firms = 10 to 49 employees. Medium-sized firms = 50 to 249 employees.
Source: Eurostat Community Innovation Survey (CIS) 2018 (accessed 4 November 2021).

Box 3.3. Slovak Innovation and Energy Agency (SIEA) survey on FDI and SMEs cooperation in the Slovak Republic, 2021

As part of the ongoing EC-OECD project on boosting productivity and innovation in EU countries and regions through stronger FDI-SME linkages and ecosystems, in 2021 the Slovak Innovation and Energy Agency (SIEA) conducted a survey among 36 Slovak SMEs about their co-operation activities with FAs. The survey provides some interesting insights on the spillover potential of FDI-SME strategic partnerships in the Slovak Republic (SIAE, 2021[6]).

The results show that FDI-SME collaboration on innovation is relatively common, but its quality and intensity could be improved. Over 80% of the interviewed companies report being engaged in co-operation activities with foreign affiliates. Almost 70% of these collaborations are technology-intensive, involving high-tech products or services. FDI is also reported to request strong innovation capacity or proof of innovation from their domestic partners in more than half of the cases. Over 60% of the respondents, however, rate the intensity of their collaboration experience as modest or moderate, and report a lack of information from the foreign partner about its future innovation needs. Also, almost 80% of the respondent SMEs declare not having participated in any international trade fair as part of their collaboration with a foreign-owned company.

Major identified advantages of co-operation are an increase of revenue, improved access to innovation, enhanced export potential and reliability of the business partner. FA's demand for higher quality input and faster delivery, by contrast, tend to be reported as a negative aspect of co-operation by the sampled firms, jointly with the bureaucracy of large corporations. Although SMEs tend to report the push for quality from FDI as a negative aspect of their co-operation experience, it may be observed that the latter

is likely to have a positive impact on the overall competitiveness and productivity of those SMEs that are able to comply with the requested quality standards.

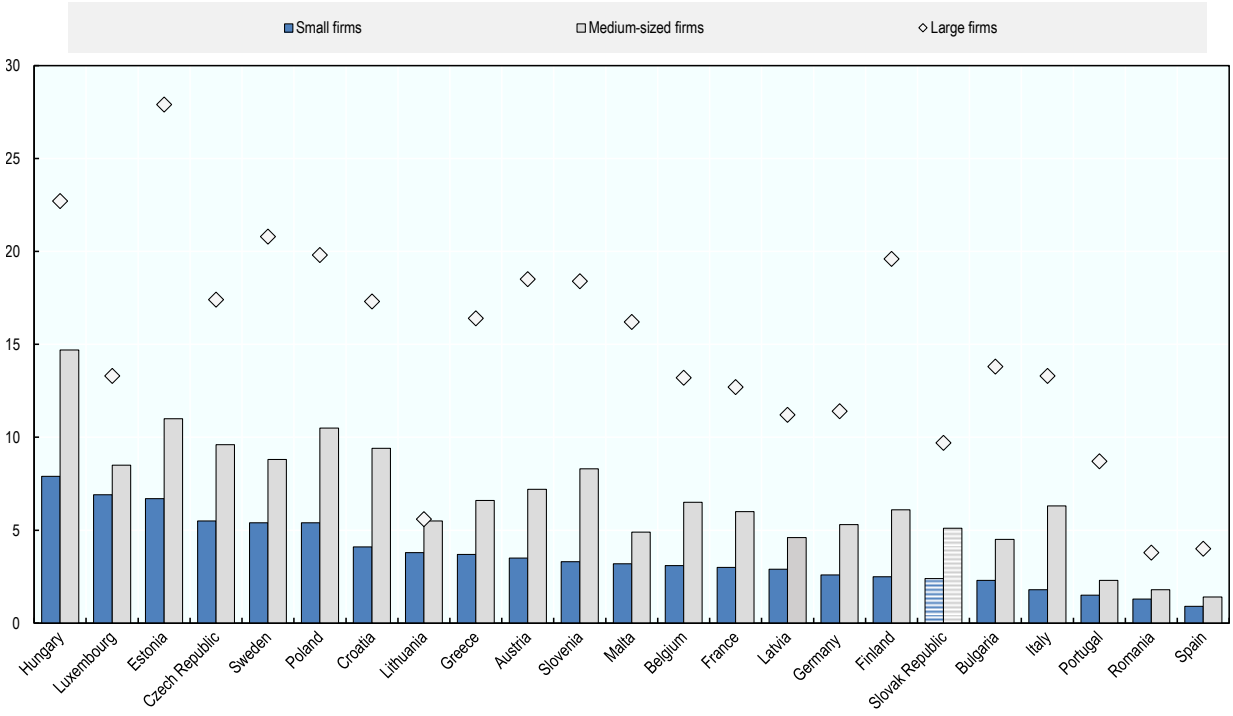
Sources: SIEA (2021), *SIEA survey on SMEs cooperation with FDI in the Slovak Republic, 2021.*

Technology licensing agreements with MNEs are diffused in the manufacturing sector

Technology licensing is a less common practice among Slovak firms than in other European countries. In 2018, less than 3% of small firms in the Slovak Republic purchased or licensed intellectual property (IP) rights from other firms, a share that is comparatively low across the EU (Figure 3.6). As in most other countries, IP licensing is more common among medium-sized firms (5%) but these still rank lower than their peers in Poland or the Czech Republic (10%). Slovak large firms are also among the less inclined to license or purchase IP rights from other firms across European countries. Overall, the comparatively low diffusion of technology licensing agreements among private business enterprises of all sizes in the Slovak Republic could suggest a scarce potential for spillovers through this particular type of channel. In this respect, however, Eurostat CIS data is not fully conclusive as it does not allow distinguishing whether IP issuing firms are foreign-owned or domestically-owned.

Figure 3.6. Enterprises that purchased or licensed IP rights from other private business enterprises, by size class, 2018

% of total firms in innovation core activities (Com.Reg. 995/2012)



Notes: Small firms= 10 to 49 employees. Medium-sized firms= 50 to 249 employees. Large firms= more than 250 employees.
Sources: Eurostat Community Innovation Survey (CIS) 2018 (accessed 25 October 2021).

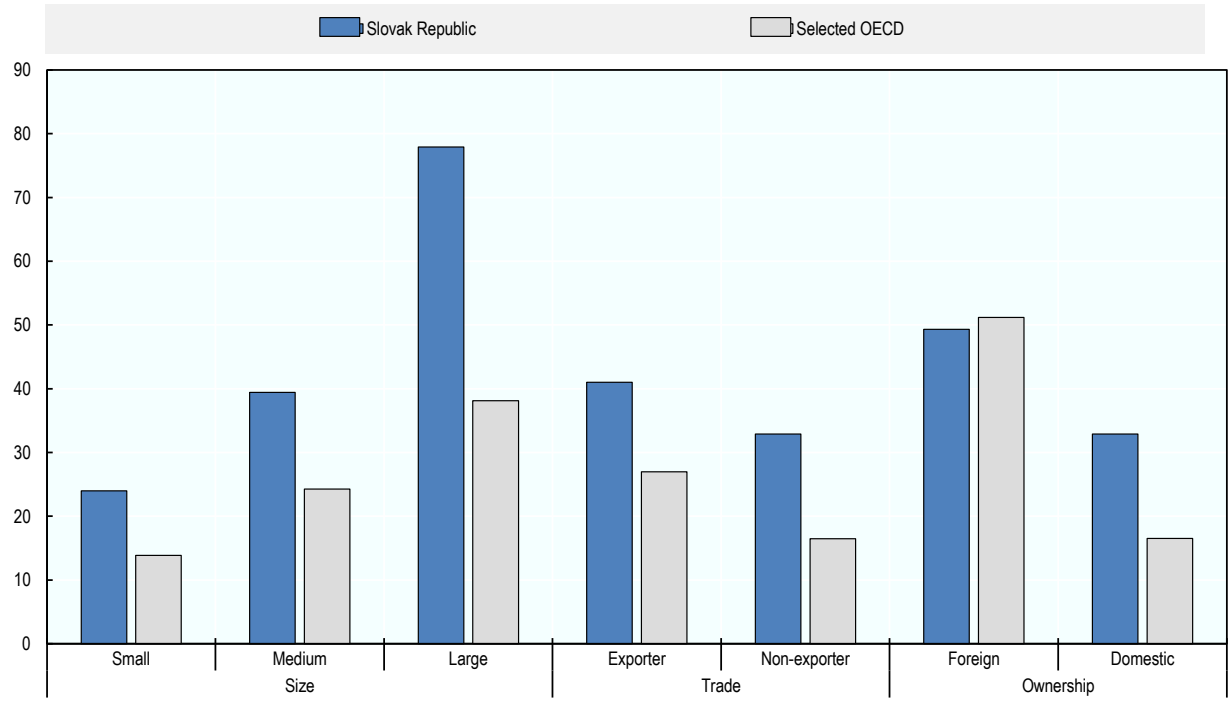
Focusing on the manufacturing sector, data from the World Bank Enterprise Surveys (WB, 2020[7]) suggest a higher propensity of Slovak businesses to establish technology licensing agreements with foreign affiliates than in a selection of benchmarking countries (i.e. Estonia, Hungary, Latvia, Lithuania, Poland,

Portugal and Slovenia) (Figure 3.7). This, by contrast with the former results, would suggest that technology transfers through this channel are likely to materialise mostly within the manufacturing sector.

The licensing of foreign technology in manufacturing is indeed significantly more frequent across all types of actors in the country, to the exclusion of other foreign firms. As compared to the patterns that could be observed in the benchmarking countries, licensing is particularly widespread among larger manufacturing firms (78%), but SMEs and domestic firms also make use of foreign technology. Indeed 24% of small and 40% of medium-sized firms in manufacturing use technology licensed from foreign companies against an average of 4% and 24% in selected OECD countries. The share of domestic firms licensing technology from FA is 33% -- more than in any of the selected comparator countries. Conversely, about half of foreign-owned manufacturers in the Slovak Republic licensed technology from (other) foreign firms – more than in Slovenia (26%) but a much lower share than in Portugal (90%) or Poland (70%). There is also less difference between exporters and non-exporters in terms of licensing. The opportunity of technology spillovers are therefore highly uneven, with a possible bias towards large domestic manufacturers.

Figure 3.7. Foreign technology licensing in the Slovak manufacturing sector, 2019

% of firms using technology licensed from foreign firms



Note: Selected OECD benchmarking economies include: Estonia, Hungary, Latvia, Lithuania, Poland, Portugal and Slovenia.
Source: Adapted from (OECD, 2022[8]). OECD based on World Bank Enterprise Surveys, www.enterprisesurveys.org/en/enterprisesurveys (accessed in 2021).

Joint ventures played an important role in the Slovak transition to a market economy and might still hold potential for productivity spillovers

Joint ventures between domestic and foreign partners played an important role in the Slovak transition to a market economy in the 1990s (Ferencíková, 2016[9]). However, these forms of co-operation received limited research attention in subsequent decades, and up-to-date evidence on the operation of international joint ventures in the Slovak Republic is currently in short supply. A rough estimation of the

total number of Slovak-foreign joint ventures operating in the country is provided by Hlusková (2016[10]). According to the author's calculation, approximately 8 500 joint ventures were operating in the Slovak Republic in 2016, 3 503 of which were headquartered in the Bratislava region, with the Trnava region ranking second (889 joint ventures) and the other regions lagging far behind. Ferencíková (2016[9]) calculates that international joint ventures accounted for 20% of all foreign-invested companies in 2015.

Another way to assess the diffusion of joint venture agreements in the Slovak Republic is to look at existing restrictions on foreign ownership, namely any foreign equity limitations in target sectors or ventures (OECD, forthcoming[11]). According to the OECD Foreign Direct Investment Regulatory Restrictiveness Index (FDI RRI) (OECD, 2020[12]), the Slovak Republic's score on foreign equity restrictions is above the OECD average and significantly higher than in peer economies like the Czech Republic or Portugal. Restrictions on foreign ownership, however, are most prevalent in the services sector, real estate investment, air and transport. Since the operation of foreign MNEs in the Slovak Republic is rather concentrated in the manufacturing industry (as discussed *supra* in Chapter 2), then there is no strong evidence of international joint ventures taking place in the Slovak Republic as a result of foreign ownership restrictions. Such restrictions should be avoided as a means to achieve FDI-SME spillovers in the first place, as they are found to have the side effect of deterring FDI (OECD, forthcoming[11]).

Regarding the performance and spillover potential of international joint ventures in the Slovak Republic, a case study conducted in 2001 on six joint ventures between Slovak companies and foreign partners (Ferencíková, 2001[13]) pointed out the positive effects on the performance of the domestic partners involved, among other things in terms of technology improvement, workforce training, management practices and knowledge of foreign markets. The results of a 2013 survey conducted on 44 joint ventures involving Slovak firms (Sásiková, 2013[14]) highlighted that the principal motive of Slovak partners for entering an international joint venture is gaining access to foreign markets, new technologies and the distribution channels of the foreign partner. The majority of the survey respondents were satisfied with the performance of the joint venture and willing to pursue the cooperation experience in the future.

3.4. Labour mobility between FDI and domestic firms

This section assesses spillover potential through labour mobility and associated skills effects in the Slovak Republic. Labour mobility between FDI and local SMEs can be an important source of knowledge spillovers**.** Foreign MNEs workers can move to domestically-owned firms based on temporary arrangements such as detachments, long-term arrangements such as open-ended contracts, or through the creation of start-ups (i.e. corporate spin-offs). Mobility can also occur in the opposite direction (from domestic SMEs to foreign MNEs), also involving potential for spillovers.

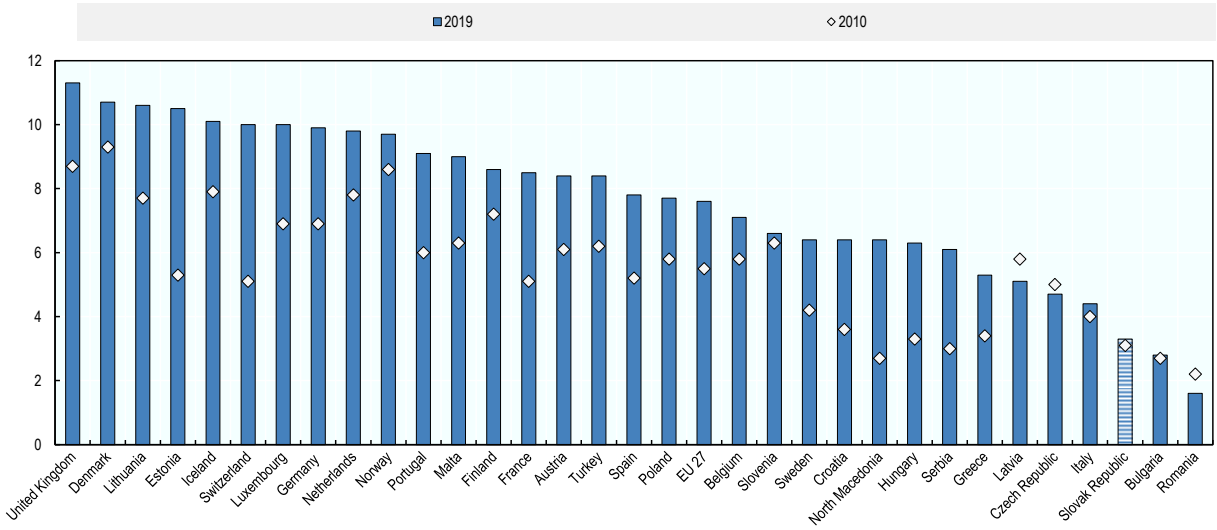
Overall, job-to-job mobility of science and technology (S&T) workers is low by international comparison

No recent evidence on labour mobility practices between foreign-owned and domestically-owned firms is available for the Slovak Republic. However, looking at broader workforce mobility trends may provide some initial insights on the likelihood of knowledge spillovers to take place through this channel. In this respect, Eurostat data on human resources in science and technology (HRST) flows show that Slovak S&T workers are less mobile than their peers in other European countries. In 2019, only about 3% of total S&T workers in the Slovak Republic had moved to another job within the previous year. This share is comparatively low, with only two countries ranking lower among EU 27 members (i.e. Bulgaria and Romania, both at 2-3%) (Figure 3.8). At the opposite end of the spectrum, S&T workers in the United Kingdom, Denmark or Lithuania were more mobile, with at least 10% of them having changed job in the previous year. Data suggests that job-to-job mobility generally increased between 2010 and 2019 across European countries; however, such increase was much more significant in Estonia (+5%) or France (+3%) than in the Slovak

Republic (+0.2%). The overall scarce propensity for job mobility of Slovak S&T workers points in the direction of a weak potential for FDI-SME spillovers through skilled labour mobility.

Figure 3.8. Job-to-job mobility of human resources in science and technology (HRST), 25-to-64-year-olds, 2010 and 2019

As % of total employed HRST



Notes: Human resources in science and technology (HRST) describes individuals in science and technology occupations, such as professionals, technicians and associate professionals, as well as those in other occupations who successfully completed a tertiary-level education in science and technology. Job-to-job mobility is the movement of an employee from one job to another from one year to the next. It excludes inflows into the labour market from a situation of unemployment or inactivity. The figure refers to HRST in total NACE (Statistical classification of economic activities in the European Community) Rev 2 activities.
Source: Eurostat, Job-to-job mobility of HRST by NACE Rev. 2 activity dataset (hrst_fl_mobsect2), 2021 (accessed 21 October 2021).

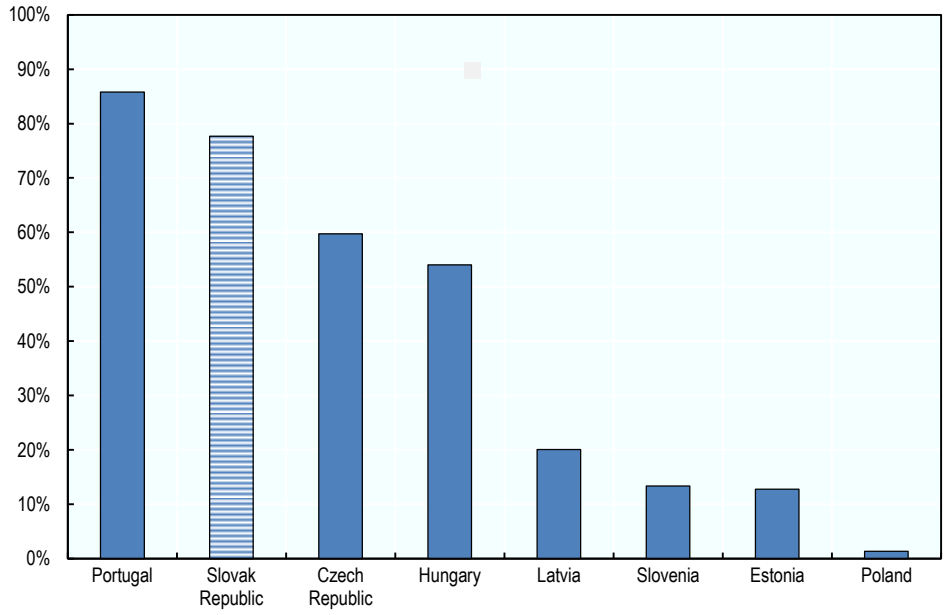
The high wage premia of foreign affiliates are likely to discourage labour mobility towards domestic SMEs

In the Slovak Republic, manufacturing workers employed by foreign-owned firms earn almost 80% higher wages compared to those employed by the average domestic firms. Similar wage premia are observed in Portugal (86%) and, to a slightly lesser extent, in Hungary and the Czech Republic (50-60%) (Figure 3.9). Such a high wage gap is likely to discourage mobility of workers from large foreign MNEs to smaller firms in the domestic sector, suggesting that this may not be a major source of productivity spillovers for Slovak SMEs.

Foreign MNEs' wage premia in the Slovak Republic are likely to be related to their larger size and higher productivity (OECD, 2019[15]). As discussed in Chapter 2, the productivity gap between small and large firms in the country is bigger than in most other OECD economies, and the business population is polarised between a few large very productive firms, which are often foreign-owned, and numerous local low-efficient SMEs (OECD, 2019[16]). This productivity gap is reflected in wage trends. The difference between the average salary of workers in large firms (more than 250 employees) and micro firms (up to 9 employees) increased by 40% between 2009 and 2016, a much more significant rate than in other OECD countries (OECD, 2019[16]).

Figure 3.9. Foreign firms' wage premia relative to domestic firms in the Slovak manufacturing sector, 2019

Wage of average foreign firms in % of wages of average domestic firms, manufacturing



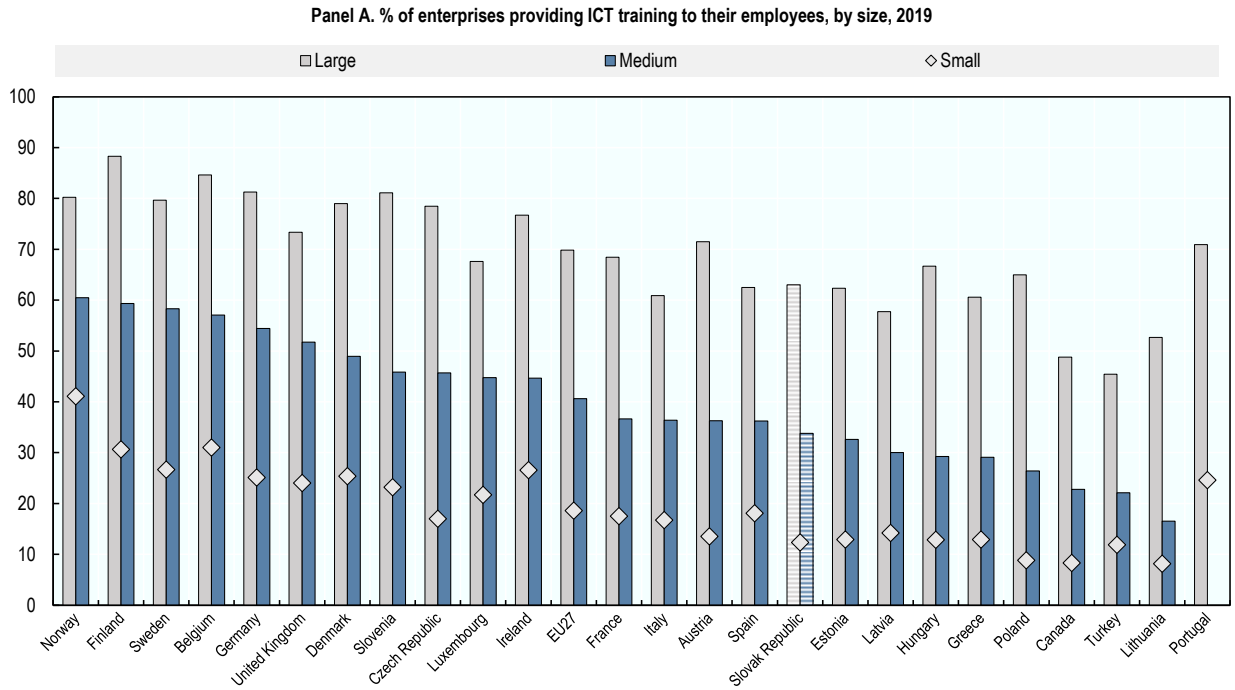
Note: See methodology in (OECD, 2019[15]).
Source: (OECD, 2019[15]) FDI Qualities indicators 2019 based on World Bank Enterprise Surveys.

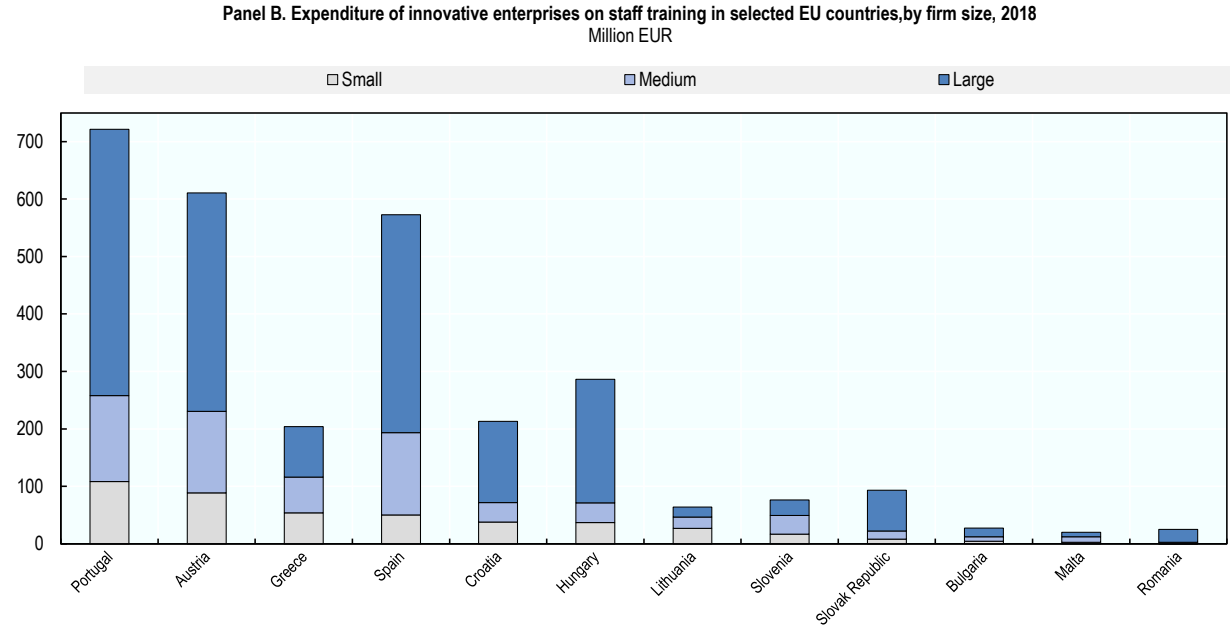
Some firm-level evidence point to limited labour mobility spillovers and high competition for talent between foreign affiliates and domestic firms. The interviews conducted by (Pavlínek, 2017[5]) with 50 Slovak firms (22 domestic and 28 foreign) in the automotive sector suggest a limited transfer of knowledge and skills to domestic firms through workers trained by foreign subsidiaries. Indeed only 14% of the local firms interviewed reported having hired staff who previously worked for foreign subsidiaries, and only one firm agreed that those workers brought with them useful knowledge. The interviews also point to an increasing competition for skilled labour between foreign subsidiaries and domestic firms on the Slovak labour market, with more than half of the respondents declaring a loss of workers to foreign subsidiaries, and increasing difficulties to recruit skilled workers following the market entry of foreign investors.

Lack of training and learning opportunities in the SME sector may also hinder workers mobility

The availability of in-work training and learning opportunities contributes to determine the quality of a working environment and can therefore be expected to weigh on workers' job mobility decisions (Cazes, Hijzen and Saint-Martin, 2015[17]). Available evidence shows that the performance of Slovak SMEs in terms of staff training could be improved. In 2019, only 12% of small and 34% of medium-sized firms had offered any type of ICT training to their employees over the previous year – which is less than in most European countries and also below the reported share for the EU 27 as a whole (Figure 3.10, Panel A). Slovak innovative SMEs also invest less than their European peers in staff training (Figure 3.10, Panel B). The lack of opportunities for on-the-job training and skills upgrading in the SME sector may contribute to discourage the mobility of MNEs workers toward smaller local firms and thereby further reduce the potential for knowledge spillovers through this particular diffusion channel.

Figure 3.10. Employees training in Slovak SMEs





Notes: Panel A: Businesses which provided any type of training to develop ICT related skills of the persons employed, within the last 12 months (%). Small = 10 to 49 employees. Medium = 50 to 249 employees. Large = 250 employees or more. Data for Portugal medium-sized firms are not available. Panel B: Expenditure on staff training include all in-house costs including wages and salaries of staff while being trained, and costs of purchased services from others. Small = 10 to 49 employees. Medium = 50 to 249 employees. Large = 250 employees or more. Data refers to innovative enterprises in innovation core activities (Com.Reg. 995/2012). The enterprise is considered as innovative if during the reference period it introduced successfully a product or process innovation, had ongoing innovation activities, abandoned innovation activities, completed but yet introduced the innovation or was engaged in in-house R&D or R&D contracted out. Innovative enterprises represented 30.5% of total enterprises in innovation core activities (Com.Reg. 995/2012) in 2018 (source: Eurostat [inn_cis11_bas] 2018).
Sources: Panel A: OECD ICT use by Businesses Database, 2020 (accessed 26 October 2021); Panel B: Eurostat Community Innovation Survey (CIS) 2018 (accessed 26 October 2021).

The direct engagement of foreign MNEs in local training initiatives, e.g. through their participation in dual education agreements with local vocation schools (Box 3.4), is likely to further accentuate a brain drain towards foreign employers, widening the skill gap with domestic SMEs. In the longer term, however, such initiatives may also result in an increase of the domestic talent pool, with benefits to local entrepreneurship development.

Box 3.4. Dual education initiatives by foreign affiliates in the Slovak Republic

Collaboration between foreign MNEs and local educational institutions (e.g. HEIs or vocational schools) has the potential to improve outcomes for local communities at different levels – e.g. by helping to enhance the quality of domestic entrepreneurship education, or stimulating a higher involvement of local firms with the local education system through competition/imitation effects (OECD, 2022, forthcoming[4]). The OECD/EC HEInnovate Country Reviews highlight a number of examples of MNEs that have helped build teaching and innovation capacity in higher education institutions (HEIs) (EC/OECD, 2022[18]).

In the Slovak Republic, participation in dual education programmes, combining theoretical education in a vocational school with practical training at a company, is a way for MNEs' affiliates to address skill shortages on the local labour market and attract qualified workers immediately upon completing their studies. Dual education also lowers recruitment and requalification costs for foreign employers as they can prepare employees according to the needs of a particular industry. Data from the Ministry of Education relative to the school term 2016/17 shows that the largest number of students involved in dual education (with both domestic and foreign owned companies) is in the Žilina Region, followed by Trenčín, Bratislava, Nitra and Prešov (Rédli, 2017[19]). The highest number of dual education contracts were signed in machinery and metal processing, electro technologies, and economics and organisation, trade and services. An increasing number of foreign companies in the Slovak Republic offer dual education options based on agreements with domestic vocational institutions. Such initiatives have the potential to foster knowledge transfer from foreign employers to the local workforce, with potential positive effects on the latter's overall skills endowment.

In the automotive sector, **Volkswagen Slovakia** established the Dual Academy in Bratislava in 2015. A total of 60 students enrolled in the 2020/2021 school year (WS, 2020[20]). The education programme lasts for four years, with a heavy emphasis on practical skills in six specialisations: machinery and equipment mechanic, tool-setting mechanic, information technology specialist, and passenger car autotronics specialist. Practical training includes concrete work experience in a Volkswagen manufacturing plant. Upon graduation, students receive a graduation certificate, an apprenticeship certificate and an internationally valid certificate of professional competence issued by the German-Slovak Chamber of Commerce and Industry. The course is free and the company contributes to the students' accommodation, transport and food costs. Partners in the initiative include Siemens, Newport Group, Faurecia, Skoda Auto Slovensko and the Bratislava self-governing region (https://dualnaakademia.sk).

Kia Motors Slovakia has also been actively cooperating with secondary vocational schools in the Žilina region since 2007. In the school year 2020/21, a total of 90 students from the Secondary Vocational School of Mechanical Engineering in Kysucké Nové Mesto, the Joint School in Martin and the Secondary Vocational School of Electrical Engineering in Žilina completed dual training in different specialisations, (mechanical engineering specialist, programmer of cutting and welding machines, and mechatronics engineer) (KMS, 2020[21]). Students have the opportunity to get targeted practical training from their future employer and are guaranteed a job with the company after graduation. Most recently, collaboration in dual education programmes has been expanded, namely via the establishment of new agreements with the Veľká okružná Business Academy and the Secondary Vocational School of

Transport in Žilina. "Autotronik", a new dual education course focussed on e-mobility and the production of hybrid cars, is expected to be established starting from the school year 2021/22 in cooperation with the Secondary Vocational School of Mechanical Engineering in Kysucké Nové Mesto. The course will enable future workers to gain skills and knowledge associated with the production of these expanding technologies.

As a pioneer in the ICT field, **T–Systems Slovakia**, a German company located in Košice (3 891 employees in 2019), has implemented since the academic year 2013/2014 ICT dual education initiative where students receive 70% of practical education (https://sario.sk/sites/default/files/sario-ict-2021-02-05.pdf).

U.S. Steel Košice, a large steel producer and key employer in the Košice region (Chapter 6), has a long history of co-operation with local technical universities and secondary schools. Since 2004, the company runs the U.S. Steel Košice Scholarship Programme, focussed on supporting talented university students in technical branches that match the company's production policy (U.S. Steel Košice, 2022[22]). The programme targets students resident in the Košice region and issued from disadvantaged backgrounds, as well as (since 2007) talented children of U.S. Steel Košice full-time employees. Since its establishment, the programme provided 406 scholarships, including 25 scholarships for the academic year 2020/2021. U.S. Steel Košice also runs a summer internship programme targeting college or university students in metallurgy, mechanical engineering, electronic engineering, information technology, economics or other technical areas.

3.5. Competition and imitation effects of FDI

Other FDI-SME diffusion channels include market mechanisms related to competition and imitation effects. Competition effects may take place when an above-average efficient MNE enters the market, putting pressure on domestic companies to become more innovative and productive. The new standards set by the foreign company (for instance in terms of product design, quality control or speed of delivery) can stimulate innovation and thereby productivity growth in local companies. Imitation and tacit learning can also become a channel of productivity spillovers to local firms (OECD, 2022, forthcoming[4]). Building on the discussion above and in Chapter 2, this section discusses how and to what extent such effects might be at play in the Slovak Republic FDI and SME sectors.

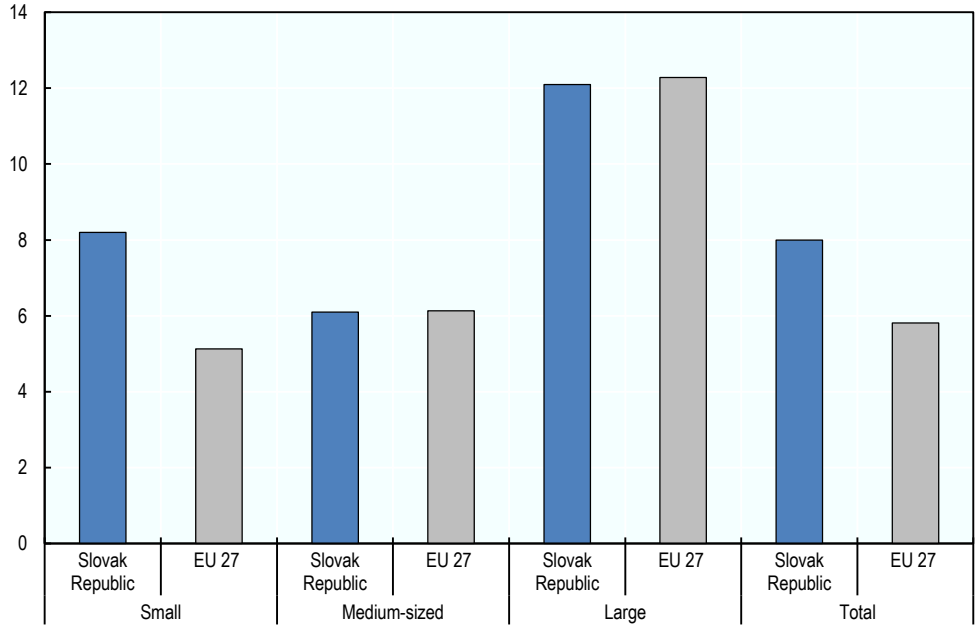
Co-operation with, and information gathering from, competitors are relatively common practices for Slovak SMEs

Imitation effects are more likely to happen to local companies which operate in the same sector or value chain function of the foreign-owned company (OECD, 2022, forthcoming[4]). Frequent collaboration with foreign-owned competitor firms is likely to increase the opportunities for imitation and tacit learning by domestic firms.

In the Slovak Republic, collaboration on R&D and innovation with competitors or other enterprises of the same sector, albeit still rare, is slightly above the EU average, particularly among small firms. Overall, 8% of total firms across all sizes collaborate with competitors, against an average of 6% in the EU 27 countries (Figure 3.11). Disaggregated data by firm size show that Slovak small firms are largely responsible for this performance. Results are close to the European average for medium and large firms, while they are comparatively higher for small firms (over 8% report horizontal collaboration, relative to an EU average of 5%). Data do not distinguish between foreign-owned and domestically-owned competitors. However, collaboration among competitors suggests some potential for FDI-SME spillovers through imitation or tacit learning.

Figure 3.11. Enterprises that co-operated on R&D and innovation with competitors or other enterprises of the same sector

% of innovative enterprises* by size class.

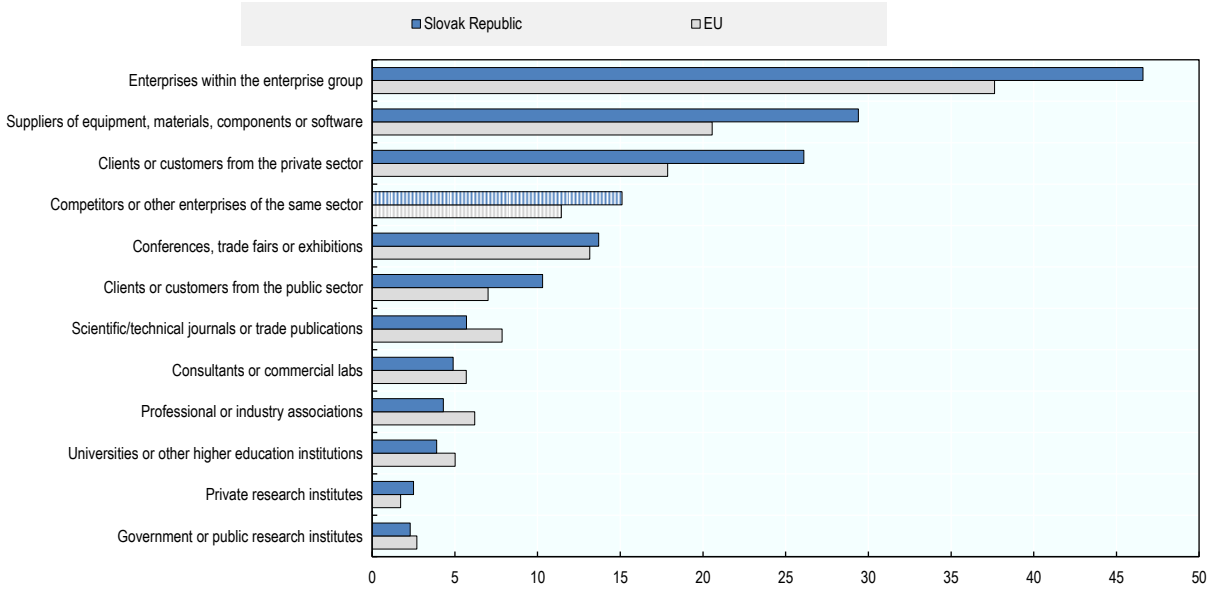


Notes: *The enterprise is considered as innovative if during the reference period it introduced successfully a product or process innovation, had ongoing innovation activities, abandoned innovation activities, completed but yet introduced the innovation or was engaged in in-house R&D or R&D contracted out. Innovative enterprises represented 30.5% of total enterprises in innovation core activities (Com.Reg. 995/2012) in 2018 (source: Eurostat [inn_cis11_bas] 2018). Small firms = from 10 to 49 employees. Medium-sized = from 50 to 249 employees. Large = 250 employees or more. Micro firms with less than 10 employees are not included. EU 27 = average % by firm size in EU 27 countries.
Source: Eurostat Community Innovation Survey (CIS) 2018 (accessed 8 November 2021).

Competitors could also be a relevant source of information for Slovak innovative firms. Beyond their own business group and their network of buyers and suppliers (see also *supra* – Strategic partnerships), Slovak small firms appear to turn relatively often to competitors or other enterprises of the same sector to source knowledge. 15% of small innovative firms in the Slovak Republic consider competitors as a source of knowledge of high importance for their innovation activities (Figure 3.12), which is more than the OECD average of 11%. This share is even larger for medium-sized and large firms (17% and 20%) and in both cases remains above the OECD average (which is 12% for medium-sized and 16% for large firms).

Figure 3.12. Relative importance of competitors as a source of information for Slovak small firms' innovation activities

% of small innovative firms which use and consider different sources of information of high importance for their innovative activities



Notes: Small firms = from 10 to 49 employees. Micro, medium-sized and large firms are not included The EU average includes the following countries: Austria, Bulgaria, Croatia, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, North Macedonia, Norway, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Spain, Switzerland.
Source: Eurostat Community Innovation Survey (CIS) 2016 (accessed 4 November 2021). Based on (OECD, 2022, forthcoming[4]).

Most Slovak SMEs consider however competition as a major barrier to their innovation activities

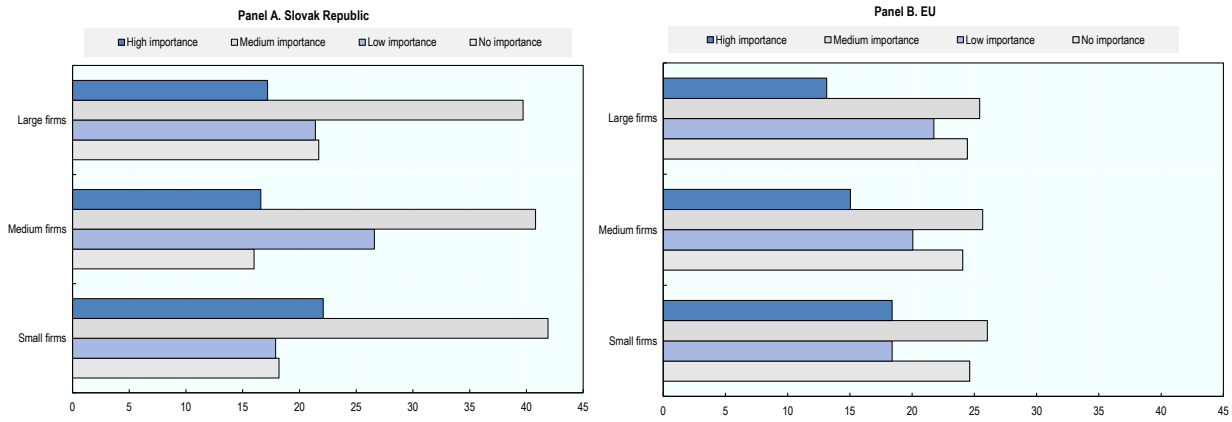
The analysis conducted in Chapter 2 (Figure 2.19) highlighted that, if high costs, lack of internal finance and difficulties in obtaining public funding are the main perceived barriers to innovation in Slovak SMEs, high competition is also reported to be a significant hindering factor, particularly by smaller firms. Almost 65% of small and 60% of medium-sized and large innovative firms in the Slovak Republic see high competition as a medium to highly important barrier to their innovation performance (against 44% and 41% respectively in the EU) (Figure 3.13). The strong perception of market competition as a barrier to innovation could be related to the difficulties Slovak SMEs face in catching up with higher quality standards (e.g. in terms of product design, management practices, or speed of delivery). It could also be seen as symptomatic of the more limited absorptive capacities of local business population. Perceiving competition as a barrier to innovation could therefore be rather a signal of the poor efficiency of competition/imitation effects for knowledge spillovers in the Slovak economy.

If market competition can stimulate innovation and thereby become a source of productivity growth, it may also result in the exit of firms that are not able -or quick enough- to adapt. High business dynamism, as measured by firm entries and exists, may therefore signal a well-functioning innovative and competitive market, where new entrants challenge incumbent firms and eventually force the exit of the less productive among them. This reallocation of productive resources to more efficient firms is a key driver of economic performance. However, firm exits in a context of high competition could also signal the existence of market distortions that prevent SMEs from scaling up capacity or competing. This might be the case, for instance,

when exiting firms are actually not the less productive incumbents, but rather recent entrants which failed to grow (OECD, 2021[23]).

Figure 3.13. Importance of high competition as a barrier to innovation by Slovak firms, 2018

% of innovative enterprises* rating the importance of high competition as a "high", "medium", "low" or "not important" barrier to innovation, by size class.



Note: *The enterprise is considered as innovative if during the reference period it introduced successfully a product or process innovation, had ongoing innovation activities, abandoned innovation activities, completed but yet introduced the innovation or was engaged in in-house R&D or R&D contracted out. Non-innovative enterprises had no innovation activity mentioned above whatsoever during the reference period. Innovative enterprises represented 30.5% of total enterprises in innovation core activities (Com.Reg. 995/2012) in 2018. Small firms = from 10 to 49 employees. Medium-sized = from 50 to 249 employees. Large = 250 employees or more. Micro firms with less than 10 employees are not included. Panel B: EU = average of the following 26 countries: Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Republic of Türkiye.
Source: Eurostat Community Innovation Survey (CIS) 2018 (accessed on 8 November 2021).

Business demography indicators (e.g. market entry and exit rates, churn rate, business survival rate) are commonly used to measure competition and, in combination with other indicators, can help assess the status of market conditions in the Slovak economy (OECD, 2021[23]). The Slovak business sector is very dynamic, with high firms birth and death rates and one of the highest churn rates in the OECD area (24.1% in 2017) (Chapter 2, Figure 2.15). For the manufacturing sector from 2013-2017, the Slovak churn rate average was about 22%, which was much higher than the OECD average of 15% in that period. The Slovak Republic additionally had a higher churn rate in manufacturing compared to similar OECD countries like the Czech Republic (16%) or Portugal (18%). However, the low survival rate of new businesses in the country points in the direction of inefficient scaling up drivers. In 2017 indeed, only about 27% of Slovak start-ups were still operating in their 5th year. The very high share of low-productive micro firms in the business population also suggests less than optimal efficiency of market competition selection effects.

References

Alfaro, L. and M. Chen (2012), "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance", *American Economic Journal: Economic Policy*, Vol. 4(3): 30-55. [29]

Cadestin, C. et al. (2019), *Multinational enterprises in domestic value chains*, OECD Publishing, Paris, https://doi.org/10.1787/9abfa931-en. [1]

Castro, F. (2000), *Foreign direct investment in the European periphery: The competitiveness of Portugal*, The University of Leeds, https://etheses.whiterose.ac.uk/2612/1/Castro_FB_LUBS_PhD_2000.pdf. [31]

Cazes, S., A. Hijzen and A. Saint-Martin (2015), "Measuring and Assessing Job Quality: The OECD Job Quality Framework", *OECD Social, Employment and Migration Working Papers*, No. 174, OECD Publishing, Paris, https://doi.org/10.1787/5jrp02kjw1mr-en. [17]

Denison, D. (ed.) (2001), *Foreign Direct Investment as a factor of Change: The Case of Slovakia*, Lawrence Earlbaum Publishers. [13]

EC/OECD (2022), *HeInnovate: Encouraging entrepreneurship through higher education*, https://www.oecd.org/industry/smes/heinnovate.htm. [18]

Ferencíková, S. (2016), *Role, Motivation and Performance of International Joint Ventures in Slovakia*, Palgrave, https://doi.org/10.1007/978-3-319-30803-6_4. [9]

Helpman, E., M. Melitz and S. Yeaple (2004), "Export Versus FDI with Heterogeneous Firms", *American Economic Review*, https://scholar.harvard.edu/files/melitz/files/exportsvsfdi_aer.pdf. [28]

Hlusková, T. (2016), *Joint Ventures in Slovak Economy and the Development of Their Characteristics*. [10]

Johanson, J. and J. Vahlne (1977), "The internationalization process of the firm - A model of knowledge development and increasing market commitments", *Journal of International Business Studies*, Vol. Vol. 8, No. 1. [30]

KMS (2020), *Kia Motors Slovakia Annual Report 2020*, https://www.kia.sk/svc/stream/media/o-spolocnosti/vyrocne-spravy/Kia%20annual%20report%202020. [21]

OECD (2022), *Strenghtening FDI and SMEs linkages in Portugal*, OECD Publishing, Paris. [8]

OECD (2021), "Methodologies to measure market competition", *OECD Competition Committee Issues Paper*, https://oe.cd/mmmc. [23]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [24]

OECD (2020), *OECD Foreign Direct Investment Regulatory Restrictiveness Index*, https://goingdigital.oecd.org/indicator/74. [12]

OECD (2019), *FDI Qualities Indicators: Measuring the sustainable development impacts of investment*, https://www.oecd.org/fr/investissement/fdi-qualities-indicators.htm. [15]

OECD (2019), *OECD Economic Surveys: Slovak Republic 2019*, OECD Publishing, Paris, https://doi.org/10.1787/eco_surveys-svk-2019-en. [16]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/d2b72934-en. [25]

OECD (2018), *Promoting innovation in established SMEs, OECD SME Ministerial Conference, Mexico City, Policy Note, 22-23 February 2018*, http://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf. [26]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*, OECD Publishing, Paris. [27]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*. [4]

OECD (forthcoming), *FDI Qualities Policy Toolkit. Policies for improving the sustainable development impacts of investment. Consultation paper forthe 6th FDI QUalities Policy Network Meeting, 16 November 2021*, OECD Publishing, Paris. [11]

Pavlínek, P. (2017), *Global Production Networks, Foreign Direct Investment, and Supplier Linkages in the Integrated Peripheries of the Automotive Industry*, https://doi.org/10.1080/00130095.2017.1393313. [5]

Rédli, E. (2017), "Dual education still ironing out the bugs", *The Slovak Spectator*, 16. May 2017, https://spectator.sme.sk/c/20530789/dual-education-still-ironing-out-the-bugs.html. [19]

SARIO (2021), "Automotive Sector in Slovakia" January 2021, https://sario.sk/sites/default/files/sario-automotive-sector-in-slovakia-2021-02-05.pdf. [2]

SARIO (2017), *Automotive Sector in Slovakia*. [3]

Sásiková, M. (2013), "Cooperation and Its Role in Facilitation of Foreign Expansion: Example of Slovak Enterprises", *Entrepreneurial Business and Economics Review*, Vol. 1/4, pp. 83-96, https://www.proquest.com/scholarly-journals/cooperation-role-facilitation-foreign-expansion/docview/1667335750/se-2?accountid=163263. [14]

SIAE (2021), *SIEA survey on SMEs cooperation with FDI in the Slovak Republic, 2021*. [6]

U.S. Steel Košice (2022), *U.S. Steel Košice official website*, https://www.usske.sk/en/about-us/corporate-info/company-profile (accessed 10 March 2022). [22]

WB (2020), *World Bank Enterprise Surveys*, http://www.enterprisesurveys.org. [7]

WS (2020), *Volkswagen Slovakia Annual Report 2020*, https://en.volkswagen.sk/content/dam/companies/sk_vw_slovakia/podnik/vyrocne_spravy/Vyrocna_sprava_2020.pdf. [20]

4 The institutional and governance framework for FDI-SME diffusion

This chapter focuses on factors that underpin the governance framework for foreign direct investment (FDI) promotion and small and medium-sized enterprises (SMEs) development in the Slovak Republic. It provides an overview of the institutions that are currently in place to design and implement FDI, SME, innovation and regional development policies, and explores the policy coordination mechanisms to ensure coherence across policy domains, institutions and tiers of government. This chapter also gives special attention to the monitoring and evaluation framework of the Slovak policy delivery system, and efforts to enhance stakeholder engagement.

4.1. Summary of findings

Strengthening FDI spillovers on Slovak SMEs requires public action in different policy domains related to investment promotion, SME internationalisation, innovation and regional development. The institutional framework that governs these policy areas differs from country to country. Different governance structures are feasible as long as appropriate coordination mechanisms are in place to ensure policy alignment across Ministries, implementing agencies and advisory bodies. This chapter aims to assess the quality of the Slovak institutional setting and identify potential governance challenges (Table 4.1). It provides an overview of the main institutions operating at the intersection of FDI, SME, innovation and regional development policy and explores their organisational structures, mandates and scope of activities. It also sheds light on their internal capacities for policy coordination, evaluation and stakeholder engagement, which are all important elements of a conducive institutional environment.

Table 4.1. Findings and recommendations on the Slovak governance framework

Findings	Recommendations
Creating a conducive institutional environment	
A large number of line ministries and implementing agencies is involved in the implementation of policies that enable FDI spillovers on domestic SMEs, resulting in higher levels of bureaucracy, policy complexity and administrative inefficiencies.	Consider how coordination mechanisms could be improved or the current governance framework restructured, e.g. by merging business support agencies –in particular those dealing with innovation policy– and through the implementation of joint programming procedures in areas that require complementary expertise.
Government agencies have recently expanded their business advisory services to the subnational level through the establishment of regional branches, one-stop-shops and business consultation centres. However, their regional footprint is still nascent and largely depends on decisions made in a centralised manner in Bratislava.	Subnational branches should be given the necessary autonomy and resources to tailor their services to local needs, build their own contacts and brands, and lead partnerships with regional and local authorities that may lack the capacity to support local entrepreneurial ecosystems.
Regional and municipal authorities have been given substantial responsibilities in several policy areas affecting business enterprises. However, the increased fragmentation of subnational governments and their lack of organisational capacities often limit their ability to support local FDI-SME ecosystems.	Consider strengthening the financial and organisational capacities of subnational authorities to enable them to support FDI-SME partnerships.
	Encourage cooperation and coordination among municipalities on investment promotion, innovation and SME support issues, for example through the establishment of a forum to share best practices.
Ensuring coordination across different institutions, policy areas and tiers of government	
The Slovak Republic has a well-developed network of high-level government councils to ensure cross-ministerial coordination. However, the lack of human resources and ambiguity on their role and responsibilities often lead to coordination crises.	Consider broadening the membership of existing Councils to ensure that implementing agencies from across the FDI-SME diffusion policy areas are involved in strategic policy discussions. Alternatively, a consolidation of the current setting could be envisaged through the merger of certain Councils.
There are currently no comprehensive strategic documents laying out policy priorities, programme actions and institutional roles on innovation and SME policy. The Slovak national strategy on investment and trade promotion expired in 2020 and has not yet been renewed.	Develop national strategies on innovation and SME policy to ensure that policy action is guided by a set of overarching policy priorities, clear targets and effective governance arrangements. Mainstream the issue of FDI-SME spillovers into these national strategies and ensure that the role of each institution is clearly articulated.
Inter-agency collaboration for the implementation of FDI-SME diffusion policies is limited while coordination takes place either informally or in a centralised manner through line Ministries.	Encourage collaboration and the exchange of information among implementing agencies by introducing joint programming procedures and establishing official coordination mechanisms (e.g. inter-agency committees).
Promoting impact evaluations and policy dialogue with stakeholders	
The adoption of the Better Regulation Strategy has led to the development of a comprehensive and solid methodology for assessing economic, social and environmental impacts, including an SME Test and policy impacts on innovation.	Consider appointing one body close to the centre of government – for instance, the Government Office of the Slovak Republic – responsible for coordinating evaluations of integrated impacts, rather than spreading the responsibility across several ministries.
The use of M&E tools by government institutions remains limited and evaluation processes still lack proper implementation due to the administrative and analytical capacities of key ministries.	Strengthen the analytical and monitoring capacities of key Ministries and implementing agencies through the provision of specialised training to raise education and awareness of public servants on evaluation methods.

The Slovak Republic has recently made significant progress in stakeholder engagement through the introduction of a standardised public consultation procedure and the organisation of several public consultations for the update of national strategies.	Provide stakeholders with sufficient time to submit their feedback on new regulations and policies. Strengthen the inclusiveness of public consultations by raising awareness of participatory processes among under-represented segments of the business population (e.g. innovative startups, small firms).

4.2. Overview of the Slovak governance framework for FDI-SME diffusion

Multiple ministries and government agencies are involved in implementing policies that act upon FDI-SME diffusion channels and enabling conditions

The Slovak policy delivery system is characterised by fragmentation. A large number of line ministries and implementing agencies is involved in the implementation of policies that enable FDI spillovers on domestic SMEs (Figure 4.1), resulting in higher levels of bureaucracy and policy complexity and, in many instances, limiting the uptake of public support programmes among potential beneficiaries (see Chapter 5 for an assessment of the Slovak policy mix).

The primary responsibility for investment, SME and innovation policy lies with the Slovak Ministry of Economy, which is in charge of executing economic growth policies that aim to strengthen industrial production and improve the overall business environment (Government of the Slovak Republic, 2001[1]). The Ministry does not have an SME policy department or unit; SME issues are mainstreamed into the work of the Competitiveness Directorate, which deals with industrial policy, innovation and general business support measures. In contrast, investment policy is coordinated through a dedicated department, which focuses mainly on the provision of state aid and the implementation of Operational Programmes funded by the European Structural and Investment Funds (ESIF).

The majority of Slovak policies that enable FDI spillovers on domestic SMEs are implemented by three government agencies under the supervision of the Ministry of Economy (MHSR) (Table 4.2):

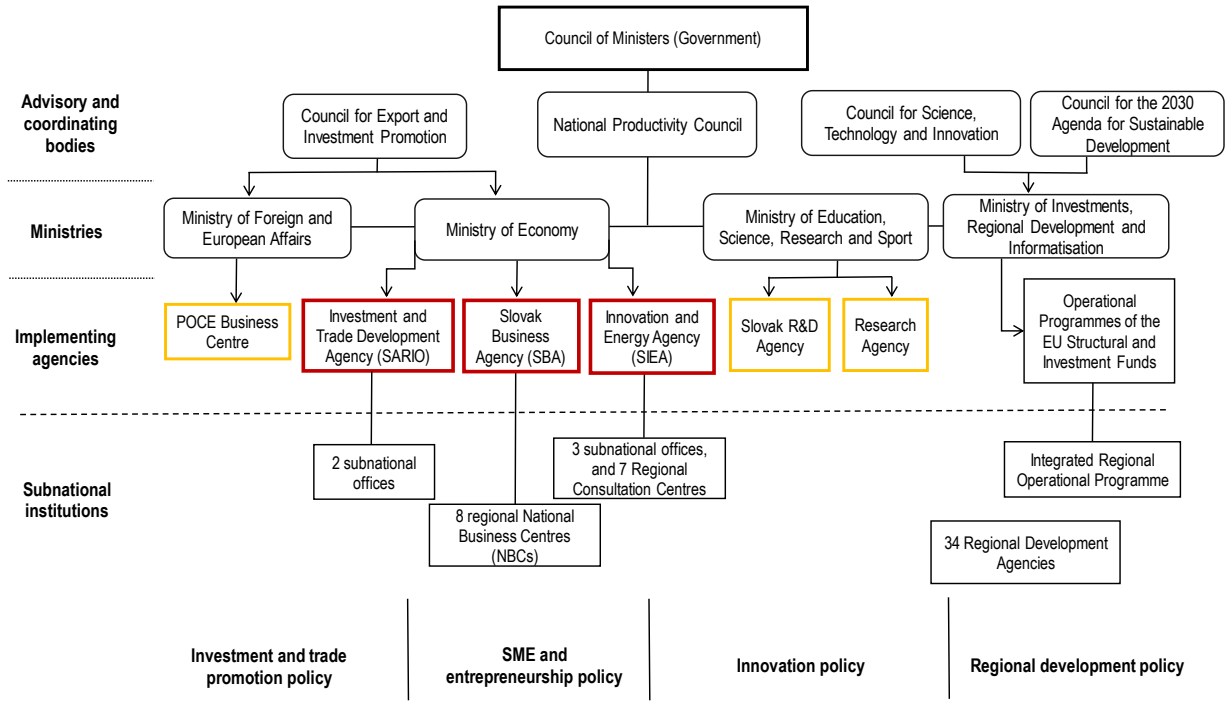
The **Slovak Agency for Investment and Trade** (SARIO) is the main government body that helps foreign investors set up their business operations in the Slovak Republic, while also supporting domestic firms, in particular SMEs, to develop their export capacities and become internationally competitive. Central to SARIO's mission is the provision of business consulting, information and facilitation services that promote FDI-driven knowledge and technology transfers and contribute to the diversification of the Slovak economy. In recent years, the agency has placed particular emphasis on promoting knowledge-intensive activities in FDI-intensive sectors, targeting in particular the space and aviation industries, smart and green mobility and medical technologies.

The **Slovak Business Agency** (SBA) is a public-private agency that was established in 1993 by the Slovak Ministry of Economy, the Association of Slovak Entrepreneurs and the Slovak Trade Association to support the development and growth of domestic SMEs. SBA serves as the main delivery point for a full range of financial and non-financial support services to entrepreneurs and SMEs at the national, regional and local levels. It manages several microloan and risk capital schemes, undertakes analyses of the Slovak business environment and provides training, mentorship, and business consultation services to support individual entrepreneurs, new start-ups and established SMEs in different stages of their life cycles.

The **Slovak Innovation and Energy Agency** (SIEA) offers technical and financial support to enhance the innovation performance of domestic business enterprises. SIEA serves as an implementing agency for the Operational Programme Integrated Infrastructure (OPII), which finances most programmes supporting innovation in SMEs. Over the past decade, the agency's role in the delivery of innovation-focused policies has been strengthened and further expanded to also cover the promotion of business clustering initiatives, the support of industrial parks, and the implementation of national projects targeting the services sector and certain creative industries. Since 2015, SIEA also fulfils the role of a Technology Agency for the

implementation of the Slovak Research and Innovation Strategy for Smart Specialisation (RIS3), which lays out national priorities for the diversification of the Slovak economy.

Figure 4.1. The institutional environment for FDI-SME diffusion in the Slovak Republic



Note: The main institutions acting upon FDI and SME linkages are designated in red. Institutions that have a complementary contribution to FDI and SME linkages are designated in yellow.
Source: OECD elaboration based on EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Table 4.2. Key implementing institutions acting upon the FDI-SME diffusion policy areas

	Innovation policy	SME policy	FDI promotion and internationalisation policy	Regional development policy
Implementing agency	Slovak Innovation and Energy Agency	Slovak Business Agency	Slovak Investment and Trade Development Agency	Regional Development Section
Date of creation	2007	1993	2001	2020
Ministry in charge	Ministry of Economy	Ministry of Economy	Ministry of Economy	Ministry of Investments, Regional Development and Informatisation
Legal form	Autonomous agency	Public-private agency	Autonomous agency	Ministry department
Mandate	Encourage domestic entrepreneurs to innovate and promote renewable energy policies	Support the growth and upgrading of Slovak SMEs	Attract and facilitate FDI and support the internationalisation of domestic companies, in particular SMEs	Implement regional development policies and coordinate the EU Funds
Target population	All firms with emphasis on SMEs, research institutions	SMEs	All firms for FDI promotion policies and SMEs for internationalisation policies	Regional/local authorities and agencies
Priority sectors	Services sectors, creative industries	All sectors except tourism and agriculture	Space and aviation industries, mobility and medical technologies	None

Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Although the investment, SME and innovation policy domains are primarily in the hands of the Ministry of Economy and its implementing agencies, several other public institutions are involved in the execution of programmes that contribute to FDI-SME diffusion (Figure 4.1, Table 4.3).

The Ministry of Education, Science, Research and Sport (MESRS) plays an important role on innovation promotion, focusing on science and technology, higher education and lifelong learning (Government of the Slovak Republic, 2001[2]). Two implementing agencies, the Slovak R&D Agency (SRDA) and the Research Agency (RA), work under the supervision of the MESRS to offer financial support for innovative activities undertaken by research and scientific institutions in collaboration with industry, thereby playing a crucial role in promoting knowledge and technology transfers. Slovak SMEs can benefit from their collaborative funding schemes, which are financed either through the state budget (for SRDA) or through the EU funds (for RA). In recent years, the strategic focus of Slovak economic diplomacy has also shifted towards the internationalisation of the Slovak research and innovation ecosystem and the support of technology transfers to Slovak SMEs through international cooperation. The economic and development cooperation service of the Ministry of Foreign and European Affairs (MZV) operates a Business Centre that helps Slovak SMEs find new business partners and expand their operations abroad through an online portal.

Finally, important prerogatives are in the hands of the Ministry of Investments, Regional Development and Informatisation (MIRRI), which was established in 2020 to monitor and evaluate the socio-economic trends in Slovak regions and coordinate the implementation of regional development policies. Although MIRRI does not target business enterprises directly, it plays a crucial role in addressing regional disparities in the quality of the business environment through financial and capacity-building programmes for subnational authorities and action plans for the development of least developed districts. It also serves as a focal point for coordinating, managing and supervising the use of EU funds for the new programming period 2021-2027. In the past, the use of EU funds by Slovak institutions was stalled by administrative inefficiencies and lack of coordination, which led to their underutilisation. Improving coordination with other parts of government and ensuring that EU funding is channelled to investment, SME and innovation support programmes are key priorities of the new ministry.

Compared to peer EU countries, the Slovak Republic's governance framework for FDI-SME diffusion is relatively fragmented, due to the number of government agencies involved in the implementation of investment, SME, innovation and regional development policies. The Slovak Ministry of Economy can serve as a central focal point to ensure synergies and prevent overlaps among SARIO, SBA and SIEA. However, this study shows that coordination mechanisms and communication channels among the three agencies and the extent of information exchange are limited (see next section). There is also increased dispersion of innovation and SME policy across many government bodies that fall outside of the supervision of the Ministry of Economy (Table 4.3). The fragmentation of the research and development and innovation (R&D&I) policy landscape (e.g. SIEA, SRDA, RA) and SME support services (e.g. SBA, SARIO, POCE Business Centre) increases the likelihood of duplication of policy efforts and trade-offs across different agencies and Ministries.

The Slovak government is currently finalising a National Strategy on R&D and Innovation, which aims to address the fragmentation of the institutional landscape and adopt a whole-of-government approach to the delivery of knowledge and technology transfer initiatives. Due consideration should be given to how coordination mechanisms could be improved or the current governance framework could be restructured, e.g. through the merger of business support agencies – in particular those dealing with innovation policy (SIEA, SRDA, RA) – and the implementation of joint programming procedures in areas that require complementary expertise (e.g. FDI-SME linkages, SME growth and internationalisation, innovation partnerships). A simpler and more integrated system of public support that targets the entire FDI-SME ecosystem at every step of its growth trajectory could help the Slovak government optimise efficiency. For instance, many EU Member States (e.g. Croatia, Finland, Lithuania, Luxembourg, Slovenia) target the entire FDI-SME ecosystem through a single government entity to facilitate coordination among the different

policy domains and make available comprehensive packages of support that are easily accessible to potential beneficiaries (Box 4.1).

Table 4.3. Mandates and strategic policy objectives pursued by key Slovak institutions

	Ministries			Implementing agencies				
	Ministry of Economy	Ministry of Investments, Regional Dev. & Informatisation	POCE Business Centre	SARIO	SBA	SIEA	SRDA	RA
Policy mandates								
Innovation promotion	✓	✓			✓	✓	✓	✓
SME development	✓			✓	✓			
FDI promotion	✓	✓		✓				
Regional development	✓	✓			✓			
Trade promotion			✓	✓				
Applied research								✓
Industrial parks	✓							
Energy policy						✓		
Strategic policy objectives relevant to FDI-SME diffusion								
Strengthen SME innovation and technological capabilities	✓	✓	✓		✓	✓	✓	
Promote strategic partnerships	✓		✓	✓		✓		✓
Promote value chain linkages	✓		✓	✓	✓			
Promote fair competition and knowledge exchange	✓			✓	✓	✓		
Promote agglomeration and industrial clustering	✓	✓				✓		
Attract FDI that fosters linkages with the local economy	✓			✓				
Encourage labour mobility	✓							

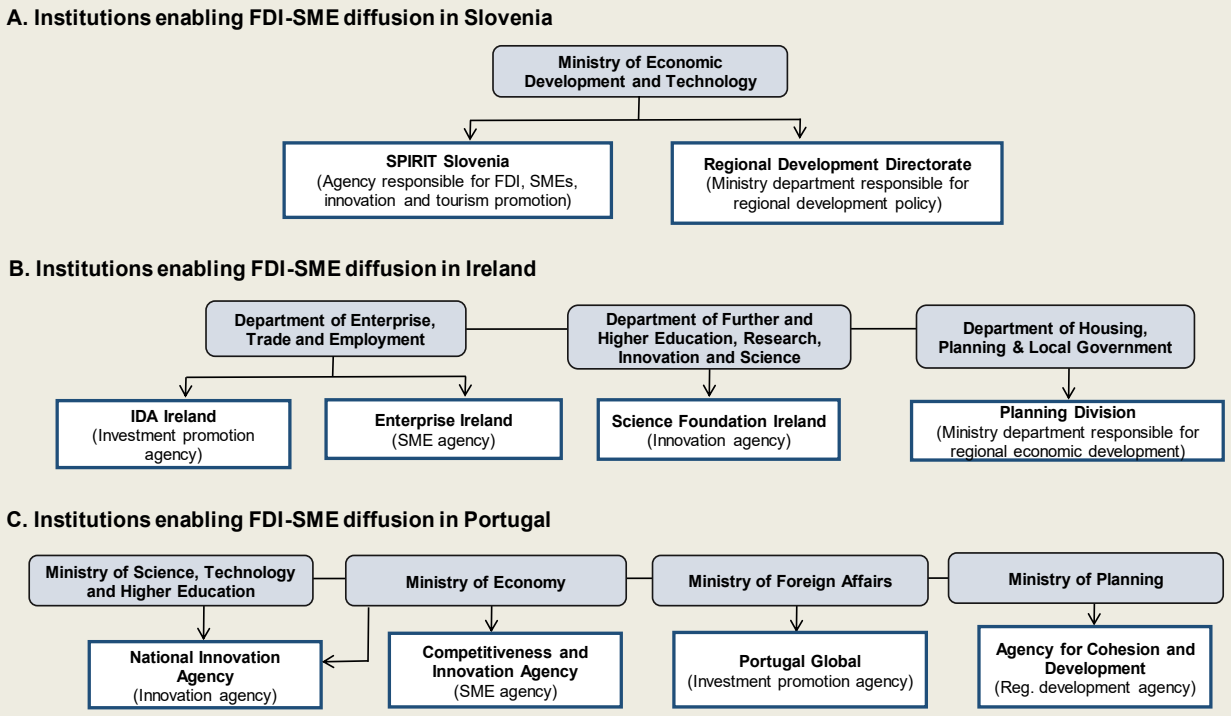
Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Box 4.1. Institutional arrangements for FDI-SME diffusion policy areas in other EU Member States

Governance systems within the EU vary, ranging from deeply centralised settings where FDI-SME diffusion policies are the responsibility of a single line Ministry; to balanced institutional set-ups where policy formulation in the areas of FDI, SMEs, innovation and regional development is shared among a small number of institutions; and to fragmented governance systems where several line ministries and implementing agencies are involved in policy formulation and implementation. In Belgium and Portugal, for instance, several implementing agencies operate across the three policy areas under the supervision of different ministries. In Ireland, FDI diffusion policy areas are split across three Ministries, with the Department of Enterprise, Trade and Employment bearing responsibility for FDI and SME policy, while innovation policy sits with the newly established Department of Further and Higher Education, Research, Innovation and Science. Such institutional settings may induce more complex governance systems – i.e. higher risks of information asymmetry, transaction costs and trade-offs – and require strong inter-institutional coordination mechanisms to overcome potential policy silos.

In contrast, other EU governments (e.g. Croatia, Finland, Lithuania, Luxembourg, Slovenia) target the entire FDI-SME-innovation ecosystem through a single government entity to facilitate coordination among the policy domains and make available packages of support that combine various policy instruments and target all the aspects of their entrepreneurial activity (e.g. innovation, internationalisation, business growth, skills, financial capacity, etc.). For instance, Slovenia's Ministry of Economic Development and Technology is responsible for all FDI-SME diffusion policy areas. Policy implementation is entrusted to one single implementing agency, SPIRIT Slovenia, which is responsible for FDI, SMEs, innovation and tourism promotion, while regional development policy is coordinated through the Ministry's Regional Development Directorate. By design, the need for inter-institutional coordination in such governance frameworks is limited, as coherence across policy domains needs to be achieved within a single supervising body.

Figure 4.2. Institutions enabling FDI-SME diffusion in Slovenia, Ireland and Portugal



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

The regional footprint of government agencies has been strengthened but policy coherence between national and subnational levels could be further improved

The presence or active engagement of government institutions at the regional and local levels are often necessary to ensure that policy is tailored to the socio-economic characteristics and needs of each region. Recent findings from EU countries show that closer proximity to foreign investors' operations makes investment promotion agencies (IPAs) more effective in pursuing their functions and better addressing investors' needs, in particular in less developed regions where information asymmetries and institutional failures are more widespread (Crescenzi, Di Cataldo and Giua, 2019[3]). The availability of appropriate business development services is also a local issue because SMEs and entrepreneurs generally access the services within a narrow local area (e.g. approximately 50 kilometres) and are therefore dependent on the quality of local supply (OECD, 2019[4]).

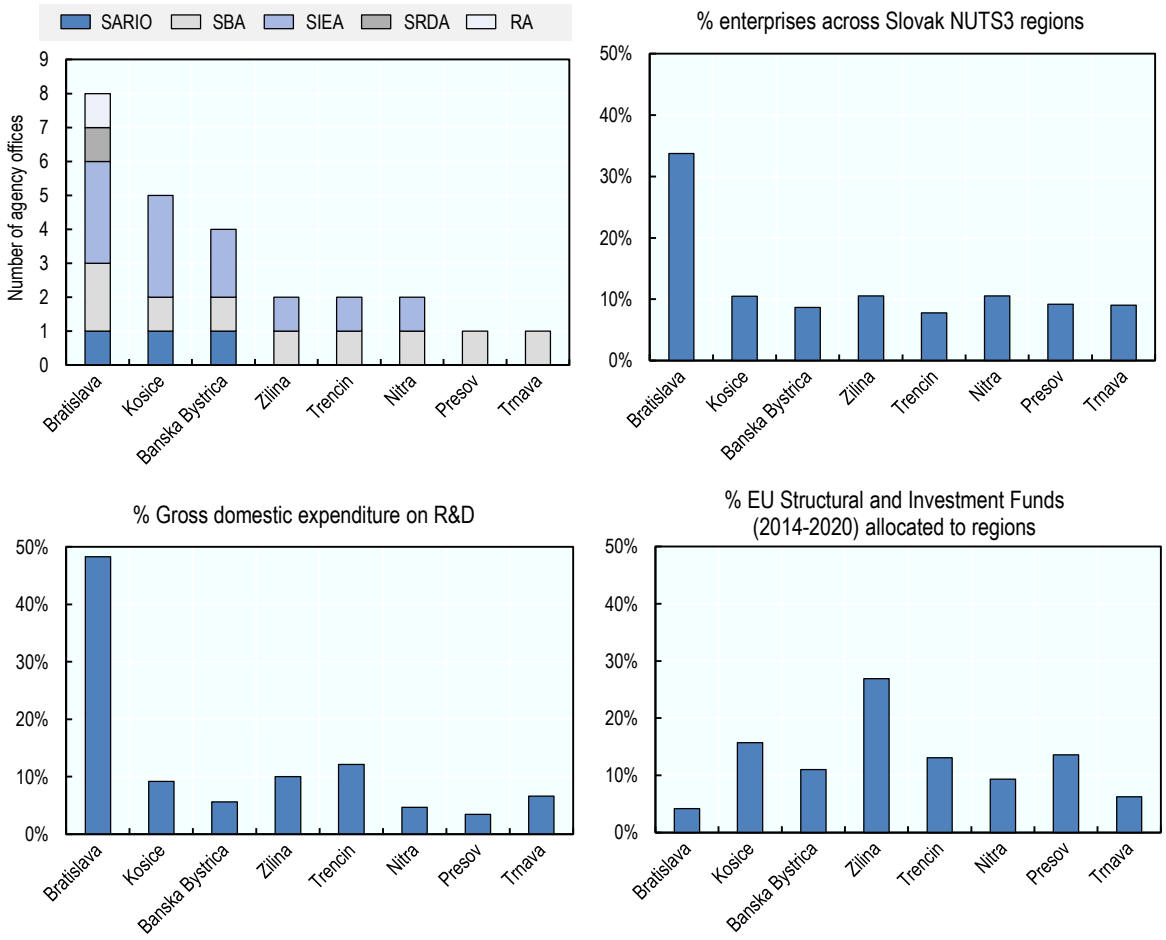
Over the past decade, Slovak implementing agencies have placed particular emphasis on expanding their business advisory services to the subnational level through the establishment of fully-fledged regional branches, one-stop-shops and business consultation centres (Figure 4.3). Outside of Bratislava, the Košice and Banská Bystrica regions host the largest number of subnational offices, reflecting their population size and their position in the centre of the Central and Western Slovakia regions. This expansion was driven by the lack of effective political engagement and coordination in economically weaker regions and the need to ensure that public support is evenly provided across the country (OECD, 2021[5]).

With support from the European Regional Development Fund (ERDF), the SBA has developed a comprehensive network of National Business Centres (NBCs) to extend the agency's national programmes to the eight NUTS3 regions. The NBCs serve as one-stop-shops for the delivery of business development services through the organisation of seminars, creative workshops, mentorship and business incubation programmes. Similarly, the SIEA has expanded its local presence across the Slovak regions through two EU-funded national projects aimed at improving the innovation performance of the Slovak economy and supporting creative industries. Seven regional consultation centres have been added to the three subnational SIEA branches since the launch of the projects in 2017. SARIO's subnational activities are coordinated through two regional offices, which focus primarily on providing FDI facilitation and aftercare services and raising awareness among domestic firms about the availability of national support programmes. In contrast, the SRDA and RA do not have any subnational operations as the scope of their activities is limited to providing financial support rather than technical assistance, which would naturally require closer proximity to beneficiaries.

Efforts to strengthen the local presence of national public institutions is a step in the right direction given regional disparities and the challenges that weaker regions face with regard to mobilising public and private actors in support of local business ecosystems. However, their regional footprint is still nascent and largely depends on decisions made in a centralised manner in Bratislava. Moving forward, policy consideration should be given to the interconnection between national, regional and local delivery of FDI, SME and innovation services, and how to balance national and local priorities. It is recommended that these subnational branches are given the necessary autonomy and resources to tailor their services to the particular needs of their local area, build their own contacts and brands, and lead partnerships with regional and local authorities that may lack the capacity to support local entrepreneurial ecosystems (see next section).

Greater autonomy and tailoring of national policies at the subnational level should however be combined with greater coordination between the SARIO, SBA and SIEA to avoid an inconsistent quality of support or the provision of overlapping services in the regions. As discussed in the previous section, a rationalisation of the Slovak institutional setting at the national level (e.g. through the merger of agencies or joint programming procedures) could help avoid the fragmentation of business development services at the regional and local levels too.

Figure 4.3. Number of agency offices across Slovak regions in relation to their business population, innovation (R&D) intensity and EU funding support



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021), and OECD regional statistics database (accessed on 3 November 2021), http://dx.doi.org/10.1787/region-data-en.

Subnational governments have been given substantial responsibilities, but often lack the capacity and own resources to support local FDI-SME ecosystems

The Slovak Republic has two subnational tiers of government consisting of 8 self-governing regions and 2927 municipalities (OECD/UCLG, 2019[6]). Decentralisation reforms introduced since the early 2000s have given regional and municipal authorities substantial powers and responsibilities in several policy areas affecting business enterprises, such as regulatory procedures for starting a new business, compliance and enforcement of subnational taxes, building permissions, zoning plans and other permit and licensing decisions.

Overall, municipalities have responsibilities for urban planning, social welfare, environment, primary education and healthcare, public order, supervision of economic activities and tourism (including subnational taxes). Municipalities also play an important role in infrastructure development, particularly in the construction and management of industrial parks, which have been used by the Slovak government to attract FDI and improve the quality of local business environments. Regional authorities, on the other hand, focus on trans-regional cooperation, secondary, professional and vocational education, roads and transport, territorial planning and regional economic development. Regions also actively participate in the

design and implementation of regional investment strategies in collaboration with the central government and local authorities. Each region is required to produce a regional integrated territorial strategy (RIUs) to access EU funds provided through the Integrated Regional Operational Programme (OECD, 2019[7]). Regions act as the lead authorities for RIUS preparation and implementation while partnership councils consisting of representatives of municipalities, civil society, government actors and businesses play an oversight role.

Although the decentralisation of responsibilities and competences has been rapid and strong, it has not been always matched with the necessary financial resources, resulting in significant financing gaps in the implementation of local development strategies. The Slovak Republic remains one of the most centralised OECD countries in terms of subnational expenditure and tax revenue (OECD, 2020[8]). In 2019, 17.5% of total public investment was carried out by subnational governments compared to an OECD average of 40% (Figure 4.4). Over the past decade, efforts have been made to strengthen the capacities of local governments to raise own-source revenue. The 2005 Act on Local Financing and 2014 ESO Programme aimed to make local governments financially autonomous and more efficient by raising subnational taxes, reducing central government transfers and improving public service delivery to citizens at the local level.

Despite these reforms, nearly 70% of regional and municipal budgets still come from national transfers or grants. EU funds constitute another source of revenue as many operational programmes include activities related to municipal life. However, the absorption rate of EU funds varies with smaller municipalities not having the necessary resources to apply for and benefit from EU funding. In fact, the revenue-raising power, spending efficiency and overall capacity of subnational authorities to effectively design and implement tailored policy approaches are limited by their small size. The Slovak Republic has the second smallest municipalities in the OECD area, with an average of just over 1800 inhabitants per local government area (OECD, 2021[9]).

The high level of decentralisation and the fragmentation of local territorial units in terms of mandates and responsibilities have created different operating environments for businesses across the country (OECD, 2020[8]). The Slovak government has tried to address these issues by promoting the establishment of joint municipal offices (JMOs), which serve as administrative offices for municipalities to ensure transferred competencies. More than 230 JMOs currently operate across the country while several inter-municipal legal entities have been established to take advantage of the economies of scale in delivering public services (Klimovsky and Nemec, 2021[10]). However, such cooperation is voluntary and focuses primarily on administrative matters rather than broader business support services, investment attraction and innovation promotion activities. Moreover, recent evidence on the effectiveness of inter-municipal cooperation on the management of construction and territorial planning issues (including industrial parks) in the Nitra region found that joint municipal offices are less efficient than offices serving a single municipality (Fandel et al., 2019[11]) – pointing towards potential organisational capacity gaps even when resources are pulled together.

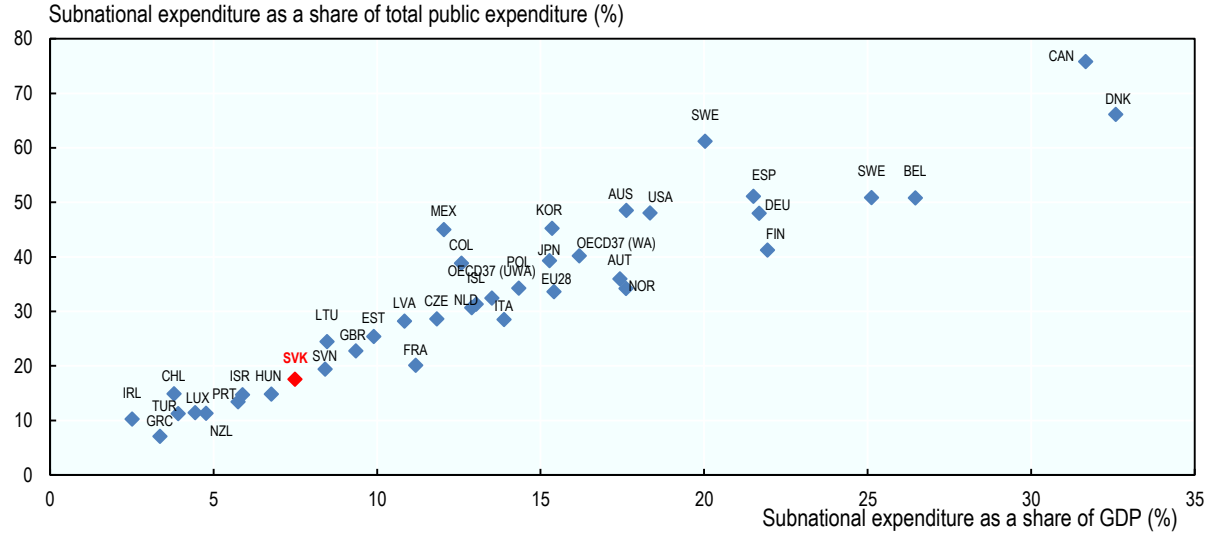
In order to improve the implementation of decentralisation reforms, the Slovak Republic could focus on further strengthening the financial and organisational capacities of subnational authorities. As highlighted in the previous section, the regional branches of the main national government agencies could partner with local authorities to help them participate in EU-funded policy initiatives, diversify their sources of revenue (e.g. EU funding), and provide complementary services to local FDI-SME ecosystems that fall under their responsibility. Although such collaboration already exists in large cities and towns, more efficiencies could likely be found through enhanced cooperation and overall coordination mechanisms among municipalities at the local level. The OECD 2020 Regulatory Review of the Slovak Republic suggests the establishment of a forum to share best practices among subnational authorities and promote the involvement of small municipalities in the development of territorially-specific policies on investment promotion, innovation and SME development (OECD, 2020[8]). The recently established Ministry of Investments, Regional Development and Informatisation could play a leading role in the establishment of such a forum and

encourage synergies among subnational actors. Funding the responsibilities that are transferred to subnational authorities adequately will be also fundamental to improve multilevel governance.

Incentives for inter-municipal co-operation could be also provided to encourage synergies beyond administrative and licensing procedures. For instance, Slovenia, introduced a set of financial incentives in 2005 to encourage inter-municipal cooperation by reimbursing 50% of staff costs of joint management bodies – leading to a notable rise in the number of such entities (OECD, 2021[12]). In the Autonomous Community of Galicia in Spain, projects that involve several municipalities get priority for regional funds while in Italy the government established financial incentives for municipal mergers and unions of municipalities. Recent decentralisation efforts in Portugal have led to the transfer of new powers to Inter-municipal Communities (CIMs), including on investment attraction (OECD, 2022[13]), while in France an experimental scheme called "city-countryside reciprocity contracts" has led to territorial partnerships for the implementation of joint initiatives for economic development (e.g. joint promotion of the territory, development of territorial strategies, land use policies and support for business) (OECD, 2021[14]). The Slovak Republic could leverage the existing horizontal cooperation means such as the JMOs to provide incentives for inter-municipal cooperation on investment promotion and SME development.

Figure 4.4. The Slovak subnational government expenditure is among the lowest in the OECD

Subnational government expenditure as a percentage of GDP and total public expenditure, 2019



Source: OECD regional statistics database (accessed on 3 November 2021), http://dx.doi.org/10.1787/region-data-en.

4.3. Policy coordination across institutions and tiers of government

Actions to improve the impact of FDI on the productivity and innovation of domestic SMEs need to be aligned with the objectives and priorities set by the government across different policy areas. This often entails cooperating with a number of government institutions dealing with FDI attraction, promotion and facilitation as well as SME development, innovation and internationalisation, and maintaining very strong ties with institutions operating at national and subnational levels (Box 4.2).

Policy coordination has been a major challenge for the Slovak public administration and a root cause of many delayed or postponed policy reforms. According to the 2020 Sustainable Governance Indicators (SGI), the Slovak Republic has a weak performance with regard to inter-ministerial coordination, ranking 38th out of 41 countries behind most OECD and EU economies (Kneuer, Malova and Bonker, 2020[15]). The fragmentation of the policy delivery system, overly bureaucratic governance arrangements, the lack

of sufficient financial and human resources, and rigid administrative and programme rules are considered to be the key factors undermining the government's strategic planning capacity and coordination across levels of government. Overall, informal coordination plays a significant role, but also undermines efforts to establish formal communication channels between ministries and other bodies of the central government, leading to several coordination crises. The role of the centre of government – the Government Office of the Slovak Republic, which is headed by the Prime Minister – has been strengthened in recent years in an effort to improve collaboration among line ministries. However, given the large number of public actors involved in policy design and implementation, collaboration remains challenging.

High-level government councils are generally proactive about bringing together different line Ministries, but fulfilling their coordinating role remains challenging

The Slovak Republic has a well-developed network of high-level government bodies to ensure horizontal policy coordination. Several advisory councils are in place bringing together the Prime Minister's office, line ministries, implementing agencies, and regional and local governments to identify priority areas where cross-ministerial policy planning and decision-making is necessary. Some of these councils are also responsible for the overall coordination, monitoring and evaluation of national strategies while others have been given broader mandates to foster policy dialogue, convene stakeholders and issue opinions on policy and legislative initiatives (Figure 4.1).

The **Council for Science, Technology and Innovation (CSTI)** plays an advisory and coordinating role on innovation and smart specialisation policies. Chaired by the Minister of Investments, Regional Development and Informatisation, it brings together the Ministry of Education, Science, Research and Sports, the Ministry of Economy, the Ministry of Foreign and European Affairs, and implementing agencies (i.e. SIEA, SRDA, RA) with representatives from the Slovak Academy of Sciences, business associations, employers' organisations and academic institutions. Since 2017, the Council oversees the implementation of the National Strategy for Smart Specialisation through a standing committee, which coordinates government decisions on research and innovation alongside monitoring and evaluating policy actions that fall under the smart specialisation domains.

The **Council for Export and Investment Promotion (CEIP)** advises the Slovak government on international investment and trade and ensures coordination between the Prime Minister's office, the Council of Ministers and other parts of government that focus on issues affecting the internationalisation of the Slovak economy. The Council is chaired by the Minister of Foreign and European Affairs and the Minister of Economy, and includes representatives from government agencies (i.e. SARIO, SBA), public development banks, the Slovak Chamber of Commerce and Industry, employers' organisations, trade unions and SME associations.

High-level policy coordination on regional and territorial development issues is ensured primarily through the **Council for the 2030 Agenda for Sustainable Development**. Alongside monitoring progress in achieving the Sustainable Development Goals (SDGs), the Council is tasked with monitoring and evaluating the National Strategy for Regional and Territorial Development. Since 2019, the **Council for Cohesion Policy 2021-2027** has also been established to coordinate the implementation of the Partnership Agreement between the European Commission and the Slovak Republic, which sets the strategic objectives and policy priorities that will guide the allocation of the EU Structural and Investment Funds for the period 2021-2027. The Council gathers representatives from all the Slovak ministries, regional and local governments as well as the private sector. Central to the coordinating role of the Council is its mandate to promote multilevel governance and ensure policy coherence at the national, regional and local levels.

The **National Productivity Council (NPC)** is responsible for monitoring, analysing and assessing the productivity and competitiveness of the Slovak Republic, covering issues related to innovation, FDI promotion, business environment, education and the effectiveness of the public sector. The council brings

together representatives from several Ministry departments (e.g. Ministry of Finance, Ministry of Education, Ministry of Economy, Ministry of Labour) and is chaired by the Director of the Government Office (i.e. the Slovak Republic's centre-of-government institution). Despite the number of Ministries involved, the council focuses primarily on providing analytical and advisory services – such as conducting independent analyses and preparing an annual report – and less so on coordinating the formulation and implementation of government policies.

The councils meet regularly and have been generally effective in mobilising different parts of the public administration to discuss policy issues deemed as a priority for the Slovak government. The agendas, minutes, conclusions and monitoring reports of their meetings are also made public to ensure transparency. Since its establishment in 2012, the CEIP has met 24 times with members approving 133 documents and adopting more than 150 conclusions on issues affecting the internationalisation of the Slovak economy (Government of the Slovak Republic, 2020[16]). Similarly, more than 20 meetings have taken place among CSTI members, with recent discussions focusing on the update of the national smart specialisation strategy, and proposals on key measures to enhance the innovation performance and competitiveness of the Slovak economy.

The institutional framework appears, however, to lack an overarching body to coordinate cross-ministerial efforts horizontally across the investment, SME, innovation and regional development policy areas. This is illustrated by the membership of the councils, which do not foster horizontal links among implementing agencies. For instance, government agencies responsible for investment promotion and SME development, namely the SBA and SARIO, are not members of the CSTI. Similarly, innovation-focused agencies such as the SIEA, SRDA and RA do not participate in the CEIP meetings. The Slovak government could consider broadening the membership of existing Councils to ensure that implementing agencies from across the FDI-SME diffusion policy areas are involved in strategic policy discussions at the highest level. Alternatively, a consolidation of the current setting could be envisaged through the merger of certain Councils. The Slovak government has recently put forward a legislative proposal for the creation of a Council on Competitiveness and Productivity with a broader remit (i.e. namely covering investment, exports, innovation, business environment, productivity and competitiveness issues), which would merge and replace certain councils, including the CEIP and the NPC. However, no decision has been taken on its establishment yet. If composed of all relevant government institutions and entrusted with sufficient financial and human resources, such a Council could facilitate inter-institutional coordination and strengthen synergies and momentum behind the FDI-SME diffusion policy agenda.

The competences of the councils are also not always aligned with the tasks entrusted to them, leading to bottlenecks in coordination and weak enforcement of collective decisions. Although the CSTI has been the main government body responsible for the management of the R&D&I system in general, and the smart specialisation strategy in particular, it does not have legislatively defined powers to enforce its decisions on individual ministries. The lack of clarity on the role and responsibilities of CSTI members has caused tension and disagreements between line ministries, leading to delays in decision-making and approval processes, and the cancelation of many innovation funding schemes (OECD, 2021[17]). These administrative inefficiencies are reflected in the rather limited use of EU funds to finance research and innovation activities; in fact, the Slovak Republic ranks amongst the EU Member States with the lowest absorption rate (approximately 46%) for the period 2014-2020 (European Commission, 2021[18]).

Box 4.2. Policy coordination: principles, instruments and benchmarking

Coordination occurs when decisions made in one programme or organisation consider those made in others and attempt to avoid conflict (*negative coordination*) or seek to cooperate on solutions that can benefit all the organisations and their clients (*positive coordination*) (Scharpf, 1994[19]). *Strategic coordination* involves the coordination of programmes around broad strategic goals of government, such as the SDGs (Peters, 2018[20]). Co-ordination relies upon a mix of interactions, with both vertical and horizontal aspects, the former referring to co-ordination between a ministry and its delivery agencies, and the latter covering for instance inter-ministry relations (OECD, 2012[21]). Co-ordination can be fostered at different points in the policy cycle, from policy design to implementation to evaluation.

Metcalfe (1994[22]) proposes a policy coordination scale as a method for comparing coordination capacities in governments. The components of policy coordination capacity are cumulative in the sense that higher-level coordination functions depend on the existence and reliability of the lower ones. From almost total independence of programmes (1) to very close policy integration (9): (1) Independent Decision-Making by Ministers; (2) Communication with other Ministers (Information Exchange); (3) Consultation with other Ministers (Feedback); (4) Avoiding Divergences Among Ministers; (5) Search for Agreement Among Ministers; (6) Arbitration of Policy Differences; (7) Setting Limits on Ministerial Action; (8) Establishing Central Priorities; and (9) Government Strategy.

Instruments of co-ordination can be based on regulation, incentives, norms and information sharing. They can be top-down and rely upon the authority of a lead actor or bottom-up and emergent (Peters, 2018[20]). They include (OECD, 2012[21]):

- *National strategies and action plans* typically involve wide consultation and deliberation, provide diagnostic overviews of what the strengths-weaknesses-opportunities-threats of an SME/innovation/local ecosystem could be, and set a shared vision of the goals pursued.
- Closely related, *policy evaluations and reviews* are a source of strategic intelligence, and a means for promoting greater co-ordination.
- *Dedicated agencies or ministries* assume the leadership of the national policy agenda in some policy domains (e.g. FDI/SME/innovation/regional) and often have responsibility of coordination. At the same time, *inter-agency joint programming* can facilitate co-ordination and other aspects of governance as agencies share agenda and action.
- The *Centre of government (*CoG), e.g. the President's or Prime Minister's Office, can bridge interests and bureaucratic boundaries. *High-level policy councils*, can also deal with aspects of policy coordination although they often have variable roles and composition across countries.
- Finally, *informal channels of communication between officials* or *job circulation* (of civil servants, but also experts and stakeholders) can play a role and suggest a relatively well-developed culture of inter-agency trust and communication.

Although coordination is a fundamental and longstanding problem for public administration and policy, there is still no standardised method for approaching related issues, and much of the success or failure of attempts to coordinate appears to depend upon context (Peters, 2018[20]). Coordination approaches and instruments need to be matched to circumstances, so does the need to coordinate across countries and policy areas. Some policy domains may work well with minimal attempts to coordinate with others, but others may require substantial policy integration and coordination. Likewise, some political systems may emphasise coordination and governance more strongly than others (Hayward and Wright, 2002[23]).

The Slovak government could consider clarifying the role and responsibilities of the CSTI and equip it with the necessary human and financial resources to ensure efficient cross-ministerial coordination. The

establishment of an executive secretariat could strengthen its capacity to coordinate whole-of-government policy-setting exercises, such as those required for the EU's smart specialisation framework. Involving the centre of government (CoG), e.g. the Government Office of the Slovak Republic, in the management of the executive secretariat could also help bridge bureaucratic boundaries across ministries and improve the enforcement of policy decisions. In recent years, due to the rise of multi-dimensional issues, many OECD governments have strengthened the role that the CoG plays in aligning cross-ministerial workplans throughout the policy cycle, including across the FDI-SME diffusion policy areas (OECD, 2018[24]). Improving the efficiency of the CSTI is a key objective outlined in the Slovak Republic's 2020-2030 Recovery and Resilience Plan, which lays out the country's national priorities for the use of the Next Generation EU fund, the EU's landmark financial instrument for recovery from the COVID19 pandemic. As the country enters a new policy cycle, the implementation of these reforms will require increased attention on resolving bottlenecks in the implementation of innovation policies across ministries and tiers of government.

Synergies for implementing the FDI-SME diffusion policy agenda could be strengthened through dedicated national strategies on innovation and SME policy

National strategies and action plans can be important instruments for policy coordination as they are crosscutting in nature and often require whole-of-government responses to ensure their effective implementation. In the Slovak Republic, several strategic documents have been adopted in recent years to articulate priorities in FDI-SME diffusion policy areas (Table 4.4). The Strategy of Foreign Economic Relations 2014-2020 has been the main strategic document guiding policy action on investment promotion and the internationalisation of the Slovak economy (Government of the Slovak Republic, 2019[25]). The Ministry of Economy and the Ministry of Foreign Affairs have been jointly coordinating its implementation together with other members of the Council for Export and Investment Promotion, mainly SARIO and the Slovak Export-Import Bank (Eximbanka). However, following its expiration in 2020, the strategy has not yet been renewed, potentially undermining policy continuity and the alignment of resources and strategic priorities with regard to investment promotion.

The Smart Specialisation Strategy (RIS3 SK) has served as the country's national strategy for innovation policy, under the aegis of the CSTI and with the SIEA and RA serving as managing authorities (Government of the Slovak Republic, 2013[26]). Although the strategy provides a comprehensive needs assessment of the Slovak innovation ecosystem and a list of priorities for public action, its scope focuses primarily on economic specialisation domains, and is therefore rather narrow in terms of serving as a comprehensive innovation strategy. The bureaucratic RIS3 governance framework described in the previous section, coupled with burdensome administrative procedures and public procurement rules, have made the formulation and implementation of innovation policies complex and difficult. Consequently, many strategic reforms envisaged in the strategy such as the merge of R&D&I government agencies and the increase of financial support for applied research, have been cancelled or postponed.

As the Slovak Republic enters a new policy cycle, challenges relating to the governance framework for innovation policy need to be addressed. Beyond the establishment of an executive secretariat within the CSTI to streamline cross-ministerial procedures relating to the smart specialisation framework, the Slovak Republic could benefit from a dedicated national strategy for innovation policy. As part of the reforms outlined in its Recovery and Resilience Plan, the Slovak government is currently developing a national strategy, which is expected to be finalised at the end of 2022. Such a strategic document would allow to create an integrated vision across government that goes beyond the EU's programming and funding conditionalities, and includes quantifiable targets, policy pillars (e.g. innovation-oriented FDI, SME innovation, access to skills, HEIs reform), related programme actions, and clearly defined roles for all the institutions involved in its implementation. A dedicated national strategy would also allow to pool together additional own resources for SME innovation activities and complement EU funds with contributions from the state budget, which have been historically low compared to other peer countries.

A similar approach could be pursued on SME and entrepreneurship policy, which is currently not guided by a clear, overarching and comprehensive strategic framework. The RIS3 strategy includes a brief SME diagnostic section, outlining policy objectives to improve the innovation performance and absorptive capacities of SMEs, including through linkages with large multinational enterprises in key sectors; but it falls short of setting long-term strategic objectives for the development of the SME&E ecosystem and defining the role and responsibilities of the various policy delivery actors. SME considerations are also mainstreamed in other national strategic frameworks, including the Digital Transformation Strategy and the Regional Development Strategy. Although the mainstreaming of SME issues is a common practice in EU and OECD countries (OECD, 2019[27]), having a dedicated national strategy will help the Slovak Republic pull resources from different parts of the government and facilitate coordination within the currently fragmented system.

Identifying policy priorities, clear-cut targets and effective governance arrangements for the innovation and SME policy areas would be a pre-condition for more targeted action on strengthening FDI-SME linkages and spillovers. The Slovak government should consider mainstreaming the issue of FDI-SME spillovers into these national strategies (e.g. by including a dedicated chapter on this topic, specific objectives, indicators and a short-term action plan) and ensure that the role of each government institution is clearly articulated.

Table 4.4. National strategic frameworks in the Slovak Republic

Strategic frameworks	Timeframe	Description	Responsible institutions
Research and Innovation Strategy for Smart Specialisation	2014-2020	The strategy, which is currently in the process of renewal for 2021-2027, focused on four key areas of economic specialisation: (1) Automotive and mechanical engineering industries; (2) Consumer electronics and electrical equipment; (3) Information and communication technologies and services, and (4) Production and processing of iron and steel.	CSTI, Ministry of Economy, Ministry of Education, Science, Research & Sport, SIEA, RA
Strategy and action plan for the digital transformation of the Slovak Republic	2019-2030	It defines the policy and particular priorities of the Slovak Republic for the digital transformation of economy and society, focusing on three pillars: 1) human resources (digitally skilled labour); 2) infrastructure (technologies, digital solutions and systems); 3) regulatory framework (legislative rules)	Ministry of Investments, Reg. Development & Informatisation
Strategy of labour mobility of foreigners	2018-2030	It is the first Slovak strategic document setting out priorities to improve the regulated mobility of foreigners within the Slovak labour market, focusing on new technologies and changes on the labour market, demographic developments, sustainable economic growth, and the integration of foreigners at the local level.	Ministry of Labour, Social Affairs and Family
Strategy of foreign economic relations of the Slovak Republic	2014-2020	It sets out policy priorities and measures to improve the internationalisation of Slovak firms and the attraction of foreign direct investment, focusing on four main areas: 1) export promotion instruments; 2) investment promotion tools; 3) measures to support cooperation with foreign countries on innovation issues; 4) and measures to improve the Slovak Republic's brand abroad.	CEIP, Ministry of Economy, Ministry of Foreign and European Affairs
Vision and Development Strategy of the Slovak Republic	2020-2030	The document directs the Slovak Republic's regional and territorial development policy to 2030 and enable the co-ordination and implementation of relevant policies at regional and sub-regional levels.	Ministry of Investments, Reg. Development & Informatisation

Source: OECD elaboration based on national strategic documents.

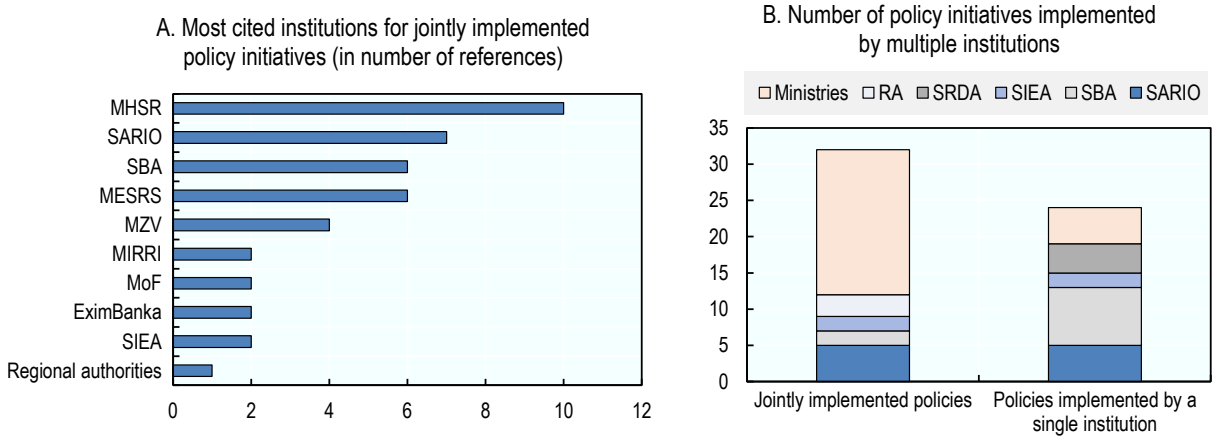
Policy coordination among implementing agencies is not frequent and takes place either informally or in a centralised manner through line ministries

Beyond high-level strategic coordination, inter-institutional collaboration for the implementation of policy initiatives is limited and takes place either informally or in a centralised manner through line Ministries. Interaction among the SBA, SARIO and SIEA is not frequent and usually takes place through the Ministry

of Economy. The latter has established a Working Group to monitor the implementation of the EU's Small Business Act for Europe (SBA) Principles, with the participation of SBA and several other ministries. Ad hoc working groups for new legislative initiatives are also often established within ministries bringing together implementing agencies and ministry departments to provide inputs and ensure policy alignment (Table 4.6). However, interviews conducted among agency staff show that coordination through the Ministry of Economy (and the Ministry of Education, Science, Research and Sport in the case of the SRDA and RA) takes place mostly on an ad hoc basis through informal meetings and at the top management level, thereby not involving a regular exchange of information on supported clients and new workstreams.

The limited degree of inter-agency interaction is also reflected in the relatively modest number of jointly implemented policy initiatives and the absence of joint programming procedures. Although the majority of Slovak policies involve some type of collaboration with other government entities, this is more common for national strategies and policies administered directly by Ministries rather than implementing agencies (Figure 4.5). In most cases, inter-agency collaboration is limited to the implementation of a few programmes financed by the EU Structural and Investment Funds. For instance, SARIO and SBA have partnered for the implementation of the National Project "Support for the internationalisation of SMEs". SBA has been also collaborating with the Slovak Centre of Scientific and Technical Information (SCSTI), a public national information centre involved in innovation and R&D support schemes, to establish National Business Centres in Slovak regions with the support of the EU-funded Operational Programme for Integrated Infrastructure.

Figure 4.5. Collaborative policy design and implementation in the Slovak Republic



Note: MHSR: Ministry of Economy; SARIO: Slovak Investment and Trade Agency; SBA: Slovak Business Agency; MESRS: Ministry of Education, Science, Research and Sport; MZV: Ministry of Foreign and European Affairs; MIRRI: Ministry of Investments, Regional Development and Informatisation; MoF: Ministry of Finance; SIEA: Slovak Investment and Energy Agency
Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Regional and local governments are also involved in the coordination efforts of Slovak implementing agencies given the latter's extensive subnational presence (Table 4.5). In recent years, contractual partnership agreements and cooperation protocols have been signed between the SBA's regional centres and some subnational authorities, often focusing on the operationalisation of national strategies at the local level, the targeting of specific sectors that are most prevalent in regions, or the provision of tailored SME support services. Investment promotion and facilitation services also heavily rely on the coordination efforts of SARIO with local municipalities, which are often responsible for the set-up and operation of industrial parks, the approval of construction permits and the development of local infrastructure. Regular meetings between SARIO and local authorities are organised throughout the year to resolve administrative matters for foreign investors and update SARIO's database of available locations for investment projects.

Table 4.5. Policy coordination in the Slovak Republic by institution and policy domain

Implementing agencies coordinate with…	Other public institutions			Across the following policy areas			
	Centre of government	Ministries	Regional and local governments	Investment policy	SME policy	Innovation policy	Regional development
SARIO		✓	✓	✓		✓	
SBA		✓	✓	✓			
SIEA		✓	✓	✓	✓	✓	
SRDA	✓	✓					
RA	✓	✓					

Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Table 4.6. Most common coordination instruments used by Slovak institutions

Coordination instruments used by:	Ministries		Implementing agencies				
	Ministry of Economy	POCE Business Centre	SARIO	SBA	SIEA	SRDA	RA
Laws and regulations	■	■				■	■
Contracts and protocols of cooperation	■		■	■			■
Specific programme rules			■	■		■	
Inter-institutional coordination bodies	■		■	■			
Informal channels of communication			■		■		
Joint programming procedures	■						
Secondment of experts and civil servants across public institutions							

Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

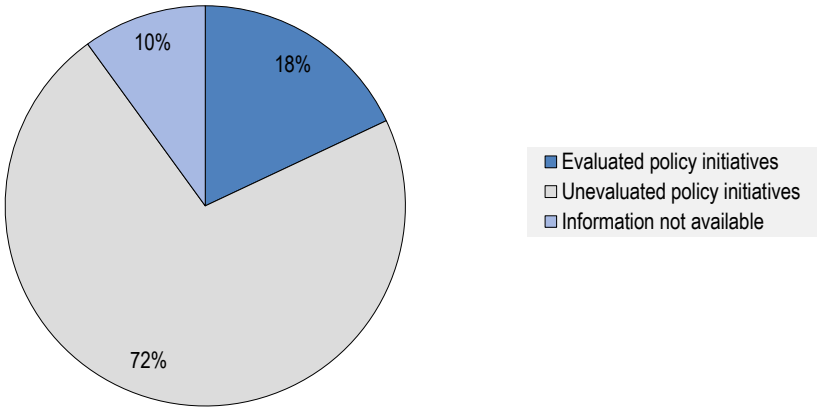
4.4. Evaluation of policy impact and engagement with stakeholders

The Slovak Republic has a well-developed framework for undertaking policy evaluations but ministries and implementing agencies should improve their analytical capacities

Evaluating the impact of public policy interventions on the domestic economy can help governments identify potential policy gaps and take corrective action to enhance their effectiveness. The adoption and use of monitoring and evaluation (M&E) frameworks by government institutions is particularly important for policy initiatives targeting FDI-SME diffusion, which often requires public action from across different policy areas and therefore enhanced scrutiny to ensure that policy action achieves the expected results. In the Slovak Republic, the use of M&E tools by government institutions is limited. This is reflected in the very small share (18%) of FDI-SME diffusion policy initiatives that have been evaluated (Figure **4.6**). Evaluations are undertaken only for policies implemented in the framework of the national smart

specialisation strategy (e.g. RA's financial support scheme for RIS3 projects) and for those funded by the EU Structural and Investment Funds (e.g. SARIO's National Project for the Internationalisation of SMEs). A notable exception is the Regional Investment Aid Scheme, which is administered by the Ministry of Economy and has been the government's main state-funded policy instrument to attract FDI in knowledge-intensive and high-tech activities (see Chapter 5 for a discussion on the policy mix).

Figure 4.6. FDI-SME diffusion policies that have been evaluated in the Slovak Republic



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

A similar picture emerges when looking at the frequency and quality of ex post evaluations of existing regulations, where the Slovak Republic ranks far below the OECD and EU averages for 2021 according to the OECD Indicators for Regulatory Policy and Governance (Figure 4.7). Proper assessment of outcomes of regulations affecting domestic and foreign firms as well as other economic actors could help policymakers understand their impact over time and ensure that regulations do not stifle their potential to engage in productive and innovative activities. In 2019, the Slovak government pilot-tested a draft methodology introducing a requirement for more comprehensive reviews of existing regulations (OECD, 2021[28]). The publication and operationalisation of the final methodology planned for 2021 could eventually help create a "culture of evaluation" within the Slovak government.

In contrast, regarding regulatory impact assessments (RIA), the country's performance is significantly better than the OECD average (Figure 4.7). The obligation to conduct RIAs has been in place since 2008 while the recently adopted RIA 2020 Better Regulation Strategy has led to the development of a comprehensive and solid methodology for assessing economic, social and environmental impacts, including a SME Test and impacts on innovation (OECD, 2020[8]). Adopted in 2018, the strategy introduced the obligation to monitor and evaluate progress in the implementation of regulatory reform programmes primarily carried out by the Ministry of Economy, which has been the main national coordinator of better regulation efforts. A RIA Committee has been also established within the ministry to oversee the quality of evaluations and coordinate their implementation across several ministries, the Government Office and the Slovak Business Agency.

Despite these improvements, evaluation processes still lack proper implementation in practice as Slovak ministries struggle with the quantification of wider impacts, focusing mainly on budgetary, procedural and programme implementation issues (OECD, 2021[5]). This is often illustrated in the monitoring frameworks of national strategies and EU funded operational programmes. The indicators included in the Operational Programme Research and Innovation (OP R&I) are primarily output-related (e.g. number of SMEs supported, number of SMEs receiving grants and participating in training programmes), and do not provide for a comprehensive reporting on the impact of the various policy interventions. The systematic use of quantifiable outcome-based indicators and the establishment of robust data tracking tools and feedback processes can ensure that reliable data on impacts are available. In some instances, policymakers may

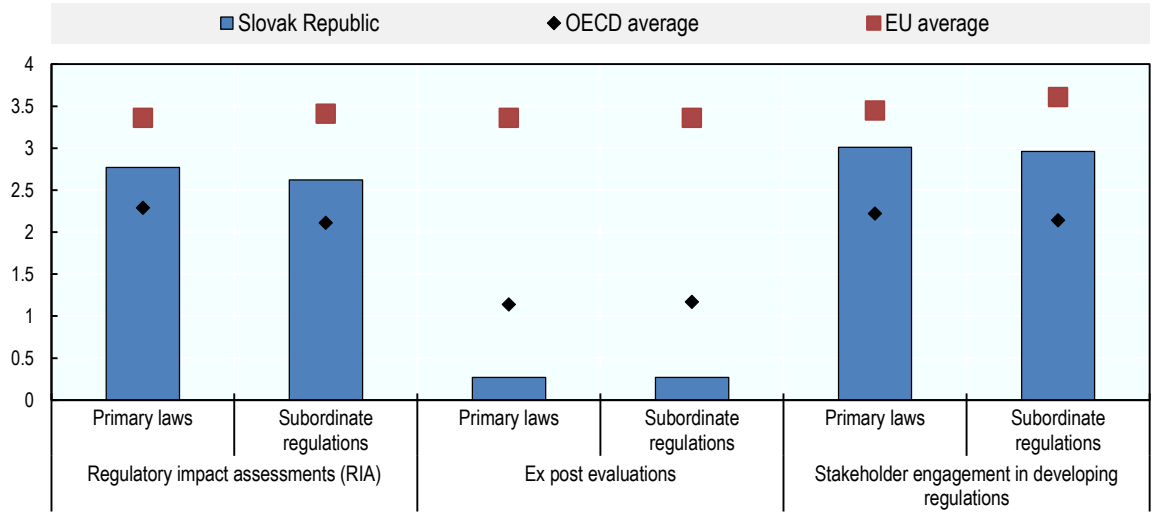
need to develop new indicators or databases to monitor the implementation and impact of a proposed policy or regulation (OECD, 2020[8]). Although the Ministry of Economy and the RIA Committee provide help to ministries to find relevant data and use them for monitoring purposes, ministries often do not have the incentives and resources to undertake data mapping exercises.

Beyond monitoring practices, the implementation of policy evaluations crucially hinges on the administrative and analytical capacities of key ministries and government bodies. Many ministries have established analytical units with responsibility to conduct policy analysis, undertake impact assessments and provide their input for the development of new laws. These specialised units could theoretically play an active role in ex ante and ex post evaluations; in practice, however, their professional make-up and capacities vary across ministries. For instance, although the Ministry of Economy is responsible for FDI, SME and innovation policy, the recent evaluation of the Regional Investment Aid Scheme was conducted by the Ministry of Labour, which is one of the providers of the regional investment aid, while the Ministry of Economy was consulted on the analysis and its outcomes. Similarly, the analytical unit of the Ministry of Finance – the Institute for Financial Policy – has been particularly prominent, acting as an "initiator" of key economic and fiscal topics within the Slovak government.

Given existing disparities in capacity, the Slovak Republic could consider appointing one body close to the centre of government – for instance, the Government Office of the Slovak Republic – responsible for coordinating evaluations of integrated impacts, rather than spreading the responsibility across several ministries (OECD, 2021[28]). Outsourcing evaluations to a body close to the centre of government would also ensure that the evaluation process is impartial and independent from the process concerned with policymaking. Such an approach would also benefit from further strengthening the organisational and human resources of the analytical unit of the Ministry of Economy given its crucial role in the implementation of policies fostering FDI spillovers on domestic SMEs. Capacities for analysis could be supported through the provision of specialised training to raise education and awareness of public servants on the process of monitoring and evaluating policy impacts. Continuous training for policymakers in evaluation methods should be also ensured of within the framework of the Better Regulation Strategy and be coupled with clear guidelines and methodologies for different types of ex ante and ex post evaluations.

Figure 4.7. Policy evaluations and stakeholder engagement in the Slovak Republic

OECD Indicators of Regulatory Policy and Governance, 2021



Note: The more regulatory practices as advocated in the OECD Recommendation on Regulatory Policy and Governance a country has implemented, the higher its iREG score. The indicators on stakeholder engagement and RIA for primary laws only cover those initiated by the executive (98% of all primary laws in the Slovak Republic).
Source: OECD Indicators of Regulatory Policy and Governance (iREG) 2021, http://oe.cd/ireg.

Similar capacity building efforts should be made at the agency level to strengthen the monitoring capabilities of implementing agencies. Right now, most agencies have specialised units where some basic monitoring information on programme participation is collected. None of SBA's business advisory programmes have been evaluated yet, while the collection of information on the impact of services provided on the growth and upgrading of domestic firms (e.g. growth of exports, turnover or jobs in supported firms, number of MNE-SME partnerships) is very limited (OECD, 2021[5]). Similarly, SARIO relies on qualitative tools (e.g. client feedback surveys, stakeholder consultations, and benchmark comparisons) to collect information on the effectiveness of their activities, which does not always allow to gather granular data for more quantitative evaluations such as cost-benefit analyses of assisted investment projects. Qualitative evaluations often provide partial information and incomplete or ambiguous results, and should ideally be complemented by more quantitative and systematic approaches, whenever possible (OECD, 2018[29]). SIEA's analytical capacities have improved, on the other hand, since the implementation of the Inovujme.sk national project, which includes a foresight component focusing on evaluating the innovation performance of the Slovak economy and collecting data on the impact of project activities. SIEA's analytical unit and SBA's Better Regulation Centre also carry out periodic surveys of SMEs for evidence-based input on their operating challenges and the use of government support programmes. Further strengthening internal monitoring competences at the agency level will be crucial for ex ante and ex post evaluations to take place by relevant ministries.

The Slovak Republic has a well-established practice of consulting with business and other stakeholders on legislative proposals and national policy frameworks

Good practice in the design and implementation of policies enabling FDI-SME spillovers includes effective mechanisms for stakeholder consultations, such as with foreign investors, local SMEs and other actors of the national innovation system. Through formal and informal deliberative processes, government bodies can understand the challenges and expectations of foreign and domestic firms, receive feedback on the relevance of their policy programmes and enrich policymaking processes with insights from various stakeholders. The Slovak Republic has recently made significant progress in the use of deliberative processes to receive feedback on prospective laws, regulatory proposals and other national strategic documents. In 2021, it had the fourth best performance out of 34 OECD countries on engaging stakeholders in the development of primary laws and subordinate regulations according to the OECD Indicators for Regulatory Policy and Governance (Figure 4.7).

Rules for stakeholder engagement were first enacted in 2014 as a non-binding recommendation of the government, and their implementation was subsequently strengthened through the introduction of additional provisions and guidance in the framework of the RIA 2020 – Better Regulation Strategy (OECD, 2020[8]). The good performance of the Slovak Republic in the area of stakeholder engagement comes from the introduction of a standardised public consultation procedure, which involves a requirement to undertake early-stage consultations of all legislative proposals and their impact assessments through the governmental portal www.slov-lex.sk. The portal serves as a single access point for comments on legislative and non-legislative drafts, including concept notes, white papers, and other strategic documents. When a new legislative initiative is posted, the general public has four weeks to submit their comments, and ministries are obliged to provide written feedback, including indicating whether comments have been accepted, rejected or partly addressed with the corresponding reasoning for the decision (OECD, 2021[28]). Beyond the portal, the Ministry of Economy also manages a list of business entities who have expressed interest in participating in consultations for policy initiatives that directly affect the business environment. When a proposal touches upon a relevant policy area, the Ministry of Economy forwards the information to the businesses included in the list, who can then engage in the process of drafting the regulation, including through meetings with regulators.

In recent years, several public consultations have also been organised for the update or renewal of national strategies. Several online workshops were organised in 2019-2020 for the update of the National Smart

Specialisation Strategy and the formulation of the Recovery and Resilience Strategy, which lays out the country's national priorities for the use of the Next Generation EU fund, the EU's landmark financial instrument for recovery from the Covid-19 pandemic. Most of these public dialogue events were organised by high-level government councils (such as the Council for Science, Technology and Innovation, the Council for Export and Investment Promotion and the Council for Cohesion Policy). As mentioned in the previous section, representatives from academia, employer organisations and business associations make up their membership alongside line ministries and other government bodies, allowing for regular input to legislative and policy initiatives. Beyond participation in high-level councils, business stakeholders and other industry experts are often invited to participate in working groups established by ministries responsible for drafting a new law or regulation.

At the agency level, engagement with local SMEs and foreign investors takes place either informally through interactions when businesses participate in government support programmes, or in a more structured way through the organisation of stakeholder events and the launch of online surveys. SBA's Better Regulation Centre, which was established in 2015 to monitor and explore ways to address the disproportionate regulatory burden on Slovak SMEs, has played a crucial role in organising and undertaking consultations on legislative and non-legislative initiatives involving SMEs. SBA's role in stakeholder engagement is also facilitated by its dual public-private governance model, with various business associations (i.e. Slovak Entrepreneurs Association, Slovak Craft Industry Federation) participating in the agency's management board and having an active role in shaping the scope of its activities. Similarly, SIEA's innovation support programmes increasingly include deliberative processes involving business enterprises and other actors of the national innovation system. For instance, in 2020, a working group consisting of representatives of industrial cluster organisations participated in the preparation of a new financial support scheme together with representatives from SIEA and the Ministry of Economy. SARIO, on the other hand, relies on direct contact with foreign investors to receive feedback on their investment facilitation and aftercare services, including through the organisation of meetings, events and surveys.

Despite the Slovak Republic's good performance, there is still room for improvement in certain aspects of the regulatory process (OECD, 2020[8]). Interviews with Ministry and agency staff showed that stakeholders participating in high-level councils and committees often complain about the lack of time available to submit their feedback. This has been particularly the case for business associations, which often have to communicate and discuss with their members, and the usual 4 weeks given by the Ministry of Economy is not sufficient. The Slovak government could therefore consider providing more time for the various stakeholders to participate in deliberative processes when a new regulation or policy is developed. Due consideration should be also given to the inclusiveness of public consultation processes. The list of business entities managed by the Ministry of Economy may not represent the whole spectrum of interests as smaller businesses have less resources to engage in discussions with public administration bodies. Ministries could be encouraged to look for potential consultees, which are not included in the list, and raise awareness of participatory processes among segments of the business population which are under-represented, such as small firms and innovative start-ups.

References

Alfaro, L. and M. Chen (2012), "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance", *American Economic Journal: Economic Policy*, Vol. 4(3): 30-55. [35]

Castro, F. (2000), *Foreign direct investment in the European periphery: The competitiveness of Portugal*, The University of Leeds, https://etheses.whiterose.ac.uk/2612/1/Castro_FB_LUBS_PhD_2000.pdf. [37]

Crescenzi, R., M. Di Cataldo and M. Giua (2019), *FDI inflows in Europe: does investment promotion work?*, The London School of Economics and Political Science, http://www.lse.ac.uk/iga/assets/documents/research-and-publications/FDI-inflows-in-Europe-does-investment-promotion-work.pdf. [3]

European Commission (2021), *European Structural and Investment Funds - Country Data for the Slovak Republic*, https://cohesiondata.ec.europa.eu/countries/SK (accessed on 29 November 2021). [18]

Fandel et al. (2019), "Decentralization Policies in Public Administration in Slovakia and the Czech Republic, and their Impact on Building Offices' Scale Efficiency", *Administrative Sciences*, Vol. 9/4, p. 89, https://doi.org/10.3390/admsci9040089. [11]

Government of the Slovak Republic (2020), *Rada vlády na podporu exportu a investícií bola prínosom pre štát aj podnikateľov*, Ministry of Economy of the Slovak Republic, https://www.mhsr.sk/press/rada-vlady-na-podporu-exportu-a-investicii-bola-prinosom-pre-stat-aj-podnikatelov. [16]

Government of the Slovak Republic (2019), *2030 Digital Transformation Strategy for Slovakia: Strategy for transformation of Slovakia into a successful digital country*, https://www.mirri.gov.sk/wp-content/uploads/2019/10/SDT-English-Version-FINAL.pdf. [25]

Government of the Slovak Republic (2013), *Research and Innovation Strategy for Smart Specialisation of the Slovak Republic*, https://www.mirri.gov.sk/wp-content/uploads/2018/10/EN.pdf. [26]

Government of the Slovak Republic (2001), *Statute of the Mininistry of Economy of the Slovak Republic*, https://www.economy.gov.sk/uploads/files/ejpaZTT9.pdf. [1]

Government of the Slovak Republic (2001), *Statute of the Ministry of Education, Science, Research and Sport of the Slovak Republic*, https://www.minedu.sk/data/att/15768.pdf. [2]

Hayward, J. and V. Wright (2002), *Governing from the Centre: Core Executive Coordination in France*, Oxford University Press. [23]

Helpman, E., M. Melitz and S. Yeaple (2004), "Export Versus FDI with Heterogeneous Firms", *American Economic Review*, https://scholar.harvard.edu/files/melitz/files/exportsvsfdi_aer.pdf. [34]

Johanson, J. and J. Vahlne (1977), "The internationalization process of the firm - A model of knowledge development and increasing market commitments", *Journal of International Business Studies*, Vol. Vol. 8, No. 1. [36]

Klimovsky, D. and J. Nemec (2021), *Local Self-Government in Slovakia*, Institute for Local Self-Government Maribor, http://www.lex-localis.press/index.php/LexLocalisPress/catalog/view/LocalGovernmentEurope/68/612-1. [10]

Kneuer, M., D. Malova and F. Bonker (2020), *Slovakia Report - Sustainable Governance Indicators 2020*, Bertelsmann Stiftung, https://www.sgi-network.org/docs/2020/country/SGI2020_Slovakia.pdf. [15]

Metcalfe, L. (1994), "International Policy Co-Ordination and Public Management Reform", *International Review of Administrative Sciences*, Vol. 60/2, pp. 271-290, https://doi.org/10.1177/002085239406000208. [22]

OECD (2022), *Strengthening FDI and SME Linkages in Portugal*, OECD Publishing, Paris, https://doi.org/10.1787/d718823d-en. [13]

OECD (2021), *Better Governance, Planning and Services in Local Self-Governments in Poland*, OECD Publishing, Paris, https://doi.org/10.1787/550c3ff5-en. [12]

OECD (2021), *OECD Regulatory Policy Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/38b0fdb1-en. [28]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [30]

OECD (2021), *Perspectives on Decentralisation and Rural-Urban Linkages in Korea*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/a3c685a7-en. [14]

OECD (2021), "Promoting research and innovation in the Slovak Republic through an effective use of European funds", *OECD Public Governance Policy Papers*, No. 04, OECD Publishing, Paris, https://doi.org/10.1787/f0e9d786-en. [17]

OECD (2021), *SME and Entrepreneurship Policy in the Slovak Republic*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/9097a251-en. [5]

OECD (2021), *Subnational Governments in OECD Countries: Key Data 2021 edition (brochure)*, OECD, Paris, https://www.oecd.org/regional/multi-level-governance/OECD_SNG_Nuancier_2021.pdf. [9]

OECD (2020), *Regulatory Policy in the Slovak Republic: Towards Future-Proof Regulation*, OECD Reviews of Regulatory Reform, OECD Publishing, Paris, https://doi.org/10.1787/ce95a880-en. [8]

OECD (2019), *Business Development Services for SME Productivity Growth – International Experience and Implications for Local Economic Policy*. [4]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/34907e9c-en. [27]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/d2b72934-en. [31]

OECD (2019), *Regional Development Policy in the Slovak Republic*, OECD, Paris, https://www.oecd.org/cfe/_Slovak%20Republic.pdf. [7]

OECD (2018), *Centre Stage II: The Organisation and Functions of the Centre of Government in OECD countries*, https://www.oecd.org/gov/report-centre-stage-2.pdf. [24]

OECD (2018), *Mapping of Investment Promotion Agencies in OECD Countries*, http://www.oecd.org/investment/Mapping-of-Investment-Promotion-Agencies-in-OECD-Countries.pdf. [29]

OECD (2018), *Promoting innovation in established SMEs, OECD SME Ministerial Conference, Mexico City, Policy Note, 22-23 February 2018*, http://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf. [32]

OECD (2012), "STI governance structures and arrangements", in *OECD Science, Technology and Industry Outlook 2012*, OECD Publishing, Paris, https://doi.org/10.1787/sti_outlook-2012-9-en. [21]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*, OECD Publishing, Paris. [33]

OECD/UCLG (2019), *2019 Report of the World Observatory on Subnational Government Finance and Investment – Country Profiles*, https://www.sng-wofi.org/reports/SNGWOFI_2019_report_country_profiles_DEC2019_UPDATES.pdf. [6]

Peters, B. (2018), "The challenge of policy coordination", *Policy Design and Practice*, Vol. 1/1, pp. 1-11, https://doi.org/10.1080/25741292.2018.1437946. [20]

Scharpf, F. (1994), "Games Real Actors Could Play", *Journal of Theoretical Politics*, Vol. 6/1, pp. 27-53, https://doi.org/10.1177/0951692894006001002. [19]

5 The policy mix for FDI-SME diffusion

This chapter reviews the mix of policies in place for fostering FDI spillovers on the productivity and innovation of Slovak SMEs. It identifies the FDI-SME diffusion channels and enabling factors that are supported by the Slovak Republic's policy framework, and the policy instruments used to promote FDI-SME linkages, noting areas for further policy development or a shift in the policy mix. It also assesses various aspects of regulation affecting the diffusion of knowledge from foreign to domestic firms, focusing on investment and trade openness, competition policy and labour market regulations.

5.1. Summary of findings and recommendations

FDI-SME linkages and spillovers may not take place automatically. Besides economic, market and firm-specific factors, public policy can play an important role. The quality of the regulatory environment and targeted measures at the intersection of investment, SME, innovation and regional development policy areas can determine whether a country can attract productivity-enhancing FDI, and whether spillovers on local SMEs can occur. These policy initiatives cannot be considered in silos but in the framework of an adequate and coherent policy mix (Box 5.1). The main challenge for governments is ensuring that the policy mix is aligned with the country's economic structure, policy priorities, and economic geography.

This chapter reviews the policy mix for FDI spillovers on Slovak SMEs and identifies areas for policy reform (Table 5.1). It identifies the main FDI-SME diffusion channels and enabling factors that are supported by the Slovak policy framework, and draws comparisons with and examples from other EU countries, in particular Portugal, Ireland and Lithuania, which offer significant opportunities for mutual learning. These comparisons are complemented with a discussion on how the Slovak Republic can support the internationalisation and upgrading of SMEs and use FDI to hasten its transition towards a knowledge-based economy.

Table 5.1. Findings and recommendations on the Slovak Republic's policy mix

Findings	Recommendations
Enabling conditions for FDI-SME diffusion	
The Slovak Republic has an open economy; FDI restrictions are limited to only a handful of sectors.	Undertake an evaluation of the Regional Investment Aid scheme to ensure that its design, in particular with regard to tax relief, remains effective in promoting productivity-enhancing FDI.
FDI promotion policies exhibit a strong focus on investments that use smart industry technologies and involve knowledge-intensive services. Financial incentives (e.g. grants, CIT relief, wage subsidies) are the main instruments used to attract FDI in high-tech activities.	Promote knowledge-intensive FDI by addressing issues that go beyond reducing investment costs such as facilitating administrative procedures for technology-intensive investments, as well as investments conducted in partnership with Slovak R&D institutions.
Regulatory incentives (e.g. Significant Investment Certificates) are only used to target investments that create a certain number of jobs in less developed regions.	Consider expanding the scope of the Significant Investment Certificates beyond employment generation to also target knowledge and technology-intensive investments.
SME absorptive capacities are supported by a comprehensive set of business development services (e.g. technical assistance, capacity-building, information services) and several funding schemes for business R&D and innovation.	Simplify the R&D tax incentive scheme to make it more attractive and easily accessible to smaller businesses.
Despite the large number of innovation funding schemes, the amount of financial support and the number of SMEs benefiting from it remain limited.	Address governance challenges that may limit access to finance for Slovak SMEs, and leverage the EU Structural and Investment Funds to strengthen their productive capacities.
Although business advisory services are comprehensive and target all aspects of SME performance, their provision is fragmented, resulting in limited uptake by SMEs.	Strengthen inter-agency collaboration for the development of easily accessible support packages that combine business development, internationalisation and innovation-funding services for SMEs.
Investment promotion and SME internationalisation policies increasingly incorporate place-based approaches, but are not always sufficiently linked to regional and local development strategies.	Ensure that policy priorities and measures relating to the attraction of knowledge-intensive investment and the upgrading of Slovak SMEs are part of regional and local development strategies.
The availability and quality of R&D infrastructure (e.g. science parks, research centres, etc.) has improved over the past decade, but the lack of funding and weak links to the real economy have hindered knowledge transfer to SMEs.	Provide performance-based funding to higher education institutions to promote science-to-business collaboration. Revise current rules on the use of R&D infrastructures by business enterprises to ensure genuine collaboration with industry.
Financial support to industrial clusters has significantly increased in recent years. There has been also greater involvement of cluster associations in the design of public support programmes.	Collaborate with cluster associations on the development of multi-year sectoral action plans that set out public and private sector interventions to address bottlenecks in their growth.
FDI-SME diffusion channels	
The Slovak Republic implements a comprehensive set of policies to promote supplier linkages and partnerships between foreign MNEs and Slovak SMEs (e.g. Business Link events, Matchmaking Fairs).	Expand the scope and activities of the SARIO Supply Chain Development Programme to pro-actively and comprehensively support FDI-SME linkages in knowledge-intensive value chains.

Investment facilitation and aftercare services have increasingly focused on encouraging R&D and technology-based partnerships.	Ensure that the financial incentives offered by grant-making agencies (e.g. SRDA and RA) target collaborative projects that involve foreign MNEs and local SMEs.
The Slovak government has placed particular emphasis on facilitating labour mobility to address labour shortages in FDI-intensive sectors.	Establish employee exchange programmes and other labour mobility incentives for foreign MNEs and their Slovak suppliers.
The legal framework for employment protection attaches equal importance to firm adaptability and job security, thereby facilitating labour mobility and the productivity spillovers it could generate.	Streamline the labour legislation and introducing targeted measures that allow micro and small firms to be exempted from certain procedural requirements or other hiring restrictions.
Regulatory barriers to competition are on par with the OECD average and the legal framework for intellectual property rights protection generally complies with international standards.	Streamline the licensing regime and ease market conduct restrictions in professional services, the energy and retail trade sectors to improve the quality of competition.

5.2. Overall balance of the policy mix for FDI-SME diffusion

SME absorptive capacities, strategic partnerships and value chain linkages are the main objectives pursued by the Slovak policy mix

The Slovak policy mix seeks to promote knowledge and technology transfers from foreign to domestic firms through measures that strengthen the absorptive capacities of local SMEs and facilitate strategic partnerships and value chain linkages (Figure 5.1). Close to 63% of Slovak policies implemented by Ministries and implementing agencies aim to upgrade entrepreneurial skills and encourage SMEs to adopt new technologies and engage in innovative activities. Strategic partnerships (41%) and value chain linkages (27%) are substantially supported through financial incentives for R&D collaborations, supplier development programmes as well as matchmaking services that reduce information barriers and allow foreign firms to identify local suppliers. A few policies are also available to attract FDI into productivity-enhancing activities (22%) and promote agglomeration economies (25%).

By contrast, a small number of targeted measures is in place to strengthen the labour mobility and competition channels (each accounting for 12% of policy initiatives). This does not necessarily mean that less policy attention goes into these FDI-SME diffusion channels. The mobility of workers and the quality of competition in domestic markets largely depend on the broader regulatory environment, i.e. laws and regulations affecting the labour and product markets respectively, and less so on targeted policies and programmes (see Figure 5.4 for an assessment of regulatory conditions in the Slovak Republic).

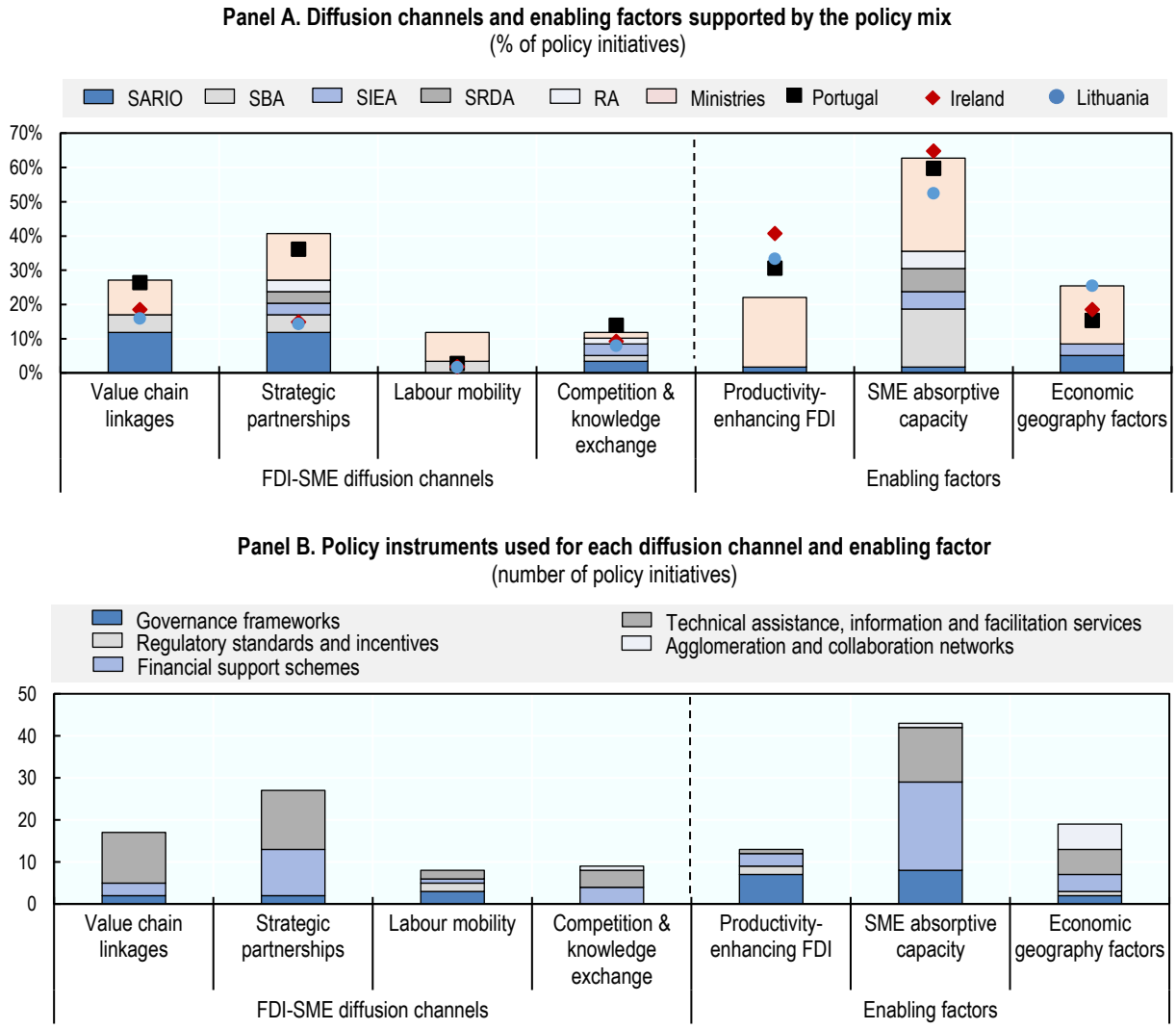
When compared to peer EU countries with similar socio-economic and market conditions, the Slovak policy mix does not substantially diverge. It does, however, reflect differences in policy priorities. For instance, the labour mobility channel is supported by almost three times more policy initiatives than in Portugal, Ireland and Lithuania. Shortages of skilled workers and skill mismatches in FDI-intensive sectors have forced the Slovak government to take policy action to simplify employment procedures and facilitate the attraction of foreign talent. Similarly, the share of policies supporting strategic partnerships is higher than in Ireland and Lithuania, reflecting the strategic choice of the Slovak government to boost the country's transition to a knowledge-based economy by promoting R&D and technology collaborations between business enterprises, universities and research institutions. Knowledge co-creation, i.e. the joint production of innovation between industry, research and other stakeholders of entrepreneurial ecosystems, is increasingly acknowledged as an important mechanism to bring together complementary expertise and facilitate the transfer of tacit knowledge (Kreiling and Paunov, 2021[1]).

One of the major factors influencing the policy mix is the desire and necessity of the Slovak Republic to maintain productivity growth by diversifying its production structure and hastening its transition towards a knowledge-based economy. The fast growth in productivity that took place in the last two decades was largely based on the country's integration into global value chains (see Chapter 2). Low investment in R&D and business innovation could, however, limit productivity growth going forward. As mentioned in Chapter 2, sustaining past productivity improvements requires the Slovak Republic to strengthen its own capacity

to innovate and adopt new technologies. Recent policy efforts have, therefore, focused on diversifying the economy beyond low value added manufacturing and strengthening the innovation capabilities of domestic firms. Despite the policy prioritisation of knowledge-intensive value chain linkages and partnerships, innovation policies could be further improved to integrate national priorities and ensure industry engagement. Similarly, the Slovak economy would stand to benefit from a more diverse set of measures to increase the knowledge-intensity of investments. The share of policies targeting productivity-enhancing and R&D-intensive FDI is considerably lower than in peer EU countries.

Considering the number of policy initiatives that target these policy objectives is only a partial measure of policy focus in a given area. One policy could rely on more resources (e.g. higher budget) for its implementation, and therefore have greater impact, while several policies in another case could be underfunded and not sufficiently effective to achieve the pursued outcomes. For this reason, the policy mix analysis conducted in the following sections takes into account other aspects relating to policy design and implementation, including the sectoral and value chain targeting of implemented measures, the uptake of public support schemes, the number of beneficiaries, the quality of the regulatory environment, and the type of policy instruments used to achieve specific policy objectives, amongst others.

Figure 5.1. Slovak policies and the FDI-SME diffusion channels and enabling factors they act upon



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Box 5.1. The policy mix for FDI-driven productivity and innovation diffusion on domestic SMEs: a typology of policy instruments

The policy mix concept refers to the set of policy rationales, arrangements and instruments implemented to deliver one or several policy goals, as well as the interactions that can possibly take place between these elements (Meissner and Kergroach, 2019[2]). Many of the policies that strengthen knowledge and technology diffusion from FDI to domestic SMEs are implemented by multiple institutions and belong to different policy domains (e.g. innovation, investment, entrepreneurship, science and technology, regional development). These "policy systems" can support the channels through which FDI spillovers occur (i.e. value chain relationships, labour mobility, competition and imitation) or the enabling factors that affect their magnitude (i.e. FDI characteristics, SME absorptive capacity, economic geography). A policy initiative can, however, act upon several channels and enabling factors and make use of various policy instruments, reflecting the plethora of policy goals it may seek to achieve as well as the many pathways to achieving productivity and innovation diffusion from foreign firms to local SMEs.

An analysis of the policy mix for FDI-SME diffusion goes beyond the characteristics of policy formulation and implementation, and focuses more on the areas where the different policy mix components are used in complementary and mutually reinforcing ways to achieve desired outcomes. It places emphasis on questions of completeness, balance and interaction among strategic objectives, policy goals, instruments, sectors and populations targeted, and institutions involved. Ideally, the policy mix will take into account interactions among these elements and ensure balanced support to promote FDI-SME linkages and spillovers. Based on the type of instrument used, such policies can be classified into:

- *Governance frameworks*, such as national strategies and action plans that lay out policy priorities and define the framework within which policy action on FDI, SMEs and innovation is organised;
- *Regulatory standards and incentives*, which define the framework within which foreign and domestic firms operate and often use legal rules to encourage or discourage different types of business activities (e.g. lighter administrative and licensing regimes for certain types of investments, local content requirements for foreign firms and labour mobility incentives);
- *Financial support schemes* in direct (e.g. grants, loans) or indirect form (e.g. tax relief) to encourage or discourage certain types of business activities (e.g. investment tax incentives, R&D vouchers, wage subsidies for skilled workers).
- *Technical assistance, information and facilitation services*, which aim to encourage the uptake of knowledge (e.g. skill and supplier development programmes) and facilitate interactions between foreign and domestic firms (e.g. matchmaking services and networking events);
- *Network and collaboration platforms and infrastructure*, which refers to platforms, facilities and infrastructures that enable spatial and network-related knowledge diffusion.

Source: Authors based on (Meissner and Kergroach, 2019[2])

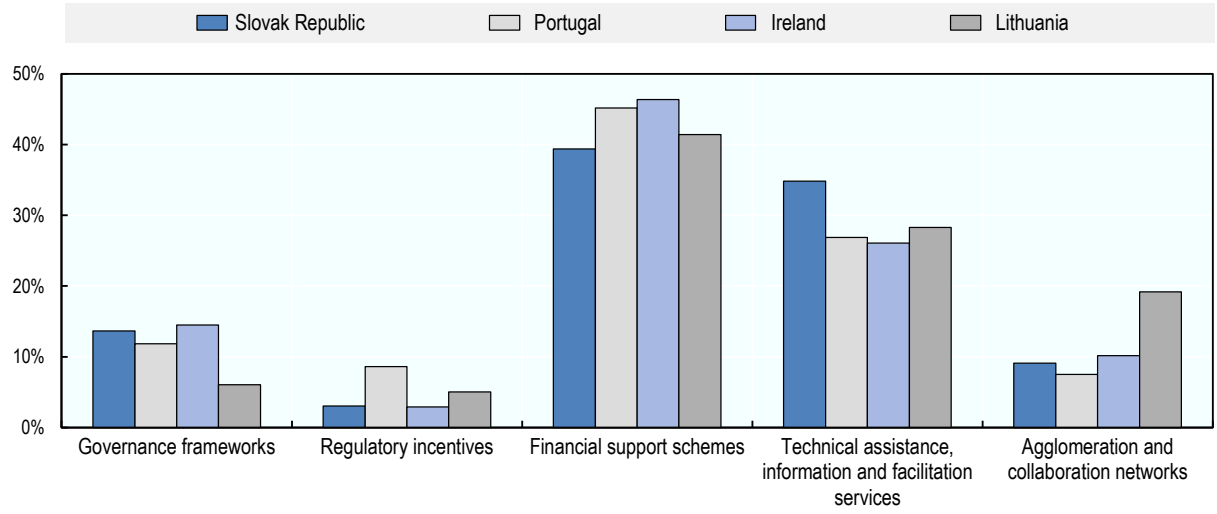
FDI-SME diffusion channels and their enabling conditions are supported mainly through financial incentives and technical assistance

Policy initiatives that aim to strengthen FDI spillovers on SMEs can make use of several instruments (e.g. technical support, financial support, regulatory easing), reflecting the plethora of strategic objectives they may seek to fulfil as well as the many pathways to achieving policy outcomes (Box 5.1). The type of instrument used often varies depending on the institution and the policy objectives pursued (Panel B, Figure 5.1). Overall, the Slovak policy mix is not substantially different from peer EU countries, where

financial and technical support as well as information and facilitation services are offered to strengthen FDI spillovers on domestic SMEs (Figure 5.2 and Figure 5.3). Although the number of financial support schemes for business innovation is large – and on par with peer EU countries – their volume is relatively low. This is mainly due to the limited resources allocated through the state budget and challenges in the absorption of EU funds. A comprehensive set of technical assistance, information and facilitation services is, however, available to support the innovation and internationalisation of Slovak SMEs and help foreign investors create linkages with the local economy. The delivery of these business advisory services is, however, fragmented. As described in Chapter 4, many public institutions are involved in their implementation, raising questions about their effectiveness in the development of FDI-SME ecosystems.

An important factor reflected in the chosen mix of policy instruments lies in the Slovak Republic's smart specialisation priorities, which have led to the targeting of specific types of firms (e.g. SMEs), priority sectors and geographic areas. A high degree of selectivity is consistent with industrial and innovation policy frameworks aimed at smart specialisation, and with current development thought about the role of targeted policy interventions in designing industrial policies for sustainable growth. In the Slovak Republic, the targeting of SMEs is widespread among government agencies. Sectoral targeting focuses mostly on FDI-intensive manufacturing sectors such as the automotive, electronics, chemicals and ICT industries; however many policy initiatives introduced in recent years have shifted their focus to the services sector, which provides opportunities for significant productivity gains (see Chapter 2). Regarding the targeting of less developed regions, there is room to further integrate place-based approaches into policymaking, in particular for programmes financed by the state budget.

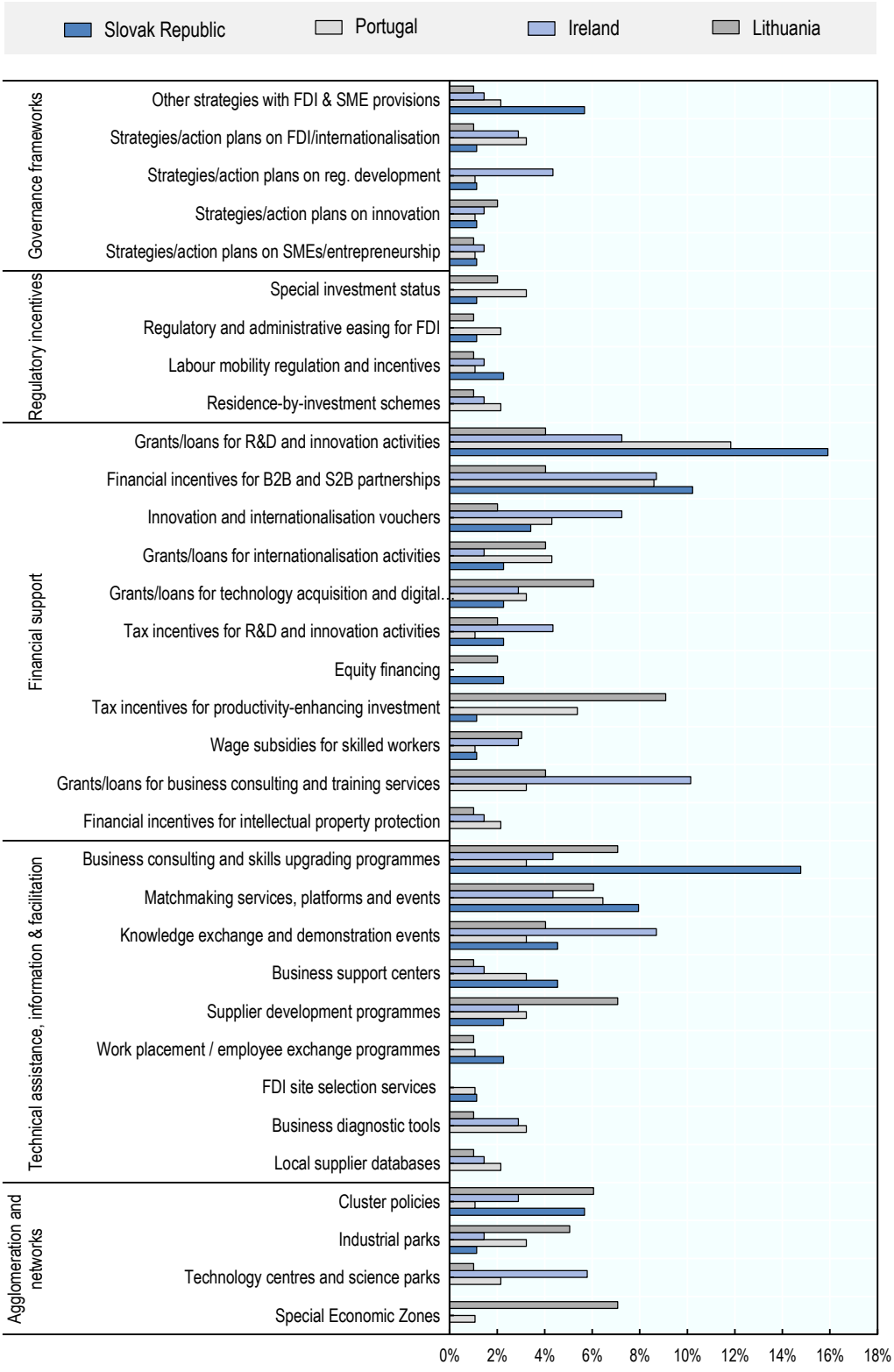
Figure 5.2. Policy instruments used in the Slovak Republic and peer EU Member States



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Figure 5.3. Main policy initiatives implemented in the Slovak Republic and peer EU Member States

In % of policy initiatives



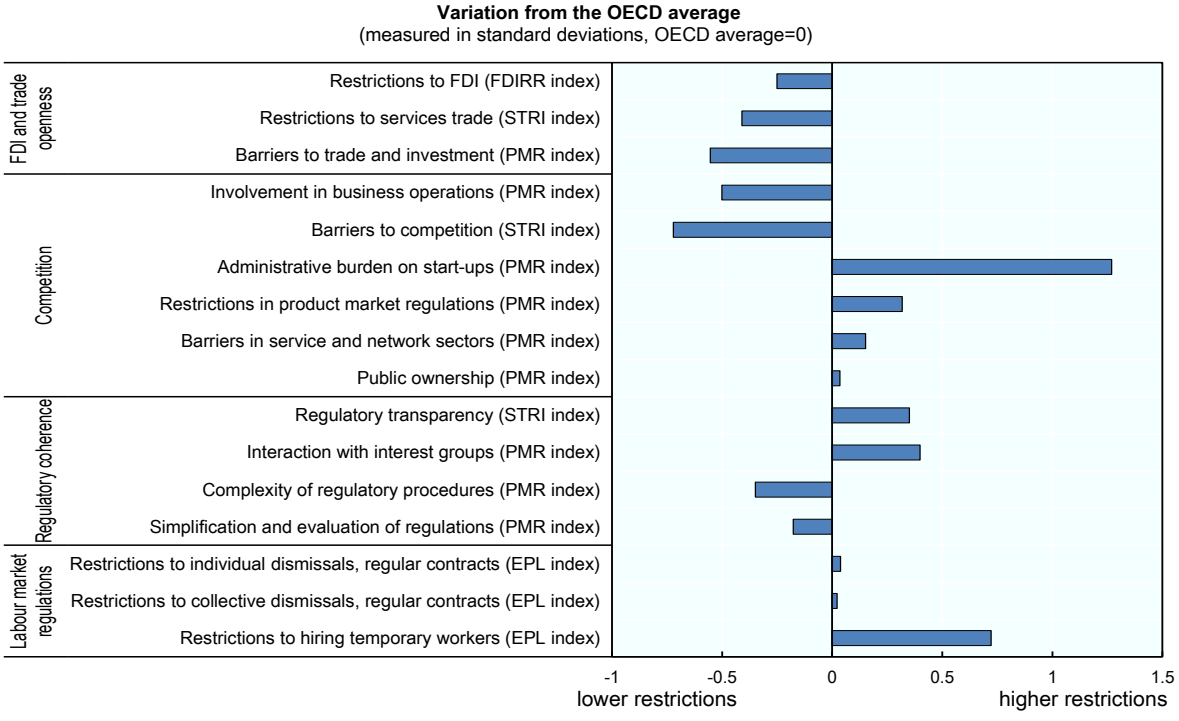
Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Market openness and a balanced labour market policy regime may facilitate FDI spillovers on Slovak SMEs, but the regulatory burden on business could be reduced

In addition to targeted measures that can enhance the impact of FDI on the productivity and innovation of domestic SMEs, the quality of the broader regulatory environment also shapes the potential for FDI spillovers. Host country factors such as openness to foreign investment, fair competition rules, the protection of intellectual property rights, and a labour market policy regime that facilitates the mobility of skilled workers need to be in place for economies to reap the benefits of FDI spillovers.

The Slovak Republic has one of the most open economies in the OECD area (Figure 5.4). Restrictions to investment and barriers to trade are limited while the Slovak government's overall attitude towards FDI attraction and facilitation is positive, not limiting or discriminating against foreign investors. A range of Slovak laws and regulations has been introduced in recent years to improve the business climate with emphasis being placed on simplifying regulations and reducing the complexity of regulatory procedures. However, according to several OECD indicators, the long-term predictability of regulation affecting the business environment is still weak, legislative processes often lack transparency, and the administrative burden on business is disproportionate. Bureaucracy, lengthy administrative procedures and frequent changes to laws and programme rules are often cited as obstacles for domestic and foreign firms that want to conduct business in the Slovak Republic.

Figure 5.4. The Slovak Republic's performance in key regulatory framework areas



Note: Data bars pointing left show lower regulatory restrictions than the OECD average, and data bars pointing right show higher restrictions.
Source: OECD elaboration based on the FDIRR, STRI, PMR and EPL indices.

Regulatory barriers to competition are only slightly above the OECD average, reflecting the adoption of good practices in areas related to public procurement rules, the corporate governance of state-owned enterprises and the state's involvement in business operations. More could be done, however, to streamline the licensing regime for certain economic activities and ease restrictions in professional services, the energy sector and retail trade, which are faced with considerable barriers to entry and conduct

restraints. Unnecessary competition-distorting rules in sectors of strategic importance for the Slovak economy could hinder productivity growth, investment and innovation. Finally, the Slovak Republic has a relatively balanced labour market regime that does not impose excessive restrictions to labour mobility, which is an important channel through which productivity spillovers from foreign to domestic firms occur.

5.3. Policies acting upon the enabling environment

Attracting and facilitating productivity-enhancing FDI

Investment promotion and facilitation policies can play an important role in enhancing FDI impacts on SME productivity and innovation by focusing on the attraction of FDI in more productive and innovative activities and in sectors with high absorptive capacities and, therefore, greater potential for spillovers. The quality of the broader regulatory environment can also determine the extent to which foreign affiliates gain access to specific sectors and create linkages with domestic firms.

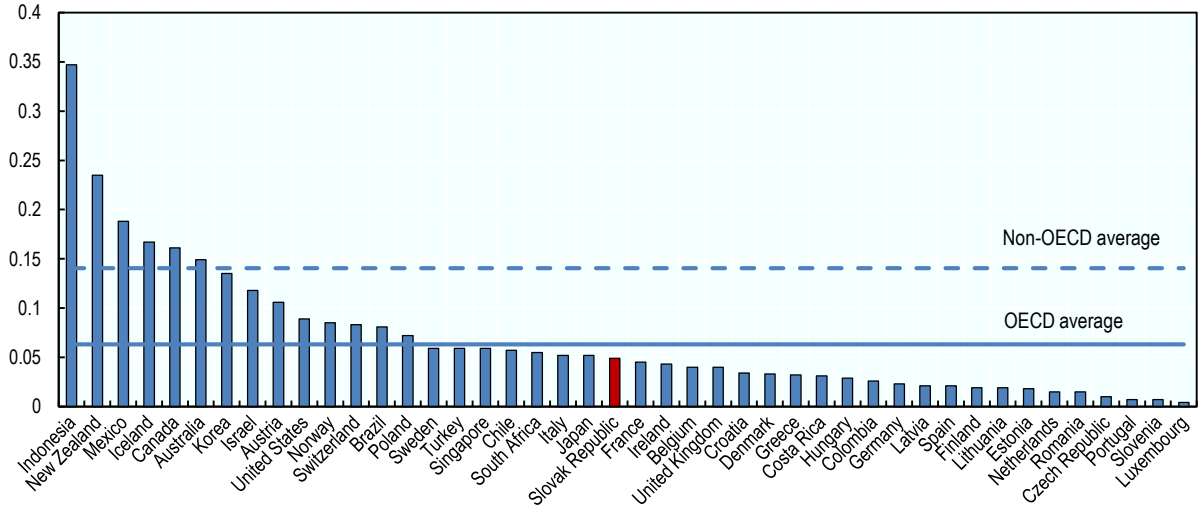
The Slovak Republic has a relatively open economy for foreign investment

According to the OECD FDI Regulatory Restrictiveness (FDIRR) Index, which catalogues statutory restrictions on FDI such as limits to foreign equity, screening and approval procedures, restrictions on key personnel, and other operational measures, the Slovak Republic has a relatively open economy – on par with peer EU and OECD countries (Figure 5.5). Foreign firms have the right to establish a business enterprise and engage in all economic activities under the same terms and conditions as domestic firms. At the sectoral level, transport, real estate and financial services are the sectors where most restrictions are found. For instance, acquisitions of financial services providers are subject to prior approval by the National Bank of the Slovak Republic, while the Act on Civil Air Transport (143/1998 Coll.) sets out specific rules for foreign entities seeking to provide air transport services. Access to the real estate sector for foreign entities also depends on several business registration requirements, including a mandatory academic recognition procedure for foreign diploma holders before being able to exercise real estate activities (European Commission, 2016[3]).

In 2021, the Slovak government introduced a screening framework for investments undertaken by non-EU/EEA companies, which seek to acquire direct or indirect control over strategic assets in sectors of critical importance (UNCTAD, 2021[4]). The amended Critical Infrastructure Act introduced a requirement to notify changes in the ownership structure as well as any acquisitions exceeding 10% of voting rights or shares for companies operating in the transport, electronic communications, energy, postal services, ICTs, water management, healthcare, pharmaceutical, finance and agricultural sectors. A new screening procedure has been also introduced for ownership changes in the mining, energy, pharmaceuticals, metallurgical and chemical sectors. The Ministry of Economy is responsible for assessing whether the proposed acquisitions disrupt the public order or threaten national security, and submit a proposal to the Council of Ministers on whether certain investment projects in these sectors should be blocked or approved.

Figure 5.5. FDI restrictions in the Slovak Republic are low compared to other OECD economies

OECD FDI Regulatory Restrictiveness Index, 2020 (open=0; closed=1)



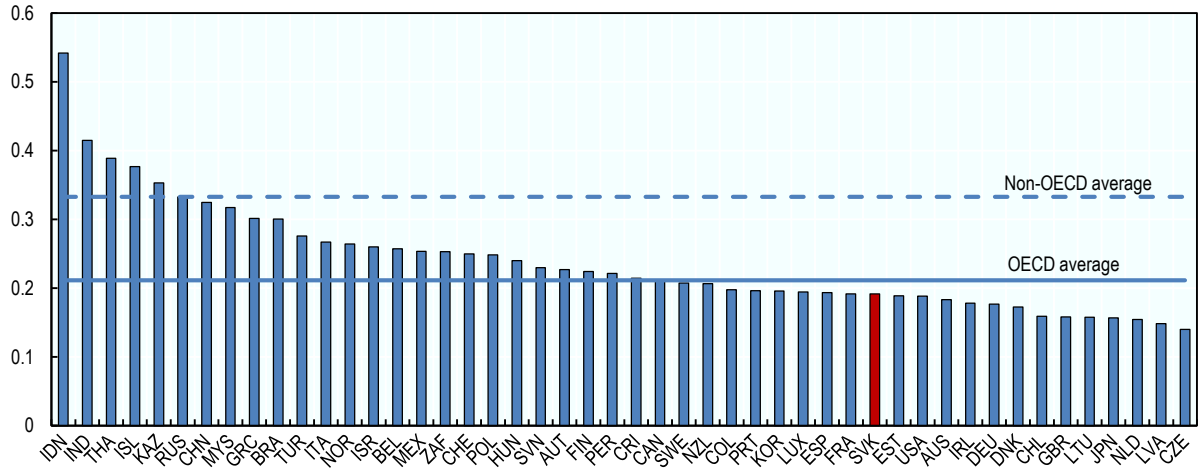
Note: The OECD FDI Regulatory Restrictiveness Index only covers statutory measures discriminating against foreign investors. Source: OECD FDI Regulatory Restrictiveness Index (database).

Beyond these FDI restrictions, there are also several 'behind-the-border' regulations, including restrictions in trade, barriers to competition and other discriminatory measures that influence market access conditions not only in industries where FDI gains access but also in downstream sectors. These regulations can affect the degree of local embeddedness of foreign affiliates and the potential for supply chain linkages with domestic enterprises. In the case of the Slovak Republic, potential behind-the-border restrictions in the services sector could undermine recent policy efforts to diversify the economy beyond low value added manufacturing and towards knowledge-intensive services. According to the OECD Services Trade Restrictiveness Index (STRI), the Slovak Republic's 2020 score is lower than most other OECD countries, reflecting the country's relatively open and stable regulatory environment for trade in services (Figure 5.6).

Accounting and auditing services, logistics, telecommunications and courier services are the most open sectors while construction, air transport, architecture and engineering services are the most restricted. Overall, conditions on the entry of natural persons seeking to provide services in the country on a temporary basis remain more cumbersome than international best practice, while rights of access to public procurement are limited to regional trade agreement partners and members of the WTO's Government Procurement Agreement. Other business requirements also apply in certain sectors, such as depositing a minimum amount of capital in a bank or with a notary in order to register a business, and appointing a company manager who is resident in the European Economic area (OECD, 2020[5]). Despite these sectoral restrictions, the Slovak Republic's overall regulatory framework for market access remains rather lenient compared to other OECD and EU countries.

Figure 5.6. Restrictions to services trade are in line with those in other OECD economies

OECD Services Trade Restrictiveness Index, 2020 (open=0; close=1)



Note: The OECD STRI indices take values between zero and one, one being the most restrictive. The STRI database records measures on a Most Favoured Nations basis. Preferential trade agreements are not taken into account. Air transport and road freight cover only commercial establishment (with accompanying movement of people). The indices are based on laws and regulations in force on 31 October 2019.
Source: OECD STRI database, 2020.

Financial incentives are the main policy instrument used to attract foreign investment into productivity-enhancing and R&D-intensive activities

Regarding the attraction of productivity-enhancing FDI, the policy mix in the Slovak Republic appears to be less diverse – in terms of number of policy initiatives and type of instruments used – than in peer EU countries. It focuses on financial incentives compared to peer countries such as Portugal, Ireland and Lithuania where regulatory measures and technical assistance are also part of investment promotion strategies (Figure 5.7). However, the Slovak policy mix does exhibit a strong focus on investments that use smart industry technologies with higher potential for knowledge and technology diffusion.

The Regional Investment Aid Scheme is the main instrument used by the Slovak government to support investments that enhance the competitiveness and productivity of the economy (

Table 5.2). The scheme provides aid in the form of grants for tangible and intangible fixed assets, corporate income tax relief, wage subsidies for newly created jobs and discounts in the renting or selling of real estate. Although, the majority of investment projects receive a package of support combining two or more different types of incentives, tax relief has been the preferred type of incentive provided to investors in the period 2008-2019. A recent evaluation undertaken by the Ministry of Labour, Social Affairs and Family Policy found that the scheme has been effective in reducing unemployment rates in economically lagging regions of the Slovak Republic (Box 5.2). However, evidence from an evaluation of the direct and indirect effects of the scheme on FDI suggests that FDI inflows to the Slovak Republic have been significantly and positively influenced more by the grants and wage subsidies rather than the tax relief, which was found to have a negative impact on inward FDI (Bobenič Hintošová, Sudzina and Barlašová, 2021[6]).

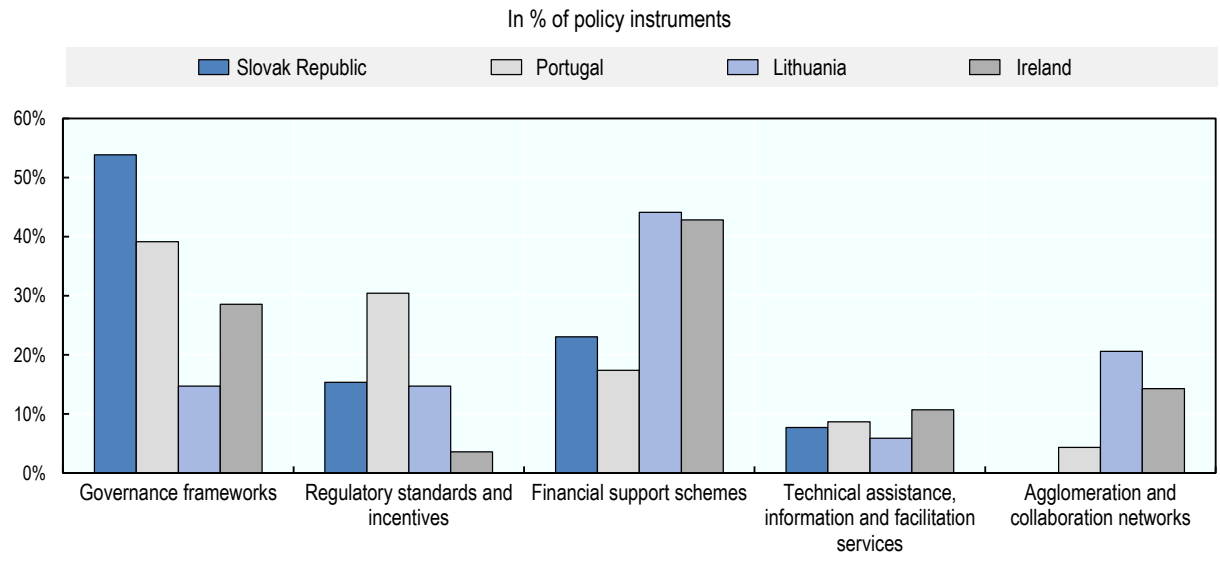
These findings deserve further and more thorough study to understand the drivers behind the different impacts of investment incentives on the Slovak Republic's capacity to attract productivity-enhancing and knowledge-intensive foreign investment. When looking at the design of the tax relief component of the scheme, it becomes clear that the value of the tax allowance is in part determined by a firm's taxable income, in addition to their expenditure in specific types of investment costs relating to new buildings, machinery and jobs created. This has implications for the type of investors that could benefit from the tax

relief; if a loss-making firm makes an investment, their taxable income will be zero, and so will the value of the tax allowance. Excluding loss-making firms may help ensure that only financially robust and profitable firms can benefit from investment aid, but it could also exclude new businesses that are loss-making in their initial years of operation and businesses making innovative investments with a longer investment recovery period. Furthermore, it could have an anti-cyclical effect for investment, i.e. if during a recession profits are lower, the tax allowance granted would be lower too.

The Slovak government could consider undertaking an independent impact evaluation of the scheme's different aid components to ensure that their targeting and design remain effective in the attraction of productivity-enhancing and knowledge-intensive FDI. Systematic ex-post evaluations could help ensure that the costs of tax incentives, in terms of revenue forgone and potential economic distortions, outweigh their benefits. The complexity of the scheme could be also revisited to increase its transparency for investors. Currently, the tax allowance targets both capital and current expenditure; requires minimum project value; requires a minimum number of new jobs created and only applies to wages of newly created jobs; and varies depending on the type and location of the investment project. All these factors may increase the complexity for investors to understand the amount of tax benefit that they could receive for a project and consider it when making their investment decision, potentially reducing policy efficiency. Publishing detailed information on eligibility conditions and the aid calculation methodology could create more certainty for potential investors.

The sectoral scope of the Regional Investment Aid Scheme illustrates, however, the government's strategic choice to support FDI-intensive sectors (see Chapter 2) to move higher up the value chain and engage in technologically sophisticated activities with more local content in their products. To benefit from the aid, investment projects should fall under one of the defined investment categories, namely industrial production, technological centres and business services centres, each one of which is linked to priority sectors (e.g. chemicals, electronics, automotive, business services etc.) and relevant smart industry technologies (e.g. robotics, artificial intelligence, big data, cloud, etc.).

Figure 5.7. Policy instruments for productivity-enhancing FDI



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Box 5.2. Findings from an empirical evaluation of the Regional Investment Aid scheme

In 2022, the Slovak Ministry of Labour, Social Affairs and Family Policy concluded an empirical evaluation of the Regional Investment Aid scheme, which explored the impact of investment incentives on the unemployment rates in districts to which these incentives were targeted as well as potential spatial spillover effects into other districts. The study relies on the assumption that, while the incentives target only a single firm, the extra spending on wages or contractors will be absorbed into the district economy and, subject to multiplier effects, will contribute to district-wide economic performance, in particular in economically lagging regions. The assumption invites a hypothesis that if there are fewer possibilities to affect growth and employment in economically lagging regions directly, the next best option might be to invest in districts with which these have the strongest ties and stimulate the local economies and employment rates by leveraging spatial spillover effects and inter-regional interdependencies.

By comparing districts, in which a firm has successfully applied for investment incentives to those which had no successful applicants, the study found that the effect of these incentives on regional unemployment varies by the level of development of the recipient district. While no significant effects have been found in most Slovak districts, investment incentives directed into one of the twelve "least developed districts" (LLDs) shows significant improvements in unemployment within the treated LDDs compared to the treated non-LDDs. Investing in non-LDDs has not been shown to be effective in reducing unemployment in those districts and there do not seem to be spillover effects into other linked (non-treated) districts. These findings are consistent with the economic intuition of diminishing marginal returns, which would indicate that investing into districts that had enjoyed more investment and development in the past will not be as impactful as investing into districts with less investment in the past.

Source: (ISP, 2022[7])

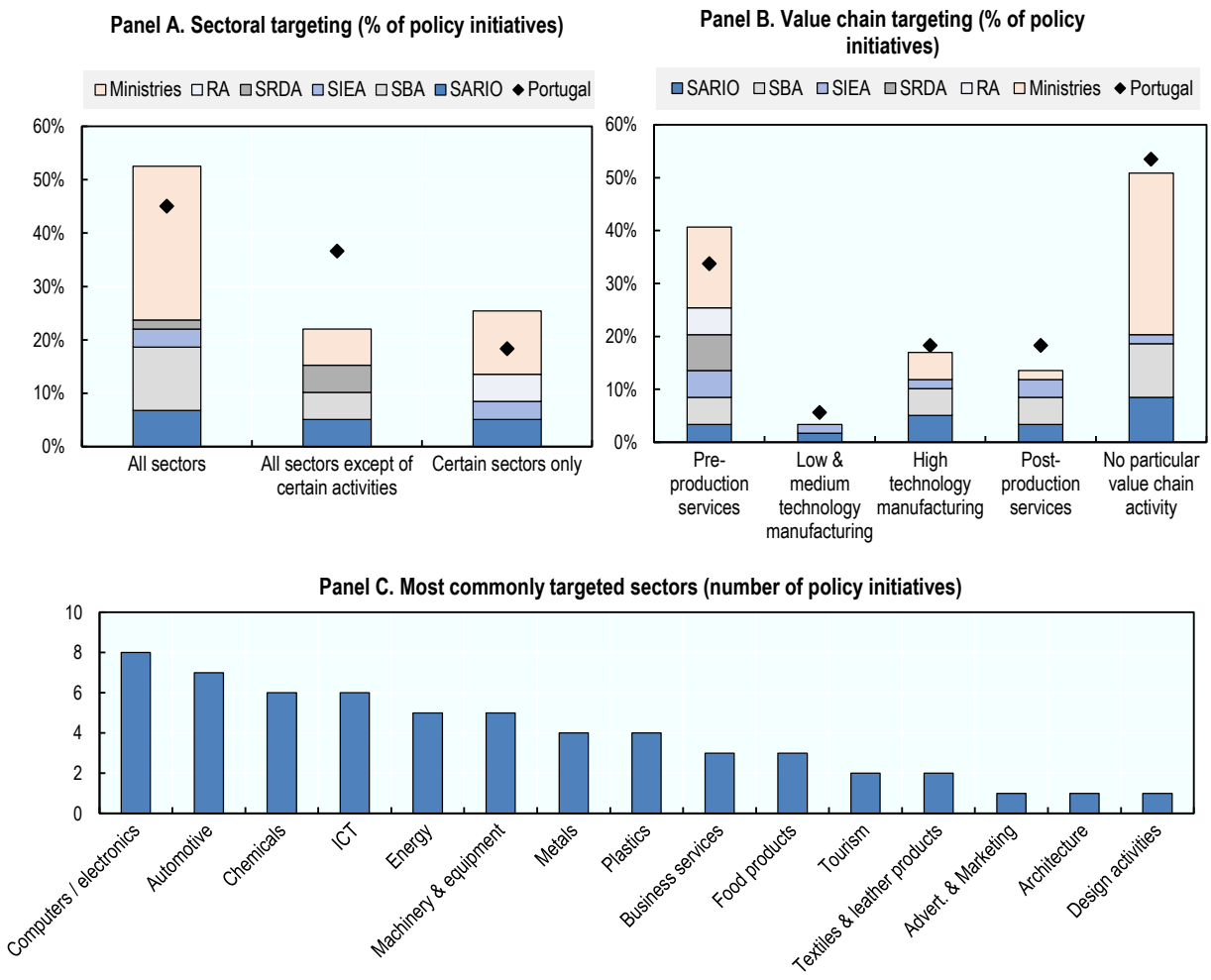
A similar pattern in terms of sectoral targeting is observed in the overall policy mix; more than 25% of policies enabling FDI diffusion on domestic SMEs target specific industries (Panel A, Figure 5.8), most of which correspond to the sectors where FDI is concentrated (Panel B, Figure 5.8). R&D-intensive activities such as pre-production services and high-technology manufacturing are also strongly prioritised in the delivery of public support. It is recommended that the current focus on attracting investments in the services sector, such as business services centres, design, marketing, advertising and tourism, is maintained and combined with measures to help domestic firms diversify their operations to match the demand of foreign investors (see section on SME absorptive capacities). Ultimately, the attraction of productivity-enhancing FDI will have to be aligned with the policy imperative to diversify the production structure of the Slovak economy away from low value added manufacturing and towards services.

Serious policy consideration should be also given to helping foreign investors address issues that go beyond reducing investment costs such as facilitating licensing procedures for productivity-enhancing projects. Besides standard grant schemes and tax incentives, many EU Member States offer comprehensive support packages to encourage innovation-oriented investments. Hungary provides special VIP subsidies for R&D investments and strategic agreements individually negotiated with the Hungarian government. Portugal has also introduced several special regulatory regimes allowing investors to benefit from simplified and expedited licensing and administrative procedures, conditional to introducing innovative and technology-based production processes in cooperation with domestic R&D institutions.

In the Slovak Republic, a similar regulatory regime, the Significant Investment Certificates, has been in place since 2002 to enable faster land acquisition processes as well as licensing and administrative

procedures for foreign and domestic investors. However, the granting of the certificates is possible only for large investments and investments that create a certain number of jobs. The Slovak government could consider broadening the scope of the scheme beyond employment generation to also target investments of smaller value that contribute to the innovation and internationalisation of the Slovak economy. To this end, complementary conditions for the granting of the special regime could be added, including investing in R&D and applied innovation, producing tradable goods and services in export-oriented sectors, and collaborating with Slovak R&D institutions and/or SMEs. Such an approach would complement ongoing policy efforts to support investments involving smart industry technologies, particularly given that these may require special licensing procedures depending on the type of activity involved (e.g. ICT sector, data centres, connectivity infrastructure).

Figure 5.8. Sectoral and value chain targeting of the Slovak Republic's overall policy mix



Note: The following value chain activities are considered: i) Pre-production services: R&D, concept development, design, patents; ii) Low and medium-technology manufacturing: production of simple, relatively unsophisticated goods such as basic metals, plastic products, food, textiles, etc.; iii) High-technology manufacturing: production of highly specialised, technologically sophisticated goods such as computer and electronic products, pharmaceuticals, chemicals, medical products, etc.; iv) Post-production services: marketing, sales, logistics, brand management, distribution and customer services.
Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Table 5.2. Main policies for productivity-enhancing FDI

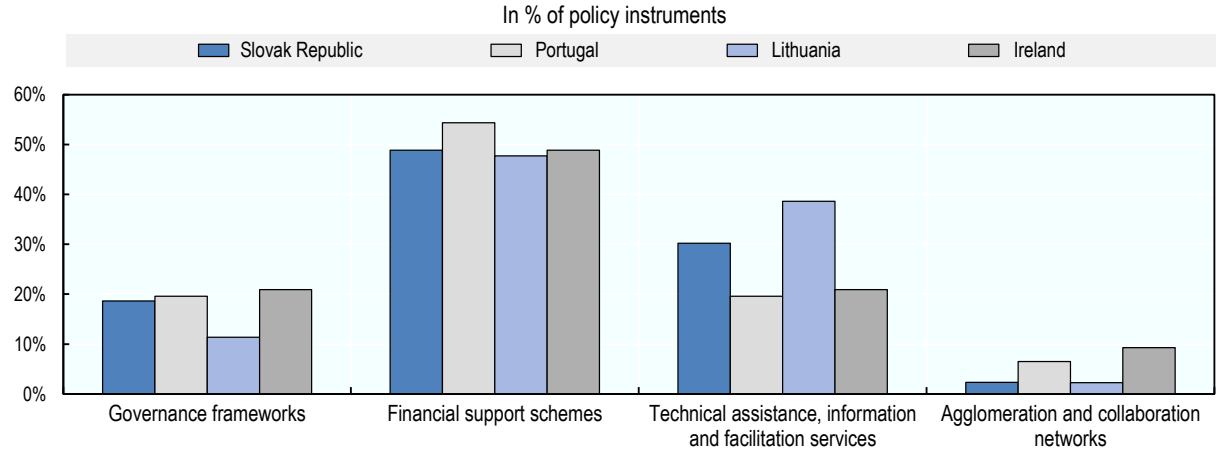
Main policies	Description	Implementing institution
Regional Investment Aid	Investment incentives for a) industrial production, b) technology centres, c) combined projects of industrial production and technology centres, and d) shared services centres.	Ministry of Economy
Significant Investment Certificates	Expedite territorial and construction licence proceedings for large investments fulfilling the following conditions: a) amount to at least EUR 100 million of investment costs, b) are deemed of national importance and create at least 300 new jobs, and c) are in the public interest.	Ministry of Economy
Super deduction for R&D	Special tax regime enabling additional deduction of 200% of costs related to all phases and all types of R&D.	Slovak Financial Administration
Patent Box	Up to a 50% corporate income tax exemption for revenue generated by the provision of intangible assets (e.g., revenue from license fees) and revenues generated by the sale of products made with the use of a patent or a utility model.	Slovak Financial Administration
Startup Visa	Temporary residence permit for entrepreneurs from outside the EU's Schengen Zone to implement an innovative business project.	Slovak Police Department

Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021)

Strengthening the absorptive capacities of Slovak SMEs

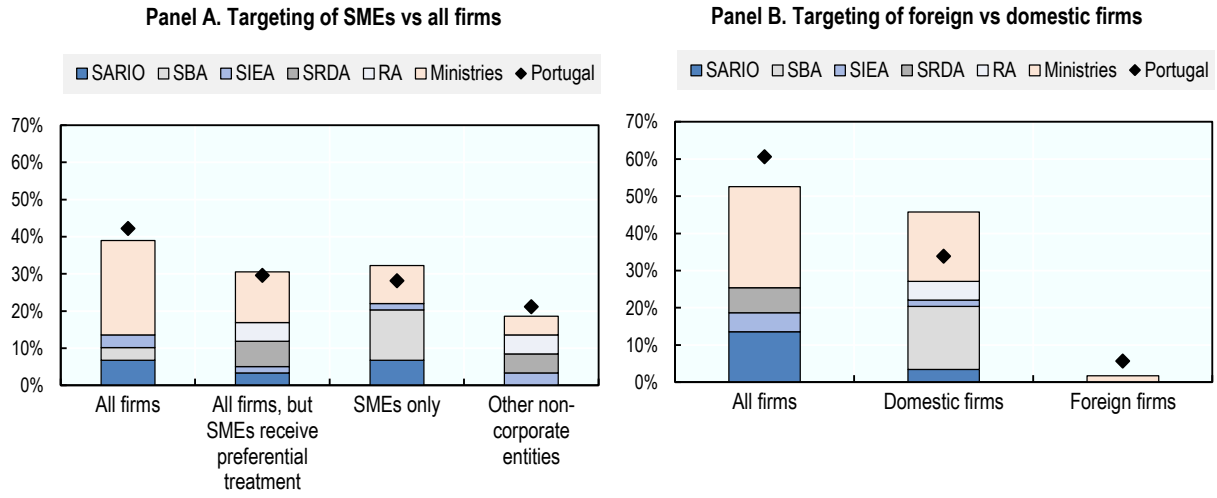
Policies targeting the absorptive capacity of local SMEs can take many forms (e.g. subsidies, grants, loans, tax relief, infrastructures, training programmes) and target various aspects of SME performance (e.g. access to innovation assets, access to skills, access to finance). In the Slovak Republic, SME absorptive capacities are supported primarily through business consulting services and technical assistance, while a few financial support schemes are in place to support R&D and innovation activities undertaken by SMEs (Figure 5.9). Considerable targeting of SMEs is also observed in the overall policy mix (Figure 5.10). More than 63% of the policy initiatives assessed for the purpose of this study target SMEs only or provide preferential treatment to them in the form of lax requirements and conditionalities and prioritisation in their selection as recipients of public support. Non-corporate entities such as universities, research institutes and technology transfer offices are also significantly involved in policies implemented by innovation-focused government agencies such as the SIEA, SRDA and RA.

Figure 5.9. Policy instruments for SME absorptive capacities



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Figure 5.10. Policies targeted to SMEs versus generic policies (% of policy initiatives)



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Financial support for business R&D and innovation is among the lowest in the OECD area

According to OECD data, in 2018, the Slovak Republic was among the countries with the lowest level of direct government funding and tax relief for R&D, at a rate equivalent to 0.04% of GDP (OECD, 2021[8]). The Slovak support to business R&D ranks far from top innovators such as the US, Canada, France and Portugal, and has also declined during the period 2006-18, while in the OECD as a whole it increased (Figure 5.11). Difficulties in obtaining public funding (grants or subsidies) are perceived as one of the most important barriers to innovation by SMEs, together with the lack of internal finance and the high costs of performing innovation (Eurostat, 2018[9]) (chapter 2) (Box 5.3).

The largest share of public support to business R&D is indirect (Figure 5.11). The Slovak R&D tax incentive scheme was first introduced in 2015 in the form of a hybrid tax allowance with a volume-based and incremental component; until then, a tax allowance was only available to R&D grant recipients. The allowance increased from 25% to 100% of qualifying expenditure in 2018, and to 200% in 2020. In a recent OECD assessment of the generosity of preferential tax treatment provided to R&D versus non-R&D investments across 48 countries, the Slovak Republic was found to offer the most generous treatment for current R&D expenditure and the greatest incentives to increase its volume, followed by Thailand, France, Lithuania and Portugal (González Cabral, Appelt and Hanappi, 2021[10]). Cross-country differences in the generosity of R&D tax allowances can lead to differences in the cost of capital faced by firms – and subsequently encourage or discourage them from increasing their R&D investment or locating their R&D functions in a given location.

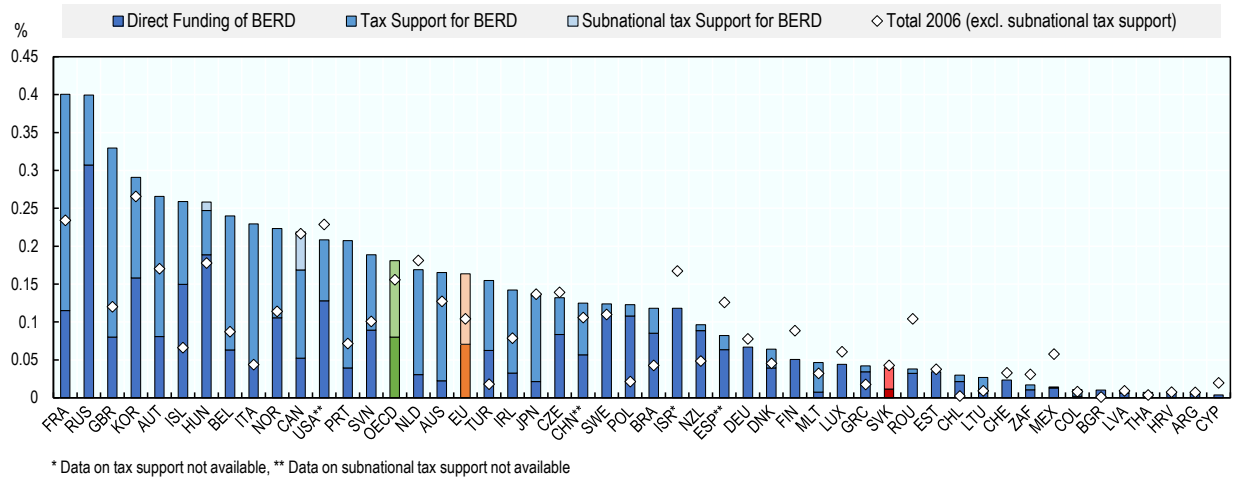
The magnitude of tax support, while small by international standards (in absolute and relative terms) has also increased markedly since the introduction of the hybrid tax allowance scheme, going from EUR 2 million of tax relief in 2015 to EUR 24 million in 2018 (OECD, 2021[8]). This was also reflected in the number of recipients, which nearly tripled during the same period, reaching around 250 recipients. This increase is primarily due to SMEs, whose number increased from around 70 to 202 between 2015 and 2018, accounting for more than 70% of all recipients.

The uptake of R&D tax relief by SMEs is a sign that recent government efforts to support smaller businesses to undertake knowledge-intensive activities have started to bear fruit. However, the share of tax support accounted for by SMEs amounted to 28% in 2018 as compared to 72% for large firms, reflecting the larger volume of R&D investments undertaken by larger – often foreign – firms. This could be due to potential reporting and other compliance constraints that small Slovak firms may face with regard to

claiming the tax allowance. For instance, as part of the application process, firms must prove that they perform R&D, publish their R&D projects and separate the R&D costs for each project into individual analytical accounts (OECD, 2021[11]). These requirements may be burdensome for small firms that do not have internal capacities to comply with the necessary procedures. To address these challenges, certain countries offer R&D tax incentives with preferential provisions for SMEs and loss-making firms. The Slovak Republic could consider further adjusting the current framework to make it more attractive to smaller businesses by ensuring that they have access to information and support for the application process.

Figure 5.11. Direct government funding and tax support for business R&D

As a percentage of GDP



Source: OECD R&D Tax Incentive Database, , December 2020

Direct government funding in the form of grants and loans could be also increased and become better targeted in order to help local SMEs conduct R&D or acquire new technologies that improve their productivity. Direct funding often represents a more discretionary and selective form of public support as it allows governments to target specific areas of research that are considered to offer high social returns – as opposed to tax incentives which are in principle available to all firms carrying out R&D. In the Slovak Republic, direct funding is offered by multiple public bodies but represents only a limited share of the total government expenditure for business R&D (29% compared to 71% for R&D tax relief) (OECD, 2021[8]). The Slovak Ministry of Economy operates an Innovation Fund and an Innovation Vouchers Scheme to support SME innovation projects with a focus on manufacturing industries, and emphasis on creating linkages with higher education institutions and research centres. The SRDA and RA, the two implementing agencies under the Ministry of Education, Science, Research and Sport, also offer R&D grants for scientific research projects, in which SMEs are often involved in cooperation with universities and research centres.

In addition, as a response to the poor development of alternative finance for SMEs, the government has deployed initiatives aimed at stimulating the supply of equity capital. In 2022, the number of these initiatives exceeds the number of those promoting traditional funding sources, such as bank loans (OECD, 2022 (forthcoming)[12]). Recent examples include the Venture to Future Fund (VFF) that aims particularly at premium SMEs at the stage of growth in order to help them fully materialise their potential on international markets (more information available at:), and the Risk Capital Programme that provides equity or quasi equity investment to start-ups and SMEs wishing to extend their business through development projects or acquisitions. Venture capital investment are made through a specialized subsidiary company, the National Holding Fund (more information available at:).

Box 5.3. Insights on SMEs scale up finance in the Slovak Republic

Scale-up finance, in the absence of a broadly used definition, can be understood as embedding all finance instruments that support mechanisms through which a firm can increase capacity and performance durably (OECD, 2022 (forthcoming)[12]). Those mechanisms include innovation, technology acquisition, market and network expansion (e.g. through internationalisation or cooperation on R&D), standardisation, or the use of intellectual property rights etc. Through network expansion for instance, SMEs can access the knowledge, technology, data and skills, and benefit from the innovation spillovers, that could help them transform processes and business models and scale up performance (OECD, 2019[13]).

Evidence from the recent OECD project on "Unleashing SME potential to scale up" (OECD, 2022 (forthcoming)[12]) shows that, in the Slovak Republic, policy initiatives to improve SME access to scale up finance mainly focus on enabling network expansion (more specifically, through the domestic market and international trade) rather than directly supporting innovation or growth investment. This may contribute to explain the large share of Slovak SMEs reporting difficulties in obtaining public funding as hampering factor to their innovation activities (chapter 2).

Source: (OECD, 2022 (forthcoming)[12]).

Financing support for SME innovation in the Slovak Republic is mainly driven by European funds, for instance the EUR 211 million European Investment Bank Group (EIB Group) support for business, energy efficiency, innovation and digitalisation in 2020 (European Investment Bank (EIB), 26 February 2021[14]). Interestingly, while the Slovak Republic benefits from one of the largest shares of the European Structural and Investment Funds (ESIF) oriented towards promoting Research and Innovation (R&I), the country ranks among the EU member states with the lowest absorption of R&I ESIF.

Despite the number of entities that offer direct funding, the amount of support and the number of SMEs benefiting from it are generally limited. For instance, in 2018-2020, on average 24 SMEs per year benefited from the SRDA's State Aid Scheme, while the Innovation Fund under the Ministry of Economy signed a funding agreement with only one Slovak SME during the same period (SRDA, 2021[15]; Innovation Fund, 2021[16]). In 2018, 25 innovation vouchers were granted through SIEA's programmes, although in previous years the number was higher (40-50 per year) (European Commission, 2019[17]). Interviews conducted among agency staff showed that overly bureaucratic procedures and the lack of coordination on the management of EU funds have been major impediments for the effective channelling of financial support to SMEs (see Chapter 4).

To address the challenge of the low absorption of ESIF for R&I, the government and the European Commission recently called upon the OECD to assist in developing an action plan and avoid further decommitments of EU funds, for the programming period 2021-27 (OECD, 2021[18]).

In addition, administrative irregularities linked to the limited human resources of Slovak Ministries and the merger of the Operational Programme Research and Innovation (OP R&D) with the Operational Programme Integrated Infrastructure (OP II) in the middle of the EU programming period have resulted in the cancellation of many funding calls. The institutional and governance reforms proposed in Chapter 4 could increase the efficiency of the Slovak innovation policy system and help channel additional direct funding into policies and programmes that strengthen the productivity and technological capabilities of SMEs.

These financial support schemes could help address current challenges with the absorptive capacities of Slovak SMEs; but they must be also transparent, time-limited and subject to regular reviews in order to

ensure that they remain relevant and reflect the latest market developments. Financial incentives are not always cost-effective in inducing firms to engage in innovation and can distort competition (OECD, 2021[19]). The Slovak government should ensure that these schemes address well-identified market failures and are evaluated periodically to ensure that benefits materialise and outweigh the costs. The conditions and criteria for granting financial support should be also clearly defined and rules-based to avoid discretionary and distortive granting decisions.

SME growth and upgrading is supported by a comprehensive set of technical assistance services; however policy coherence could be further improved

Policy efforts to improve the innovation performance of Slovak SMEs through technical assistance, information and facilitation services have been more systematic than the provision of financial support for business R&D. Programmes aimed at SME growth and upgrading are administered through the three implementing agencies of the Ministry of Economy (i.e. SBA, SIEA, SARIO), and financed either through the state budget or the EU-funded Operational Programme Integrated Infrastructure (OP II).

In addition to policy efforts aimed at increasing the knowledge intensity of FDI (see section on productivity-enhancing FDI), similar initiatives have been recently introduced to help Slovak SMEs diversify their activities towards high-tech sectors. In 2019, SARIO started providing diversification services to Slovak SMEs that want to expand their operations into the space, aviation, smart mobility and medical technologies industries. The support includes business-consulting services, seminars, matchmaking events and workshops for B2B collaboration. The Slovak economy would stand to gain from aligning SME diversification policies with those seeking to diversify the sectoral composition of FDI towards more productive and knowledge-intensive activities. Given the strong concentration of the Slovak production structure on very few manufacturing industries, SARIO's diversification programme could place particular emphasis on the services sector, which has greater potential for FDI-driven productivity gains (see Chapter 2).

Furthermore, the SIEA implements two innovation-focused programmes, the national project "Increasing the Innovation Performance of the Slovak Economy" (*Inovujme.sk*) and the national project "Support for the Development of the Creative Industry in the Slovak Republic". The two programmes have been successful in providing a variety of business development services (e.g. business consulting, skills development workshops, knowledge exchange and networking events, innovation vouchers) to domestic SMEs and mobilising stakeholders from across the Slovak research and innovation ecosystem. The SBA also operates several business consulting and mentoring programmes that each target different business functions, activities and types of entrepreneurial skills (e.g. start-up support scheme, incubation and acceleration programmes, internship programme). The number of beneficiaries, however, varies and can be limited for programmes that provide technical assistance as opposed to networking events and workshops that generally attract more SMEs. For instance, an average of only 43 SMEs per year benefitted from the SBA's Start-up Support Scheme in the period 2018-2020 (OECD, 2021[20]).

Overall, the Slovak Republic has put in place a comprehensive set of technical support programmes to improve the absorptive capacities of Slovak SMEs. However, the provision of SME development services by multiple government agencies has contributed to an increased administrative burden on SMEs that have to go through multiple lengthy application procedures to benefit from the various schemes. In a 2018 survey of 1000 Slovak SMEs undertaken by the SBA, the lack of information on the availability of support programmes was described as the most important issue for almost half of survey respondents, while an equal share (45%) assessed the possibilities of SMEs to benefit from public support negatively (SBA, 2019[21]). Increased administrative burden (64%), strict compliance criteria (38%) and lengthy application procedures (37%) were cited as the main barriers to SME access to public support. The same barriers are identified in a more recent survey of 36 Slovak SMEs undertaken by SIEA in 2021, with the majority of

respondents suggesting that SME support programmes could reflect market needs better and be less bureaucratic and administratively burdensome (SIEA, 2021[22]).

These findings suggest that there is scope to increase the uptake of business development services among Slovak SMEs by simplifying application procedures and raising awareness about the availability of support. As suggested in Chapter 4, joint programming procedures and the establishment of formal communication channels at the agency level (e.g. shared customer relationship management system) to track the number of unique SMEs that benefit from public support could facilitate coordination and measurement of the actual impact of these policies. The three agencies could collaborate on the development of "thematic" programmes through which they would combine and offer their business development, internationalisation and innovation-funding services as packages, structured around specific factors of SME growth and upgrading (e.g. exports, innovation, technological upgrading, skills development, financial capacity, etc.). Such an approach would also help increase the number of SMEs that receive technical support as they would have to go through a single application procedure to benefit from a range of different services.

Table 5.3. Main policies for SME absorptive capacities

Main policies	Description	Implementing institution
National Business Centres	A network of one-stop-shops providing technical assistance, information and facilitation services to Slovak SMEs.	SBA
Inovujme.sk project	Business consulting services as well as financial support to help entrepreneurs find innovative solutions and raise awareness of the importance of innovation.	SIEA
Support for the creative industry	Business consulting services as well as financial support to improve the performance and competitiveness of SMEs operating in creative industries (e.g. computer programming, architectural activities, advertising, specialised design activities.)	SIEA
Innovation Vouchers	Financial support to SME innovation projects implemented in collaboration with research institutions and universities in the following areas: mechanical engineering, food and biochemistry, social innovation, construction and transport, chemistry, electronics, energy, innovative technologies.	Ministry of Economy
Creative Vouchers	Financial support for SMEs that want to solicit the services of architects, designers, marketers and programmers.	SIEA
Micro-loan programme	Financial support to micro and small entrepreneurs through microcredits with preferential terms in order to make small businesses financially sustainable and help create new job opportunities in Slovak regions.	SBA
Acceleration programme	Professional counselling (up to 10 hours of individual consultations), skills upgrading seminars, and activities aimed at increasing awareness about entrepreneurship and presenting business success stories and good business practices.	SBA
Growth programme	Consulting services provided to SMEs with a potential to grow, innovate, strengthen their competitiveness, conclude business partnerships and gain access to foreign markets.	SBA
National Holding Fund	Equity or quasi-equity investments to high-potential start-ups and SMEs involved in industrial production, tourism, innovative entrepreneurship, and business services.	SBA
R&D grants	Financial support to SMEs, higher education institution and research centres for individual or collaborative R&D activities.	SRDA

Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

There is room to improve the regulatory environment for SMEs, especially for start-ups

Administrative and regulatory burden can also weight on the performance of SMEs, influencing their overall innovation and absorptive capacity. In the Slovak Republic, regulatory reform efforts and initiatives undertaken in the recent years (e.g. lessening restrictions related to product market regulation, namely in areas where health, well-being, or safety could not be jeopardised) have led to some improvements to the business environment (OECD, 2020[23]). The country also compares very well with other OECD countries in terms of stakeholders engagement and especially consultations with businesses.

Nevertheless, some regulatory obstacles still harm business performance in the Slovak Republic, especially for SMEs. The World Bank's "Ease of Doing Business" index 2020 (World Bank, 2020[24]) highlighted challenges stemming from an inefficient administration, like burdensome procedures for starting a business or granting building permits, areas that are essential for the proper functioning of businesses. For instance, completing the procedures to legally build a warehouse takes 300 days in the Slovak Republic, which is about twice the average time in OECD high income countries (152 days) (World Bank, 2020[25]). Also, the Slovak Republic requires 7 procedures for new businesses as compared to an average of 4.9 in OECD high income countries, while the process lasts over 21 days, as compared to 9 days across the OECD (World Bank, 2020[25]; OECD, 2021[11]). The country's performance remains weak in this area despite some recent reforms, such as abolishment of the requirement to obtain and submit information on tax arrears in 2019, which speeds up the business registration process (OECD, 2021[11]).

The Ease of Doing Business 2020 also highlighted some strengths. The Slovak Republic ranked 45th among 190 economies in 2020, with an overall score of 75.6 (a 4 points improvement since 2015). Among individual indicators making up the overall score, the country ranked among the top ten countries for ease of administration on trading across borders (1st) and registering property (8th place) (World Bank, 2020[24]).

The knowledge transfer infrastructure could be further supported with the necessary financial and technical resources to promote science-to-business collaboration

The potential for FDI-SME linkages can be influenced by the quality of the knowledge transfer infrastructure, which may include technology transfer offices, applied research centres, collaborative laboratories, universities and other facilities that contribute to the creation and diffusion of knowledge through synergies. These facilities provide a physical environment for foreign firms to collaborate with domestic actors, and for local SMEs to access technological premises, equipment, manpower and activities provided by universities and public research institutions that they could not afford independently.

In recent years, the Slovak government has made significant public investments in developing the R&D infrastructure across the country. Over 2007-2013, more than EUR 400 million from the EU Structural and Investment Funds were invested in the construction of science parks and research centres within or around higher education institutions (HEIs) with the aim to promote the commercialisation of R&D results and foster stronger linkages between applied research and business innovation (Balog, 2019[26]). Several parks and universities have also established technology transfer offices, brokerage centres and business incubators to assist local enterprises in innovation activities and intellectual property protection.

Despite these policy efforts, the engagement of HEIs with external actors, in particular the private sector, remains weak. In 2016, Slovak universities derived only 1.9% of their total resources from business research (OECD, 2021[11]). A recent OECD country review of the Slovak higher education system found that the limited autonomy and inward focus of HEIs and the lack of incentives and established communication channels have hampered collaboration with off-campus stakeholders (OECD, 2021[27]). Significant regional disparities are also observed in the availability of R&D infrastructure. Most science parks have been established in and around the Bratislava region, leaving the central and eastern regions of the country without the necessary facilities to support science-to-business collaboration. Similarly, a dysfunctional funding system has affected the use, maintenance and staffing of these infrastructures. In many occasions, universities and the Slovak Academy of Sciences reportedly have had to allocate funding from their own resources to ensure the continuity of the services provided by the science parks and research centres (Balog, 2019[26]). Access of business enterprises to science parks has been also hindered by the state aid rules governing funding calls for collaborative R&D. These regulatory constraints include restrictions to revenue generation from R&D activities supported by public funds, which in effect meant that innovative SMEs and start-ups could not use these infrastructures for R&D projects involving commercial applications or links to the real economy.

Policy efforts should focus on providing incentives to HEIs to engage with external stakeholders, in particular the private sector, and strengthen their role as regional entrepreneurial ecosystem anchors. As part of the Slovak Republic's national Recovery and Resilience Plan, the government has stated its intention to establish institutional contracts that tie a portion of higher education funding to specific performance criteria contributing to national policy objectives (OECD, 2021[27]). The proposed performance-based funding system is a step in the right direction as it could significantly help universities develop third-mission activities related to innovation promotion and entrepreneurship development. The example of the UK's Knowledge Exchange Framework presented in Box 5.4 illustrates how competitive funding allocated to HEIs can be an important stimulus for enhancing knowledge transfer to SMEs, in particular if it is combined with a robust monitoring and evaluation framework, quantitative and qualitative metrics and extensive consultation processes with HEIs and business stakeholders. In the case of the Slovak Republic, it will be important to explicitly define the objectives of innovation and knowledge transfer within the strategic documents of HEIs and collect information on their performance to ensure that the impact of their knowledge exchange activities can be evaluated.

The quality of the services provided by science parks and applied research centres could be also improved by ensuring adequate financial and human resources to maintain and expand their operations in the regions in which they are located. Existing rules on the use of these infrastructures by business enterprises should be altered to accommodate R&D activities involving commercial applications and promote genuine collaboration with industry, including foreign MNEs and Slovak SMEs. In addition to providing high value-added business development services, more impact could be obtained by anchoring these infrastructures into regional entrepreneurial ecosystems. Subnational governments, together with universities, cluster associations, the private sector and national implementing agencies, should be involved in formulating the strategic priorities and scope of activities undertaken by science parks and ensure that these are aligned with local market needs and the smart specialisation framework of their regions.

Box 5.4. The role of Higher Education Institutions (HEIs) in fostering innovation diffusion through science-to-business collaboration

In recent decades, higher education institutions (HEIs) have expanded their missions to become drivers of innovation and entrepreneurship, and connect proactively with their ecosystems and networks. In the same vein, national and subnational governments have leveraged HEIs to strengthen regional innovation ecosystems, reflecting local market needs and opportunities for local economic development. In many OECD countries, HEIs play a critical role in stimulating knowledge and technology diffusion by offering education, facilities and incentives for innovation collaborations involving foreign and domestic firms, public and private research organisations, cluster associations, technology and science parks, and business incubators. The HEInnovate, an initiative developed by the European Commission in collaboration with the OECD, supports HEIs to promote entrepreneurship and innovation with a view to creating societal impacts and sustaining economic growth at local and national levels. The HEInnovate country reviews have identified good policy practices to strengthen the role of HEIs in promoting knowledge exchange with off-campus businesses.

Slovenia: Integrating innovation and entrepreneurship commitments into HEIs' strategic plans

In a HEInnovate survey of 15 Slovenian HEIs, 13 indicated that they had a written strategy while half of them include some form of third mission activity in their HEI strategy, including providing support for the creation and growth of small businesses, developing an entrepreneurial mindset in students, and commercialising research results through technology transfer and spin-offs. In addition, 13 HEIs reported having non-academic stakeholders in their governing bodies, including businesses and regional and local authorities. Many of the smaller Slovenian HEIs and individual faculties work with foreign and domestic companies through associations and chambers of commerce. Many HEIs also work with local companies to assess the HEIs' programme delivery. They conduct focus groups, interviews and a graduate survey. Moreover, their incubators offer an opportunity for local companies to gain practical assistance for growing their enterprises.

For all HEIs, articulating a strategic mission and vision that includes goals related to entrepreneurship, knowledge transfer and engagement can provide focus to faculty, staff and students and help them see how their activities contribute to the enterpreneurial and innovation ecosystem of the regions in which they are located. In addition, it can generate positive political support for the university when stakeholders see the important contributions the university is making to the local economy. This alignment of goals between universities and their regional networks provides a signal to potential partners that the HEI is prepared to engage proactively in partnership-building activities.

United Kingdom: The role of competitive funding in supporting science-to-business partnerships

The United Kingdom is reportedly the first country to have introduced performance-based funding, through the Higher Education Innovation Fund (HEIF), to reward universities' success in knowledge exchange (Rosli and Rossi, 2016[28]; Kitagawa and Lightowler, 2012[29]). The effective allocation of funding was ensured based on priorities and criteria set out in the "Knowledge Exchange Framework" (KEF), which was developed by Research England to evaluate universities' contribution to the exploitation of knowledge and to support HEIs' knowledge interaction with business, public organisations and the wider public. The KEF is evaluating HEIs based on quantitative metrics and qualitative metrics (narrative statements). These knowledge exchange metrics are grouped into seven different categories:

- research partnerships with non-academic stakeholders

- "working with business": incomes from contracts for research and consultancy with business, as well as grants
- "working with the public and third sector": research, consultancy, facilities and equipment income with the third sector
- "skills, enterprise and entrepreneurship": Higher Education Business and Community Interaction, income from professional development course and graduate start-up rates
- "IP and commercialisation": licensing, IP as a proportion of research income
- "public and community engagement": score based on a self-assessment and additional information, including a narrative statement
- "local growth and regeneration", including a narrative statement.

To measure comparability between HEIs, the institutions were grouped in clusters by capability (research institutions versus teaching-oriented institutions), by size and discipline (STEM, non-STEM, arts). To ensure the effectiveness of the framework and refine the metrics, Research England organised a consultation process with the higher education sector as well as a pilot exercise consisting of a series of workshops held in 2019. After the consultation and pilot exercise, the first knowledge exchange framework iteration took place in the academic year 2019/2020. Research England recently published the outcomes of the KEF exercise, as an interactive dashboard that aims to provide more accessible information and data for institutions and their partners to understand and improve their own performance.

Sweden: Strengthening HEIs' impact on local economic development and innovation

In Sweden, the connection between HEIs and local and regional authorities has turned out to be a particularly important driver for the exchange of knowledge. Local authorities have helped link education and research activities to regional needs and profiles. These efforts reflect the multilevel governance of the country, and the importance of local governments in fields such as innovation, healthcare, energy and education.

All Swedish regions embed universities in their development strategies, funded by the research grants from the HEI, the region and the private sector. In the regional development strategy for Region Norrbotten, Luleå University of Technology is described as the county's knowledge engine for both public and private sector but also for attracting young people to the county and to secure the competence for the municipalities. The university operates in an industrial ecosystem, home to a mix of capital-intensive large companies and SMEs operating in major Swedish industries. Research is conducted in co-operation with companies such as Bosch, Ericsson, Scania, LKAB, SKF and other international universities. In the past decade, the university has developed industrial PhD programmes specifically designed to promote innovation in SMEs. These group SMEs together based on their innovation needs, to facilitate interactions with the HEI.

The University of Gävle has also developed its own Knowledge Transfer Partnership (KTP) office in collaboration with UK HEIs, The KTP office is a one-stop shop that businesses can use to benefit from the research capacity of the HEIs. Through KTP, small businesses can host a young researcher (a newly graduated academic) for a fixed-term contract. The HEI contributes to the salary of the researcher, who can work on product development, market development, process development and energy efficiency.

Source: (OECD/European Union, 2021[30]; OECD/European Union, 2021[31]; OECD/European Union, 2021[32])

Mainstreaming economic geography considerations into FDI-SME diffusion policies

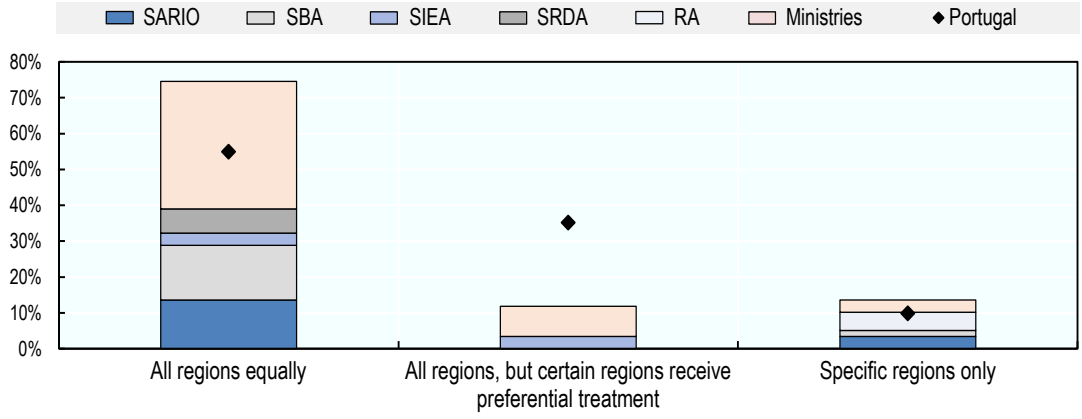
Clusters embed characteristics such as industrial specialisation and geographical proximity that make knowledge spillovers more likely to happen. From a policy perspective, this means that FDI attraction policies, SME policies and cluster development policies could go hand in hand to increase the potential of FDI for SME productivity. Moreover, informing investors about the investment potential of regions and improving the local business climate by adapting policies to the economic and market characteristics of local economies could prove effective.

Place-based approaches could be leveraged to strengthen the impact of FDI-SME diffusion policies on least developed regions

Several Slovak policies and programmes (25%) involve a place-based approach to the eligibility conditions or the amount of support provided to business enterprises (Figure 5.12). This is particularly the case for investment incentives available to domestic and foreign investors, and certain SME internationalisation programmes supported by the EU Structural and Investment Funds. However, the majority of FDI-SME diffusion policies (75%) apply to all Slovak regions on equal terms, while economic geography factors are not always taken into consideration in the delivery of innovation and R&D support services. For instance, the national smart specialisation strategy does not fully reflect disparities between Slovak regions in terms of specialisation, economic performance and innovation potential (European Commission, 2020[33]).

Figure 5.12. Place-based policy implementation in the Slovak Republic

In % of policy initiatives



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

In terms of regional access to innovation and R&D support programmes, the presence of several SBA and SIEA consultation centres in each of the regions provides some consistency in the availability of innovation support services and reduces potential information asymmetries and gaps in the delivery of state support programmes in the regions. However, these satellite offices are not generally involved in the implementation of regionally-tailored programmes and are often disconnected from regional development actions and strategies implemented by local and regional authorities. A similar picture emerges when looking at the various financial incentive schemes aimed at supporting business R&D. The RA is the only innovation-focused implementing agency that follows a place-based approach by providing R&D grants for enterprises headquartered outside of the Bratislava region. This is due to the role of the RA as the managing authority of the OP II and the EU funding conditionalities that place emphasis on the support of less developed regions. In contrast, state-funded programmes such as the R&D grants provided by the

SRDA, the Innovation Fund and innovation vouchers programme of the Ministry of Economy pursue a rather space-blind approach.

Investment promotion and internationalisation policies generally exhibit a higher degree of spatial differentiation than SME innovation programmes. The Regional Investment Aid Scheme applies to all Slovak regions except for the Bratislava area and offers preferential conditions for investment projects implemented in the central and eastern parts of the country with a particular focus on least developed districts (LDDs). Similarly, the EU-funded national project "Support of the internationalisation of SMEs 2017-2023", which is jointly implemented by the SARIO and the SBA, seeks to attenuate regional disparities by providing support to firms headquartered outside of the Bratislava region. In 2019, 209 SMEs from Western, Central and Eastern Slovakia were supported through supplier development workshops, seminars and business networking events (see section on value chain linkages) (SBA, 2020[34]).

Efforts to address regional inequalities have intensified over the past decade. In 2015, the Slovak government passed the Law on the Support of Lagging Regions (Act No. 336/2015), which has led to the recognition of 18 least developed districts (LDD) in Central and Western Slovakia, where the unemployment rate is 1.4 times above the national average (Government of the Slovak Republic, 2021[35]). Regional Councils consisting of local government representatives, businesses, non-governmental organisations (NGOs) and other stakeholders have been established in each LDD, and tasked with preparing Action Plans on the basis of which financial support is provided for the implementation of measures at the district, regional and national level. However, the primary objective of these plans is to reduce unemployment in districts with the weakest economies, and their focus tends to be more on infrastructure, welfare and educational issues rather than directly on investment promotion and SME development (OECD, 2021[11]). It is also unclear whether the main national implementing agencies responsible for investment, SME and innovation matters are involved in the implementation of these plans through their satellite offices.

Overall, in the Slovak Republic, the policy thinking around regional development appears to focus more on employment generation and the support of areas with high unemployment rate, and less so on innovation and technology diffusion. Linkages between regional development action plans and the needs of local FDI-SME ecosystems could be strengthened to ensure that measures relating to the attraction of knowledge-intensive investment, SME innovation and internationalisation are part of broader local economic development strategies. The satellite offices of the main implementing agencies could be more involved in the deliberations of Regional Councils and play a greater role in tailoring national policies and programmes to the economic and market conditions of each region. The role of Regional Councils as platforms of coordination and engagement of various stakeholders could be also further strengthened to foster greater commitment and synergies across the public and private sectors.

Support to industrial clusters has increased, but a more comprehensive approach will be needed to strengthen the internationalisation of local FDI-SME ecosystems

The number of industry cluster initiatives has gradually increased over the past decade, reflecting the importance that the Slovak government ascribes to the role of networks in creating, accessing and sharing new knowledge. There are currently 16 certified cluster organisations, spanning several industries (e.g. IT, automotive, engineering, plastic products, and tourism). Until recently, there was a lack of systematic public support for the integration of clusters into broader regional and local entrepreneurial ecosystems. However, in recent years, the SIEA and the Ministry of Economy have increased the resources dedicated to the support of business networks. There has been also greater involvement of cluster organisations and their representatives – such as the Union of Slovak Clusters – in the design of public support programmes. In 2020, a working group consisting of the SIEA and representatives of industrial clusters was involved in the preparation of a Business Networking Support Scheme.

The increased policy attention that business networks receive is also demonstrated by their international recognition. In 2018-2020, more than 23 Slovak clusters were awarded a certificate of excellence by the European Secretariat for Cluster Analysis (ESCA). This was possible through a SIEA certification programme that helps clusters improve their organisational capacities and join international networks. The SIEA also operates a monitoring platform, which includes presentations of cluster organisations, data on their contribution to the socio-economic development of Slovak regions as well as information on national and international support programmes.

These policy initiatives provide a solid basis for the development and integration of existing and new Slovak clusters into international business networks; however, more impact could be obtained through a more comprehensive approach built around support platforms that integrate regional and sectoral priorities, keep regional and local actors involved, and take into account the diversity of local business environments. The Portuguese case study summarised in Box 5.5. represents a good example of how public support to cluster development can be provided in a systematic and comprehensive manner by integrating clear-cut targets, a diverse range of support instruments – including reforms to the regulatory environment – and a robust monitoring and evaluation framework to ensure the alignment of policy initiatives with regional and sectoral needs. In particular, in the Slovak Republic, there is need to further involve regional and local governments as well as universities and research institutions in cluster initiatives with local businesses, and provide them with the necessary resources to ensure their operational autonomy. The SIEA could leverage the existing working group for the development of dedicated multi-year action plans for each certified cluster organisation.

Box 5.5. Strengthening the competitiveness and internationalisation of industrial clusters: The automotive cluster in Portugal

Since 2017, the Portuguese SME Competitiveness and Innovation Agency, IAPMEI, has recognised 18 industrial clusters (*clusters de competitividade*) in Portugal with the aim to foster greater collaboration between domestic and foreign companies, business associations, universities and other non-corporate entities of the Portuguese research and innovation ecosystem. Since their establishment, the clusters have played a crucial role in supporting Portuguese SMEs to implement smart specialisation strategies, identify bottlenecks in their performance, and provide feedback to government agencies on the implementation of effective SME policies. Financial support to recognised clusters is provided through the Portugal 2020 Incentives Scheme, which includes a dedicated set of financial instruments for collective actions, networks and other forms of business-to-business and science-to-business partnerships.

In 2019, "Sectoral Pacts for Competitiveness and Internationalisation" were signed between the Ministry of Economy and Digital Transition and some of the recognised clusters. The Pacts provide a framework to strengthen the innovation and internationalisation of industrial clusters, including: measures that promote industry 4.0 practices; training and skills development programmes; innovation activities; actions to promote the brand and strengthen the attractiveness of Portuguese clusters; and targeted reforms in the regulatory environment to address barriers to innovation and internationalisation in specific sectors and value chains. A Monitoring Committee was also set up to ensure the implementation of the agreements.

The Automotive Cluster (MOBINOV)

The Portuguese Automotive Cluster (MOBINOV) was founded in 2016 by the Automobile Association of Portugal and the Association of Manufacturers for the Automotive Industry. It gathers companies involved in the manufacturing of automobiles and their components, business associations of the automotive industry as well as non-corporate entities of the national research and innovation ecosystem such as technical universities and vocational education and training institutions. The cluster's main objective is to serve as a platform of knowledge and technological development within the Portuguese automotive sector, promote partnerships, further consolidate the value chain of automobile manufacturers and their suppliers, and develop global sourcing strategies for the automobile components industry and its customers.

In 2019, MOBINOV was among the clusters that signed a Sectoral Pact with the Ministry of Economy and Digital Transition, setting out several objectives for the internationalisation of the automotive sector and specific measures to achieve them. These include:

- *Prepare the automotive industry for the industry 4.0 transformation* – Measures: i) Study the impact of the industry 4.0 transformation on electrical and autonomous vehicles; ii) Support the production capacities of less innovative companies; iii) Support companies to identify funding sources and technological opportunities; iv) Improve the functioning of the Portugal 2020 Incentives Schemes for the automotive sector
- *Increase the availability of skilled labour for the Portuguese automotive industry* – Measures: i) Implement measures that promote job creation in the automotive sector; ii) Adapt training programmes and higher education courses to business needs; iii) Support on-the-job training within companies operating in the automotive sector; iv) Improve the availability of human capital.
- *Improve the competitiveness of the automotive industry through technological collaboration* – Measures: i) Promote science-to-business and business-to-business linkages; ii) Encourage

the exchange of knowledge and expertise; iii) Promote start-ups and spin-offs of automotive companies.

- *Promote the competitive advantages and technological capabilities of the automotive industry at the national and international level* – Measures: i) Foster internal demand; ii) Promote Portugal's brand as a technology producing economy; iii) Facilitate access to major international manufacturers, technology developers and potential partners; iv) Strengthen domestic and foreign investment.
- *Reform the legal and regulatory environment to increase the attractiveness of Portugal as a destination for innovative companies operating in the automotive sector* – Measures: i) Promote integrated solutions tests in specific locations within Portugal to allow domestic and foreign companies to test the implementation of autonomous vehicles; ii) Introduce legislation on the circulation of mega-trucks; iii) Introduce legislation on alternative fuel vehicles.
- *Reduce red tape and other contextual costs for business* – Measures: i) Enable companies to respond to economic and production fluctuations; ii) Create conditions to reduce logistical costs and overcome existing barriers; iii) Identify areas for improvement for the competitiveness of the automotive industry.

Source: (IAPMEI, 2021[36])

5.4. Policies acting upon the FDI-SME diffusion channels

Promoting FDI-SME linkages and strategic partnerships

Matchmaking services are available to foreign and domestic firms, but more could be done to support supply chain development and promote R&D and technology partnerships

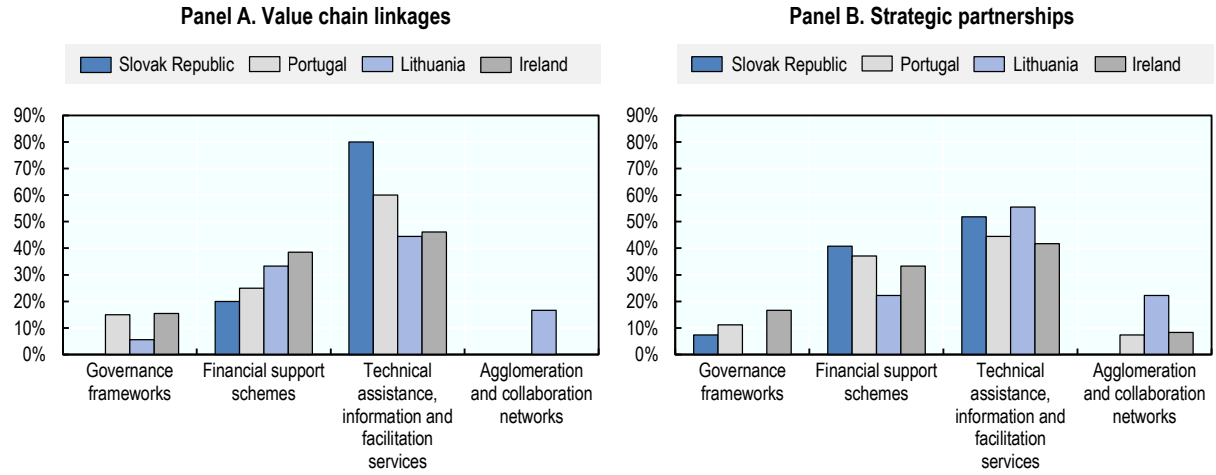
FDI facilitation and aftercare services as well as supply chain development programmes can be instrumental in encouraging greater embedding of foreign affiliates in local economies and building relationships that contribute to greater use of local SME suppliers. The Slovak Republic has a comprehensive set of policies and programmes to promote supply chain linkages and partnerships between foreign firms and Slovak SMEs. Most of these programmes rely mainly on the provision of information and facilitation services rather than financial support (Figure 5.13). SARIO provides matchmaking services through several programmes that target foreign firms and their affiliates, including the flagship Business Link events and Slovak Matchmaking Fairs, which are implemented under the auspices of the Ministry of Economy. Several sourcing and cooperation events are also organised throughout the year as part of the National project "Support of the internationalisation of SMEs 2017-2023", geared to strengthen the internationalisation capacities of SMEs and help them access global value chains (GVCs). Many of these matchmaking services target FDI-intensive sectors, focusing in particular on manufacturing (e.g. engineering, automotive, transport, chemicals, and energy).

In recent years, investment facilitation and aftercare services have focused on encouraging foreign and domestic firms to collaborate on the implementation of R&D and technology-based projects. SARIO has established an Innovation Services Platform, which connects some of its most technologically advanced foreign clients with innovative Slovak firms to undertake R&D. These information and facilitation services are not coupled with financial support. In the Slovak Republic, financial incentives for R&D collaborations remain limited in terms of volume and do not always involve foreign affiliates. This is linked to the overall weak performance of the Slovak innovation policy system as well as inefficiencies arising from the poor management of EU funds. Although both the SRDA and RA offer R&D grants for projects implemented by

multiple entities, their scope can be limited to collaborations between research institutions and Slovak-owned firms only, while in some cases the actual number of beneficiaries from business – as compared to research institutions and universities – is small.

Figure 5.13. Policy instruments for value chain linkages and strategic partnerships

In % of policy instruments



Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

The Slovak Republic could benefit from re-balancing its policy mix beyond information and facilitation services and towards policies that allow foreign and domestic firms to access the necessary technical support and finance for the development of products and services through science-to-business (S2B) and business-to-business (B2B) collaboration. The SRDA and RA should ensure that foreign affiliates are aware of and have access to the grant schemes made available from the state budget and the EU funds for collaborative business R&D activities. The establishment of the SARIO Innovation Services Platform is a step in the right direction but it could be further leveraged to strengthen coordination between the various actors involved in FDI promotion and innovation policy (e.g. SARIO, SIEA, SRDA and RA) and ensure that SARIO clients are offered access to public support schemes provided by other government agencies. The platform could move beyond matchmaking services and also serve as an “one-stop-shop”, connecting foreign affiliates and innovative Slovak firms with advisors in other parts of the Slovak government, subnational authorities, clusters, industrial parks as well as R&D and technology-focused universities.

Regarding supply chain development, policy efforts are fragmented across multiple institutions and lack a comprehensive approach. As part of the national project for the internationalisation of SMEs, SARIO implements the Supply Chain Development Programme, aimed at increasing the involvement of Slovak SMEs in domestic supply networks. However, the programme has so far focused only on collecting information and building a database on the needs of original equipment manufacturers (OEMs) and the capacities of Slovak SMEs. An Exports Academy also operates within SARIO, organising seminars, practical trainings and knowledge exchange workshops to help Slovak entrepreneurs improve their sales strategies. Other important actors in the delivery of SME internationalisation services include the SBA, which provides advisory services through their Growth Programme to help SMEs penetrate foreign markets; and the POCE Business Centre in the Ministry of Foreign Affairs, which operates the “Let’s do business abroad” portal with information about tenders, fairs, exhibitions and new business opportunities involving foreign firms.

A more comprehensive approach to supply chain development will be necessary for Slovak SMEs to reap the benefits of FDI spillovers. SARIO’s Supply Chain Development Programme could be expanded to

provide a package of support for clusters and networks of foreign and domestic firms operating in specific value chains. The Supplier Clubs programme implemented by the Portuguese investment promotion agency (AICEP) is a good example of how public policy can mobilise actors across the business ecosystem to help local SMEs collaborate with foreign affiliates. The programme combines matchmaking services to help foreign and domestic firms identify collaboration opportunities and agree on jointly implemented projects; business consulting services and training programmes provided by foreign affiliates to their suppliers based on an assessment of the latter's performance; and financial support through EU-funded incentive schemes to help SMEs upgrade their technological capabilities for the implementation of the agreed joint projects. Such a systematic approach to value chain building in the Slovak Republic will require the use of a more diverse range of policy instruments and greater coordination among the agencies involved in investment promotion and SME growth policies.

Table 5.4. Policies for value chain linkages and strategic partnerships

Main policies	Description	Implementing institution
Business Link events	Matchmaking fairs aimed at promoting business networking and connecting domestic and foreign firms to explore opportunities for collaboration.	SARIO
Sourcing and cooperation events	Events, conferences, panel discussions and presentations aimed at involving Slovak SMEs into subcontractor networks of foreign companies and promoting joint ventures and business partnerships.	SARIO
Business partner search	Matchmaking services provided by SARIO to help foreign affiliates identify Slovak suppliers and partners for joint ventures, R&D collaborations and exchange of expertise.	SARIO
SARIO Innovation Services	A matchmaking platform connecting large foreign investors established in the Slovak Republic with Slovak technology companies.	SARIO
Exports Academy	Business consulting, training and skills upgrading services to improve the supplier capacities of Slovak SMEs.	SARIO
Supply chain development programme	Collecting information and building a database on the needs of original equipment manufacturers (OEMs) and the capacities of Slovak SMEs	SARIO
Grants for collaborative R&D projects	Grants to support R&D projects undertaken by consortia of businesses, universities and research centres.	SRDA & RA
Let's do business abroad portal	Information on tenders, matchmaking and networking fairs, exhibitions and business collaboration opportunities.	POCE Business Centre

Source: EC/OECD Survey on Policies enabling FDI spillovers to domestic SMEs (2021).

Facilitating the mobility of workers from foreign MNEs to local firms

Productivity spillovers from labour mobility depend on the quality of labour market regulations and the availability of policies and programmes that encourage the movement of workers from foreign MNEs to local firms. Striking the right balance between employment protection and adaptable labour markets, while incentivising the mobility of skilled workers in sectors with considerable FDI presence through targeted measures can contribute to greater spillovers on local economies.

The Slovak Republic has a rather balanced legal framework for employment protection

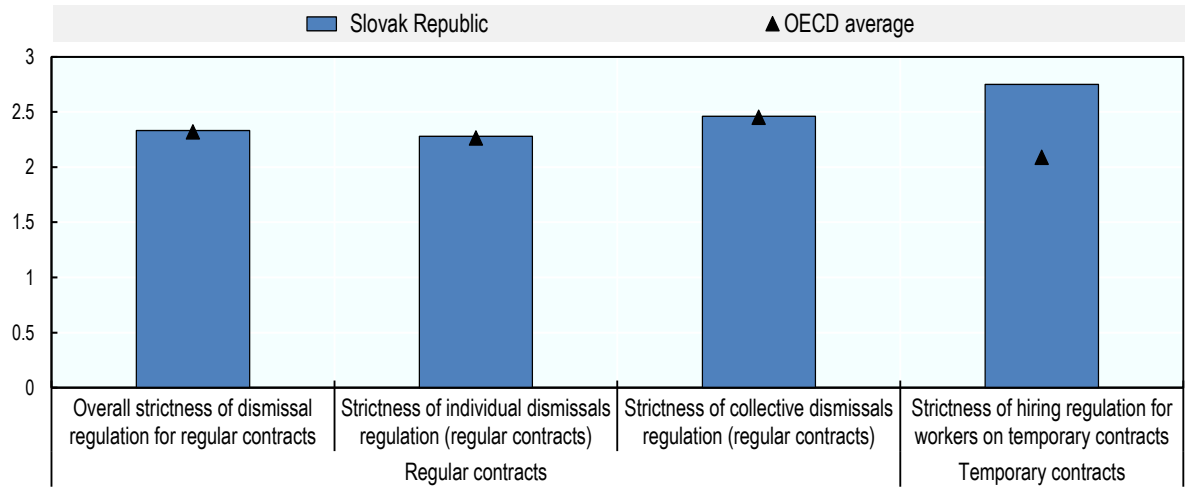
In the Slovak Republic, labour market policy has primarily focused on removing domestic barriers to labour market participation and addressing labour shortages particularly in the IT and manufacturing sectors where most FDI – and therefore demand for skilled workers – is concentrated. In 2018, the government adopted a Strategy on Labour Mobility of Foreigners, outlining various short- and long-term measures including: a quarterly update of the list of sectors with labour shortages; a review of the conditions for granting temporary residence permits; a simplified procedure for filling designated scarce jobs in districts with unemployment levels below 5%; and measures to reduce red tape in the recognition of foreign education credentials (Government of the Slovak Republic, 2018[37]). Various ministries have been

responsible for the creation of more flexible regulations that would enable employers to hire foreign workers more efficiently.

The Slovak regulatory framework seems to attach equal importance to firm adaptability and job security. According to the OECD indicators of Employment Protection Legislation (EPL), in the Slovak Republic, restrictions to individual and collective dismissals of regular workers are on par with the OECD average (Figure 5.14). In contrast, the regulatory setting for hiring temporary workers is stricter than the rules for regular workers, and above the OECD average. Stricter rules for hiring temporary workers are usually used by governments to encourage the uptake of permanent employment and counteract potential overuse of temporary contracts by firms (OECD, 2020[38]). In the aftermath of the 2008 global financial crisis, a number of OECD countries, including the Slovak Republic, introduced a legal limit for the cumulated duration of temporary work assignments.

Figure 5.14. Strictness of employment protection legislation in the Slovak Republic

OECD Employment Protection Legislation Indicators, 2019 (most strict = 6, least strict = 0)



Note: The OECD indicators of employment protection are synthetic indicators of the strictness of regulation on dismissals and the use of temporary contracts. For each year, indicators refer to regulation in force on the 1st of January. Range of indicator scores: from 0 (low regulatory protection) to 6 (high regulatory protection).
Source: OECD Employment Protection Legislation Database, 2019

The overall balance of the Slovak regulatory framework points towards potential benefits from the presence of FDI through labour mobility; however, these are more likely to occur in regions and sectors with high SME absorptive capacities. Recent evidence from EU countries shows that labour markets with strong absorptive capacities are better positioned to moderate any adverse labour market effects of FDI, in particular the crowding out of employees in domestic firms, which occurs either directly when foreign and domestic firms compete for the same scarce labour resources or indirectly when foreign firms offer higher wages to attract highly skilled workers (Becker et al., 2020[39]). These findings highlight the need to examine labour market regulations and their role in FDI-SME diffusion by looking at how they relate to other drivers of labour mobility, namely the absorptive capacity of domestic firms and the availability (or lack) of skills in the local labour force. Despite the conduciveness of the regulatory framework and the inflow of foreign workers following the simplification of employment procedures, labour mobility from foreign to domestic firms will not be fully leveraged in the Slovak Republic unless structural challenges linked to the absorptive capacities of local SMEs are addressed (see section on SME absorptive capacities).

Linked to the capacity of domestic firms to retain and attract highly skilled workers is the complexity of hiring regulations and the disproportionate impact they may have on SMEs. Findings from an analysis of labour legislation undertaken by the SBA indicate that employment laws have changed on average 36 times per calendar year between 2016-2020 (SBA, 2019[21]). Interviews conducted as part of the 2021 OECD review of SME and Entrepreneurship Policy in the Slovak Republic also revealed that hiring the first employee is especially costly for Slovak micro firms, who often opt for subcontracting to a self-employed contractor instead of hiring a new employee (OECD, 2021[11]). The Slovak government could consider streamlining the labour legislation and introducing targeted measures that allow micro and small firms to be exempted from certain procedural requirements or other hiring restrictions of the labour code.

Targeted employee exchange/secondment programmes and other incentives could be also used to foster productivity spillovers from labour mobility. In Portugal, the Portuguese investment promotion agency (AICEP) implements the *INOV Contacto* programme, which allows highly skilled young graduates to conduct a short-term internship in a Portuguese company, followed by a long-term internship in a foreign multinational. Although these programmes do not affect the overall labour market conditions, they can provide a more targeted approach to facilitating the transfer of knowledge and skills from foreign firms to local labour markets. SARIO, in collaboration with SBA, could consider developing an employee exchange programme involving foreign affiliates and Slovak SMEs. Additional measures such as incentives for corporate spinouts could also allow employees of domestic MNEs, including foreign affiliates, to create their own start-up. Payroll tax incentives for highly skilled or R&D workers could also encourage domestic SMEs to hire qualified employees with prior experience in multinational firms.

Addressing workforce skills gaps and mismatches has been a key priority for the Slovak economy

Encouraging the uptake of permanent employment, as done by the Slovak government, can have a positive impact on Slovak firms' willingness to invest in job training of their employees, which is an important component of a firm's absorptive capacity. Evidence on the role of employment protection regulations in shaping the incentives of firms to invest in formal training shows that enforcing stricter hiring regulations for temporary contracts and less rigid regulations for dismissals of permanent workers (as is the case in the Slovak Republic) is associated with higher investment by firms in the human capital of their employees (Almeida and Aterido, 2011[40]). In contrast, overly restrictive dismissal regulations combined with low regulation of temporary contracts (e.g. Portugal) may lead to reduced investment in job training.

As described in Chapter 2, domestic SMEs still face considerable challenges to invest in job training despite the emphasis that the Slovak government has placed on skills development. A major overhaul of the national vocational education and training (VET) framework took place in 2015 with the introduction of a dual education system that aimed to foster greater collaboration between employers and vocational schools (European Commission, 2019[41]). The reform included simplified registration requirements for SMEs participating in the dual system, tax and other financial incentives for employers that provide practical training, and additional funding to VET schools. VET programmes targeting eligible job-seekers (e.g. REPAs+, KOMPAS+) were also introduced to boost the participation of the unemployed in (re-)training activities, with recent evaluations showing positive outcomes on participants' employment situation (Štefánik, 2018[42]; OECD, 2020[43]). Since the introduction of these measures, participation of Slovak SME employees in vocational training programmes has increased, accounting for roughly 32% of students entering vocational learning programmes in 2019 (as opposed to a 15-20% share in 2015-2017) (European Commission, 2021[44]). New enrolments of apprentices have also quadrupled from 422 in 2015 to 1615 in 2019 (European Commission, 2020[33]).

The 2030 Digital Transformation Strategy and the related Action Plan for the period 2019-2022 are the most recent strategic documents that seek to define policy priorities as well as specific actions to reform the education system, introduce lifelong learning and VET programmes, and improve digital skills in the

labour market (Government of the Slovak Republic, 2019[45]). A National Coalition for Digital Skills and Jobs was also set up to mobilise representatives of the public and private sectors, academic institutions and civil society to improve the digital skills of students, employees and IT specialists. However, in the Slovak Republic, strategies, policies and reforms tend to be well developed and comprehensive, but their implementation is often comparatively weak.

To address skill shortages a whole-of-government approach is required given the cross-cutting nature of the skills agenda (OECD, 2021[19]). Linkages with other policy areas should be strengthened to ensure that educational, vocational and training programmes are not implemented in silos but are aligned with the Slovak strategies for smart specialisation, innovation and entrepreneurship. The programming of the EU funds for the period 2021-2027 offers the opportunity for a better alignment of policy priorities across these areas. Moving forward, active labour market policies could be further aligned with skills upgrading programmes, and be coupled with investments in human capital development within SMEs and in the general workforce.

Creating market conditions for fair competition and knowledge exchange between foreign MNEs and Slovak SMEs

Competition rules that ensure a level playing field for foreign and domestic firms can facilitate the entry of foreign investors and, at the same time, incentivise domestic firms to become more productive and improve the quality of their products (Lembcke and Wildnerova, 2020[46]). Policies that ensure intellectual property (IP) rights protection are also important as they guarantee the appropriability of knowledge and innovation benefits, and determine the qualities of FDI that can be attracted.

Regulatory barriers to competition are limited, but there is room for improving product market regulation in some sectors and domains

According to the OECD Product Market Regulation (PMR) indicators, which measure the degree to which laws and policies promote or inhibit competition, regulatory barriers to competition are slightly above the OECD average in the Slovak Republic (Figure 5.15). Public procurement rules, the regulatory procedures, use of command and control regulation, the corporate governance of state-owned enterprises, and the assessment of the impact of new regulations on competition are all relatively close to international best practices. In contrast, public ownership of the largest operators in network sectors is higher than in many other OECD countries, the licensing regime is burdensome and there is scope to improve the rules regulating the interaction between interest groups and public officials. For instance, policymakers are not required to make their agenda available to the public, nor to disclose the identity of the interest groups they meet. However, there is a compulsory cooling-off period for public officials when they leave their post, as well as regulation dealing with potential conflicts of interest. Moreover, a Code of Conduct for civil servants, including rules for accepting gifts and other benefits, entered into force in January 2020.

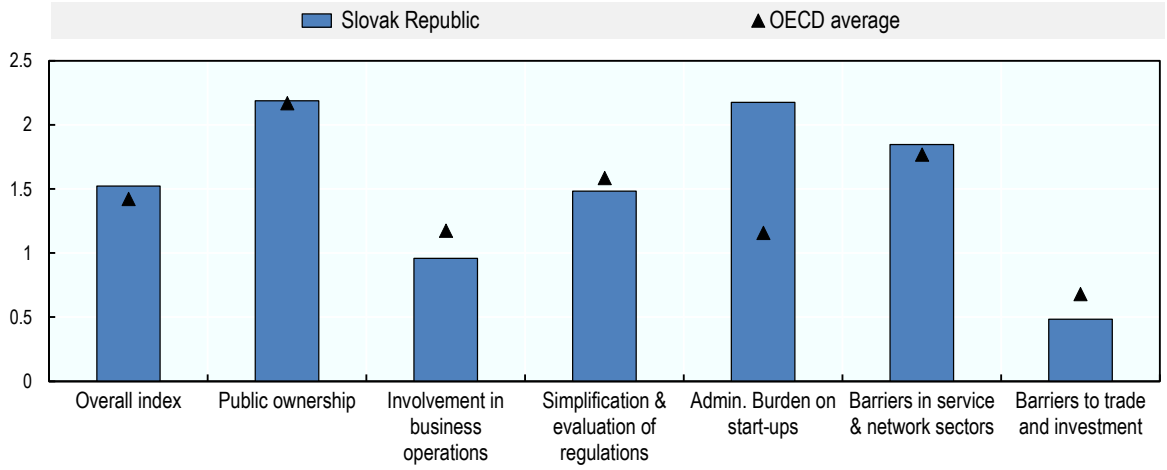
The Slovak Republic's PMR score indicates that there is scope to further improve its performance in the area of administrative and regulatory burden on start-ups. Several reforms have been introduced in recent years aimed at the simplification of business processes. This included the abolishment of the requirement to obtain and submit information on tax arrears, which aimed to speed up the business registration process; the creation of a new corporate structure, the simplified joint stock company, which allows new corporations to be registered with a minimum capital share of 1 EUR; and a draft amendment to the Income Tax Act to make it easier for Slovak SMEs to comply with tax obligations (OECD, 2021[11]). A Better Regulation Strategy (RIA 2020) was also adopted by the Slovak government in 2018 in order to improve the quality of laws, eliminate redundant regulation and reduce bureaucratic complexity. Although the RIA 2020 Strategy is a comprehensive better regulation policy effort in accordance with international best practices considerable delays have been observed in the implementation of specific commitments so far (OECD, 2020[47]). Implementation challenges could be addressed by targeting the most urgent areas of reforms,

choosing priority areas for action and complementing the strategy with an action plan with a realistic timeline.

At the sectoral level, the regulatory framework in the e-communications sector is more competition-friendly than in most other OECD countries, but less so in the energy and some of the transport sectors (Figure 5.16). This is due to the presence of state-owned enterprises, for example in the electricity, gas and retail sectors, and regulation that is not in line with international best practices. Professional services are among the most regulated in the OECD area, in particular notaries, architects, and civil engineers. Regulatory barriers to competition in retail distribution are also above the OECD average, though less so in the retail sale of medicines. For example, special administrative requirements apply for the establishment of large-scale outlets and shop-opening hours are more regulated than in many other OECD countries. When firms are subject to overly restrictive entry restrictions and onerous rules for conducting their business, a lack of competitive pressure may induce them to charge above-market prices, provide sub-optimal services and fail to adapt to market changes and innovation.

Figure 5.15. More pro-competitive regulation is needed in certain areas

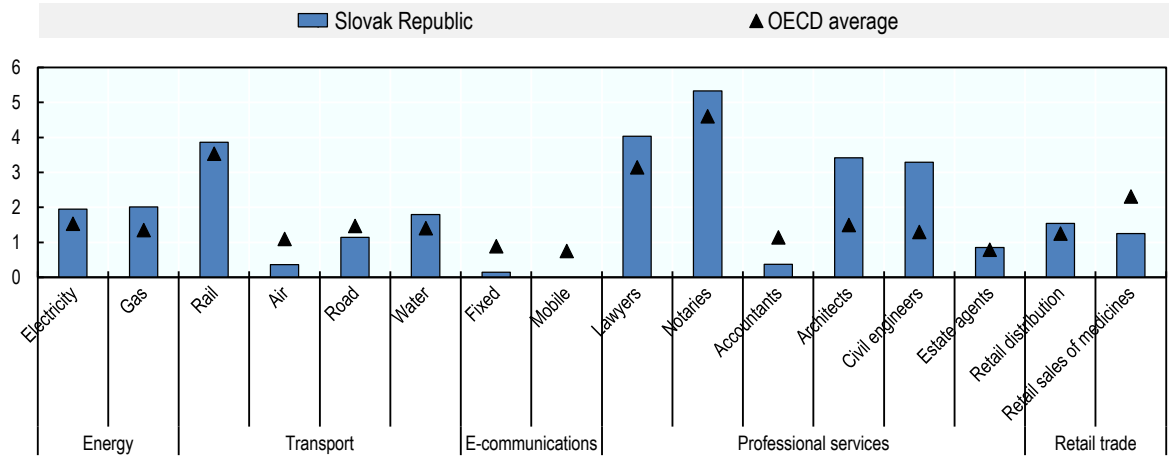
OECD Product Market Regulation, 2018 (most competitive=0; least competitive=6)



Note: The indicators refer to economy-wide regulation and are composed of the simple average of the sub-indicators on State involvement and Barriers to entry. The indicators range between 0 (most competitive) and 6 (least competitive environment). Source: OECD PMR database, 2018.

Figure 5.16. Professional services are strictly regulated

OECD Product Market Regulation, by sector, 2018



Note: Index scale 0 to 6 from most to least competition-friendly regulation.
Source: OECD 2018 PMR database

The intellectual property protection framework is well-developed; however enforcement procedures can be further improved

The Slovak legal framework for intellectual property (IP) rights protection generally complies with European and international standards. The Slovak Republic ranks 60th out of 141 countries in terms of IP protection in the World Economic Forum's 2019 Competitiveness Report, and 39th out of 131 economies in the Global Innovation Index 2020 prepared by the World Intellectual Property Organisation (WIPO), INSEAD and Cornell University (World Economic Forum, 2019[48]; Cornell University, INSEAD, and WIPO, 2020[49]).

The registration of IP rights is done through the Industrial Property Office (IPO), which is the official government agency responsible for industrial property protection, including inventions, industrial designs, trademarks and geographical indications of origin. The IPO operates several Patent Information Centres and Contact and Information Points, which offer information and advisory services on IPR issues, raise awareness among business enterprises and research institutions about the benefits of IPR protection, and make available relevant documentation. An online portal has been also in place since 2008 to streamline information on all matters regarding intellectual property in the Slovak Republic and abroad. Recently, the IPO established a network of Information and Advisory Points for Innovation (INNOINFO), which are established in business incubators, regional advisory and information centres, technical universities and the regional departments of the Slovak Chamber of Commerce and Industry (SCCI). The INNOINFO network specifically targets SMEs and entrepreneurs and delivers business diagnostic services.

The protection of IP rights is enshrined in several legal instruments such as the Patent Act, and the Copyright Law, as well as in general pieces of legislation including the civil and criminal codes. Coordination is ensured by the Inter-ministerial Commission for the Fight against Counterfeiting and Piracy, which gathers representatives of several line ministries, the General Prosecutor's Office, the IPO and the Slovak Trade Inspection Authority. Established in 2011, the Commission coordinates policy issues relating to infringements of IP rights, monitors the implementation of the national anti-counterfeiting strategy, organises information campaigns, and provides training to relevant public and private sector entities.

The Slovak Republic does not have a specialised intellectual property court as is the case in other EU countries; general courts have jurisdiction to rule on all matters relating to infringements to IP rights. Alternative dispute resolution (ADR) procedures are not mandatory, and therefore not commonly used in

relation to IP rights disputes. The general lack of awareness and weak ADR culture, coupled with the insufficient degree of specialisation of judges could put pressure on civil courts and increase the backlogs of cases piled up on their calendars (SBA, 2020[34]). Some countries, like Italy, have taken initiatives to support the development of ADR systems and introduced a requirement to undertake ADR sessions before any court proceedings as a way to unburden court systems. In Portugal, a specialised IP court has been established to address the considerable delays in the procedural stages and decision of cases involving the enforcement of IP rights, while a state-supported Arbitration Tribunal has jurisdiction to resolve solely IP rights disputes. In the Slovak Republic, efforts to improve the efficiency of the judicial system have picked up over the past decade with the introduction of hosting judges to address temporary workload challenges, legislative measures to de-register old inactive cases, and efforts to increase the use of IT tools in courts (European Commission, 2020[33]). The Slovak government could consider taking additional steps to raise awareness of ADR procedures to improve the settlement of IPR-related disputes.

References

Alfaro, L. and M. Chen (2012), "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance", *American Economic Journal: Economic Policy*, Vol. 4(3): 30-55. [55]

Almeida, R. and R. Aterido (2011), "On-the-job training and rigidity of employment protection in the developing world: Evidence from differential enforcement", *Labour Economics*, Vol. 18, pp. S71-S82, https://doi.org/10.1016/j.labeco.2011.05.001. [40]

Balog, M. (2019), *Vedecké parky a výskumné centrá na Slovensku*, http://www.researchgate.net/profile/Miroslav-Balog/publication/335062103_Vedecke_parky_a_vyskumne_centra_na_Slovensku/links/5d4d3f174585153e5947c715/Vedecke-parky-a-vyskumne-centra-na-Slovensku.pdf. [26]

Becker, B. et al. (2020), "FDI in hot labour markets: The implications of the war for talent", *Journal of International Business Policy*, Vol. 3/2, pp. 107-133, https://doi.org/10.1057/s42214-020-00052-y. [39]

Bobenič Hintošová, A., F. Sudzina and T. Barlašová (2021), "Direct and Indirect Effects of Investment Incentives in Slovakia", *Journal of Risk and Financial Management*, Vol. 14/2, p. 56, https://doi.org/10.3390/jrfm14020056. [6]

Castro, F. (2000), *Foreign direct investment in the European periphery: The competitiveness of Portugal*, The University of Leeds, https://etheses.whiterose.ac.uk/2612/1/Castro_FB_LUBS_PhD_2000.pdf. [57]

Cornell University, INSEAD, and WIPO (2020), *The Global Innovation Index 2020: Who Will Finance Innovation?*, https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf. [49]

European Commission (2021), *2021 SME country factsheet: Slovakia*, European Commission, https://ec.europa.eu/docsroom/documents/46089. [44]

European Commission (2020), *Country Report Slovakia 2020, 2020 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011*, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0524&from=EN. [33]

European Commission (2019), *Country Report Slovakia 2019, 2019 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011*, https://ec.europa.eu/info/sites/default/files/file_import/2019-european-semester-country-report-slovakia_en_0.pdf. [41]

European Commission (2019), *Voucher Schemes in Member States: A report on the use of voucher schemes to promote innovation and digitalisation*, https://ec.europa.eu/information_society/newsroom/image/document/2019-32/member_states_use_of_voucher_schemes_0D31F683-AA92-B7FF-684433BCBD8A4F3A_61225.pdf. [17]

European Commission (2016), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on reform recommendations for regulation in professional services (COM(2016) 820 final)*, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0436&from=DE. [3]

European Investment Bank (EIB) (26 February 2021), *"Slovakia: EIB Group supports €211 million of investment in 2020 for businesses, energy efficiency, innovation and digitalisation"*, https://www.eib.org/en/press/all/2021-070-slovakia-eib-group-supports-eur211-million-of-investment-in-slovakia-in-2020-for-businesses-energy-efficiency-innovation-and-digitalisation. [14]

Eurostat (2018), *Community Innovation Survey*, https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm. [9]

González Cabral, A., S. Appelt and T. Hanappi (2021), "Corporate effective tax rates for R&D: The case of expenditure-based R&D tax incentives", *OECD Taxation Working Papers*, No. 54, OECD Publishing, Paris, https://doi.org/10.1787/ff9a104f-en. [10]

Government of the Slovak Republic (2019), *2030 Digital Transformation Strategy for Slovakia*, https://www.mirri.gov.sk/wp-content/uploads/2019/10/SDT-English-Version-FINAL.pdf. [45]

Government of the Slovak Republic (2018), *Strategy for Labour Mobility of Foreigners in the Slovak Republic*, https://www.employment.gov.sk/files/slovensky/uvod/informacie-cudzinci/strategy.pdf. [37]

Helpman, E., M. Melitz and S. Yeaple (2004), "Export Versus FDI with Heterogeneous Firms", *American Economic Review*, https://scholar.harvard.edu/files/melitz/files/exportsvsfdi_aer.pdf. [54]

IAPMEI (2021), *Clusters de Competitividade: Pactos para a competitividade e internacionalização*, https://www.iapmei.pt/getattachment/PRODUTOS-E-SERVICOS/Empreendedorismo-Inovacao/Eficiencia-Coletiva-e-Clusters/BrochuraClusters04052021.pdf.aspx. [36]

Innovation Fund (2021), *Annual Report of the Innovation Fund 2020*, https://www.inovacnyfond.sk/wp-content/uploads/2021/07/Vyrocna_sprava_Inovacny_fond_2020.pdf. [16]

ISP (2022), *Direct and indirect effects of regional economic stimuli*, http://www.employment.gov.sk/files/slovensky/ministerstvo/analyticke-centrum/analyticke-komentare/komentare_2022/ekonom_pomoc_regionom.pdf. [7]

Johanson, J. and J. Vahlne (1977), "The internationalization process of the firm - A model of knowledge development and increasing market commitments", *Journal of International Business Studies*, Vol. Vol. 8, No. 1. [56]

Kitagawa, F. and C. Lightowler (2012), "Knowledge exchange: A comparison of policies, strategies, and funding incentives in English and Scottish higher education", *Research Evaluation*, Vol. 22/1, pp. 1-14, https://doi.org/10.1093/reseval/rvs035. [29]

Kreiling, L. and C. Paunov (2021), "Knowledge co-creation in the 21st century: A cross-country experience-based policy report", *OECD Science, Technology and Industry Policy Papers*, No. 115, OECD Publishing, Paris, https://doi.org/10.1787/c067606f-en. [1]

Lembcke, A. and L. Wildnerova (2020), "Does FDI benefit incumbent SMEs?: FDI spillovers and competition effects at the local level", *OECD Regional Development Working Papers*, No. 2020/02, OECD Publishing, Paris, https://doi.org/10.1787/47763241-en. [46]

Meissner, D. and S. Kergroach (2019), "Innovation policy mix: mapping and measurement", *The Journal of Technology Transfer*, Vol. 46/1, pp. 197-222, https://doi.org/10.1007/s10961-019-09767-4. [2]

Ministry of Investment, R. (ed.) (2021), *Regional Development: Least Developed Districts*, https://www.mirri.gov.sk/sekcie/najmenej-rozvinute-okresy/index.html (accessed on 2021). [35]

OECD (2021), *EU/OECD Survey on Policies enabling FDI spillovers to domestic SMEs*. [20]

OECD (2021), *FDI Qualities Policy Toolkit: Policies for improving the sustainable development impacts of investment*, OECD, https://www.oecd.org/daf/inv/investment-policy/FDI-Qualities-Policy-Toolkit-Consultation-Paper-2021.pdf. [19]

OECD (2021), *Improving Higher Education in the Slovak Republic*, Higher Education, OECD Publishing, Paris, https://doi.org/10.1787/259e23ba-en. [27]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [50]

OECD (2021), "Promoting research and innovation in the Slovak Republic through an effective use of European funds", *OECD Public Governance Policy Papers*, No. 04, OECD Publishing, Paris, https://doi.org/10.1787/f0e9d786-en. [18]

OECD (2021), *R&D Tax Incentives: Slovak Republic, 2020*, https://www.oecd.org/sti/rd-tax-stats-slovak-republic.pdf. [8]

OECD (2021), *SME and Entrepreneurship Policy in the Slovak Republic*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/9097a251-en. [11]

OECD (2020), *OECD Employment Outlook 2020: Worker Security and the COVID-19 Crisis*, OECD Publishing, Paris, https://doi.org/10.1787/1686c758-en. [38]

OECD (2020), *OECD Services Trade Restrictiveness Index (STRI), Slovak Republic 2020*, https://www.oecd.org/trade/topics/services-trade/documents/oecd-stri-country-note-svk.pdf. [5]

OECD (2020), *OECD Skills Strategy Slovak Republic: Assessment and Recommendations*, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/bb688e68-en. [43]

OECD (2020), *Regulatory Policy in the Slovak Republic: Towards Future-Proof Regulation*, OECD Reviews of Regulatory Reform, OECD Publishing, Paris, https://doi.org/10.1787/ce95a880-en. [23]

OECD (2020), *Regulatory Policy in the Slovak Republic: Towards Future-Proof Regulation*, OECD Reviews of Regulatory Reform, OECD Publishing, Paris, https://doi.org/10.1787/ce95a880-en. [47]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/34907e9c-en. [13]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/d2b72934-en. [51]

OECD (2018), *Promoting innovation in established SMEs, OECD SME Ministerial Conference, Mexico City, Policy Note, 22-23 February 2018*, http://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf. [52]

OECD (2022, forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*, OECD Publishing, Paris. [53]

OECD (2022 (forthcoming)), *Unleashing SME potential to scale up: New evidence on scale up policies and institutions*, OECD Publishing, Paris. [12]

OECD/European Union (2021), *Supporting Entrepreneurship and Innovation in Higher Education in Lithuania*, OECD Publishing, http://www.oecd.org/cfe/smes/HEInnovate-Lithuania_2021r.pdf. [31]

OECD/European Union (2021), *Supporting Entrepreneurship and Innovation in Higher Education in Slovenia*, OECD Publishing, http://www.oecd.org/cfe/smes/HEInnovate%20country%20review%20Slovenia_231121.pdf. [32]

OECD/European Union (2021), *Supporting Entrepreneurship and Innovation in Higher Education in Sweden*, OECD Publishing, http://www.oecd.org/cfe/smes/OECD_EC_HEInnovate%20country%20review_Sweden.pdf. [30]

Rosli, A. and F. Rossi (2016), "Third-mission policy goals and incentives from performance-based funding: Are they aligned?", *Research Evaluation*, p. rvw012, https://doi.org/10.1093/reseval/rvw012. [28]

SBA (2020), *Report on the State of Small and Medium-Sized Enterprises in the Slovak Republic in 2019*, Slovak Business Agency, http://www.sbagency.sk/sites/default/files/report_on_the_state_of_small_and_medium-sized_enterprises_in_the_slovak_....pdf. [34]

SBA (2019), *Report on the State of Small and Medium-Sized Enterprises in the Slovak Republic in 2018*, Slovak Business Agency, http://www.sbagency.sk/sites/default/files/report_on_the_state_of_small_and_medium_enterprises_in_the_slovak_republic_in_2018.pdf. [21]

SIEA (2021), *SIEA survey on SMEs cooperation with FDIs in Slovakia*, https://www.inovujme.sk//files/dokumenty-np-zivse/Cooperation%20of%20Slovak%20SMEs%20with%20Foreign%20Investors.pdf. [22]

SRDA (2021), *SRDA Annual Report 2020*, https://www.apvv.sk/buxus/docs/agentura/vyrocne-spravy/apvv-vs-2020-en.pdf. [15]

Štefánik, M. (2018), *Labour Market in Slovakia 2019+*, http://www.ekonom.sav.sk/uploads/journals/390_labour_market_in_slovakia_2019.pdf. [42]

UNCTAD (2021), *Slovakia - Introduction of investment screening mechanism, Investment Policy Monitor*, https://investmentpolicy.unctad.org/investment-policy-monitor/measures/3700/introduction-of-investment-screening-mechanism (accessed on 21 July 2021). [4]

World Bank (2020), *Doing Business 2020*, World Bank, Washington DS, https://doi.org/10.1596/978-1-4648-1440-2. [24]

World Bank (2020), *Doing Business 2020: Slovak Republic*, World Bank, Washington DC, https://documents1.worldbank.org/curated/en/498491575287773364/pdf/Doing-Business-2020-Comparing-Business-Regulation-in-190-Economies-Economy-Profile-of-Slovak-Republic.pdf. [25]

World Economic Forum (2019), *The Global Competitiveness Report, World Economic Forum*, http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf. [48]

6 Regional focus: Banská Bystrica and Košice

This chapter focuses on regional factors determining investment decisions and FDI-SME spillovers in the Slovak Republic, focussing in particular on the two regions of Banská Bystrica and Košice. The chapter firstly presents some key economic geography characteristics of the two regions. It then examines the FDI spillover potential and the absorptive capacity of SMEs in Banská Bystrica and Košice, trying to identify the competitive advantages of FDI-SME ecosystems in the two regions. The chapter also provides some insights on regional policies and institutional frameworks to support FDI-SME spillovers.

6.1. Summary of findings

Regions can differ greatly within a country, whether because of fixed factors (such as the availability of natural resources) or policies (that affect for instance the quality of the transport network, the education system, or local governments and institutions) that in turn determine population and the density and nature of business activities (OECD, 2009[1]) (OECD, 2012[2]). As such, firms within regions also differ, as do trade and investment opportunities. Multinational enterprises (MNEs) consider regional rather than country-specific factors when choosing where to invest. Policies to improve spillovers from FDI to domestic SMEs are therefore more likely to be effective when these regional factors are taken into account.

This chapter focuses on regional factors determining investment decisions and FDI-SME spillovers, using the two examples of Banská Bystrica and Košice. A more granular, regional perspective highlights the relevance of a place-based approach to the promotion of FDI-SME linkages in the Slovak Republic. The regions of Banská Bystrica and Košice have similarities in their economic structure and geography but differ importantly as to their paths of growth and industrial development. This chapter explores the characteristics of the two regions, including an analysis of SMEs and MNEs operating there. It also looks into how local policy and institutions support and harm an enabling environment for FDI-SME linkages. Box 6.1 provides some clarifications on the territorial level classification underlying the analysis in this report and the occasional regional data limitations addressed.

Box 6.1. Territorial level classification and data limitations

Based on the OECD classification of territorial levels of Member countries (OECD, August 2021[3]), the Slovak Republic has four large regions (territorial level 2 or TL2) and eight small regions (territorial level 3 or TL3). The two regions under study in this report – Košice and Banská Bystrica – are TL3 regions situated in less developed areas within respectively the Eastern and Central regions of the country (TL2), with significant influence on regional innovation structures and capacities.

As for European countries in general, this classification is largely consistent with the Eurostat Nomenclature of Territorial Units for Statistics (NUTS) 2021. For the European Union's 2021-27 programming period, the Slovak Republic has four regions at level II of the NUTS and eight regions at level III. Only one of the broader Slovak NUTS II regions is classified as a "more developed region" (European Commission, 2021[4]).

The regional analysis in this report includes both data at territorial levels 2 and 3 of the OECD classification (OECD, August 2021[3]). For some areas of investigation, only (or mainly) TL2 information was available. Consequently, some of the evidence used in this Chapter refers to a higher geographical level and might not fully reflect the situation at the TL3 level. In addition, these units of review should not be confused with the (smaller) main cities in each of these TL3 regions, with the same name but operating at the city level (Figure 6.1).

The limited availability and sophistication of regional level data makes targeted, geospatial analysis difficult, and limits the evidence base for policy making. It may also (by default) perpetuate a concentration of policy and investment efforts in the capital region.

Table 6.1. Key findings: Banská Bystrica and Košice

	Banská Bystrica	Košice
Economic geography and specialisation	• Regional economic development historically driven by **mining and heavy industries** concentrated in the North. Export-oriented manufacturing (e.g. car components, machines) and construction also account for an important proportion of regional value added and employment. • The region experienced a **deindustrialisation process**, shifting from the traditional specialisation in heavy industries (mining, metallurgy, chemical) to a more services-oriented economy. • **South remained peripheral to the regional economy**, with lower industrial density and important shares of value added coming from agriculture, forestry and fishing – making Banská Bystrica the first agricultural region in the Slovak Republic. • Building upon its rich natural and cultural heritage, Banská Bystrica has invested in **tourism** as a driver of local development. Distributive trade, repairs, transport, accommodation and food services overall represent the second sector of employment in Banská Bystrica (following public administration)	• Similarly to Banská Bystrica, also Košice experienced a **transition towards a more service-oriented economy**. This process was even stronger in Košice, where the share of services in value added raised above the national average. • **Metallurgy** remains a core sector of the regional economy. The region hosts US Steel Košice, the largest integrated steel producer in Central Europe. • However, Košice has also achieved economic diversification through a **fast-developing ICT services sector** and is becoming the most important **innovation hub** outside Bratislava. The Košice ICT industry remains extremely concentrated and clustered, with most ICT firms in the region located in the regional capital city of Košice. • **Tourism** (distributive trade, repairs, transport, accommodation and food services) is the first sector of employment in Košice.
Demographic trends, skills and infrastructure	• Banská Bystrica has a **older population** than most other Slovak regions. **Out-migration towards other Slovak regions (mostly Bratislava)** further limits the local talent pool. • Central Slovakia experienced a **dramatic drop in the percentage of young people not in education, employment or training (NEET)** (-10 percentage points over 2015 and 2019), while their share remained essentially stable in Eastern Slovakia. There seems to be a **fair diffusion of ICT and digital skills** among the regional population, especially the youngest, by international standards. • **The regional transport network has gaps** that limit connectivity, especially in lagging districts. It mainly relies on road transport, including passenger buses, while the railway network is poorly developed. The level of **digital infrastructure development**, as measured by the share of households with Internet access, **is one of the lowest** among NUTS III regions.	• Košice has **less elderly population** than the Slovak average. Thanks to the dynamism of its capital city and emerging services economy, Košice is also the best performer in Central and Eastern Slovakia in terms of **attractiveness to new young residents** from other Slovak regions. • In line to what is observed in other regions outside Bratislava, **tertiary education attainment in Eastern Slovakia is low** in terms of international standards. The **share of** NEET 18-24-year-olds is **higher than in any other NUTS II regions** and has remained stable since 2015. • The region is accessible through a **well-developed transport network**, including an international airport. The **digital infrastructure is well developed** by national standards, with 83% of households having access to the Internet, in par with Bratislava.
FDI spillover potential	• Banská Bystrica is a **comparatively weak performer in terms of FDI attraction**, accounting for only 2% of the Slovak Republic total FDI stock – the second lowest share across NUTS III regions. • **Foreign investors mostly target the more industrialised central and northern districts** neighbouring the regional capital city of Banská Bystrica, while the south lags behind in terms of FDI attraction. • The **construction and automotive components industries**, together with a few other manufacturing activities (e.g. chemicals, electronics) account for the bulk of greenfield FDI and the related job creation in Banská Bystrica. The services sector's performance in terms of greenfield investment attraction is much weaker.	• Košice is **the strongest FDI performer in Eastern Slovakia**, accounting for almost 80% of the total FDI stock of the broader NUTS II region. **Its share in the national FDI stock is also in line with that of Western regions** outside Bratislava. The city district of Košice II ranks 7th across Slovak districts in terms of inward FDI stock and is the only Eastern district among the top-10 FDI performers. • FDI is **very concentrated in the regional capital city of Košice**, which accounts for over 75% of the regional stock. • Like in Banská Bystrica, greenfield capital investment and investment-driven job creation **concentrates in a narrow number of industries**, namely the **metal**, **construction** and **automotive components** industries. However, a non-negligible share of inward greenfield FDI is also present in the **chemicals**, **R&D, communication and ICT & Internet infrastructure** industries, as well as in a broad range of services activities.

SME and entrepreneurship economy	• Banská Bystrica has a **limited stock of SMEs**, the average employer firm having less than 10 employees. SMEs and large firms are concentrated in **industry** and **transportation and storage**, while the rest of the economy is **dominated by micro firms**. • Larger firms tend to cluster together in metropolitan and most developed areas, driving sharp **sub-regional imbalances in entrepreneurial activity**. • SMEs tend to have **low survival rates** and **weak scale up capacity**, which can prevent the formation of linkages with MNEs. • Banská Bystrica has **limited R&D capacity**, accounting for a minor share of total R&D expenditure and staff in the Slovak Republic. Central Slovakia is the **second worst** performing NUTS II region in terms of **business R&D expenditure and staff**.	• Like in Banská Bystrica, the Košice business sector is **dominated by micro firms**. Regional SMEs mostly operate in **industry**, but they are also present in the **information and communication** sector, where the average number of firms' employees tend to be higher than in total economy. • Also in Košice, **SMEs and entrepreneurship activity is very clustered** around the capital city and the more developed metropolitan areas within the region. • Another common characteristic with Banská Bystrica is that business demography indicators signal a **low survival and scale up capacity of local SMEs**. This can be a barrier to FDI embeddedness and linkages with the domestic business sector. • Košice **drives the R&D performance** of Eastern Slovakia. It is the second Slovak region after Bratislava in terms of **government R&D expenditure** and **R&D staff**. In the broader NUTS II region, however, the business sector continues to spend less in R&D and employ less R&D staff than in the rest of the country.

6.2. Economic geography in Košice and Banská Bystrica

Two regions at the crossroads of Central Europe

The Slovak Republic is a landlocked country in Central Europe, bordered by Poland to the north, Ukraine to the east, Hungary to the south, Austria to the southwest, and the Czech Republic to the northwest. The map below illustrates the relative size and geography of the two regions (Figure 6.1). Košice and Banská Bystrica, albeit different, share more similarities than with the capital region of Bratislava. For purposes of comparison, data (TL3) are presented below in order to illustrate their different characteristics (Table 6.2).

Košice (*Kosicky kraj*) is the most south-eastern part of the country, geographically furthest from the capital region of Bratislava than other TL3 regions, bordering with Hungary and Ukraine. The region stands at the intersection of West-East European roads from the Czech Republic and Austria to Ukraine and the Russian Federation, and North-South European roads from Poland and the Baltic States towards Hungary and the Balkans (Košice Region Brussels Office, 2022[5]). With an area of almost 7 thousand square kilometres, the region constitutes 14% of the country's total area (OECD, 2022[6]).

Situated centrally in the country, Banská Bystrica *(Banskobystricky kraj*) is the largest region by land size, bordering with Hungary. With an area of almost ten thousand square kilometres, the region constitutes almost 20% of the total area of the Slovak Republic (OECD, 2022[6]).

The two regions of Košice and Banská Bystrica have in the north the Slovak Ore mountains, an extensive mountain range within the Carpathian mountains, that supported the industrial development of the country into one of the most important mining centres in the world. Much of the two regions' land is made of massive and hard-to-access hills covered by large forests, and high reliefs. The southern part of the Banská Bystrica region is characterised by lowland hillsides, stretching east-west and creating a corridor for transiting between Bratislava and the city of Košice, e.g. for the location of pipeline transport (Gregorová, 2018[7]). The city of Banská Bystrica, smaller by its inhabitant population, stands at approximately halfway between the two largest cities in the country, Bratislava and the city of Košice.

Figure 6.1. Slovak regions and region capitals (TL3)

Sources: Rainer Lesniewski, iStock / Getty Images Plus, via Getty Images.

Table 6.2. Characteristics of TL3 regions, 2020 (or latest year available)

TL2	Bratislava	Western Slovakia			Central Slovakia		Eastern Slovakia		**Slovak Republic**
TL3	Bratislava	Trnava	Trencín	Nitra	Žilina	Banská Bystrica	Prešov	Košice	
Geography / Demography									
Population (number inhabitant, 2020)	669 592	564 917	584 569	674 306	691 509	645 276	826 244	801 460	**5 457 870**
Elderly dependency ratio (% 65+, 2020)	26.19	25.19	27.03	26.77	23.03	25.77	21.26	22.72	**24.54**
Economy									
GDP per capita (million USD, current prices, 2018)	75 149	34 082	26 164	25 868	27 047	23 159	19 960	25 512	**31 558**
GVA total economy (million USD, current prices, 2018)	44 129	17 196.2	13 755.4	15 711.3	16 754.9	13 467	14 747.7	18 287.4	**154 049**
Employment									
Unemployment rate (% unemployed over labour force 15-64) (2019)	2.4	4.7	2.9	4.7	4.5	7.9	10.2	8	**5.8**
Innovation									
R&D personnel (2019)	16 802	1 986	2 437	2 535	4 014	2 356	1 439	4 740	**36 309**
Total R&D expenditure (EUR thousand, 2019)	374 848	51 326	94 105	36 578	77 944	43 725	26 705	71 359	**776 590**
Government R&D expenditure (EUR thousand, 2019)	173 950	14 512	3 909	28 276	29 639	18 982	8 618	36 273	**314 157**

Note: R&D personnel = Researchers (including PhD students), technicians and equivalent staff and supporting staff (headcount).
Source: OECD Regional Statistics database, 2022 (accessed on 21 February 2022); (Statistical office of the Slovak Republic, 2020[8]), *Regional statistical yearbook of the Slovak Republic 2020*. Data from the Statistical Office of the Slovak Republic refer to the eight Slovak self-governing regions, whose territory correspond to the eight TL3 regions of Slovakia in the OECD territorial classification.

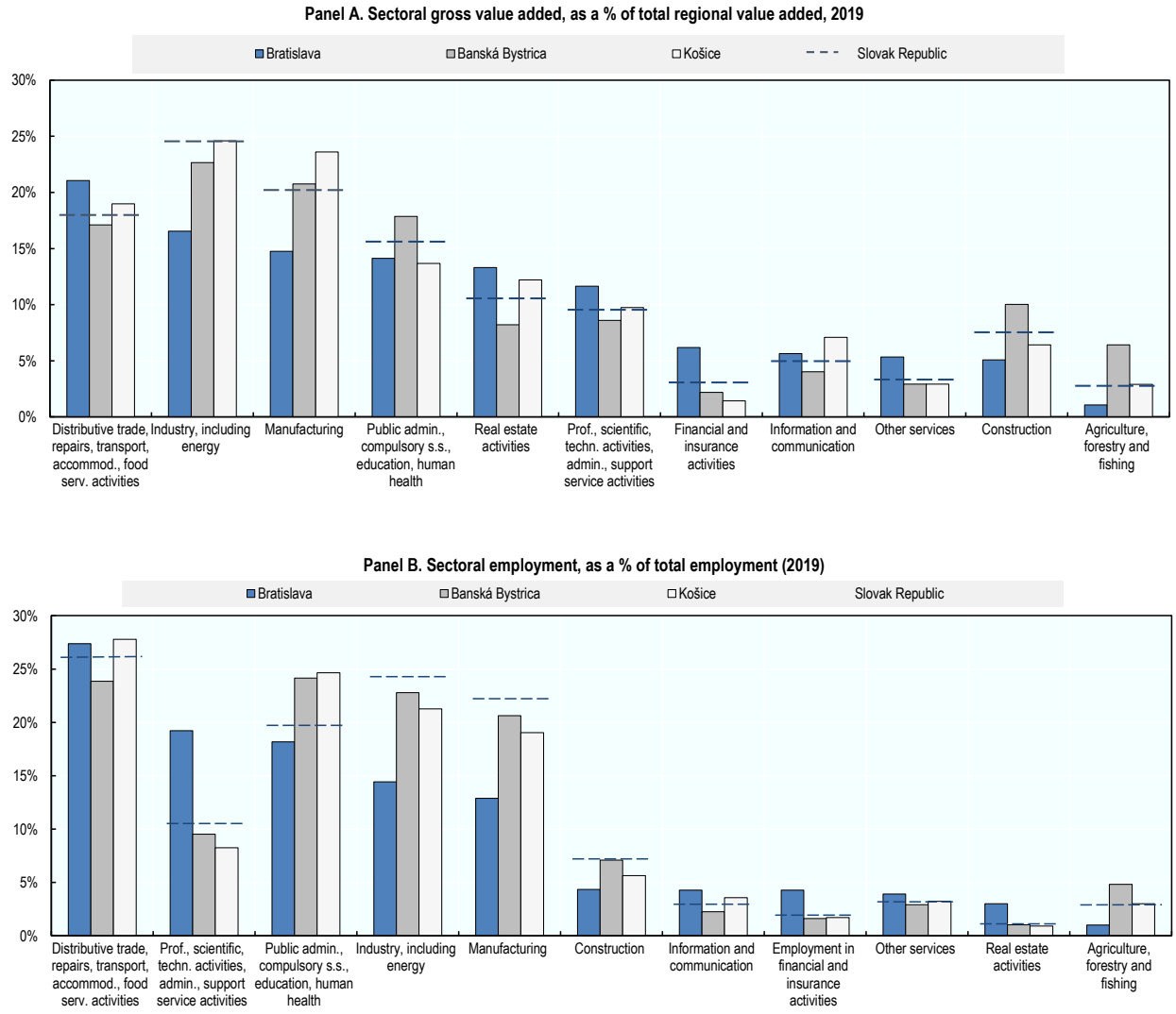
The Banská Bystrica region has a population of almost 650 000. The regional population declined by 1.2% between 2015 and 2019, while at same time the national population increased by 0.6%. Banská Bystrica also has the lowest population density in the country – 68.8 inhabitant per km^2 (OECD, 2022[6]). The largest regional city in terms of inhabitants is Banská Bystrica (city). The region consists of 13 districts, 516 municipalities, of which 24 have the status of "city"[1] (Statistical Office of the Slovak Republic, 2019[9]). About half of the population lives in a urban setting (Statistical Office of the Slovak Republic, 2019[9]).

The Košice region has a population of over 800 000 inhabitants (which represents about a 0.6% increase since 2015), with a density almost twice as large as the Banská Bystrica region (119.3 inhabitants/km^2) and over 54% of its population living in urban settings (OECD, 2022[6]) (Statistical Office of the Slovak Republic, 2019[10]). The region has 11 districts, 17 towns and 440 municipalities (Statistical Office of the Slovak Republic, 2019[10]). Its capital Košice is the second biggest city in the Slovak Republic and the industrial anchor of the east of the country (Košice Region Brussels Office, 2022[5]).

Two regions in a process of deindustrialisation, with shifting specialisation

Going through a deindustrialisation process, the regions of Banská Bystrica and Košice have experienced a shift from a traditional industry structure – mainly in mining, metallurgy and chemical industries – to services, that account in 2019 for 60.9% and 66.1% of regional gross value added respectively (OECD, 2022[11]) (Figure 6.2). These numbers denote a strong shift to services in Košice compared to all other regions (except Bratislava). 77.3% of gross value added in the capital region is indeed done in services, as compared to a country average of 65.1%.

Figure 6.2. Sectoral specialisation of Banská Bystrica and Košice



Note: Regions are defined at TL3 level. Absolute specialisation, as measured by sectoral share in regional gross value added.
Source: OECD (2022), OECD Regional Database (accessed 16 February 2022).

The economic development of Banská Bystrica was driven by extensive mining activities and heavy industries (e.g. ironworks, paper, cement, aluminium and chemicals manufacturing), especially in the northern part. The southern part of the region has experienced less dynamic growth, holding a more peripheral role in the regional economic system. In particular, the proximity to the Hungarian border, in a context of post-World War geopolitical tensions, has deterred the settlement of industrial centres and the processing or deposits of metallic material in the area (Gregorová, 2018[7]), constraining local activities to agriculture. In 2019, 6.4% of the regional gross value added still comes from the agriculture, forestry and fishing sector, as compared to 2.8% on average in the country, making Banská Bystrica the first Slovak region in terms of value added and employment in agriculture (OECD, 2022[11])(Figure 6.2).

However, the metallurgy sector remains vibrant in the region and there are still niche enterprises in historical sectors such as glass and ceramics. After 1989 and the transition of the Slovak Republic to a market economy, many former enterprises have been able to transform to face new global conditions. The industrial structure of Banská Bystrica has a strong export-orientation and relies on the manufacture of car components, machines, steel pipes, and pulp, aluminium and paper. The manufacturing and construction

sectors accounted respectively for 20.7% and 10% of regional gross value added in 2019, above national averages (20.3% and 7.6%) (Figure 6.2).

Another important sector of employment is the distributive trade, repairs, transport, accommodation and food services which employ 23.8% of total persons employed in the region (2019), i.e. the second largest sector of employment after the public administration (Figure 6.2). The Banská Bystrica region has succeeded to build upon its natural and cultural heritage. With mountains in the north and valleys in the south, the region has high levels of natural conservation (e.g. four national parks and protected landscape areas) and the most varied and diversified surface among all Slovak regions (Gregorová, 2018[7]). The region has turned into a popular winter and summer destination, developing new forms of tourism (Box 6.2).

Box 6.2. Mining tourism

Mining of raw materials leaves irreversible changes both underground and on the surface. There are relief changes in the form of caves, heaps, and tailing ponds. There is also environmental contamination with heavy metals (Cech et al., 2020[12]). Some mining brownfields – i.e. abandoned or devastated mining sites – have been transformed for tourism purposes in the Slovak Republic as in other Eastern European countries with similar mining tradition (Gregorová et al., 2020[13]).

Mining tourism represents a relatively new form of tourism combining adventure and adrenaline experiences with a new visual perception of the mining landscape, especially underground (Gregorová et al., 2020[13]). Tourists can visit mining cities or regions, mining museum, or sites that are not necessarily out of operation, and get exposure to historical (but also contemporary) technology, material and objects, such as facilities, buildings, tools etc., as well as mining tradition.

In addition, rural settlements that originated in mining or metallurgy industry have allowed to develop cottages, while topography proved to be suitable for outdoor leisure (e.g. hiking, cycling, skiing, and climbing) or water sports (Gregorová, 2018[7]).

Source: (Cech et al., 2020[12]), (Gregorová, 2018[7]) and (Gregorová et al., 2020[13]).

The Košice Region is one of the most important economic areas in the country (Košice Region Brussels Office, 2022[5]) and shares a number of similarities with the Banská Bystrica region in terms of specialisation. Core sectors include heavy industries from the early stages of industrialisation (metallurgical, mechanical engineering and chemical industries), manufacturing of electricals and textile, but also a fast-developing sector of information and communication technologies (ICT) services.

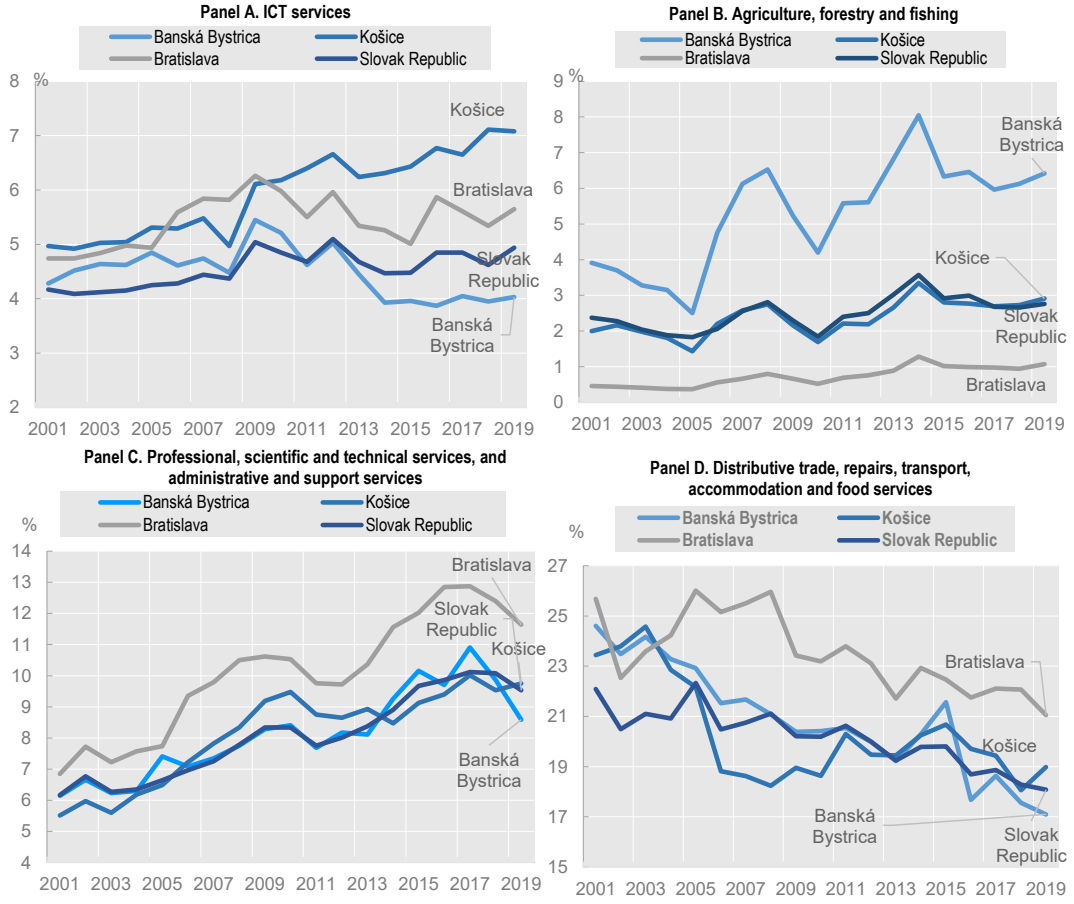
Metallurgy remains a dominant sector in Košice, accounting for 60% of industrial production and 50% of its exports (Košice Region Brussels Office, 2022[5]). US Steel Košice – the largest integrated steel producer in Central Europe – is a key employer in the region, with almost 9 000 people in its payroll (US Steel Košice, 2022[14])[2]. It also actively collaborates with selected high schools, universities and vocational institutions in the region, whose graduates are the main source for hiring (Chapter 3) (US Steel Košice, 2022[14]). The manufacturing and construction sectors still represent in 2019 24.6% and 23.6% of regional gross value added (as compared to 24.5% and 20.3% for national averages) (Figure 6.2).

The south of the region is characterised by its agricultural production, with important wine-growing areas (although agriculture contributes to a much lesser extent to regional value added than in Banská Bystrica – i.e. 2.9% against the 6.4% mentioned above – Figure 6.2) (Košice Region Brussels Office, 2022[5]).

The two regions have invested in tourism as a driver of local development. The distributive trade, repairs, transport, accommodation and food services employ 27.8% of total persons working in the Košice region (2019), which constitutes this time the largest employment sector before the public administration (24.7%).

Figure 6.3. Shifting specialisation of Banská Bystrica and Košice regions

Changes in sectoral share in regional gross value added, 2001-19



Note: Regions are defined at TL3 level.
Source: OECD (2022), OECD Regional Database (accessed 16 February 2022).

However, the Košice region has also achieved economic diversification towards a number of knowledge-intensive, creative, and ICT-oriented sectors (Box 6.5). ICT services contribute to 7.1% of regional value added in 2019, as compared to 4.9% on average in the Slovak Republic and 4.0% in the Banská Bystrica region (Figure 6.2). This share is significantly above that of all other Slovak regions, including Bratislava (5.6%). The supply of IT services has increased significantly faster in the region over the past two decades than in the rest of the country (Figure 6.3). In addition, 9.7% of regional value added come from professional, scientific and technical activities, and administrative and support services, which compares slightly higher than the national average (9.5%).

The regional socio-economic performance in Košice and Banská Bystrica is still lower

Despite significant improvements in recent years, GDP levels remain low in the two regions examined as compared to the capital region. GDP per capita increased by over 45% in both Košice and Banská Bystrica over 2009-2019 – about twice the increase observed in the capital region (26%). However, overall levels (in USD per capita) remain low compared to the national average. The two regions are at the bottom of the national ranking in terms of GDP per capita level, followed only by Prešov.

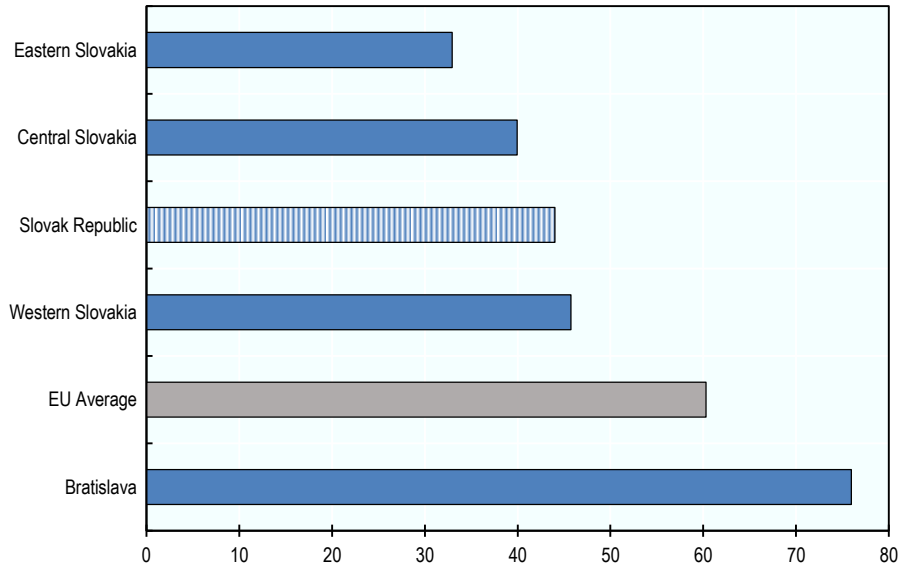
The comparatively low economic performance of Košice and Banská Bystrica compounds with the high regional income inequalities that are observed in the Slovak Republic (Chapter 2, Figure 2.7). The Gini index that measures income inequality across regions is larger in the Slovak Republic than in the OECD, and larger than in many other Eastern European countries (OECD, 2021[15]).

Current global uncertainties risk to slow down post-COVID-19 recovery in Slovak regions, especially in Eastern Sovakia. The COVID-19 pandemic had a severe impact across the country, with GDP shrinking by over 6% in 2020 (Chapter 2, Box 2.1). Recovery is anticipated in 2022 and 2023. The recovery path however remains subject to relevant uncertainties as the Russia-Ukraine crisis, which started in the first quarter of 2022, weights on the country's economic outlook (Chapter 2, Box 2.2). Eastern regions risk to be particularly exposed to the socio-economic impact of the crisis, due to their geographical location in close proximity to the Ukrainian border. The Košice region is at the forefront of welcoming and registering refugees fleeing the conflict. Two of the three currently functioning Slovak-Ukrainian border crossing points are located in Košice, while Michalovce – the second-largest city in the Košice Region – hosts one of the large-capacity refugee welcome centres set up in the country (Pwc Slovakia, 2022[16]) (Human Rights League and Mareena, 2022[17]) (OECD, 2022[18]).

Cross-region divides in income and growth performance are linked to cross-regional gaps in competitiveness. The Slovak Republic is ranked 42 among 141 economies in the 2019 Global Competitiveness Index, with a score of 66.8 out of 100. Although being in the upper third of the covered countries, the country's position is below that of peer economies like the Czech Republic (which ranks 32), Portugal (34) or Poland (37) (World Economic Forum, 2019[19]) (NBPSR and ISA, 2019[20]). The relative weakness of Slovak Republic's competitiveness performance finds roots in the significant imbalances across regions (Figure 6.4). The competitiveness of the Central and Eastern Slovakia is approximately half of that achieved by the capital region (OECD, 2021[15]).

Figure 6.4. Competitiveness performance across Slovak regions, 2019

European Regional Competitiveness Index 2019, 0-100 scores

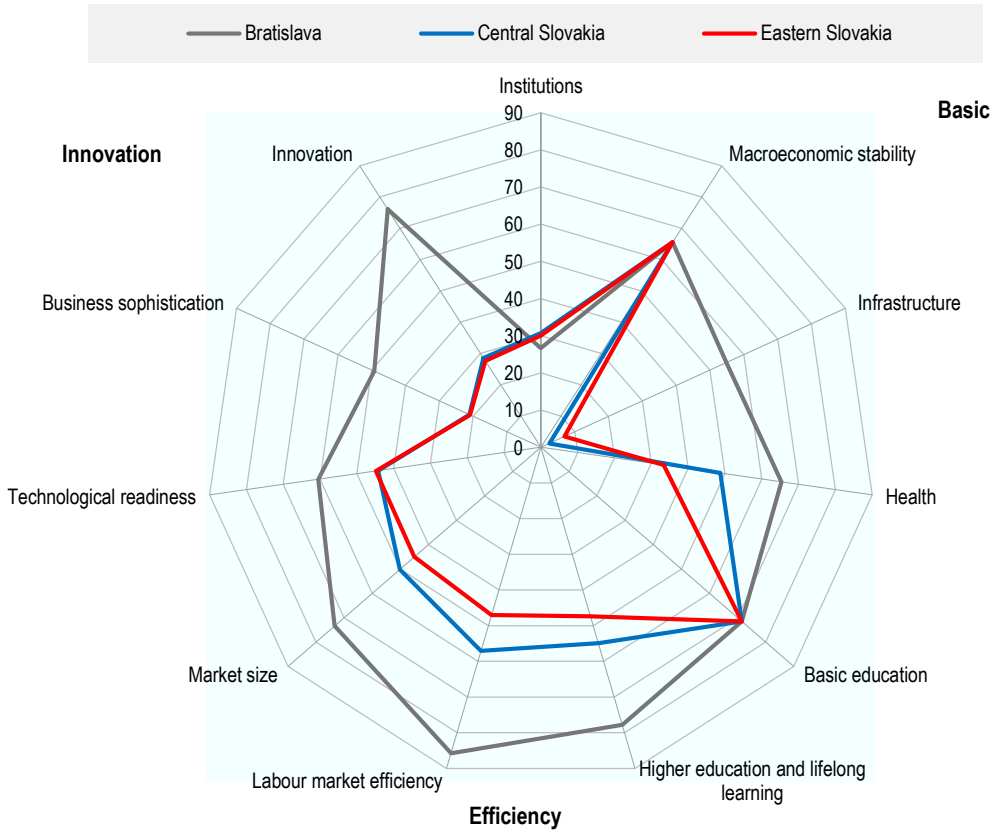


Notes: The Regional Competitiveness Index (RCI) 2019 includes 74 indicators at the NUTS-2 level across the EU, most spanning the period 2015-2017, with some as recent as 2018 while a few others go back to 2014. The indicators are grouped into 11 pillars which, in turn, are organised into three sub-indexes: basic, efficiency and innovation factors of competitiveness. RCI 2019 was computed including the United Kingdom as a member of the EU because the reference period of all the indicators included in the Index is prior to the country's official departure date from the Union (31 March 2019). Consequently, all the EU averages include 28 Member States.

Source: (EC, 2019[21]), European Regional Competitiveness Index 2019 and (Annoni, 2019[22]), *EU Regional Competitiveness Index 2019.* Based on (OECD, 2021[15]), *SMEs and Entrepreneurship Policy in the Slovak Republic*.

Central and Eastern Slovakia perform rather poorly in basic and innovation factors of competitiveness. Figure 6.5 compares the competitiveness performance of Eastern and Central Slovakia with the capital region based on the EU 2019 Regional Competitiveness Index (Annoni, 2019[22]). The two regions have a very similar profile. With the exception of two areas **–** i.e., macroeconomic stability and basic education – Central and Eastern Slovakia rank lower than the capital on all competitiveness indicators. Their performance is particularly weak in the areas of infrastructure, business sophistication and innovation. Such weaknesses are rooted into several factors, including in particular their recent industrial decline and shift in regional production; weaknesses in human capital and labour market operations; infrastructure deficiencies; and the poor state of the environment (OECD, 2021[15]).

Figure 6.5. Drivers of competitiveness in Central and Eastern Slovakia, 2019



Notes: The 2019 edition of the EU Regional Competitiveness Index includes more than 70 indicators at the NUTS-2 level across the EU, most spanning the period 2015-2017, with some as recent as 2018 while a few others go back to 2014. The indicators are grouped into 11 pillars which, in turn, are organised into three sub-indexes: basic, efficiency and innovation factors of competitiveness (Annoni, 2019[22]).
Sources: (Annoni, 2019[22]), *EU Regional Competitiveness Index 2019.*

Ageing population, brain drain toward the west and a general skills challenge weigh on regional imbalances

The Slovak Republic has in relative terms a larger active population base than other countries in the EU or the OECD. The dependency ratio, i.e. the share of less than 15-year-olds and more than 65-year-olds

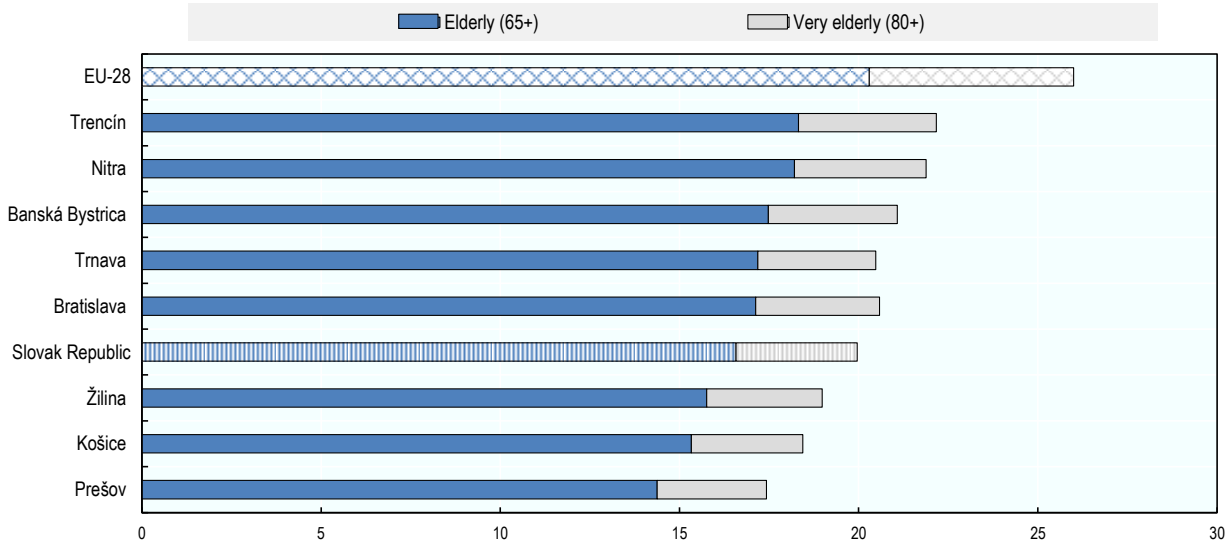
over the working-age population (15-64), was 47.9% in 2020, which compares low to the totals observed in the EU28 (55.8%) and OECD (54.1%) areas (OECD, 2022[6]).

However, the Slovak population is ageing rapidly. The country is subject to one of the fastest increases in the EU in the old-age dependency ratio, which is projected to surpass the EU average by 2050 (OECD, 2022[23]). This ageing trend weighs on the country's economic outlook, exacerbating fiscal challenges from the COVID-19 crisis and putting long-term fiscal sustainability at risk (OECD, 2022[23]).

At regional level, Banská Bystrica has a slightly older population than most other regions in the country, including Košice, which makes it is comparatively more exposed to the adverse impacts of ageing. The share of elderly in total population (17.5%) is higher than at national level (16.6%) (OECD, 2022[6]). Košice, by contrast, has the second lowest elderly population ratio (15.3% of 65+ and 3.1% of 80+) among NUTS III regions, as well as a younger population.

Figure 6.6. Ageing in Slovak regions

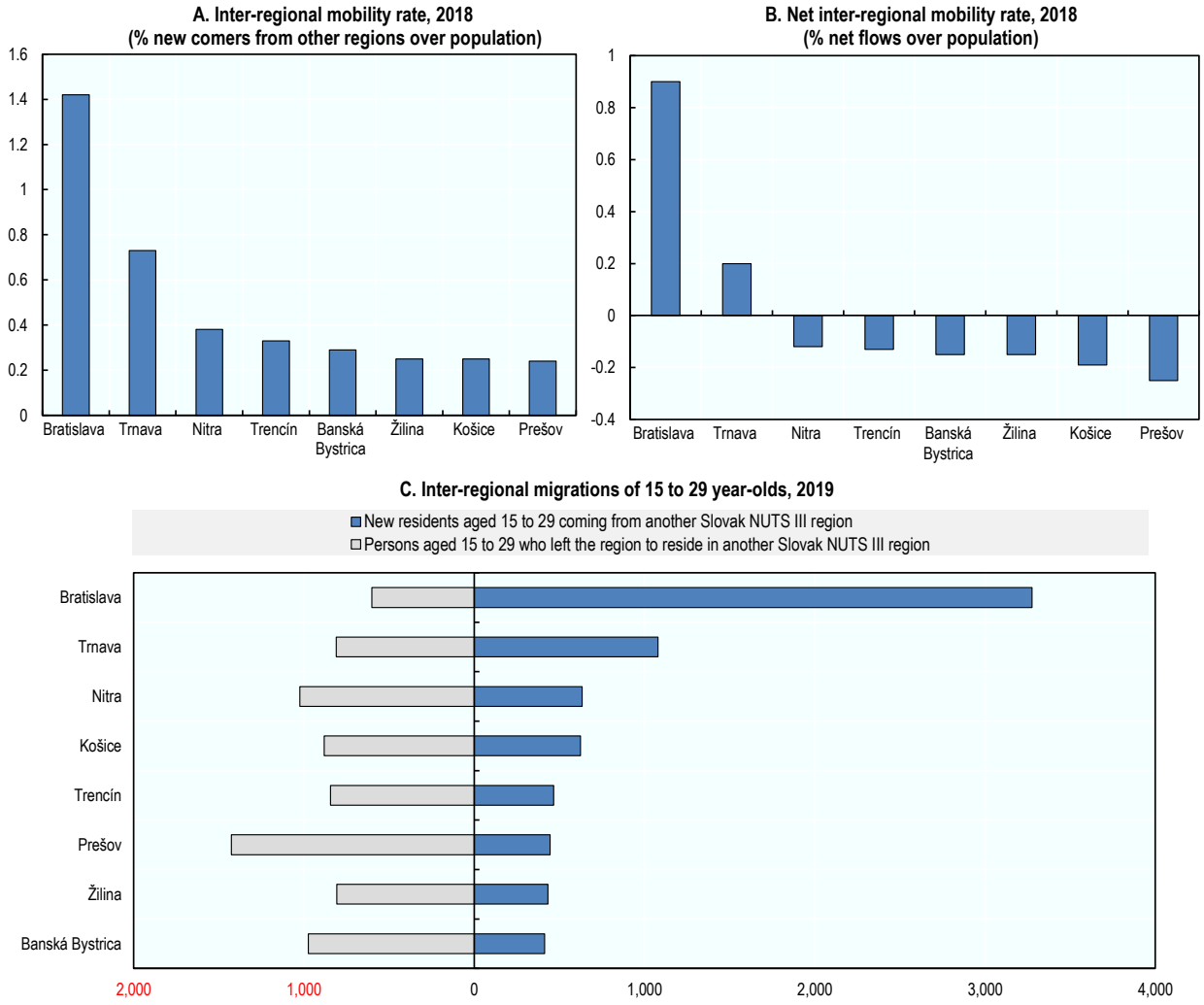
% of elderly (+65) and very elderly (+80) population over total population, 2020*



Notes: Regions are defined at TL3 level. * EU-28 very elderly population share is of 2019.
Source: OECD (2022), OECD Regional Database (accessed 16 February 2022).

Eastern and central regions are affected by significant out-migration towards the west, especially the capital city. The out-migration population tends to be characterised by young people who are highly qualified (GRNCOH, 2014[24]). The Bratislava region is by far the most attractive destination for inter-regional migrants in the Slovak Republic, especially the younger. The share of population coming from another region in Bratislava (1.42%) is about 5-fold than in Košice (0.25%) and Banská Bystrica (0.29%) (Figure 6.7, Panel A). Together with Trnava, Bratislava is also the only region having positive net regional mobility rate: in all the other Slovak regions, the share of population leaving to reside in another region exceeds that of incoming inter-regional migrants (Figure 6.7, Panel B). Košice scores relatively well as per the number of new residents aged 15 to 19 coming from other Slovak regions, ranking fourth across the eight Slovak NUTS III regions in 2019 (straight after the capital and its surrounding regions Trnava and Nitra), thanks to the attractiveness of its capital city and its emerging services economy (Figure 6.7, Panel C). The situation is different in Banská Bystrica, which had the lowest number of new residents aged 15 to 19 coming from other regions in 2019.

Figure 6.7. Inter-regional migrations in the Slovak Republic

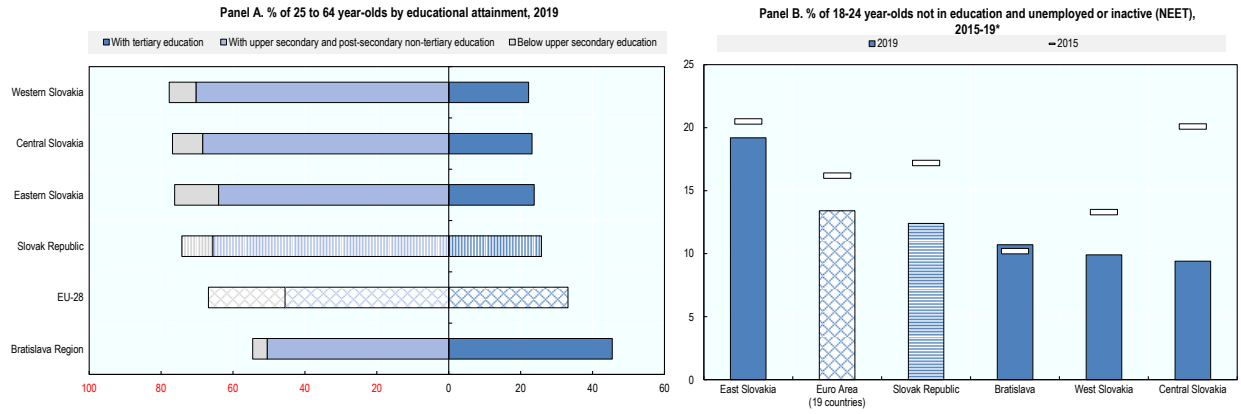


Source: OECD (2022), OECD Regional Database (accessed 16 February 2022)

Tertiary education attainment in the Slovak Republic is very low, achieved by only 26% of 25-64 year-olds compared to an OECD average of around 39% (Chapter 2) (OECD, 2022[25]) (OECD, 2021[26]). The national percentage is boosted by the performance of Bratislava, where the share of 25-64 year olds with tertiary education (46%) is almost double than at national level. In both Central, Eastern and Western Slovakia, the proportion of 25-64 year olds with tertiary education (22-23%) is closer to that observed in the Slovak Republic as a whole (Figure 6.8, Panel A). It is a low share by international standards, below the average 33% share observed in EU-28 regions.

The proportion of 18-24 year-olds not in education, employment or training (NEET) has been shrinking at national level, but the contribution of Slovak regions to this positive outcome is uneven. In the Slovak Republic, the share of 18-24 year-olds NEET dropped significantly from over 17% to about 12% between 2015 and 2019, falling below the EU-19 value (13%) (Figure 6.8, Panel B). At regional level, the stronger decrease (about ten percentage points) was observed in Central Slovakia. In Eastern Slovakia, by contrast, the share of NEET 18-24 year-olds – which in 2015 was around 20%, at par with Central Slovakia – has remained substantially stable over the years and stood at 19% in 2019, i.e. significantly higher than in any other Slovak TL2 region.

Figure 6.8. Education and skills in Slovak TL2 regions

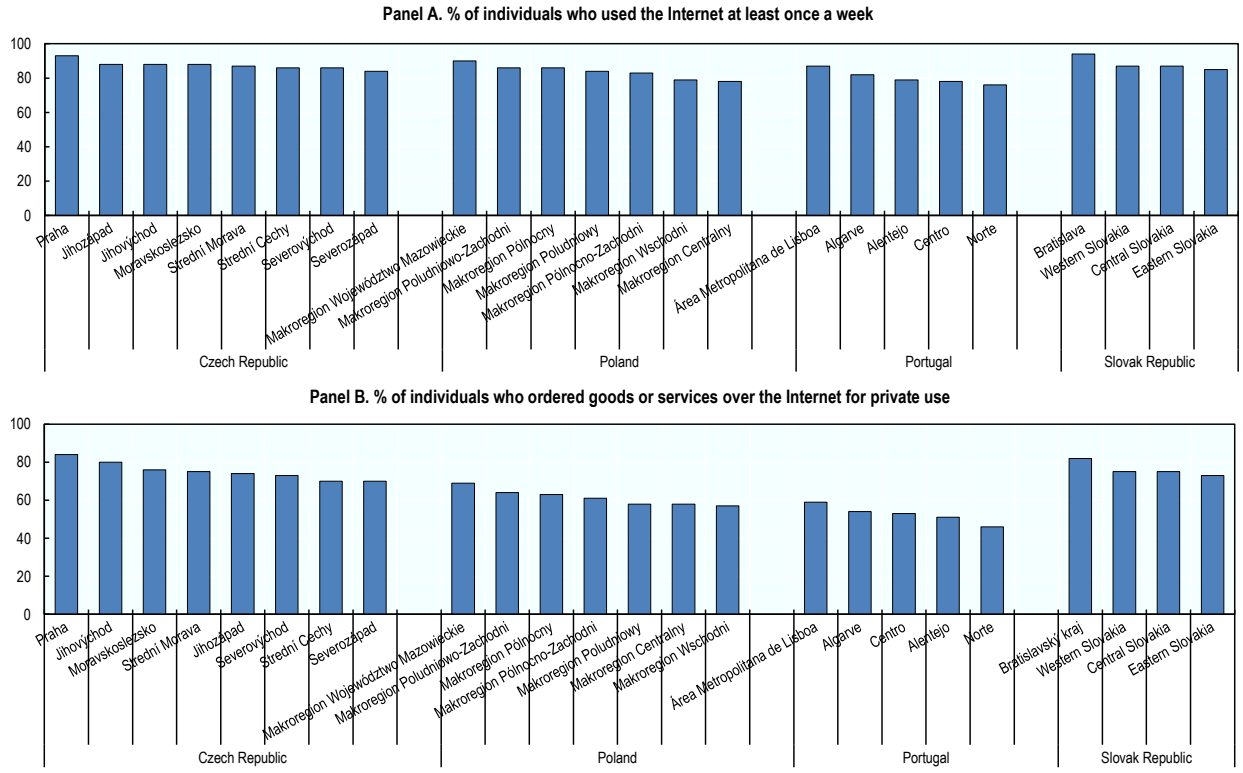


Note: Regions are defined at TL2 level (see Box 6.1 for more information on current data limitations and the territorial classifications used in this report). Panel B: *Data for Bratislava is 2015-2017.
Source: OECD (2022), OECD Regional Database (accessed 16 February 2022)

Evidence on digital awareness in Banská Bystrica is limited, but recent survey outputs are encouraging. A 2019 World Bank survey on the digital literacy of public transport users and not users in the Banská Bystrica region (World Bank, 2020[27]) revealed a widespread diffusion of smartphones among 16-26 year-old interviewees, which suggests a high level of digital awareness amongst this age group. Also, almost 70% of the transport users surveyed across all age groups used the Internet to obtain public transport information and nearly 50% used electronic transport payment systems. The relative diffusion of such digital services and solution suggests a good provision of basic digital skills among the Banská Bystrica population.

In all Slovak TL2 regions, ICT and digital skills seems to be in reasonably good supply by international standards. The average share of individuals using the Internet on a weekly basis in Slovak NUTS II regions (88%) is the same as in the Czech Republic and higher than in Poland (84%) and Portugal (80%). If Bratislava has the highest percentage of regular internet users among the peer European regions observed in Figure 6.9, Panel A (94%), the other Slovak TL2 regions also perform reasonably well by international standards (85-87%). The private use of e-commerce solutions also seems more common than in most peer regions abroad. The share of individuals who purchased goods and services online for private use over the previous year in Eastern Slovakia (73%) or Central Slovakia (75%) is higher than in any Polish or Portuguese comparator regions.

Figure 6.9. Internet use by individuals in Slovak NUTS II regions, 2021



Notes: Regions are defined at NUTS II level (see Box 6.1 for more information on current data limitations and the territorial classifications used in this report).
Source: Eurostat (2022), Regional statistics, Regional digital economy and society (accessed 31 March 2022)

There are deficiencies in transport and digital infrastructure, especially in Central and Eastern regions

In the Slovak Republic, the quality of transport infrastructure varies across regions. Despite the central position of the Slovak Republic and good access to large European markets, the country's transport networks are unbalanced, with uneven coverage across regions and rather poor inter-regional connectivity. The low quality of the infrastructure in the south and east of the country has affected FDI prospects in these regions (OECD, 2021[15]) with the costs of access from the east of the country to the rest of the EU estimated to be among the highest in the EU (Szczurek, 2017[28]). This has also an impact on inter-region access, trade and labour mobility.

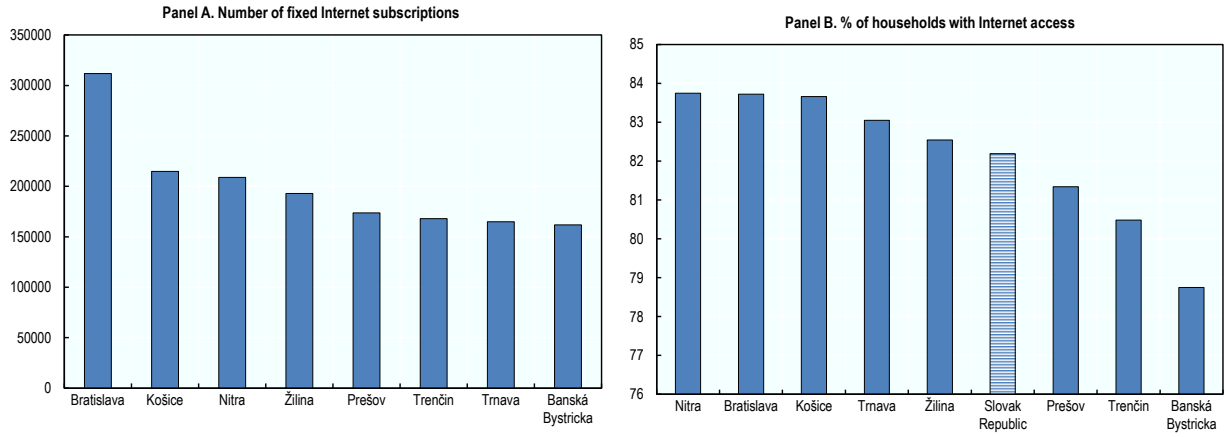
The Košice region is accessible through a well-developed transport network that converges towards the regional city of Košice. The international airport connects the city and the region to the capitals or business centres of European neighbours, such as Prague, Vienna, Warsaw, London, Munich and Dusseldorf (Košice Region Brussels Office, 2022[5]).

The transport network in Banská Bystrica has gaps that limit connectivity, especially in lagging districts. The Banská Bystrica region has a reasonably good road network, despite poor road surfaces in some remote areas (World Bank, 2020[27]). The main Slovak Republic's west-east motorway (D1) does not cross the region. However, the city of Banská Bystrica has a good highway connection to Bratislava. The regional international airport Sliac is used for chartered and private flights. The railway network quality is variable with speed restrictions and unreliability in some places. The region is not integrated in any trans-European rail corridor. Train service in mountainous areas is comparatively slow due to the tortuous curves in place

to traverse mountain ranges (SARIO, 2014[29]). By contrast, the bus network has a much higher geographical penetration, with currently 319 bus lines in the region, which are connected to interregional and international bus services (World Bank, 2020[27]).

Digital infrastructure development is also uneven across regions, with Banská Bystrica lagging behind. The intensity of broadband Internet access, together with the associated skills and capacities base, matter for a region's overall FDI attractiveness. Fixed internet subscription is significantly higher in the capital region than in any other region: 2019 figures indicate this is over 300 000 in Bratislava compared to approximately 210 000 in Košice and about 160 000 in Banská Bystrica (Statistical office of the Slovak Republic, 2020[8]). In Banská Bystrica, the share of household with Internet access (79%) is lower than in any other Slovak region and also significantly below the national average (82%). Košice, by contrast, performs in par with the capital region, with around 83% of households having access to the Internet (Statistical office of the Slovak Republic, 2020[8]).

Figure 6.10. Digital infrastructure in Slovak regions, 2019



Notes: Data refers to the eight Slovak self-governing regions, which are defined as TL3 regions in the OECD classification (and as NUTS III regions by Eurostat). (see Box 6.1 for more information on current data limitations and the territorial classifications used in this report). Data as of 31 March 2019.
Source: (Statistical office of the Slovak Republic, 2020[8]), Indicators T 17-1 and T 17-2.

6.3. FDI spillover potential

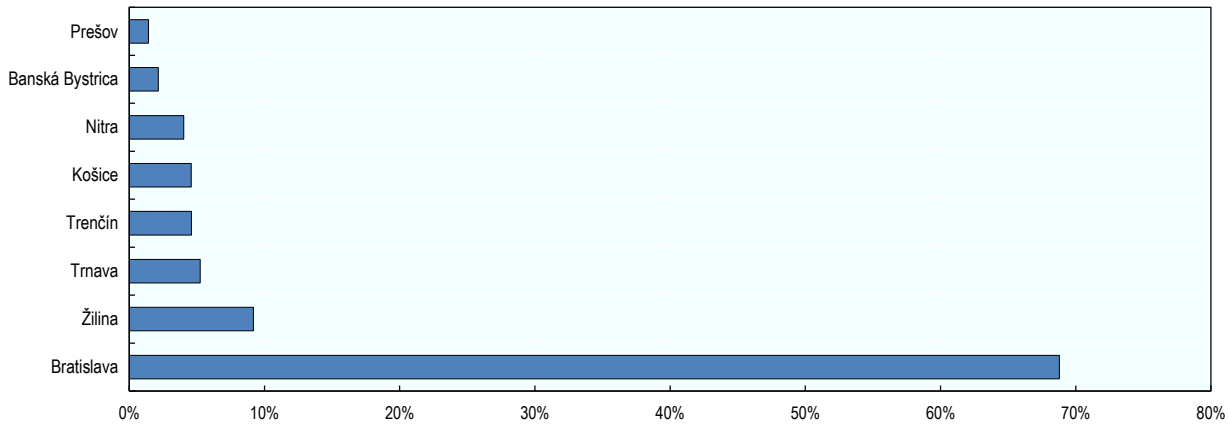
Inward FDI is concentrated in Bratislava while Košice drives the FDI performance of the East

The east-west divide in economic performance and competitiveness which characterises the Slovak Republic also affects regional FDI stocks (Fabus, 2018[30]) (OECD, 2021[15]). The places with the highest FDI stocks are almost exclusively situated in Western Slovakia. Similarly, the regions with the lowest level of FDI stocks are situated in Central and Eastern Slovakia (Dudás, 2019[31]).

The performance of Bratislava in terms of FDI attraction surpasses all other regions. In 2019, the Bratislava region accounted for 69% of the total FDI stock in the Slovak Republic – that is, almost five times the cumulative share of the next two best performing regions (Žilina and Trnava, 14% in total) (Figure 6.11). Statistics on the Bratislava FDI stock could however be influenced by methodological issues, e.g. concentration of company's headquarters in the capital city (Dudás, 2019[31]). But even looking beyond Bratislava, the FDI stock of western regions (Trnava, Trencín and Nitra, 14%) is higher than that of eastern regions (Košice and Prešov, 6%).

Figure 6.11. Slovak Republic FDI inward stock by region, 2019

% of total inward FDI stock, by region



Source: National Bank of Slovakia (NBS), "Foreign Direct Investment", www.nbs.sk/sk/statisticke-udaje/statistika-platobnej-bilancie/priame-zahranicne-investicie (accessed 18 March 2022).

The east-west divide in the FDI stock is also visible at the district level (Table 6.3). The top-10 sub-regional districts with the highest FDI stocks are almost exclusively located in Western Slovakia, with the five Bratislava city districts leading the ranking. All of the ten lowest ranking districts, by contrast, are located in central and eastern regions, with half of them in the sole Prešov.

Table 6.3. FDI inward stock in Slovak regions: top- and bottom-10 districts, 2019

Top-10 districts			Bottom-10 districts		
District name	Inward FDI stock (EUR)	L3 region	District name	Inward FDI stock (EUR)	L3 region
Bratislava I	13 936 643.43	Bratislava	Vranov nad Topľou	18 760.01	Prešov
Bratislava II	13 824 478.53	Bratislava	Rimavská Sobota	14 971.40	Banská Bystrica
Bratislava III	4 297 903.87	Bratislava	Trebišov	8 630.47	Košice
Žilina	2 753 274.94	Žilina	Turčianske Teplice	0.00	Zilina
Bratislava IV	1 748 044.64	Bratislava	Poltár	0.00	Banská Bystrica
Bratislava V	1 556 157.15	Bratislava	Levoča	0.00	Prešov
Košice II	1 161 323.19	Košice	Medzilaborce	0.00	Prešov
Senec	854 566.71	Bratislava	Stropkov	0.00	Prešov
Trnava	812 533.85	Trnava	Svidník	0.00	Prešov
Malacky	779 124.35	Bratislava	Sobrance	0.00	Košice

Note: The Slovak Republic is divided into 8 regions and 79 districts. With the exception of Bratislava and Košice, each district consists of a district capital and its surroundings. Bratislava and Košice are the largest cities in the country and they consist of five and four districts respectively. The ranking excludes the following nine districts, for which data is confidential: Banská Štiavnica, Bardejov, Detva, Gelnica, Košice II, Krupina, Sabinov, Snina, Stará Ľubovňa.
Source: National Bank of Slovakia (NBS), "Foreign Direct Investment", www.nbs.sk/sk/statisticke-udaje/statistika-platobnej-bilancie/priame-zahranicne-investicie.

The dominant share of the Bratislava region in total FDI stocks has remained substantially stable since 2012 (Grešš, 2019[32]). Bratislava's comparative advantage in attracting FDI is likely to be rooted in its more favourable geographical location, infrastructure endowment and entrepreneurial environment (Grešš, 2019[32]) (Dudás, 2019[31]). Furthermore, the country's key institutions are based in the capital region. The

regions to the west of the Slovak Republic – in very close proximity to the capital region – are, most likely, benefiting from agglomeration effects which are strongly associated with concentrated FDI efforts in Bratislava.

If the west benefits from its proximity to the capital region, the center and the east lag behind. Košice is rather isolated in Eastern Slovakia as a reasonably strong FDI performer. The region accounts for 5% of the Slovak Republic total FDI stock – in par to the contribution of Trnava, Trenčín and Nitra in the west – and is responsible for almost 80% of Eastern Slovakia total FDI stock, far outstripping the performance of Prešov (Figure 6.11). The four Košice city districts drive the regional performance, attracting more than 75% of total regional FDI stock (National Bank of Slovakia (NBS), 2022[33]). Despite its central geography, the very different economic structure in Banská Bystrica has led to a very limited share of inward FDI (only about 2% of the national stock). FDI is concentrated in the central-northern part of the region (Banská Bystrica and Zvolen districts), while southern districts – less industrialised and more peripherical to the regional economy – fail to secure significant investment inflows.

Announced new greenfield investment projects based on fDi Markets data (Financial Times, 2021[34]) show the primacy of Western Slovakia as target region for such types of investment. Bratislava attracted almost one third of total greenfield capital investment in the Slovak Republic between 2010 and 2020 and roughly a further third went to the other western regions (Nitra, Trnava and Trenčín). The Košice region secured around 5% of total inward greenfield investment over the same period, while Banská Bystrica attracted less than 3%, ranking last among Slovak regions. The distribution of new jobs created from greenfield FDI across regions reflects the geography of investment. Greenfield investment generated 4 935 new jobs in the Banská Bystrica region between 2010 and 2020 (4% of the total), that is, less than one seventh of the 37 107 new jobs created in the Bratislava region over the same period. The Košice region performed better, securing 8% of all the new jobs created at national level in 2010-20 (although also remaining far below the Bratislava region).

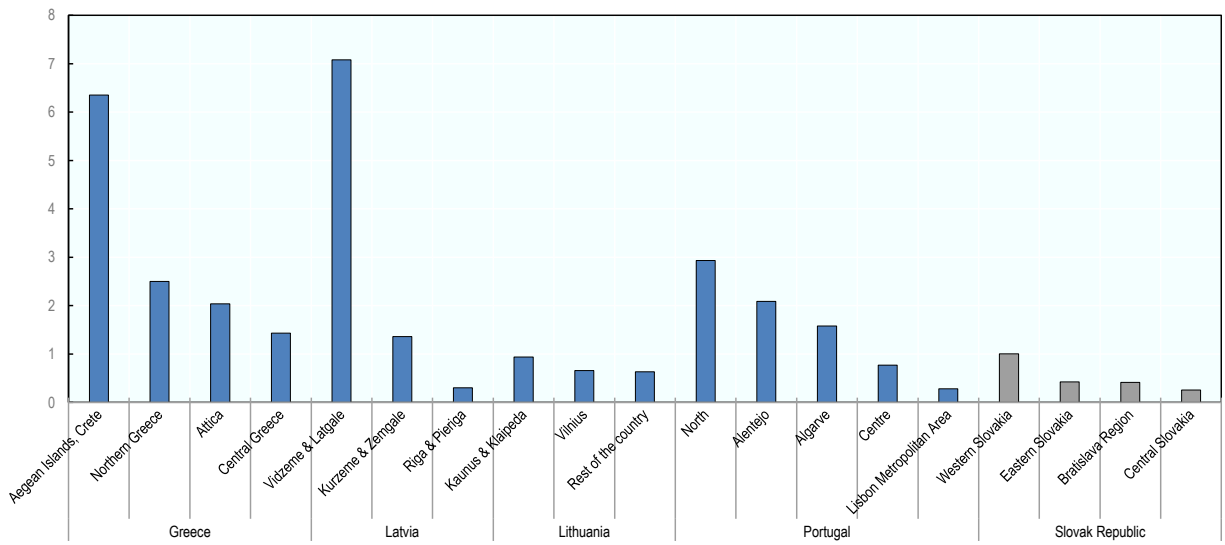
Productivity premia of foreign firms are low across all Slovak regions

Productivity spillovers from FDI are more likely to occur if foreign firms perform better than domestic firms (OECD, forthcoming[35]) (Chapter 2). A productivity premium of foreign firms is observed across Slovak NUTS II regions, but it tends to be lower than in EU comparator countries such as Portugal, Latvia or Greece (Figure 6.12). In line to what is observed in the selected benchmarking economies, productivity gaps tend to be smaller in metropolitan regions, namely Bratislava. Central Slovakia, where Banská Bystrica is located, exhibits the lowest productivity differences between foreign and domestic firms.

The existence of a productivity advantage of foreign firms over domestic firms suggests some potential for spillovers. However, if the productivity difference is too large SMEs may face difficulties in closing the gap. Relatively lower differences in productivity, by contrast, could suggest narrower performance gaps and better absorptive capacities of domestic SMEs, which could facilitate knowledge exchange with foreign partners.

Figure 6.12. Performance differences between foreign and domestic firms across regions, selected EU countries, 2019

Are foreign firms more productive than their domestic peers? (yes if value > 0; no if value < 0)



Note: See methodology in OECD (OECD, 2019[36]).
Source: (OECD, 2019[36]), *FDI Qualities Indicators* using data from the World Bank Enterprise Surveys.

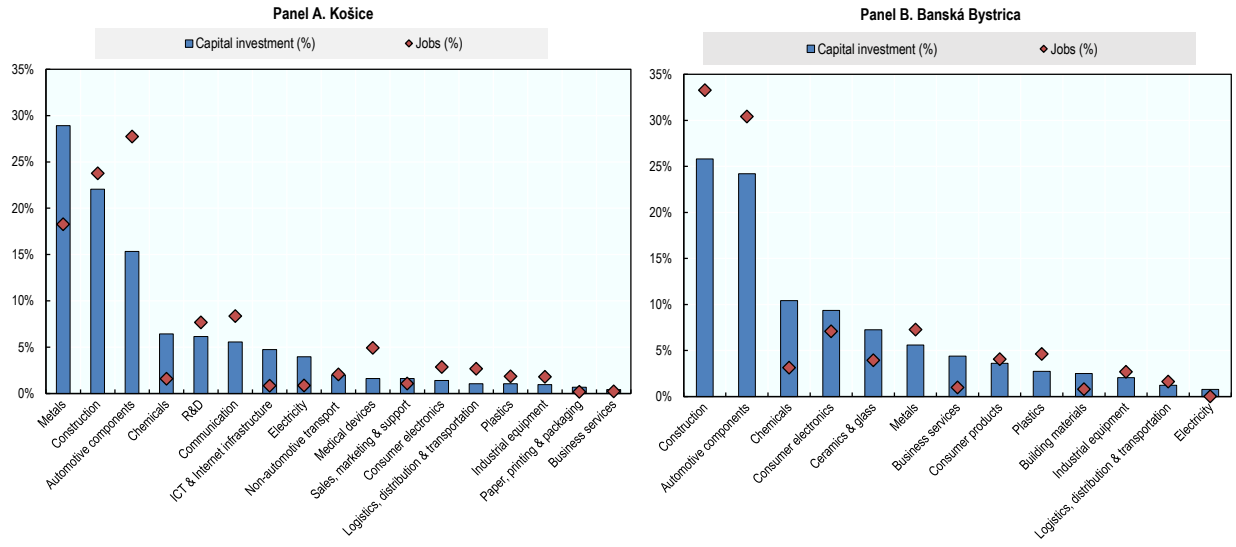
Greenfield investors in Košice and Banská Bystrica target a limited number of industries

Both in terms of capital investment and jobs created, greenfield investment in the Košice region is concentrated in a narrow number of industries, reflecting regional economic specialisation (Figure 6.13, Panel A). The metal industry (steel, aluminium and other fabricated metal products as well as machine shops, turned products, screws, nuts and bolts) is the main target of foreign greenfield investors in Košice, accounting alone for almost 30% of total inward capital investment and 20% of the related jobs generated in the region between 2010 and 2020. The construction and automotive components industries overall attracted a further 40% of total greenfield investment (and over half of all new jobs generated) over the same period. The remaining regional stock of greenfield investment is distributed across a broad range of industries, including chemicals; communication; ICTs and Internet infrastructure; energy; and a number of services of higher value added (e.g. R&D, sales, marketing and support).

Greenfield investment in Banská Bystrica is even less diversified. The construction and automotive components industries also account for the bulk of inward greenfield investment in Banská Bystrica (Figure 6.13, Panel B). Each of these industries attracted around one quarter of total investment received between 2010 and 2020 and one third of the jobs it generated. Other manufacturing industries – including chemicals, ceramics and glass, metals or plastics – account for the rest of the regional inward greenfield investment stock, while the services sector (mainly business services, logistics, distribution and transportation) attracted a much smaller share of investment in the period observed. The high sectoral concentration of greenfield FDI in the two regions presents vulnerabilities in these territories to any downturn in the related sectors.

Figure 6.13. Sectoral distribution of total inward greenfield investment in the Košice and Banská Bystrica regions in 2010-2020

In % of total capital investment and new jobs generated



Source: (Financial Times, 2021[34]), Financial Times fDi Markets database (accessed July 2021).

6.4. SMEs absorptive capacity

Both regions count mostly micro firms and SMEs are unevenly distributed across economic sectors and regional districts

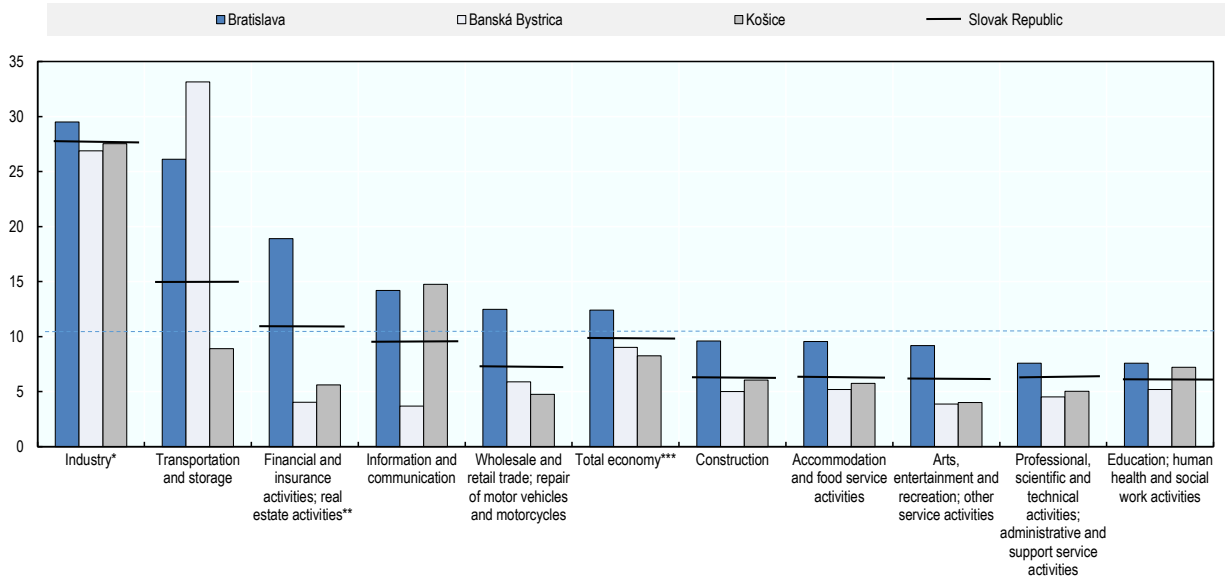
Micro firms account for the bulk of the business population in both Banská Bystrica and Košice. The Slovak business population is strongly characterised by micro and single person businesses (Chapter 2) (OECD, 2021[15]). The situation does not differ at regional level in both Banská Bystrica and Košice, where micro firms represent 90% of the total business population (OECD, 2022[37]). As observed at the national level, the prevalence of micro firms in the business population is a hampering factor for the aggregate productivity of these regional economies and can also deter foreign investment, reducing opportunities for FDI spillovers. Common challenges for micro businesses indeed include poor scale-up capacity and difficulties in absorbing knowledge and technology which can constraint the type of investments multinationals make in the regions.

SMEs density – i.e. the number of SMEs per 10 000 inhabitants – in Bratislava outstrips that of the other regions form the Slovak Republic (Table 6.4) (OECD, 2021[15]). Differences in SMEs density across regions outside the capital are also sharp. Banská Bystrica and Košice have the lowest SMEs density among Slovak regions.

Both in Košice and Banská Bystrica, SMEs operate in a limited number of sectors. In Banská Bystrica, firms above 10 employees are concentrated in the transportation and storage and industry sectors, while the rest of the economy appears to be dominated by micro firms (OECD, 2022[37]) (Figure 6.14). In sectors where SMEs are underrepresented, the likelihood of knowledge transfer from FDI to the domestic business centre is limited. In Košice, in addition to industry, some SMEs operate in information and communication, where firms register an above-average size of 14.7 employees each (the average in total economy being of 8 employees). This (most likely) reflects the dynamism of this fast-developing sector of the regional economy (Box 6.5) and increases the potential for FDI spillovers to materialise. In both regions, overall,

SMEs and large firms are less broadly represented across the economy than in Bratislava, where the average size of firms exceeds the threshold of ten employees in a larger number of economic activities, including wholesale and retail, financial and insurance activities and real estate activities.

Figure 6.14. Average size of employer firms, by sector, 2017



Notes: * Industry: excluding construction. ** Financial and insurance activities; real estate activities: except activities of holding companies. *** Total economy: industry, construction and services excluding insurance activities of holding companies.
Source: (OECD, 2022[37]), OECD Regional Statistics database: Business demography.

Both in Košice and Banská Bystrica, firms are unevenly distributed across sub-regional districts. SMEs and larger firms tend to cluster together in metropolitan and most developed areas, driving sharp sub-regional imbalances in entrepreneurial activity. This limits the potential for FDI spillovers to the local economy in the less developed districts, as foreign investors also tend to target the more industrialised and urbanised areas within the two regions. In the Košice region, the regional firm stock is concentrated around the capital (districts of Košice I-IV, Gelnica and Košice Okolie) – where almost all the large firms in the region also operate – while peripheric districts report less active firms (Statistical office of the Slovak Republic, 2020[8]) (OECD, 2021[15]). In Banská Bystrica, district-level differences in entrepreneurial activity are also sharp. Large firms above 50 employees appear to be concentrated in a few central and northern districts (e.g. Banská Bystrica (capital district), Banská Štiavnica, Brezno, Detva, Krupina). The number of active businesses in the capital district of Banská Bystrica is around 22 times higher than in the neighbouring districts of Žiar nad Hronom or Žarnovica.

Lower business survival and scale up capacity can prevent the formation of linkages with MNEs…

The Slovak Republic has one of the highest business start-up rates across OECD countries, but it also has among the lowest new enterprise survival rates – which most probably reflects the scale-up difficulties of its very large population of micro firms (Chapter 2). The rate of firm creation in Bratislava is lower than in the other Slovak regions (Table 6.4), but this suggests a more resilient SME and entrepreneurship ecosystem, with less firm deaths and higher survival rates (OECD, 2021[15]). In both Banská Bystrica and Košice, the rate of firms' death is about twice than in Bratislava, and only about 63% of new firms survive

three years after creation, against 67% in the Slovak Republic as a whole and about 80% in Bratislava (Table 6.4).

Low business survival rates in the two regions under review can deter FDI in these territories, not least because of an unpredictable supply chain. Targeted support and reforms to boost the survival rates of SMEs and micro businesses can generate a more attractive investment environment. Strategic collaboration efforts, which serve to benefit both MNEs and local businesses, can best be achieved in a more stable business environment (OECD, 2021[15]).

Table 6.4. SME and entrepreneurship activity by region, 2018

Region	Stock of active registered SMEs per 10 000 people	Rate of firm creation	Rate of firm deaths	Survival rate - one year after creation"	Survival rate - three years after creation
Bratislava	1 664	8.30%	4.40%	89.40%	79.70%
Žilina	955	10.70%	7.10%	81.00%	65.80%
Nitra	861	11.80%	7.70%	78.40%	63.70%
Trnava	832	10.10%	6.10%	82.40%	65.20%
Trencín	765	10.50%	7.70%	78.70%	64.00%
Prešov	730	13.50%	8.40%	72.60%	61.50%
Banská Bystrica	681	11.40%	7.60%	77.40%	63.50%
Košice	583	11.00%	7.40%	77.00%	62.60%
Slovak Republic	**874**	**10.60%**	**6.70%**	**80.40%**	**66.90%**

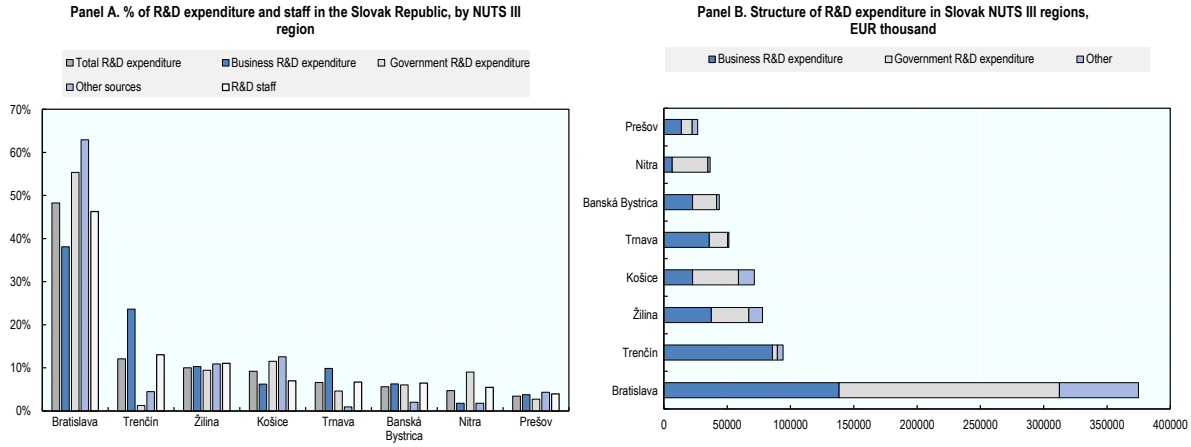
Notes: Calculated on the basis of the date of establishment and disestablishment of the entity. Number of newly born firms and number of firms deaths divided by the number of enterprise population (active and inactive).
Sources: (OECD, 2021[15]), *SME and Entrepreneurship Policy in the Slovak Republic*, p. 52, based on 2018 data from the Slovak Business Agency (SBA).

R&D capacity concentrates in the capital region

At the regional level, R&D capacity is concentrated in Bratislava. The capital region accounts for about half of total gross domestic spending on R&D in the Slovak Republic (Chapter 2) (Figure 6.15, Panel A). Bratislava also concentrates 55% of government R&D expenditure. Furthermore, Bratislava has 3.5 times as many R&D workers as Košice and over 7 times as many as Banská Bystrica (Statistical office of the Slovak Republic, 2020[8]). This indicates that skills, capacity and infrastructure related to R&D are mainly concentrated in the capital region, that contributes disproportionally to the national STI system.

Košice drives the R&D performance of Eastern Slovakia. It is the second Slovak region in terms of government R&D expenditure (accounting for 12% of the total) and R&D staff endowment (13%). It also accounts for 9% of total R&D expenditure in the Slovak Republic, ranking fourth across the eight NUTS III regions.

Figure 6.15. R&D capacity in Slovak regions, 2019



Notes: R&D personnel includes persons employed directly in the field of R&D as well as persons providing direct services to R&D (headcount). Other sources of expenditure: higher education institutions, private non-profit organisations and funding from abroad. Data refers to the eight Slovak self-governing regions. These correspond to the 8 OECD LT3 regions (OECD, August 2021[3]) and to the eight EU NUTS III regions of the Slovak Republic

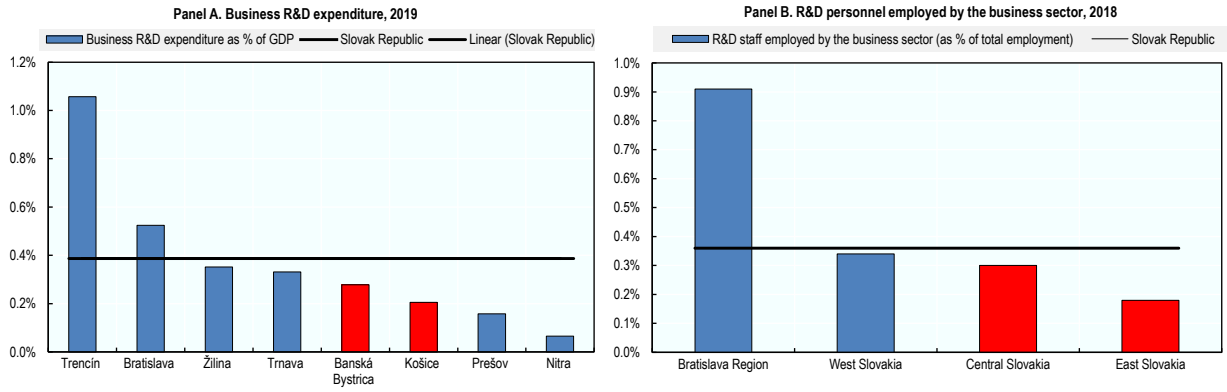
Source: Statistical office of the Slovak Republic (2020), *Yearbook of science and technology in the Slovak Republic 2020,* https://slovak.statistics.sk.

R&D expenditure in Slovak SMEs increased significantly in recent decades, but remains below the OECD average (Chapter 2). This is a constant feature across businesses of all sizes (e.g. even MNEs invest little in R&D by international standards), with a high concentration of business R&D in a few large companies in automotive and electronics sectors. This, in turn, reinforces and perpetuates the Slovak Republic' status as an assembly hub of intermediate, imported inputs, whose competitiveness is still derived from low production costs.

In absolute terms, business enterprises in Košice and Banská Bystrica spend almost the same amount in R&D – that is, about one sixth than in the Bratislava region. In Banská Bystrica, however, business R&D represents about half of total R&D spending, while in Košice business enterprises account for only 32% of total R&D – a figure that is more similar to that observed in Bratislava (37%) (Figure 6.15, Panel B). Like the capital region indeed, Košice attracts a higher share of R&D funding from government, HEIs, private non-profit organisations and foreign sources, resulting in a more diversified R&D expenditure structure. In western and northern regions outside the capital, the business sector accounts for a significantly higher proportion of total R&D expenditure – up to 70% in Trnava and 90% in Trenčin, which probably reflects the activity of larger firms (including multinationals) operating in the local manufacturing clusters.

In both Košice and Banská Bystrica, business R&D expenditure as a share of the regional GDP stands between 0.2 and 0.3%, which is lower than in the Slovak Republic as a whole (0.4%), and also ranks low across the eight NUTS III regions (Figure 6.16). The TL2 region of Eastern Slovakia, where Košice is located, also lags far behind the other NUTS II regions in terms of R&D staff employed by the business sector – i.e. 0.18% of total employment in 2018, which is about half than in Central and Western Slovakia (around 0.30%), as well as in the Slovak Republic as a whole (0.36%) (OECD, 2022[38]).

Figure 6.16. Business sector R&D in Slovak regions



Notes: Panel A: Data refers to the eight Slovak self-governing regions. These correspond to the 8 OECD LT3 regions (OECD, August 2021[3]) and to the eight EU NUTS III regions of the Slovak Republic. Panel B: Regions are defined as TL2 level based on the OECD territorial grid (OECD, August 2021[3]).
Source: Statistical office of the Slovak Republic (2020), *Yearbook of science and technology in the Slovak Republic 2020,* https://slovak.statistics.sk (accessed 23 May 2022); (OECD, 2022[38]), OECD Regional Statistics database: Regional Innovation (accessed 23 May 2022).

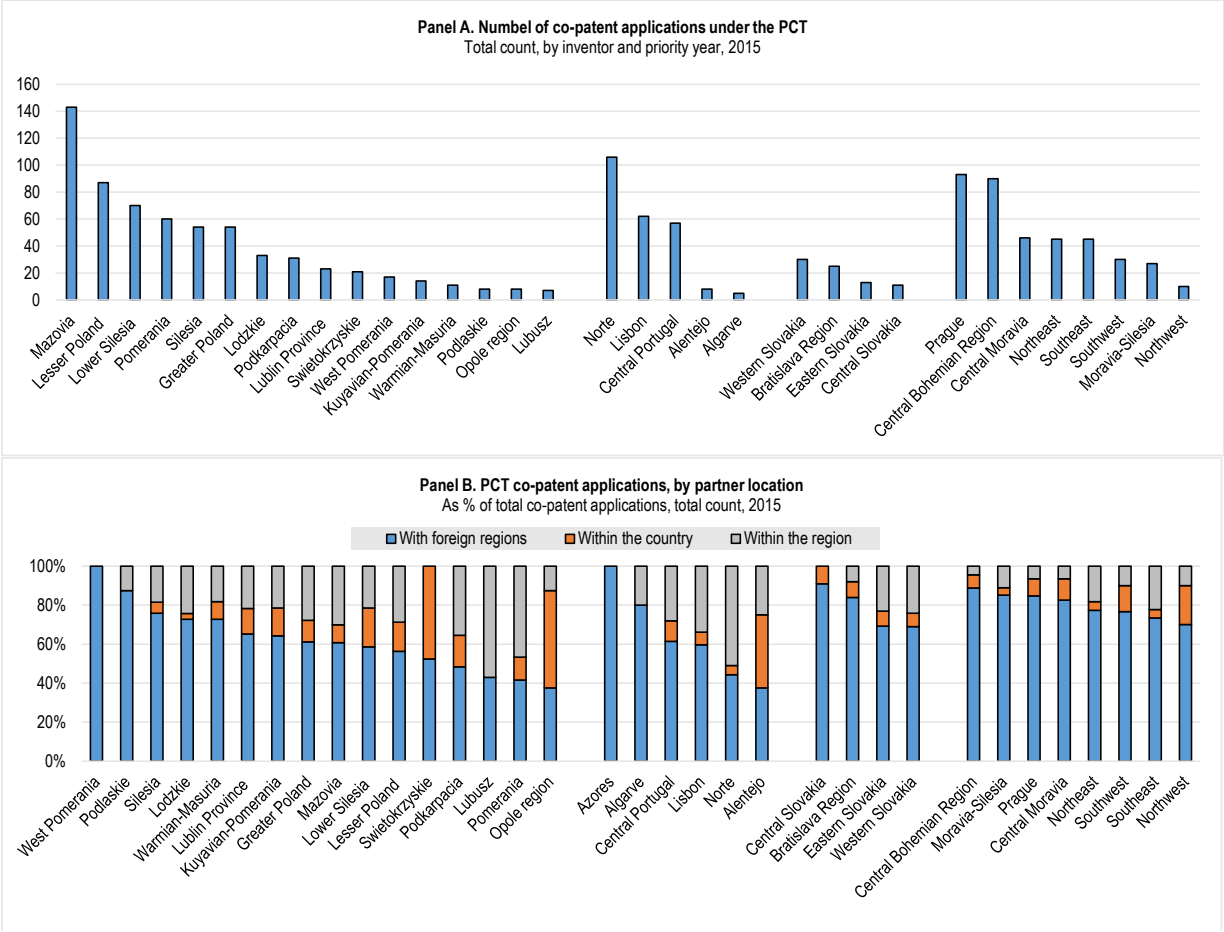
Firms in Eastern and Central Slovakia are relatively well integrated in international patent co-operation networks

The degree to which patenting results from collaboration (either within the same region or country or with foreign regions) may shed some light on the level of R&D co-operation and knowledge exchange in national or local economies. Co-patenting implies the ability to establish external contacts and collaboration to access knowledge, technology, competences and skills that are needed to innovate. Co-patenting involving foreign investors also provides some insights on the degree of research internationalisation and firms' integration in international knowledge networks (OECD, 2017[39]).

Overall, co-patenting is less diffused in Slovak regions compared to peer EU regions. In 2015, the number of co-patent applications filed under the Patent Co-operation Treaty (PCT) in Slovak regions compared low with peer regions in Portugal, Poland and the Czech Republic (Figure 6.17, Panel A).

International co-invention, however, seems relatively common among Slovak firms. In 2015, the share of co-patents involving partners from abroad was 90% in Central Slovakia, which ranks very high across comparator regions (Figure 6.17, Panel B). In Eastern Slovakia, almost 70% of co-patents resulted from collaboration with foreign regions, which is close to the average share of peer regions included in Figure 6.17.

Figure 6.17. Co-patenting in Slovak regions, 2015



Notes: Regions are defined as TL2 level based on the OECD territorial grid (OECD, August 2021[3]). Selected comparator regions are Portugal, Poland and the Czech Republic's TL2 regions.
Source: (OECD, 2022[38]), OECD Regional Statistics database: Regional Innovation (accessed 23 May 2022).

6.5. Regional governance and policy mix for FDI-SME spillovers

Promoting and facilitating productivity-enhancing FDI

SARIO's subnational offices in Košice and Banská Bystrica hold primary responsibility for FDI promotion in the two regions

Government agencies acting upon FDI-SME ecosystems have a larger footprint in Košice and Banská Bystrica than in any other regions outside the capital. Slovak government agencies have recently expanded their presence and services at subnational level through the establishment of regional offices and branches (Chapter 4). Outside Bratislava, Košice and Banská Bystrica host the majority of these subnational offices, reflecting their key relevance to the economy of Eastern and Central Slovakia (Figure 4.2). All the three main government agencies acting upon FDI-SME ecosystems under the Ministry of the Economy – namely the Slovak Business Agency (SBA), the Slovak Innovation and Energy Agency (SIEA) and the Investment and Trade Development Agency (SARIO) – operate regional centres in both Košice and Banská Bystrica. The presence and operation of these regional centres can be a factor in local FDI attraction and embeddedness, provided that effective linkages and collaborations are established with local investment promotion stakeholders (self-governing bodies, business networks and associations,

etc.). Adequate policy attention should be paid to providing these subnational offices with the necessary autonomy and resources to tailor their services to the particular needs of their local area, build their own contacts and brands, and lead partnerships with regional and local authorities (Chapter 4).

The Slovak Agency for Investment and Trade (SARIO) holds primary responsibility for FDI promotion in Banská Bystrica and Košice. In addition to its headquarters in Bratislava, SARIO operates two regional offices in Košice and Banská Bystrica, which ensure its presence and activity not only in the two regions in question but also in the wider TL2 regions of Eastern and Central Slovakia. Through its regional offices, SARIO is the main public agency for investment promotion and attraction in Košice and Banská Bystrica. Indeed, since the former East Slovakian Investment Agency ceased its operation in 2019, no autonomous subnational investment promotion agency seems to operate in Košice, Banská Bystrica or the neighbouring TL2 regions.

Governments can adopt a wide range of institutional arrangements for FDI promotion and facilitation at subnational level, depending among others on the country size, the overall level of centralisation of the economic policy and the related multilevel governance mechanisms (OECD, 2021[40]). Similarly to the Slovak Republic, many other OECD economies have a centralised system of national IPAs that interact with subnational branches, including Ireland or the Czech Republic (OECD, 2021[40]). Other IPAs do not have subnational branches and rather rely on autonomous subnational bodies and institutions for local investment promotion and facilitation – this is the case for almost half of OECD IPAs (OECD, 2018[41]).

There is room to enhance the level of collaboration and engagement of the local network of FDI promotion and facilitation stakeholders

As part of its pivotal role in regional investment promotion, SARIO's office in Košice interacts and maintains relationships with a wide network of regional stakeholders, mostly as information providers and reference suppliers. These include regional and municipal authorities, although poor organisation and co-ordination often limit the scope of self-governing bodies' contribution and engagement in investment promotion and facilitation activities (Capik, 2019[42]). The adoption of tailored co-ordination mechanisms could help overcome these challenges. For instance in Sweden, a code of conduct agreement among the national IPA and the regions was established to better communicate opportunities and encourage exchange of information. As another example, the French IPA (Business France) has designed a formal information-sharing process to increase the efficiency of the collaboration with France's 13 regions (OECD, 2021[40]) (OECD, 2018[41]).

The overall involvement of private capital in FDI promotion and facilitation activities in Banská Bystrica and Košice remains limited. The activities of the US Steel Economic Development Centre (EDC) in Košice between 2001 and 2007 represented a notable exception to the otherwise scarce engagement of private enterprises (Capik, 2019[42])(Box 6.3). Local chambers of commerce (such as the American ones – see also *infra*) also support SARIO's investment promotion activities in both Banská Bystrica and Košice by acting as information sources and networking platforms amongst their members. Collaborations with SARIO's regional offices are often project-specific and their intensity can vary on an ad hoc basis (Capik, 2019[42]).

Box 6.3. US Steel Economic Development Centre (EDC) in Košice

The US Steel Economic Development Centre (EDC) in Košice represented an interesting example of private capital participation in the investment attraction process, and a unique one in Central-Eastern Europe.

The EDC was founded in 2001 with the primary objective of contributing to regional promotion and investment attraction to Eastern Slovakia. The EDC was initially planned to operate for a two-year period, but US Steel Košice ended up running it for six years, unit it was moved under the umbrella of the Košice Self-governing region as of 1st January 2008.

The EDC developed an extensive network of partners including public institutions such as SARIO, local and regional authorities, and universities. Being a part of US Steel, the EDC could leverage the company's far-reaching international contacts in preparing and performing a variety of promotional activities, ranging from the publication of promotional materials to the organisation of road-shows. The Centre's promotional activities mostly targeted the United States and Canada and aimed to attract manufacturing investors with potential to have a positive impact on the regional labour market.

During its six years of operation, the Centre drew 26 foreign investors to Slovakia, corresponding to an aggregate investments of USD 250 million, creating over 4 000 new workplaces.

The model developed by the EDC has subsequently been emulated in other parts of Europe. Upon the purchase of the Serbian steelmaker, Sartid, US Steel opened a comparable Economic Development Centre in Belgrade.

Source: (Capik, 2019[42]); (The Slovak Spectator, 2008[43])

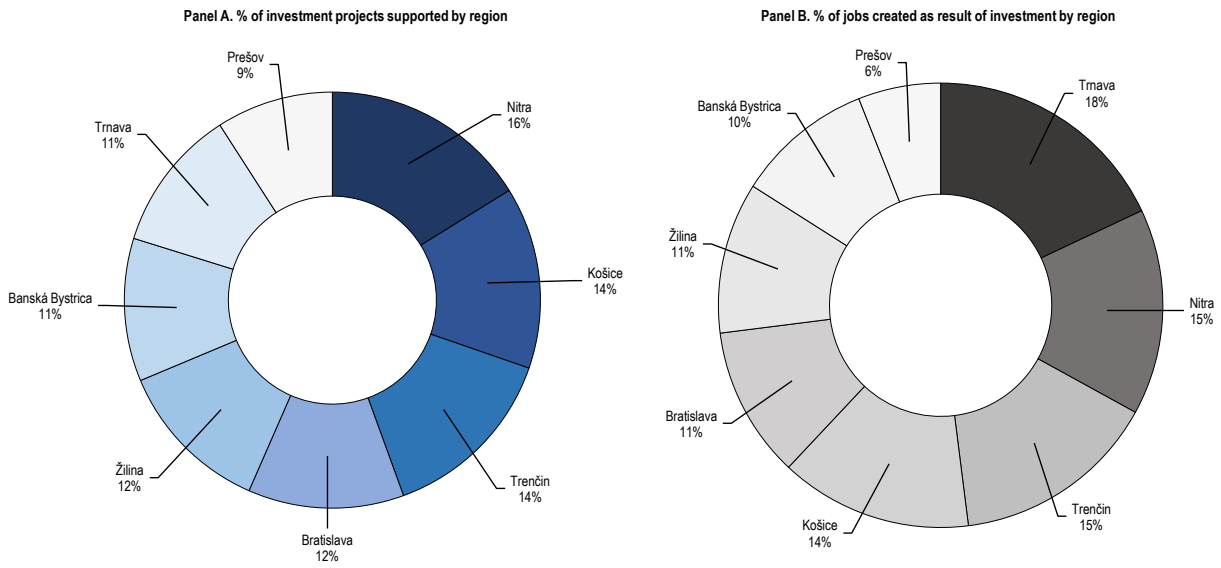
Košice is one of the largest beneficiary regions of SARIO's investment promotion and attraction activities, while Banská Bystrica has taken less advantage from them

Investment promotion agencies operating at subnational level play an essential role in reducing the information asymmetries that firms face when searching for a location and simultaneously use this knowledge of firm preferences to promote their regions (OECD, 2022[44]). In Banská Bystrica and Košice, SARIO's regional offices offer a variety of services aimed to promote and facilitate investment, support matchmaking between FDI and local firms and embedding FDI in the local economy. These services include the provision of information to foreign investors, including tailored analysis on the regional labour pool, the biggest local employers and potential sourcing partners. They also include consultancy services to foreign companies and support to networking between self-governing bodies; the local business sectors; regional universities and research institutions; and foreign investors. SARIO's regional offices also monitor and map available real estate in the regions and formulate tailored offers to local and foreign investors interested in starting or expanding their business in Central and Eastern Slovakia (SARIO, 2022[45]).

Košice is one of the largest beneficiary regions of SARIO's investment promotion and attraction activities, while Banská Bystrica seems to take less advantage from them. Since 2002, SARIO supported more than 600 investment projects at national level, whose regional distribution (also in terms of job creation) is shown in Figure 6.18. After Nitra, Košice appears to be the second largest beneficiary from SARIO's investment support activity, gathering 14% of all investment projects supported. The region also secured 14% of the jobs generated by the supported investment, ranking fourth across the eight Slovak NUTS III regions. Banksá Bystrica benefitted less from SARIO's FDI promotion activity. Only 11% of total investment projects supported by SARIO indeed, and 10% of the jobs generated, were located in the Banská Bystrica region – only the Prešov region in Eastern Slovakia ranks lower.

Overall, the proportion of investment projects supported by SARIO in central and eastern Slovak regions increased over the period 2002-21 (SARIO, 2022[46]). Moving ahead, due policy attention should be paid to boost this trend and at same time strengthening SARIO's focus on promoting and facilitating investment in lagging regions and districts, including Banská Bystrica and the less developed areas of Eastern Slovakia.

Figure 6.18. Regional distribution of successful investment projects supported by SARIO over 2002-21



Source: SARIO (2022), Overview of successful SARIO projects, www.sario.sk/sites/default/files/sario-success-stories-2022-03-01-sk.pdf

The recent adoption of a place-based approach in the design of investment incentives has not yet shown significant impact on the investment performance of the lagging regions

In the Slovak Republic, the majority of FDI-SME diffusion policies applies to all regions in equal terms (Chapter 5) (EC/OECD, 2021[47]). However, FDI promotion policies have a stronger regional focus compared to other policy areas, as for instance SME innovation support programmes, and seek to enhance investment attraction in lagging regions.

The adoption of a place-based approach in Slovak FDI policy is relatively recent. Some increased attention to regional convergence in the design of FDI promotion policies was observed since the early 2000s, mainly spurred by the EU enlargement process and an adaptation to the European state aid rules. Before then, FDI promotion policy in the Slovak Republic had no regional development focus (Šipikal, 2011[48]). As other central European economies in the same years, the Slovak Republic concentrated its policy efforts on attracting FDI within its borders, without prioritising less developed regions over the others (Fabus, 2018[30]).

The current Regional Investment Aid Scheme, adopted in 2018 – i.e. the main instrument to support and facilitate productivity-enhancing investment in the Slovak Republic – applies to all regions outside the capital and offers preferential conditions for investment in Central and Eastern Slovakia with a particular focus on the least developed districts (LDDs). Investment in Eastern Slovakia, including Košice, can benefit from an aid up to 50% of the eligible costs. For investment targeting Central Slovakia, where Banská Bystrica is located, the maximum investment aid is 40% of eligible costs. Eligible costs include the

purchase or rent of land and buildings, new technology and machinery, intangible assets (e.g. patents), or the wage costs of new employees for a 2-year period (SARIO, 2021[49]).

In spite of the strong regional imbalances, investment incentives in the Slovak Republic historically targeted the more developed regions (Fabus, 2018[30]). Over the period 2002-21, the Slovak Ministry of Economy awarded 235 investment incentives, about 85% of which targeted foreign investors (MH SR, 2022[50]). Table 6.5 details the results across regions. They show that the bulk of incentives was spent in the more developed areas of the country (Kristály, 2017[51]). In the east, Košice secured the fourth highest amount on incentives and the highest number of investment-driven jobs over 2002-21. The less developed central and eastern regions of Banská Bystrica and Prešov lag behind in terms of total amount of incentives received, volume of investment attracted and jobs generated. So far, the adoption of a more place-based approach in the design of investment incentives since 2018 seems to have had limited success in reversing these trends and raising the incentive shares of the lagging regions.

Investment incentives are a relatively common tool to address market failures, e.g. in the Slovak case lagging investment in the less developed regions, and narrow disparities in regional FDI attractiveness. Their implementation, however, requires regular monitoring to assess their effectiveness, evaluate the costs and benefits and ensure their transparency. In the Slovak Republic, the limitations recently introduced to state support in the most developed regions seem to have had limited impact as yet on regional disparities in incentives distribution, and therefore in investment attraction, across Slovak regions. Moving ahead, adequate evaluation and monitoring mechanisms should be put in place in order to carefully and regularly assess the efficiency of the existing financial incentive measures in supporting regional development and convergence in the Slovak Republic and allow for potential adjustments, in order to optimise the use of the public funding involved.

Table 6.5. Regional distribution of investment incentives in 2002-2021

Region	Number of incentives	Investment volume (eligible costs) (EUR million)	Planned number of jobs created (headcount)	Total incentive amount (EUR million)
Žilina	29	2 286	7 168	427
Nitra	32	2 572	11 937	390
Trnava	17	2 011	8 580	386
Košice	54	1 207	12 091	315
Trenčín	34	1 396	11 809	215
Banská Bystrica	37	577	7 834	153
Prešov	25	272	3 126	87
Bratislava	7	472	3 007	53
Slovak Republic	**235**	**10 794**	**65 552**	**2 028**

Sources: Ministry of Economy of the Slovak Republic (MH SR) (2022), *List of entities receiving regional investment aid*, www.economy.gov.sk/podpora-investicii/podpora-investicii/investicna-pomoc/zoznamy (accessed 11 April 2022); based on (Fabus, 2018[30]) .

Supporting entrepreneurship and innovation

Government innovation and entrepreneurship agencies have a fair footprint in Košice and Banská Bystrica

In both Banská Bystrica and Košice, government innovation and entrepreneurship agencies have a fair regional footprint. The Slovak Business Agency (SBA) and the Slovak Innovation and Energy Agency (SIEA), i.e. the main government agencies acting in the field of entrepreneurship and innovation support under the Ministry of the Economy, operate regional offices respectively in Košice and Banská Bystrica

(Chapter 4). The SBA's National Business Centres (NBCs) set up in the capital cities of both regions serve as one-stop-shops for the delivery of business development services through the organisation of seminars, creative workshops, mentorship and business incubation programmes.

Košice and Banská Bystrica also respectively host two of the five European Commission's Business Innovation Centres (BICs) established in the Slovak Republic, offering business counselling and consulting, investment consulting, information on (and linkages to) financing, technology transfer, advice on EU programmes, and networking opportunities (OECD, 2021[15]).

In spite of their legislative and financial constraints, self-governing bodies have a role to play in supporting regional entrepreneurship and innovation

Subnational tiers of government (i.e. regions and municipalities) in Slovak regions play an important role in supporting local entrepreneurial ecosystems through their wide range of responsibilities in the related areas of business development, education, infrastructure (including the construction and management of industrial parks) and supervision of economic activities (Chapter 4). For instance, the Košice regional and municipal governments support innovative entrepreneurship by facilitating networking, linkages and co-ordination between the different actors of the regional innovation and entrepreneurship ecosystem, including universities, research organisation, cluster organisations and other innovation stakeholders operating locally (Lavčák, 2015[52]).

The Banská Bystrica Self-Governing Region also supports innovation and entrepreneurship, either directly or through its agencies. In Banská Bystrica, regional government's initiatives for entrepreneurship and innovation include a publicly-available online directory of the companies operating in the region, which is searchable by economic sector and company size (Banská Bystrica Self-governing Region, 2022[53]). The Banská Bystrica Development Agency, which is established and financed by the Banská Bystrica Self-Governing Region with an annual budget of EUR 1.5 million in 2020, implements diverse policies in the area of entrepreneurship and innovation support, both autonomously and in co-operation with other institutions, including regional branches of government agencies such as SIEA or SBA. Box 6.4 provides some examples of these policy initiatives.

Limited powers and financial resources currently restrict the scope of action of regional governments in the areas of innovation and entrepreneurship (Balaz, 2011[54]). In the Slovak Republic, innovation policy is not devolved to subnational self-governing authorities. The lack of funding at the local level limits the effectiveness of self-governing bodies in implementing local and regional strategies, including in the area of entrepreneurship and innovation (OECD, 2021[55]). More financial and legislative autonomy could increase the scope for regional governments' action in support of regional innovation and entrepreneurship ecosystems (Horehajova, 2018[56]).

Box 6.4. Policy initiatives to support entrepreneurship and innovation in Banská Bystrica

Innolab

The pilot phase of this policy initiative was launched by the Banská Bystrica Development Agency at the beginning of 2021. Innolab is a physical space dedicated to stimulate regional creativity and innovation. It supports entrepreneurship development in the Banská Bystrica region through workshops, networking initiatives and support to the implementation of innovative business initiatives. Innolab aims to strengthen the capacity of regional firms and entrepreneurs to innovate and use new technologies, as well as develop skills in the local labour force in line with the needs of foreign firms. (www.innolabb.sk/)

Innovation Vouchers

The Innovation Vouchers initiative was launched in June 2021. The programme is implemented by the Banská Bystrica Development Agency in collaboration with the Slovak Innovation and Energy Agency (SIEA). Innovation Vouchers aim to promote and facilitate R&D and technology partnerships, as well as other types of collaborative projects (e.g. open innovation networks, joint bid for public procurement, etc.), among local businesses in the Banská Bystrica region. The programme targets all firms equally, irrespectively of their size or ownership (domestic vs. foreign). Beneficiaries include firms from all sectors, except fishery and aquaculture, as well as primary production, processing and marketing of agricultural products. (www.webnoviny.sk/vtechnologiach/siea-podpori-podnikatelov-v-banskobystrickom-kraji-dostanu-inovacne-poukazky-video/)

Source: (EC/OECD, 2021[47]), EC/OECD Survey on FDI-SMEs Policies in EU Member Countries.

Both regions have a fairly developed network of regional higher education and R&D institutions which may support local entrepreneurship and innovation ecosystems

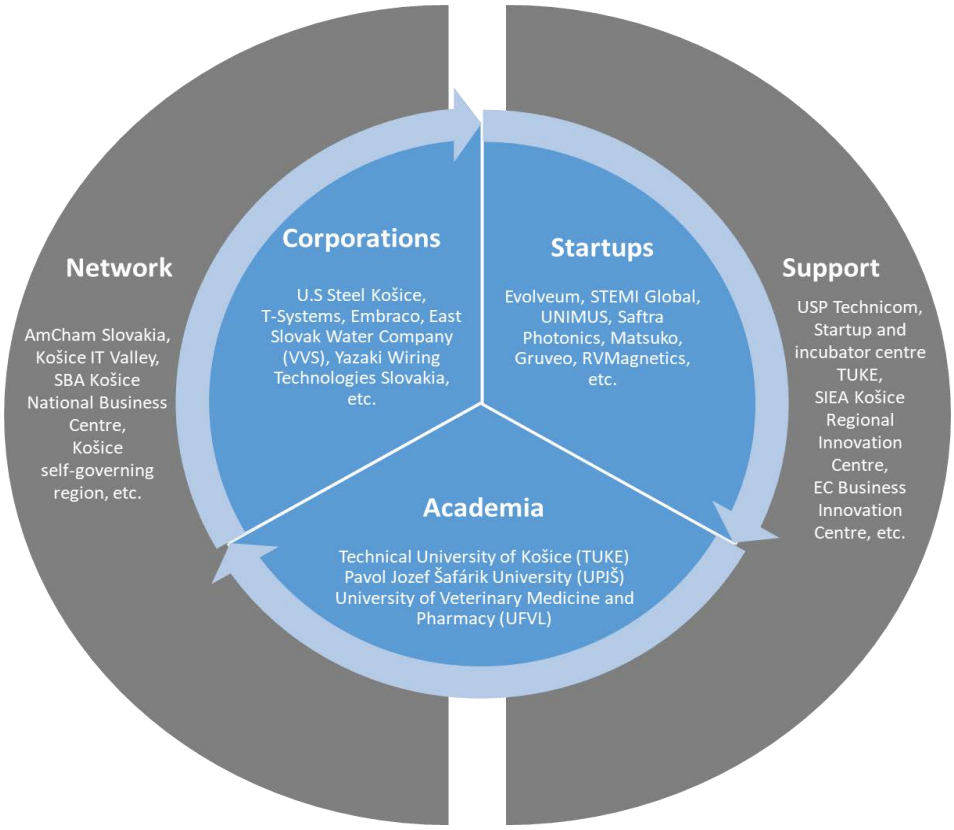
Both Košice and Banská Bystrica host universities and R&D institutions of national relevance, which may contribute to enhance the regional entrepreneurial and innovation ecosystems. Universities have a role to play in fostering the business and innovation environment in the regions where they are located, for instance by providing more opportunities for entrepreneurship education or developing research and innovation partnerships with the business sector. The Košice region, which hosts 13% of the country's university students, has three public universities: the Technical University of Košice (TUKE), the Pavol Jozef Šafárik University (UPJŠ), and the University of Veterinary Medicine and Pharmacy (UFVL) – all featuring research centres of national relevance in diverse fields, including natural science, energy, informatics, mechanical engineering and manufacturing technologies. The Slovak Academy of Science (SAS) – the main research performing institution in the Slovak Republic (OECD, 2016[57]) – also has a number of regional workplaces in Košice (7 specialised institutions including materials research, experimental physics, geotechnics, neurobiology, parasitology, livestock physiology and social sciences).

The Banská Bystrica region also has a fairly developed university network, featuring three public universities and the Faculty of Health of the Slovak Medical University based in Bratislava. The Matej Bel University (MBU) is the largest regional university based in the region's capital, Banská Bystrica. It was established in 1992 and is rather humanities-oriented, with 6 700 students in six faculties: economics, political sciences and international relations, natural sciences, arts, education and law (World Bank, 2020[58]). The Technical University in Zvolen (TUZVO), with 2 350 students, has a unique national specialization in wood and forestry sciences – which reflects the region's high levels of natural conservation (Lesáková, 2011[59]) and is also pertinent to the regional economy, offering opportunities for R&D collaboration with the private sector (e.g. wood processing companies and furniture producers) that could be further strengthened. The Academy of Arts (AoA) has approximately 600 students in dramatic, performing and fine arts. The Faculty of Health of the Slovak Medical University in Bratislava is also based in Banská Bystrica. It provides education in nursing, physiotherapy, and urgent medical care.

Several institutes of the Slovak Academy of Science (SAS) are also located in the Banksá Bystrica region. Among others, Inoval, a SAS research centre, specializes in aluminium research and is highly active in collaborating with industry. The centre was founded in the heart of the Slovak aluminium industry in the town of Žiar nad Hronom, where a cluster of aluminium companies is located. Inoval established five joint laboratories with industry, and supports PhD theses and diploma works. One of these joint research efforts resulted in a technology to produce car engine parts made of composites created from aluminium powders. The centre has other research lines pending and prototypes with potential for commercialization (World Bank, 2020[58]).

Universities can also support regional innovation and entrepreneurial ecosystems by providing entrepreneurship support infrastructure, particularly business incubators. The start-up and incubator centre at the Technical University of Košice (TUKE) focuses on innovative business projects from the Košice region. It supports the development of high-tech SMEs – both start-ups and spin-offs – mainly based on the outputs of research conducted under the aegis of the Slovak Academy of Sciences (SAS). The services provided include professional counselling, coaching and mentoring, and business models evaluation. The centre is a key component of the TUKE University Science Park (USP) TECHNICOM, a collaborative project conducted with the co-operation of the other universities in the region (https://startupcentrum.tuke.sk/).

Figure 6.19. Innovation and entrepreneurship ecosystem in the Košice region



Source: OECD based on American Chamber of Commerce (https://amcham.sk/policy-advocacy/regional-capital) and Interreg Europe (2020), *Interreg Europe Policy Learning Platform - Peer review: Košice Self-governing Region 2020*, https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/Peer_reviews/Peer_review_Kosice_self_governing_region_final_follow_up.pdf.

The overall lack of innovation capacity and culture in regional firms is a barrier to private sector engagement

Both Košice and Banská Bystrica witness examples of business associations' involvement in regional SMEs and entrepreneurship support. For instance, local chambers of commerce in both regions play a role in furthering the interests of SMEs and strengthening regional business and innovation networks. In Košice, among others, the American Chamber of Commerce (AmCham)'s has been supporting entrepreneurship and innovation networks in the region through its office in the capital since 2004. AmCham's activities focus on connecting companies, academia, startups and other actors involved in the development and creation of new jobs with high added value. AmCham has more than 70 member

companies operating in the east of the Slovak Republic. Every year, AmCham organizes in Košice the East Innovation Conference, attended by member companies, students, politics and the general public. The conference wants to point out positive examples of start-ups and established companies and their R&D centres and highlight the potential of the region of Eastern Slovakia in the field of innovation (https://amcham.sk/). In Banská Bystrica, the regional office of the Slovak Chamber of Commerce and Industry (SOPK) (www.sopk.sk/bb) provides a broad range of business support services such as legal and financial consultancy for entrepreneurs, trade information services, development of foreign trade relations, organization of trade missions, educational activities, or the organization of professional workshops, meetings and seminars.

The overall lack of innovation capacity and culture in regional firms currently represents a barrier to the direct engagement of the private sector in the development of the regional entrepreneurial ecosystem. In Central and Eastern Slovakia, the R&D and innovation capacity of the business sector is relatively weak by international standards and there is a high proportion of micro firms with limited scaling up and innovation potential in the total business population (see *infra* – SMEs absorptive capacity). This situation also appears to limit the capacity of the business sector to get involved in regional innovation and entrepreneurship policy making and implementation processes. The lack of innovation culture in smaller businesses is another factor that limits the private sector's engagement in regional entrepreneurship and innovation policy (Klimovský, 2011[60]).

There is a need to improve the monitoring and evaluation of regional innovation strategies

Even in the absence of a formal devolution of innovation policy, regions may tend to adopt governance frameworks such as innovation and entrepreneurship strategies to improve co-ordination among local innovation stakeholders and enhance the overall coherence of their policy action (OECD, 2011[61]). The adoption of regional innovation strategies in the Slovak Republic is relatively recent. The first two regional innovation strategies were developed for Bratislava and Nitra in the early 2000s. In the subsequent decade, innovation strategies were also adopted by the other six regions (Horehajova, 2018[56]). There is a lack of evidence and information on the outcomes of these first experiences and their overall impact on regional entrepreneurship and investment performance.

Since 2021, the Košice region has a new Regional Innovation Strategy 2021-2030, which aims to develop a modern and creative environment for the emergence of innovative companies with cutting-edge technology (Košice Self-Governing Region, 2021[62]). The strategy was established by the Kosice Self-Governing Region, which is also responsible for its implementation. The strategy was defined via a participatory process involving representatives from the public, business, academic and non-profit sectors.

The strategy aligns to Smart Specialisation Strategy (S3) principles and builds on the national Smart Specialization Strategy (RIS3) 2021+, as well as the Economic and Social Development Programme and the Integrated Territorial Strategy (IÚS) of the Košice Self-Governing Region (Košice Self-Governing Region, 2022[63]). The Strategy's focus on managing innovation and innovation processes is underpinned by strong coordination ambitions with national and regional innovation-oriented agencies or institutions. The strategy puts the accent on improving networking and connectivity among regional innovation actors and strengthening co-operation at regional level between research institutions and industry, thereby enhancing the commercial exploitation of R&D. It is unclear to what extent the strategy focusses specifically on FDI attraction or strengthening FDI-SMEs linkages for innovation, but its overall focus on supporting networking and collaboration among regional innovation actors could be conducive to raising the attractiveness of the regional innovation system to foreign investors. Appropriate monitoring and evaluation mechanisms will need to be adopted in order to assess the strategy's implementation and its impact on the regional investment performance.

With funding support from the 6th EU Framework Programme for Research, Technology Development and Demonstration, the Banská Bystrica region adopted a regional innovation strategy in 2008 (BabyRIS,

2008[64]). The Regional Innovation Strategy of Banská Bystrica Region (BabyRIS) was developed since 2005 with the assistance of two foreign and one national partners – the Abruzzo Region in Italy, the Southern Estonia Region and the Nitra Self-governing Region – which contributed their experience in the preparation and implementation of the innovation strategies in their respective territories. Based on a SWOT analysis, the strategy identified five priorities for the regional innovation policy: innovation policy and culture; human resources for innovation; cooperation in innovation development; support of innovative companies; regional infrastructure for innovation. It is unclear whether a specific timeframe was established for the implementation of this strategy or if any evaluation exercise has ever been undertaken to assess its progress.

Košice city offers one of the best business environment across the country

In the Slovak Republic, regulatory hurdles on Slovak entrepreneurs may vary significantly across regions and cities. The high level of decentralisation for providing administrative services such as construction permits and the small size of municipalities has led to important differences in business operating environments across the country. According to the WB Subnational Doing Business 2018 – which assessed the business regulatory environment in the five cities of Zilina, Prešov, Košice, Trnava and Bratislava (World Bank, 2018[65]) – the largest spatial variations in regulatory performance are in the areas of getting electricity, dealing with construction permits and enforcing contracts (Table 6.6).

Košice city offers the second best business regulation environment across the five benchmarked cities and ranks at the top in the area of enforcing contracts. Trial time at the court in Košice (about 15 months) is two months faster than in Bratislava (World Bank, 2018[66]) (although this is perhaps partially explained by the different caseload of the two cities).

Table 6.6. Ease of doing business in Slovak cities, 2018

			Starting a business		Dealing with construction permits		Getting electricity		Registering property		Enforcing contracts	
City	Aggregate Rank (1-5)	Average DTF score (0-100)	Rank (1-5)	Average DTF score (0-100)	Rank (1-5)	Average DTF score (0-100)	Rank (1-5)	Average DTF score (0-100)	Rank (1-5)	Average DTF score (0-100)	Rank (1-5)	Average DTF score (0-100)
Presov	1	78.78	1	84.73	1	62.91	2	86.27	4	90.17	2	69.81
Kosice	2	78.19	4	83.72	3	60.74	3	85.29	2	91.24	1	69.95
Zilina	3	77.82	1	84.73	5	57.90	1	88.41	3	91.00	4	67.08
Trnava	4	76.96	3	83.98	2	61.39	5	80.07	1	91.48	3	67.90
Bratislava	5	76.16	5	81.97	4	59.33	4	83.19	4	90.17	5	66.12

Notes: The distance to frontier (DTF) score shows how far a location is from the best performance achieved by any economy on each Doing Business indicator. The score is normalized to range from 0 to 100, with 100 representing the frontier of best practices (the higher the score, the better). For more details, see the chapter "About Doing Business and Doing Business in the European Union 2018: Croatia, the Czech Republic, Portugal and Slovakia" in (World Bank, 2018[65]). The data for Bratislava have been revised since the publication of Doing Business 2018. The complete data set can be found on the Doing Business website at http://www.doingbusiness.org. a. Based on the DTF scores for the five regulatory areas included in the table.
Source (World Bank, 2018[65]), *Doing Business in the European Union 2018: Croatia, the Czech Republic, Portugal and Slovakia.*

Overall, Slovak cities offer a good regulatory environment by international standards, except in some areas where challenges remain. All the benchmarked Slovak cities outperform the EU average in property registration, contract enforcement and (except Trnava) getting electricity. Processes related to starting a business, by contrast, tend to be more complex and lengthier than the EU average across all cities. Construction permits also remain one of the most challenging areas for cities of the Slovak Republic,

suggesting that the administrative burden reduction efforts at the national level have not trickled down to cities.

Small cities appear to be more business-friendly than the capital. Surprisingly enough, Bratislava – the economic centre and capital of the Slovak Republic – scores the worst by ease of doing business compared to the five other municipalities (Table 6.6). It is also the only benchmarked city not to rank at the top in at least one area. Improvements in the capital city performance would not only close the gap with the other cities but also be reflected in the country's global ranking.

Strengthening industrial clusters

A number of industrial clusters have started emerging which might enhance the development and convergence of entrepreneurial ecosystems in Slovak regions (Chapter 2). The Slovak Republic currently lacks a holistic regulatory framework on cluster support and development. At the institutional level, competence for implementation of cluster policy is fragmented across diverse ministries. In this context, clusters tended to emerge from the bottom-up, in the absence of specific policy support. To encourage the growth and flourishing of these emerging cluster initiatives, careful policy attention should be paid to improve their organisation, increase local autonomy and strengthen the support capacity of local authorities (OECD, 2021[55]).

The Košice region has invested in industrial clustering and developed rather extensive cluster experience in areas such as IT, robotics and automation. The region counts with two certified clusters:

- The Košice IT Valley is a formal cluster organisation founded in 2007 to create an IT ecosystem in the east of the country (Box 6.5). It was established as a joint initiative of educational institutions, regional public entities (namely the Košice Self-governing Region and the City of Košice) and leading IT companies. The cluster association contributes to strengthen the regional innovation ecosystem and provides a platform for co-ordination and information exchange between public entities, the business sector and the regional education and research institutions, also fostering the development of the ICT industry in the region (Agency for Support of Regional Development Košice, 2015[67]). The cluster counts over 55 members, combining education and public administration institutions, IT companies and a section of businesses beyond the IT sector, including US Steel Košice. From the outset, the cluster adopted a strong collaboration ethos across the region, as a response to industrial restructuring (OECD, 2016[68]). The cluster is involved in a number of EU projects including Interreg Europe and Urban Innovative Actions.
- The Automation and Robotics Cluster (AT+R) was established in 2010 with a strong internationalisation ambition and has been improving engagement in domestic and foreign markets. It supports diversification through combined innovation efforts in areas such as sensors and automated production systems and has been involved in EU Framework Programme projects. It offers a wide range of services, including testing, diagnostics and training.

Both the Kosice IT Valley and the AT+R cluster also have received an ECEI Bronze Label in 2013 (OECD, 2021[55]). The Košice IT Valley was also the first Central European Cluster to receive a ECEI Gold Label for cluster excellence management in 2015 (European Secretariat for Cluster Analysis (ESCA), 2022[69]).

Box 6.5. Košice IT valley and creative industry

The emergence of Košice IT valley has been driven by the Slovak integration into the European Union and the arrival of big global players and FDI in the early 2000s.

Small and micro IT firms of regional origin, sometimes spin-offs of the European Framework Programme projects, were born, supported by a new generation of graduates – or self-made men trained on computer games – surfing the wave of new programming languages, the growth of computer games, internet and mobile technologies. The process of e-government and orders passed through the Internet by the public administration also contributed to stimulate the IT business.

After the accession of the Slovak Republic to the EU (2004), key global players entered into the regional IT market, establishing subsidiaries. In particular, the arrival of the German T-Systems service centre changed the local ICT sector. T-Systems initiated the dialogue between the actors of the "knowledge triangle" – or "Triple Helix" (universities, public administration and firms) – and supported the establishment of the regional association "Košice IT Valley", which marked the first IT clustering initiative in the region.

In fact, the formation of the Košice ICT industry has been heavily supported by a reconfiguration of the local knowledge infrastructure. The orientation of regional research and educational organisations, earlier designed towards industrial applications, engineering and automation, was shifted towards informatics, business information systems, software/game/multimedia developments and web design, in order to support a fast-growing demand for ICT and creative skills on the regional labour market. In that sense, the establishment of the Košice IT Valley cluster was an important step towards strengthening cooperation between the creative and ICT sectors, the city of Košice becoming a hotspot for media arts (UNESCO, 2022[70]).

Source: Abridged from (Hudec and Šebová, 2012[71]), otherwise stated.

The Banská Bystrica region counts with two certified clusters:

- The Ipeľ Energy Enviromental Cluster (IPEEK) is a formal cluster organisation in the area of ecological waste management and renewable energy solutions established in the region since 2020. It counts with 16 members including firms, research organisations, universities and technology centres, 13 of which are SMEs (European Cluster Collaboration Platform (ECCP), 2022[72]). According to a recent survey, the clusters' activities over the period 2020-22 focussed on networking and human resources development. New R&D and innovation-related activities are expected to be undertaken in the next three years. A cluster development strategy up to 2023 has been developed, which stresses the importance of developing co-operation with universities and research institutions (Havierniková, 2022[73]).
- The REPRIK (Regional Innovation Industrial Cluster Rimavská Kotlina) cluster association was also established in 2020. It operates in the field of circular economy and innovative recycled material solutions. The cluster has 14 members, 9 of which are SMEs (European Cluster Collaboration Platform (ECCP), 2022[74]). The cluster membership features firms, universities and research organisations and other ecosystem actors. REPRIK also holds a ECEI Bronze Label from the European Cluster Excellence Initiative (ECEI), issued by the European Secretariat for Cluster Analysis (ESCA) (European Secretariat for Cluster Analysis (ESCA), 2022[69]) (REPRIK, 2022[75]).

An aluminium processing cluster is developing from the bottom-up in the Banská Bystrica region, particularly in the city area of Žiar nad Hronom (OECD, 2021[15]). The aluminium cluster is one former industrial sector supported by an injection of foreign direct investments, combining cutting-edge research and savvy producers linked to various value chains (World Bank, 2020[58]). The cluster was also triggered

by the Slovak Academy of Sciences founding a research and development (R&D) centre in the region (see *infra* – regional governance and policy mix). This has enabled R&D cooperation with local firms and the commercial application of innovative solutions. As a result, the cluster now involves a number of innovative, export-oriented companies.

Some policy efforts are being conducted in Banská Bystrica to support the emergence of new industrial clusters in the sectors of ICTs and heavy industry engineering. There are signs of increasing policy attention to industrial clusters at regional level. In 2021, the Banská Bystrica Development Agency launched a policy initiative aimed to support the creation of industrial clusters in the region. The initiative involves different regional stakeholders, with the Regional Development Agency of Banská Bystrica playing the role of coordinator and facilitator. The first supported clusters are in ICTs and heavy industry engineering. In 2021, both clusters held kick-off meetings, where several project proposals for clusters development were formulated. In addition to the two pilot clusters, there are plans to support more industrial sectors in the future. The programme targets all firms equally, irrespectively of their size or ownership (domestic vs. foreign) (EC/OECD, 2021[47]).

Conclusions

Table 6.7 summarises the main findings of the current section regarding the regional governance and policy mix for FDI-SME spillovers in Banská Bystrica and Košice and derives some policy recommendations from them.

Table 6.7. Regional governance and policy mix for FDI-SME spillovers: main findings and recommendations

Main findings	Recommendations
Promoting and facilitating productivity enhancing FDI	
Government agencies acting upon FDI-SME ecosystems have a larger footprint in Banská Bystrica and Košice than in most regions outside the capital, which may be a factor in local FDI attraction and embeddedness. Subnational branches of all the three main government agencies acting upon FDI-SME ecosystems under the Ministry of the Economy – namely the Slovak Business Agency (SBA), the Slovak Innovation and Energy Agency (SIEA) and the Investment and Trade Development Agency (SARIO) – operate in the regional capital cities.	Enhance the local embeddedness of subnational government offices by strengthening their linkages and collaborations with local investment promotion stakeholders (self-governing bodies, business networks and associations, etc.).
	Ensure that subnational government offices have sufficient autonomy and financial resources to tailor their services to the particular needs of their local area, build their own contacts and brands, and lead partnerships with regional and local authorities.
The regional offices of SARIO hold primary responsibility for FDI promotion in Banská Bystrica and Košice. Partnerships and co-operation with local FDI promotion and facilitation stakeholders (regional and municipal authorities, business associations, civil society) are rather informal and their intensity may vary on an *ad hoc* basis.	Support the adoption of formal mechanisms for more systematic co-ordination and information exchange with regional and municipal self-governing bodies in the area of investment promotion.
	Involve the private sector in FDI-SME promotion and facilitation activities by establishing local partnerships with strategically important enterprises and business associations.
SARIO's activity in Central and Eastern Slovakia has been increasing over the last decades, but the lagging regions and districts continue to benefit proportionally less – only 11% of all the investment projects supported by SARIO between 2002 and 2021 were located in Banská Bystrica, against 14% in Kosice.	Further strengthen SARIO's focus on promoting and facilitating investment in the lagging regions and districts of Central and Eastern Slovakia, including Banská Bystrica and eastern districts outside Košice, by supporting tailored activities and partnerships with local actors and leveraging local potential.
The recent adoption of a place-based approach in the design of investment incentives (Regional Investment Aid Scheme) has not yet shown significant impact on regional imbalances in investment attraction or on the traditional orientation of foreign investors towards the most developed regions, particularly in the West.	Ensure careful and systematic monitoring of the ongoing investment incentive scheme, to evaluate its costs and benefits, transparency and efficiency in addressing regional disparities in investment attraction.
Fostering entrepreneurship and SME innovation	

Although they have no direct competence in the area of innovation policy, self-governing regions in Košice and Banská Bystrica hold numerous responsibilities related to promoting innovation and entrepreneurship (e.g. in the areas of education, infrastructure and local development) and act in support of regional entrepreneurial ecosystems either directly or through their local agencies.	Enable the intervention of regional governments in the design and implementation of innovation and entrepreneurship policy and address the financial constraints that currently limit the scope and effectiveness of their action in such fields.
	Provide incentives for subnational authorities to develop competences and know-how and become more efficient in their efforts to promote local SMEs and entrepreneurship activity.
Both Košice and Banská Bystrica have a well-developed network of higher education and R&D institutions, which may contribute to enhance the regional entrepreneurial and innovation ecosystems. Regional universities also provide entrepreneurship support infrastructure, like the start-up and incubator centre at the Technical University of Košice (TUKE).	Strengthen the role of universities as key regional actors in entrepreneurial ecosystems by promoting academic entrepreneurship; entrepreneurship education; entrepreneurial spaces and start-up support for graduates; and encouraging them to provide innovation consultancy and support to regional SMEs.
Business and entrepreneurship associations contribute to the development of the regional entrepreneurial ecosystem by providing diverse business support services and acting as networking platforms for their respective communities of members.	Support the joint commitment across the public and private sectors for the development of regional entrepreneurial ecosystems.
	Create incentives for SMEs and larger firms to engage in business networks and association, to develop partnerships with regional authorities and to get involved in participatory policymaking processes at regional level.
Strengthen cluster organisations	
Košice has consolidated cluster experiences such as the Kosice IT Valley, a certified cluster association founded in 2007. Emerging industrial clusters also exist in Banská Bystrica, namely in the field of environmental and energy solutions, the circular economy and aluminium processing. Both regions are engaged in the support of emerging clusters, with promising outlook for regional entrepreneurship and SME development.	Support cluster management organisations via the provision of adequate resources, including targeted technical assistance for the development of strategies and operational activities.
	Support networking within and across clusters through targeted events, meet-ups and knowledge sharing platforms.

Source: Author's elaboration; (OECD, 2021[55]).

References

Agency for Support of Regional Development Košice (2015), *Responsible Innovation Road Map for Košice Region*, Interreg Central Europe project report, https://www.interreg-central.eu/Content.Node/ROSIE/CE1004-ROSIE-RM-PP03-ASRD.pdf. [67]

Alfaro, L. and M. Chen (2012), "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance", *American Economic Journal: Economic Policy*, Vol. 4(3): 30-55. [80]

Annoni, P. (2019), *The EU Regional Competitiveness Index 2019*, European Commission, https://doi.org/10.2776/046835. [22]

BabyRIS (2008), *Regional Innovation Strategy of the Banská Bystrica Region (BabyRIS)*, https://www.bbsk.sk/Portals/0/Files/doc/RisBBSK/3-regionalna-inovacna-strategia-banskobystrickeho-kraja.pdf. [64]

Balaz, V. (2011), "Innovation policies in the Bratislava region", *Prognostické práce*, Vol. 3, pp. 121-148, https://www.researchgate.net/publication/265360821_Innovation_policies_in_the_Bratislava_Region. [54]

Banská Bystrica Self-governing Region (2022), *Firmy. Database of Business Entities*, https://firmy.bbsk.sk/. [53]

Capik, P. (2019), *Foreign Investment Promotion. Governance and Implementation in Central-Eastern European Regions*, Palgrave Macmillan Cham, https://doi.org/10.1007/978-3-030-13658-1. [42]

Castro, F. (2000), *Foreign direct investment in the European periphery: The competitiveness of Portugal*, The University of Leeds, https://etheses.whiterose.ac.uk/2612/1/Castro_FB_LUBS_PhD_2000.pdf. [82]

Cech, V. et al. (2020), "Environmentally Degraded Mining Areas of Eastern Slovakia As a Potential Object of Geotourism", *Sustainability*, Vol. 12/6029, https://doi.org/10.3390/su12156029. [12]

Dudás, T. (2019), "Regional structure of foreign direct investment in Slovakia", *Ekonomický časopis, 67*, pp. 811-836, https://zbw.eu/econis-archiv/bitstream/11159/4235/1/168926389X.pdf. [31]

EC (2019), *European Regional Competitiveness Index 2019 Dataset*, https://cohesiondata.ec.europa.eu/d/if3f-yweu?category=Other-RCI&view_name=European-Regional-Competitiveness-Index-2019-index. [21]

EC/OECD (2021), *EC/OECD Survey on FDI-SMEs Policies in EU Member Countries*. [47]

European Cluster Collaboration Platform (ECCP) (2022), *"Ipel Energy Environmental Cluster"*, https://clustercollaboration.eu/content/ipel-energy-environmental-cluster (accessed on 28 April 2022). [72]

European Cluster Collaboration Platform (ECCP) (2022), *"Regionalny Priemyselny Inovacny Klaster Rimavska Kotlina Reprik"*, https://clustercollaboration.eu/content/regionalny-priemyselny-inovacny-klaster-rimavska-kotlina-reprik (accessed on 28 April 2022). [74]

European Commission (2021), *Slovakia: Investment for jobs and growth goal (ERDF and ESF+) eligibility, 2021-202*, https://ec.europa.eu/regional_policy/sources/graph/poster2021/sk.pdf. [4]

European Secretariat for Cluster Analysis (ESCA) (2022), *Official website*, https://www.cluster-analysis.org/. [69]

Fabus, M. (2018), *State aid and investment: Case of Slovakia*, https://www.researchgate.net/publication/329712563_State_aid_and_investment_Case_of_Slovakia. [30]

Financial Times (2021), *fDi Markets database*, https://www.fdimarkets.com/. [34]

Gregorová, B. (2018), "Tourism as an Instrument of Economic Development of the Banská Bystrica Self-Governing Region", *Przedsiębiorczość – Edukacja [Entrepreneurship – Education]*, Vol. 14, pp. 245–259, https://doi.org/10.24917/20833296.14.18. [7]

Gregorová, B. et al. (2020), "Transforming Brownfields as Tourism Destinations and Their Sustainability on the Example of Slovakia", *Sustainability*, Vol. 12/10569, https://doi.org/10.3390/su122410569. [13]

Grešš, M. (2019), *Slovakia economy briefing: Foreign Direct Investment in Slovakia*, China-CEE Institute, https://china-cee.eu/wp-content/uploads/2019/07/2019e0778%EF%BC%886%EF%BC%89Slovakia.pdf. [32]

GRNCOH (2014), *Case study report linked to EC Horizon (FP7) project: "Growth-Innovation-Competitiveness: Fostering Cohesion in Central and Eastern Europe" (GRNCOH), March*, http://www.grincoh.eu/working-papers?get=ae43cb7e92364659874d5bfce4d4d70d. [24]

Havierniková, K. (2022), *Clusters as platforms for business-research/research-business relations - Country Report: Slovakia*, https://v4clusters.sgh.waw.pl/sites/v4clusters.sgh.waw.pl/files/2022-02/Country%20report%20SK.pdf (accessed on 20 May 2022). [73]

Helpman, E., M. Melitz and S. Yeaple (2004), "Export Versus FDI with Heterogeneous Firms", *American Economic Review*, https://scholar.harvard.edu/files/melitz/files/exportsvsfdi_aer.pdf. [79]

Horehajova, M. (2018), *The Regional Innovation Policy: The Situation of Slovakia*, Springer, https://doi.org/10.1007/978-3-319-67101-7_5. [56]

Hudec, O. and M. Šebová (2012), "The ICT Sector Evolution in an Industrial Region of Slovakia", *Ekonomický časopis*, Vol. 60/1, pp. 65 – 82, https://www.sav.sk/journals/uploads/0622125601%2012%20Hudec-%C5%A0ebov%C3%A1-RS.pdf. [71]

Human Rights League and Mareena (2022), *Information for people coming from Ukraine*, https://www.ukraineslovakia.sk/ (accessed on 31 March 2022). [17]

Johanson, J. and J. Vahlne (1977), "The internationalization process of the firm - A model of knowledge development and increasing market commitments", *Journal of International Business Studies*, Vol. Vol. 8, No. 1. [81]

Klimovský, D. (2011), *Innovation Policy in the Slovak Regions*, Vega, Ljubljana, https://www.researchgate.net/publication/255172687_Innovation_Policy_in_the_Slovak_Regions. [60]

Košice Region Brussels Office (2022), *Economic and investment opportunities in the Košice region*, https://brusel.vucke.sk/en/economic-and-investment-opportunities-in-the-kosice-region (accessed 15 February 2022). [5]

Košice Self-Governing Region (2022), *Official website, Regional development*, https://web.vucke.sk/sk/kompetencie/regionalny-rozvoj/investicne-prostredie/regionalna-inovacna-strategia-2.html. [63]

Košice Self-Governing Region (2021), *Regional Innovation Strategy 2021-2030 (RIS KK 2021+)*, https://web.vucke.sk/files/sk/kompetencie/regionalny-rozvoj/koncepcne-materialy/ris/vo05zast25bod11-5main.pdf. [62]

Kristály, V. (2017), *INVESTIČNÉ STIMUL*, INESS, https://iness.sk/sites/default/files/media/file/pdf/INT/INT_1-2017_Investicne_stimuly.pdf. [51]

Lavčák, M. (2015), *The Late Turn-Out of the Slovak Startup Factories: Locational and Institutional*, http://www-sre.wu.ac.at/ersa/ersaconfs/ersa15/e150825aFinal01242.pdf. [52]

Lesáková, L. (2011), "The Process of Forming the Regional Innovation Strategy", *Acta Polytechnica Hungarica, Vol. 8, No. 1*, http://acta.uni-obuda.hu/Lesakova_27.pdf. [59]

MH SR (2022), *List of entities receiving regional investment aid*, Ministry of Economy of the Slovak Republic, http://www.economy.gov.sk/podpora-investicii/podpora-investicii/investicna-pomoc/zoznamy. [50]

National Bank of Slovakia (NBS) (2022), *"Foreign Direct Investment"*, http://www.nbs.sk/sk/statisticke-udaje/statistika-platobnej-bilancie/priame-zahranicne-investicie. [33]

NBPSR and ISA (2019), *Report on Productivity and Competitiveness of the Slovak Republic 2019*, https://ec.europa.eu/info/sites/default/files/economy-finance/7814_report-on-productivity-and-competitiveness-of-the-slovak-republic-npb-isa-final2.pdf. [20]

OECD (2022), *Adult education level* (indicator), https://doi.org/10.1787/36bce3fe-en (accessed on 25 October 2022). [25]

OECD (2022), "Measuring the attractiveness of regions", *OECD Regional Development Papers, No. 36*, https://doi.org/10.1787/fbe44086-en. [18]

OECD (2022), *OECD Economic Surveys: Slovak Republic 2022*, OECD Publishing, Paris, https://doi.org/10.1787/78ef10f8-en. [23]

OECD (2022), *OECD Regional Database: Regional economy*, http://stats.oecd.org/Index.aspx?DataSetCode=REGION_ECONOM (accessed on 16 February 2022). [11]

OECD (2022), *OECD Regional Statistics database: Business demography*. [37]

OECD (2022), *OECD Regional Statistics database: Innovation*. [38]

OECD (2022), *OECD Regional Statistics Database: Regional demography*, http://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR (accessed on 17 February 2022). [6]

OECD (2022), *Strengthening FDI and SME Linkages in Portugal*, OECD Publishing, Paris, https://doi.org/10.1787/d718823d-en. [44]

OECD (2021), *Country statistical profile: Slovak Republic 2021/1*, http://www.oecd-ilibrary.org/economics/country-statistical-profile-slovak-republic-2021-1_g2g9ea7a-en;jsessionid=FkXTSambx6wmzlzHIF1WNiCl.ip-10-240-5-80. [26]

OECD (2021), *Middle East and North Africa Investment Policy Perspectives*, OECD Publishing, Paris, https://doi.org/10.1787/6d84ee94-en. [40]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/97a5bbfe-en. [76]

OECD (2021), *SME and Entrepreneurship Policy in the Slovak Republic*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/9097a251-en. [15]

OECD (2021), *SME and Entrepreneurship Policy in the Slovak Republic*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/9097a251-en. [55]

OECD (2019), *FDI Qualities Indicators: Measuring the sustainable development impacts of Investment*, OECD Publishing, Paris, http://www.oecd.org/investment/fdi-qualities-indicators.htm. [36]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://doi.org/10.1787/d2b72934-en. [77]

OECD (2018), *Mapping of investment promotion agencies in OECD countries - OECD*, OECD, Paris, http://www.oecd.org/investment/Mapping-of-Investment-Promotion-Agencies-in-OECD-Countries.htm. [41]

OECD (2018), *Promoting innovation in established SMEs, OECD SME Ministerial Conference, Mexico City, Policy Note, 22-23 February 2018*, http://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf. [78]

OECD (2017), *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*, OECD Publishing, Paris, https://doi.org/10.1787/9789264268821-en. [39]

OECD (2016), *Making the Most of Public Investment in the Eastern Slovak Republic*, OECD Multi-level Governance Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264253261-en. [68]

OECD (2016), "Slovak Republic", in *OECD Science, Technology and Innovation Outlook 2016*, OECD Publishing, Paris, https://doi.org/10.1787/sti_in_outlook-2016-84-en. [57]

OECD (2012), *Promoting Growth in All Regions*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264174634-en. [2]

OECD (2011), *Regions and Innovation Policy*, OECD Reviews of Regional Innovation, OECD Publishing, Paris, https://doi.org/10.1787/9789264097803-en. [61]

OECD (2009), *How Regions Grow: Trends and Analysis*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264039469-en. [1]

OECD (forthcoming), *Enabling FDI diffusion channels to boost SME productivity and innovation in EU countries and regions: Towards a Policy Toolkit. Revised Concept Paper*, OECD Publishing, Paris. [35]

OECD (August 2021), *OECD Territorial grids*, OECD Centre for Entrepreneurship, SMEs, Regions and Cities, https://www.oecd.org/regional/regional-statistics/territorial-grid.pdf. [3]

OECD/UCLG (2019), "2019 Report of the World Observatoty of Subnational Finance and Investment. Country Profile: Slovak Republic", https://www.sng-wofi.org/country-profiles/Fiche%20SLOVAK.pdf. [83]

Pwc Slovakia (2022), *Rules for entry into the Slovak Republic from Ukraine. Practical guide and necessary information for refugees fleeing war in Ukraine.*, https://www.pwc.com/sk/en/tax-services/rules-of-entry-into-the-slovak-republic-from-ukraine.html (accessed on 31 March 2022). [16]

REPRIK (2022), *REPRIK Home*, https://www.reprik.eu/ (accessed on 28 April 2022). [75]

SARIO (2022), *Overview of SARIO's successful projects*, https://www.sario.sk/sk/investujte-na-slovensku/prehlad-uspesnych-projektov-sario. [46]

SARIO (2022), *SARIO in partner regions*, https://www.sario.sk/en/invest-slovakia/sario-partner-regions. [45]

SARIO (2021), *Investment incentives in Slovakia*, https://sario.sk/sites/default/files/sario-investment-aid-eng-2021-08-03.pdf. [49]

SARIO (2014), *Banská Bystrica Region*, https://www.sario.sk/sites/default/files/content/files/sario-banskobystricky-kraj_0.pdf. [29]

Šipikal, M. (2011), *Concentration of FDI and regional disparities - The role of regional policy*, https://www.researchgate.net/publication/239811159_Concentration_of_FDI_and_regional_disparities_-_The_role_of_regional_policy. [48]

Statistical Office of the Slovak Republic (2019), *Banská Bystrica in figures 2019*. [9]

Statistical Office of the Slovak Republic (2019), *Košický Kraj in figures 2019*. [10]

Statistical office of the Slovak Republic (2020), *Regional statistical yearbook of the Slovak Republic 2020*, https://slovak.statistics.sk/wps/portal/!ut/p/z1/tZFLU8IwFIV_DcuQNI8mXRZhShEdASs0GydNU4nQB1hB_r2p48LHwIwLs7iTe-fLnXNyoIQrKCt1sE-qtXWltq5Ppf8447EYDLwQIc6GKJ4kw1m0CDxEEVx-B8TtfITi-_Aumk-oAxiUI98_QAmlrtqmXcO0zI7UGpgKNK9ZD7mytRulremhwynbq8qArzMqcO7nmgPfYxRQxX. [8]

Szczurek, M. (2017), *The Slovak Republic diagnostic paper:Assessing progress and challengesin developing a sustainable market economy*, European Bank for Reconstruction and Development (EBRD), https://www.ebrd.com/publications/country-diagnostics. [28]

The Slovak Spectator (2008), "U. S. Steel Košice in it for the long-term", *The Slovak Spectator*, https://spectator.sme.sk/c/20028305/u-s-steel-kosice-in-it-for-the-long-term.html. [43]

UNESCO (2022), *Creative Cities Network: Kosice*, https://en.unesco.org/creative-cities/kosice (accessed on 16 February 2022). [70]

US Steel Košice (2022), *US Steel Košice official website*, https://www.usske.sk/en/about-us/corporate-info/company-profile (accessed 10 March 2022). [14]

World Bank (2020), *Linking Industry and Research in the Banská Bystrica Region (BBSK)*, https://www.bbsk.sk/Portals/0/catchingup/2021/LINKING%20INDUSTRY%20AND%20RESEARCH%20IN%20THE%20BANSKA%20BYSTRICA%20REGION_EN.pdf. [58]

World Bank (2020), *Slovakia Catching-up Regions: Digitalization of Public Transport in the Banská Bystrica Region*, World Bank, Washington DC, https://documents1.worldbank.org/curated/en/099045101252239295/pdf/P1730740a33bd903a0b3bc0aa639f01007d.pdf (accessed 31 March 2022). [27]

World Bank (2018), *Doing Business in the European Union 2018. Fact Sheet: Slovakia*, World Bank, Washington DC, https://subnational.doingbusiness.org/content/dam/doingBusiness/media/Fact-Sheets/SubNational/DB18-EU2-Slovak-EN-Factsheet.pdf. [66]

World Bank (2018), *Doing Business in the European Union 2018: Croatia, the Czech Republic, Portugal and Slovakia*, World Bank, Washington, DC., https://subnational.doingbusiness.org/content/dam/doingBusiness/media/Subnational-Reports/DB18-EU2-Report-ENG.PDF. [65]

World Economic Forum (2019), *The Global Competitiveness Report 2019*, https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf. [19]

Notes

[1] The special status of "city" is granted by the Parliament to municipalities that are considered administrative, economic and cultural centres. They are in charge of providing public services to neighbouring municipalities (OECD/UCLG, 2019[83]).

[2] A downturn in demand, following the global health pandemic and changing market conditions, is however likely to generate job losses.

Strengthening FDI and SME Linkages in the Slovak Republic

This report assesses the linkages between foreign direct investment (FDI) and domestic small and medium-sized enterprises (SMEs) in the Slovak Republic. It provides policy recommendations to national and subnational governments on how to foster productivity and innovation spillovers from FDI to the local economy. The report looks at the quality of investment the country attracts, the absorptive capacity of Slovak SMEs, and a broad range of economic, business and policy conditions that can strengthen knowledge and technology diffusion from FDI to domestic SMEs. It also provides a diagnostic assessment of the core FDI-SME spillover diffusion channels, namely value chain linkages, strategic partnerships, labour mobility, and competition and imitation effects. The report provides an overview of the Slovak policy arrangements for promoting international investment, SME performance and innovation, and regional development. It does so by taking a close look at multi-level coordination, stakeholder consultation and impact evaluation. It then reviews the policy mix in support FDI-SME linkages and spillovers and proposes concrete areas for further policy reforms. The last chapter introduces a regional lens, focusing on the regions of Banská Bystrica and Košice. This report is part of a multi-year European Commission-OECD project on strengthening FDI-SME ecosystems and is the second pilot review for future country assessments.

Co-funded by the European Union

PRINT ISBN 978-92-64-47812-1
PDF ISBN 978-92-64-60637-1

9 789264 478121