

Chapter 10. Innovation policy for SMEs (Dimension 8b) in the Western Balkans and Turkey

This chapter assesses policies and infrastructure for fostering innovation in small and medium-sized enterprises (SMEs) in the Western Balkans and Turkey. It starts with an overview of the assessment framework and the progress made since the last assessment in 2016. It then analyses the four sub-dimensions of Dimension 8b: 1) policy framework for innovation, considering the overall strategic approach to innovation; 2) government institutional support services for innovative SMEs, looking at the physical infrastructure to support SME innovation; 3) government financial support services for innovative SMEs, assessing the availability and scale of direct and indirect financial schemes; and 4) SME and research institution collaboration, asking whether policy approaches seek to establish links between academia and industry. Each sub-dimension concludes with key recommendations to support SMEs in becoming more innovative.

Key findings

- **Progress has been made in developing holistic innovation frameworks**, and the majority of the assessed economies have an innovation strategy in place, or are in the process of renewing one.
- **Horizontal co-ordination of innovation policy has improved** across the region, with national councils for innovation established in four economies. However, monitoring and evaluation of policy implementation is largely insufficient.
- **Governments have scaled up financial support for innovation.** While donor support remains critical, a few governments have allocated significant budgets to sustain this type of policy support in the long term.
- **Most economies have introduced a mix of financial instruments to support firms' innovation and technology development.** However, with the exception of Turkey, none of the assessed economies have capitalised fully on the potential of indirect financial support – such as fiscal measures to encourage investments in research and development – as a cost-effective policy tool.
- **Disbursement rates of funds earmarked for innovation are often low**, suggesting there is room to increase SMEs' awareness to absorb available funds, and to improve the design of financial instruments.
- **Young companies increasingly benefit from a solid infrastructure of incubators** that also extends to regions outside the main economic hubs. A small number of accelerators has been developed through private sector initiatives as well.
- **Several economies have established science and technology parks, technology institutes and technology transfer offices**, but it is too early to evaluate their impact.
- **The first regional venture capital fund – the Enterprise Innovation Fund (ENIF) – has started operating** in the Western Balkans, backed by the European Union and several international financial institutions. The number of investments made so far has been relatively low – 16 at the time of writing.
- **Effective programmes to encourage industry-academia collaboration remain scattered.** Government efforts to foster collaboration seem to be hampered by the private sector's poor perception of public research institutes' capacity, and the lack of an environment encouraging academic staff to engage in joint activities with the private sector.

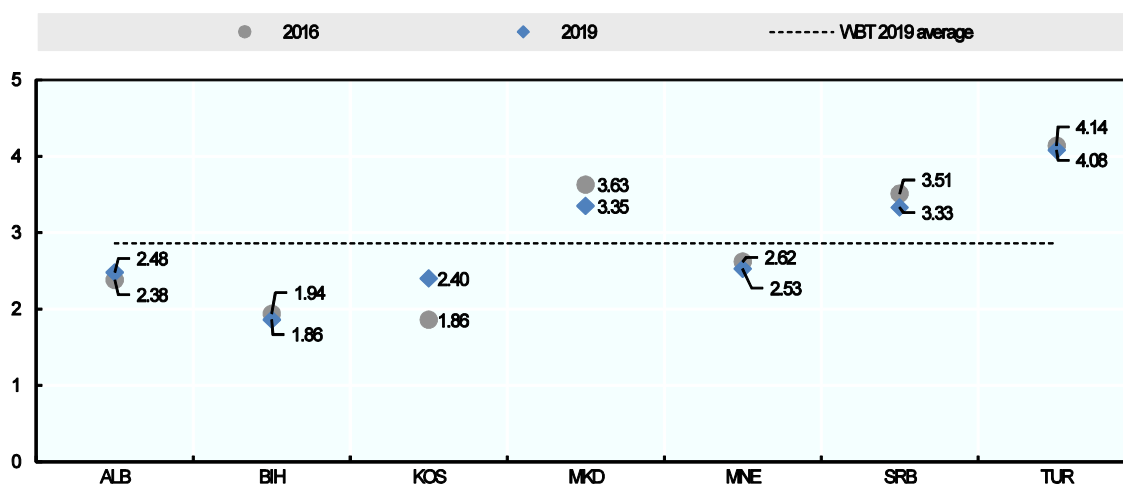
Comparison with the 2016 assessment scores

Overall, the innovation policy scores of the Western Balkan and Turkey (WBT) economies have changed little since the last assessment in 2016. Kosovo* has recorded the largest improvement, yet this partially reflects the fact that it was starting from a low

* This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo's declaration of independence.

base (Figure 10.1). The assessment found a two-tier performance among the economies, with the Republic of North Macedonia, Serbia and Turkey having more developed innovation ecosystems underpinned by solid public policy tools and instruments.

Figure 10.1. Overall scores for Dimension 8b (2016 and 2019)



Note: Scores for 2019 are not directly comparable to the 2016 scores due to a methodological change increasing the focus on implementation. Therefore, changes in the scores may reflect the change in methodology more than actual changes to policy. The reader should focus on the narrative parts of the report to compare performance over time. See the Policy Framework and Assessment Process chapter and Annex A for information on the assessment methodology.

Implementation of the SME Policy Index 2016 recommendations

The WBT economies have at least partially addressed all the recommendations made in the 2016 assessment (OECD et al., 2016^[1]), as shown in Table 10.1. They have taken a number of actions to enhance innovation policy frameworks and governance, while scaling up financial support to boost innovation activities and technology commercialisation. In contrast, concrete measures to ensure the long-term sustainability of financial instruments and reduce donor dependency, or to promote an holistic ecosystem approach to innovation, have been limited.

Table 10.1. Implementation of the SME Policy Index 2016 recommendations for Dimension 8b

Overall 2016 recommendations	SME Policy Index 2019	
	Main developments during the assessment period	Regional progress status
Develop and adopt policy frameworks and well co-ordinated governance structures	- Albania, Serbia and Montenegro have adopted new innovation strategies; Turkey was preparing a new one at the time of writing. - Serbia has established an intra-ministerial council; Kosovo has set up a dedicated Ministry of Innovation and Entrepreneurship.	Advanced
Promote an “ecosystem” approach to innovation	- Little progress has been made to promote an holistic approach to innovation, and initiatives remain fragmented. - Holistic co-ordination mechanisms that include all stakeholders are largely absent, and policy measures are ill-designed to support enterprises throughout all stages of the business cycle.	Limited
Further develop innovation-related	- The hard infrastructure to support innovation has evolved, particularly in Montenegro (Technopolis), Serbia (Belgrade STP) and Turkey, where new	Moderate

infrastructure	incubators, technology parks, technology development zones and STPs are operational.	
Promote co-operation between academia and private sector	<ul style="list-style-type: none"> - Turkey continues to offer large-scale programmes to support R&D and commercialisation; Serbia has introduced a new instrument to foster industry-academia collaboration. - Serbia and Turkey have or are implementing reforms to the IPR legal framework to encourage patent applications. 	Limited
Further promote financial instruments covering the entire financial cycle	<ul style="list-style-type: none"> - All economies have implemented direct financing instruments for innovation, but scale often remains limited. Most notably, North Macedonia and Serbia have increased the scale of financial instruments, which are well used in Serbia, but disbursements in North Macedonia are quite low. Albania has established a small-scale fund for innovative projects; Kosovo launched its first-ever innovation fund in 2018. 	Moderate
When developing innovation-related infrastructure, economies should focus on the development of a sustainable business model	<p>A large proportion of financial and technical assistance continues to be provided through international donors; however, there have been some encouraging trends:</p> <ul style="list-style-type: none"> - The government provides significant funding in Turkey; Serbia and, most recently, North Macedonia have provided some national budget contributions to more recently launched financial schemes by their respective innovation funds. - Both Albania and Kosovo have allocated small-scale funding to financing schemes. - All Western Balkan economies, except for Bosnia and Herzegovina, have made financial contributions to the Western Balkans Enterprise Development & Innovation Facility. All economies have contributed to the Horizon 2020 programme. 	Limited

Note: IPR – intellectual property rights; R&D – research and development; STP – science and technology park.

Introduction

Innovation, as defined by the OECD *Oslo Manual*, is the “implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” (OECD/Eurostat, 2005^[2]).

There is a clear link between firm innovation and productivity. Innovations help firms to boost growth and productivity, even if only a small percentage of them advance to the global technological frontier (EBRD, 2014^[3]). Firms’ capacity to create knowledge largely depends on external factors. The quality of institutions, rule of law, availability of a skilled labour force and labour regulations are identified as greater constraints to doing business by innovative firms than those that do not engage in product innovation. For smaller firms, these are even more important.

Against this background, supporting the development of a knowledge economy and boosting innovation capacity have become priorities for governments around the globe. While it is imperative for policy makers to build a broader knowledge-enabling business environment, they also need to emphasise supporting innovation at enterprise level, for instance in the form of financial and technical support schemes available to local businesses or by building a strong ecosystem conducive to innovation by firms.

The Small Business Act for Europe identifies a number of practices to support innovation in SMEs, and encourages governments to undertake activities in the following broad areas:

- strengthening programmes to promote innovative clusters and networks, and provide support to high-growth enterprises (particularly SMEs)
- ensuring simplified access to public research infrastructure and national research programmes, and active participation of SMEs in transnational research activities
- fostering innovative activities and the commercialisation of knowledge through the development of financial and non-technological support services for small businesses (EC, 2008^[4]).

Assessment framework

Structure

This chapter analyses the innovation policy framework and the available public support to foster innovation in SMEs in the WBT region. The analysis hinges around four sub-dimensions:

- **Sub-dimension 8b.1: Policy framework for innovation** looks at the overall strategic approach of innovation policy and its implementation, and how SMEs are covered by this framework.
- **Sub-dimension 8b.2: Government institutional support services for innovative SMEs** reviews the physical non-financial infrastructure to support innovation in SMEs across all stages of the business cycle.
- **Sub-dimension 8b.3: Government financial support services for innovative SMEs** assesses the availability and scale of direct and indirect financial schemes to stimulate innovation by firms.

- **Sub-dimension 8b.4: SME and research institution collaboration and technology transfer** examines policy approaches to establishing linkages between academia and industry, both financial and non-financial, and reviews the legal framework for intellectual property protection.

Each sub-dimension assesses the policy performance by dividing it into two or three thematic blocks. Figure 10.2 shows how the sub-dimensions, thematic blocks and their constituent indicators make up the assessment framework for the innovation policy for SMEs dimension.

The assessment was carried out through collection of qualitative data with the help of questionnaires filled-out by governments, as well as face-to-face interviews undertaken with SME owners and managers. In addition to collecting qualitative inputs, an integral part of the assessment was the compilation of quantitative data on certain indicators that were requested from the economies' statistical offices.

Where applicable, findings are confirmed with underlying statistical evidence of firm innovation, R&D activity and development of a knowledge economy. However, statistical data is currently not consistently present across the region. For more information on the methodology see the Policy Framework and Assessment Process chapter and Annex A.

Figure 10.2. Assessment framework for Dimension 8b: Innovation policy for SMEs

Innovation policy for SMEs			
Outcome indicators Number of SMEs introducing product, process, marketing or organisational innovations % of innovative SMEs collaborating with each other % of SMEs giving employees some time to develop or try out a new approach or new idea about products or processes Number of patents and utility models registered			
Sub-dimension 8b.1: Policy framework for innovation			Sub-dimension 8b.2: Government institutional support services for innovative SMEs
Thematic block 1: Strategic approach	Thematic block 2: Co-ordination of innovation policy	Thematic block 3: Implementation of innovation policy	Thematic block 1: Incubators and accelerators
			Thematic block 2: Technology extension services for established SMEs
Quantitative indicators Gross domestic expenditure on R&D (% GDP) Number of actions implemented in the innovation strategies or related policy documents			Quantitative indicators Number of incubators and accelerators Amount of public financial support allocated to incubators and accelerators, and technology extension services
Sub-dimension 8b.3: Government financial support services for innovative SMEs			Sub-dimension 8b.4: SME and research institution collaboration and technology transfer
Thematic block 1: Direct financial support		Thematic block 2: Indirect financial support	Thematic block 1: Innovation voucher schemes and co-operative grants
			Thematic block 2: Institutional infrastructure for industry-academia co-operation
			Thematic block 3: Intellectual property rights
Quantitative indicators Direct government funding of business R&D (% GDP) Tax incentives for business R&D expenditures (% GDP)			Quantitative indicators Number of science and technology parks, technology centres and technology transfer offices Amount of public financial support allocated to vouchers and co-operative schemes

Note: The outcome indicators serve to demonstrate the extent to which the policies implemented by the government bring about the intended results, and they have not been taken into consideration in the scoring. By contrast, quantitative indicators, as a proxy for the implementation of the policies, affect the overall scores.

Key methodological changes to the assessment framework

While the content of the analysis remains largely unchanged since the 2016 assessment, the framework has been restructured based on the approach developed in the *OECD Reviews of Innovation Policy* (OECD, 2018^[5]). An additional thematic block has been introduced to recognise the importance of effective collaboration between SMEs and research institutions to enhance technology transfer and commercialising innovations. This and other changes are highlighted in Table 10.2.

Table 10.2. Key changes in the composition of Dimension 8b

Sub-dimension	Key changes since the 2016 assessment
Sub-dimension 8b.4: SME and research institution collaboration and technology transfer	<p>New thematic block added: "Innovation voucher schemes and co-operative grants"</p> <p>"Institutional infrastructure for industry-academia co-operation" moved out of Sub-dimension 8b.1 and added to Sub-dimension 8b.4.</p> <p>"Intellectual property rights" moved out of Sub-dimension 8b.3 and added to Sub-dimension 8b.4.</p>

Other sources of information

In addition to the assessment framework, the analysis of this dimension also draws on information and data from the European Innovation Scoreboard 2018 (EC, 2018^[6]) and other European Commission (EC) sources, such as data on the use of Horizon 2020 funds; as well as the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute of Statistics. To assess innovation and intellectual property protection, data from the World Economic Forum's Global Competitiveness Index were also used (WEF, 2017^[7]).

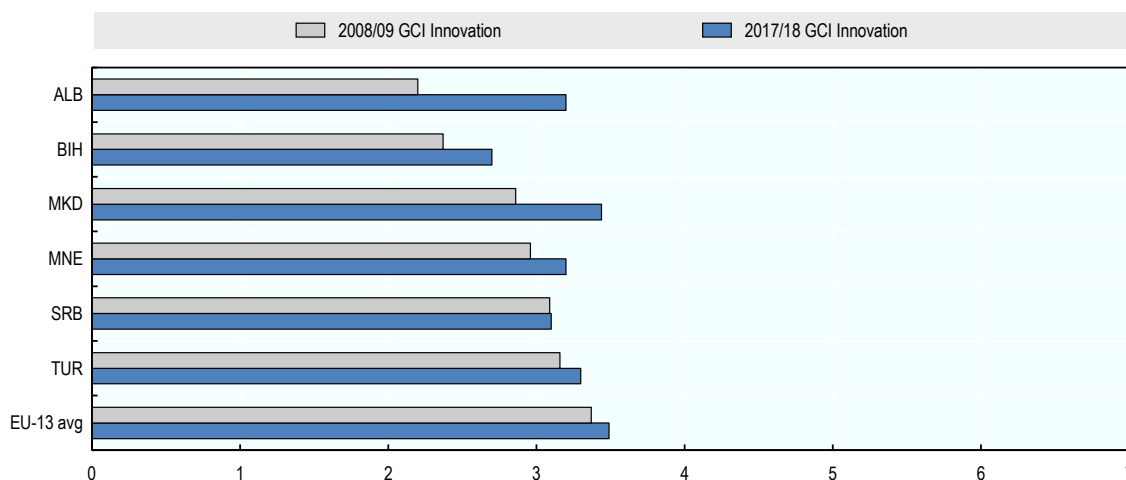
Analysis

Performance in innovation policy for SMEs

Outcome indicators play a key role in examining the effects of policies, and they provide crucial information for policy makers to judge the effectiveness of existing policies and the need for new ones. Put differently, they help policy makers track whether policies are achieving the desired outcome. This analysis section starts by drawing on the outcome indicators chosen for this dimension (see Figure 10.2) to assess how innovative the Western Balkan and Turkey economies are.

The WBT region has substantially improved its innovation performance in the past decade, but it continues to lag significantly behind European peers.

The European Innovation Scoreboard 2018 identifies those economies included in the EC's assessment – North Macedonia, Serbia and Turkey – as modest or moderate innovators, although it emphasises that they have been starting to strongly catch up the EU countries and improve their overall performance in recent years (EC, 2018^[6]). Similarly, the World Economic Forum's analysis in the Global Competitiveness Index confirms that the gap is closing (Figure 10.3). Although the WBT economies continue to perform less well than their European peers in innovation, the last ten years have seen a rise from an average score of 2.8 in 2008/09 to 3.2 in the 2017/18 index. This reflects an overall increase in the economies' capacity to innovate, in their policy frameworks for innovation, as well as in the quality of their scientific research institutions.

Figure 10.3. WBT innovation scores in the Global Competitiveness Index (2008 and 2017)

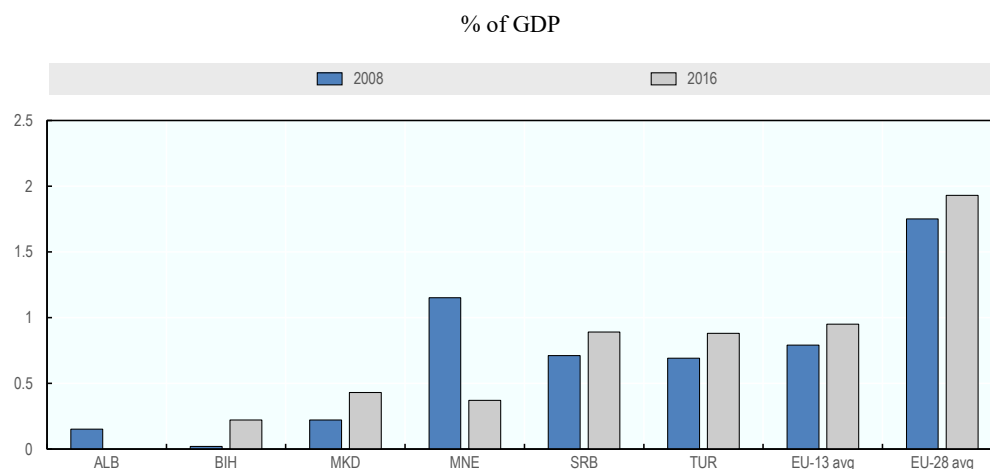
Note: Data for Kosovo not available; data for North Macedonia from 2017; scores range from 1 to 7, where 7 is the highest. EU-13 – Bulgaria, Croatia, Cyprus,** the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovak Republic and Slovenia.

** Footnote by Turkey: 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. Turkey recognises the Turkish Republic of Northern Cyprus. Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the “Cyprus” issue. Footnote 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 Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Sources: WEF (2008^[8]), *The Global Competitiveness Report 2008-2009*, www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2008-09.pdf; WEF (2017^[7]), *The Global Competitiveness Report 2017-2018*, www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf.

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However, the region continues to score particularly poorly for private sector spending on research and development (R&D). Overall shares of gross domestic expenditure on research and development as a percentage of gross domestic product (GDP) have increased since the onset of the global financial and economic crisis in 2008 (UIS, 2018^[9]). But overall spending on research and development remains negligible, particularly in the business sector. As Figure 10.4 shows, R&D spending is below 1% of GDP in all WBT economies, compared to approximately 2% on average across European Union (EU) countries. As a result, the region falls well short of the target for EU countries to raise overall R&D investments to 3% of GDP by 2020.

Figure 10.4. R&D expenditure as a share of GDP (2008 and 2016)

Note: Data for Albania only available for 2008; data for Kosovo not available. EU-13 – Bulgaria, Croatia, Cyprus,** the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovak Republic and Slovenia.

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Source: UIS (2018^[9]), *R&D Data Release*, <http://uis.unesco.org/en/news/rd-data-release>.

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All economies participate in the EC’s Horizon 2020 programme.¹ Up until mid-2018, the region had participated in over 1 000 projects, receiving financial support in excess of EUR 210 million. Given the size of their economies, Serbia and Turkey have been the most active – participating in over 300 projects (Serbia) and 560 projects (Turkey). Other economies have also taken part, though the low level of funding they have received has not yet exceeded their contributions to the scheme (Table 10.3).

Table 10.3. Horizon 2020 portfolio (2014-18)

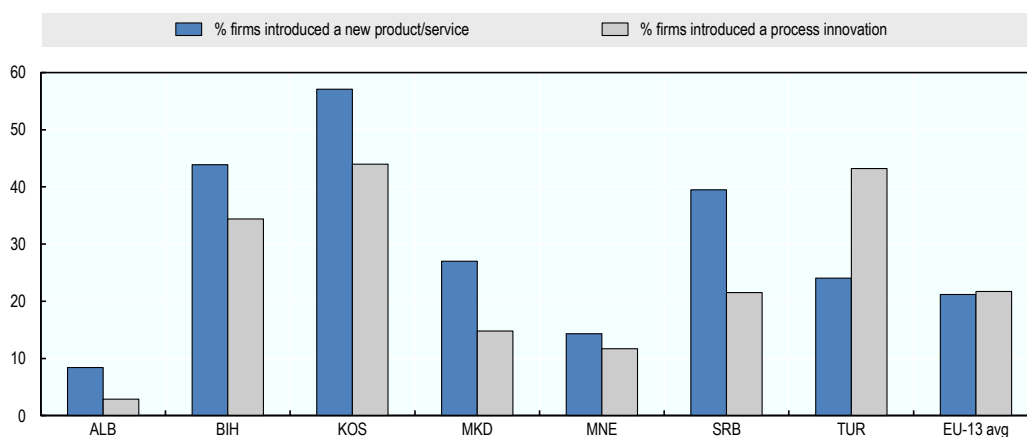
	Project participation (no.)	EU contribution (EUR million)
ALB	25	2.2
BIH	51	4.5
KOS	10	0.9
MKD	61	6.9
MNE	25	1.6
SRB	302	66.5
TUR	562	128.6
TOTAL	1 036	211.2

Source: EC (2018^[10]), *Horizon 2020 Framework Programme (H2020): Projects & Results*, <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-results:programCode=H2020>.

Patent application levels are significantly lower than those of the region's European peers confirming that, overall, innovation that advances the technological frontier remains subdued. However, innovation should go far beyond R&D, as the OECD *Oslo Manual* suggests. It also involves more incremental changes, including adopting existing technologies and services and introducing organisational and managerial changes (OECD/Eurostat, 2005^[2]).

Analysing the self-reported levels of innovation by firms suggests a more positive trend (Figure 10.5). The percentage of firms that have introduced new products and services or a process innovation is higher in Bosnia and Herzegovina, Kosovo, Serbia and Turkey than it is on average in the Central European and Baltic countries. Given the low levels of R&D spending, this suggests that these innovations are often imitations, involving adopting existing products and services from abroad.

Figure 10.5. Share of innovating firms in the WBT region (2016)



Note: EU-13 Member States – Bulgaria, Croatia, Cyprus,** the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.

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Source: EC (2017^[11]), Digital Skills to Boost Innovation, <http://s3platform.jrc.ec.europa.eu/digital-skills>.

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The findings in Figure 10.5 confirm the overall positive innovation trend in the region. External factors, such as an increasingly stable macroeconomic environment in recent years, are important determinants of innovation. However, these promising developments are also the result of policy makers slowly recognising the importance of innovation for productivity and long-term economic growth.

Policy framework for innovation (Sub-dimension 8b.1)

An overarching innovation policy framework is vital to put in place long-term economic goals and lay out strategic directions, while outlining concrete policy measures to build an innovation-supporting ecosystem. Due to the cross-cutting nature of innovation, it is

imperative to have a framework that defines the roles of different public institutions, as well as ensuring that the measures are complementary.

However, treating innovation in isolation is insufficient. While the innovation policy framework may include a standalone, dedicated innovation strategy, it is typically linked to and referenced in other key strategic government documents – including, but not limited to, the SME strategy, education and science strategy or industrial development strategy.

The policy framework should ideally capture both technological and non-technological innovation, and incorporate policy measures such as fostering innovation activity and R&D, commercialisation, and technology transfer. A strong focus should also be placed on supporting small enterprises, which typically face higher obstacles to innovating. Best practice policy frameworks also include a concrete action plan for implementation and quantifiable indicators to monitor progress and evaluate impact.

This section assesses the existence and quality of innovation policy frameworks in the WBT region. It looks at the availability of holistic innovation strategies, policy co-ordination mechanisms, as well as implementation of innovation policy (Table 10.4).

Table 10.4. Scores for Sub-dimension 8b.1: Policy framework for innovation

	ALB	BIH	KOS	MKD	MNE	SRB	TUR	WBT average
Strategic approach	3.60	2.25	2.90	3.80	3.45	3.60	4.60	3.46
Co-ordination of innovation policy	2.33	1.44	2.33	3.67	2.33	3.67	5.00	2.97
Implementation of innovation policy	2.57	1.86	2.43	4.14	2.57	4.14	3.57	3.04
Weighted average	2.83	1.89	2.55	3.94	2.79	3.88	4.17	3.15

Note: See the Policy Framework and Assessment Process chapter and Annex A for information on the assessment methodology.

Overall, the region has made tangible progress in improving innovation policy frameworks since the last assessment. Legislation has advanced in some economies, but while formal co-ordination and implementation bodies are in place, more effort needs to be put into effective execution and measuring the impact of innovation policies. Turkey, closely followed by North Macedonia and Serbia, are the top performers in this aspect.

Policy frameworks are progressing, but co-ordinated implementation is lacking

Setting up a cross-cutting policy framework is increasingly recognised as the cornerstone to fostering innovation in the Western Balkans and Turkey. Most notably, Albania, Montenegro and Serbia have adopted new innovation strategies and action plans since the last assessment in 2016. Turkey's National Science, Technology and Innovation Strategy expired in 2016; its new national Science and Technology Innovation (STI) Strategy 2017-2023 is yet to become operational. While adoption is pending, other strategic documents refer to innovation policy, including the SME Strategy (2015-2018) and the 10th Development Plan. North Macedonia has had a comprehensive strategy in place since the last assessment. Despite having an action plan for monitoring and evaluating the strategy, however, there is no evidence of ongoing assessment of its implementation. In

Bosnia and Herzegovina, R&D and innovation policy is dealt with at the entity level.² In the Republika Srpska, the Strategy for Scientific and Technological Development adopted in 2017 represents the key strategic framework for innovation, whereas in the Federation of Bosnia and Herzegovina, the SME Development Action Plan is the only document that discusses innovation. No progress has been made in Kosovo, where innovation policy frameworks remain at the draft stage.

Turkey remains the top performer in horizontal policy co-ordination and implementation. Its Supreme Council for Science and Technology co-ordinates innovation policy, while the two implementing agencies, the Scientific and Technological Research Council of Turkey (TÜBİTAK) and the SME Development and Support Organisation (KOSGEB), run a number of programmes to support SME innovation.

By contrast, cross-ministerial policy co-ordination remains rudimentary across many of the Western Balkan economies, as several ministries are responsible for innovation policy or co-ordinating bodies do not exclusively focus on innovation. Within the region, Serbia has made the biggest progress by establishing an intra-ministerial council to co-ordinate science, technology and innovation policies in 2017. Kosovo established a dedicated Ministry of Innovation and Entrepreneurship in 2017, although its exact role in co-ordinating and implementing innovation-related policies in relation to other government bodies is not yet clear, and it will need to build capacity. The co-ordination body that North Macedonia set up several years ago has recently become effectively non-operational. In Albania, innovation policy implementation is overseen by the newly created Agency for Scientific Research and Innovation and the Albanian Investment Development Agency (AIDA), its SME agency. It has no clear co-ordination mechanism in place, however. Montenegro, having adopted the Law and Strategy for Innovative Activities, has renamed the Scientific Research Council the Council for Science, Research and Innovation, and entrusted it with the additional task of fostering innovation. Bosnia and Herzegovina has made little progress even though a co-ordination body would be particularly helpful to ensure consistency and alignment of policies across the entities.

All the assessed economies have mechanisms in place to monitor the implementation of innovation policy, albeit at different levels of functionality. However, comprehensive evaluations of measures are very rare across the region, and limited to some donor-funded programmes.

Innovation support activities in the region are predominantly funded by international donors

North Macedonia and Serbia's innovation funds, and Turkey's TÜBİTAK, each serve as the primary implementation agency for the national policy framework on innovation. The Serbian Innovation Fund has continued to build expertise since the last assessment, and North Macedonia's Fund for Innovation and Technology Development (FITD) has started operating, although its capacity remains somewhat limited and its disbursement rates below potential. Other economies have not yet established dedicated innovation agencies and predominately provide support to innovative enterprises through broader SME agencies. In July 2018, an Innovation Fund was established in Kosovo with a budget of EUR 4 million partly co-financed by Gesellschaft für Internationale Zusammenarbeit (GIZ). Disbursement of funds was expected to start before the end of 2018 at the time of writing.

Most financial and non-financial assistance is backed by international donor support, particularly the European Union, but also other bilateral donors such as the World Bank

and GIZ. Only the Turkish Government provides significant national budget support to implement enterprise support schemes. In Serbia, the government has recently provided notable budget allocations to the Innovation Fund, but in the other economies national contributions are largely symbolic. In North Macedonia, with the exception of the FITD's operational costs, all the innovation funds have so far been covered by a World Bank loan. As donor funds start running out, public support will need to kick in if economies are to continue implementing their innovation policy framework.

The way forward for the policy framework for innovation

- **Take an overarching strategic view and co-ordinate policies across the whole of government.** Failure to do so can create overlapping and even contradictory measures, while leaving gaps in government support in crucial areas. Economies without a valid innovation strategy in place should accelerate drafting and adopting one, and more emphasis should be placed on implementation across the region. The economies need better co-ordination with policy areas that impinge on or benefit from innovation. Systematic monitoring and evaluation would also help governments identify bottlenecks and adjustments needed in implementation, and increase policies' long-term impact.
- **Develop sector-specific support and “smart specialisation” frameworks.** As general innovation policy frameworks are improving and SMEs' absorption capacity indicates a long-term potential for innovation, governments can start developing vertical innovation policies targeting specific sectors or thematic areas. To that end, smart specialisation, conceived by the European Commission, can offer a valuable way forward. It identifies high-potential areas in which to specialise, based on an analysis of the economy's strengths and potential involving a wide range of stakeholders (Box 10.1) (EC, 2017^[11]).

Successful implementation of smart specialisation frameworks hinges on designing a more tailored mix of innovation policy measures, by targeting certain segments of SMEs, as well as the main obstacles to innovation that policy makers would like to address. Given the limited financial resources allocated to innovation, prioritising only those areas deemed to be the most competitive and offering the greatest potential can be a cost-effective use of public funds.

- **Improve statistical data to formulate evidence-based policies.** Systematic data collection and more widely available innovation-related statistics will enable effective monitoring and evaluation frameworks, as well as benchmarking. At present, only North Macedonia, Serbia and Turkey are included in the European Innovation Scoreboard, while the remaining economies are not covered due to a lack of statistical data.

Box 10.1. Smart specialisation policies in the Western Balkans and Turkey

Background

The smart specialisation approach combines vertical industrial, educational and innovation policies to address a limited number of priority areas, sectors and technologies for knowledge-based investments, focusing on their strengths and comparative advantages.

The smart specialisation concept is relatively new to economic development, and was first initiated by the European Union. It includes a comprehensive capacity assessment that aims to identify and target the most competitive industries with innovative potential, in order to accelerate the country's economic and scientific development. Smart specialisation is implemented across most EU countries, and is gaining appreciation worldwide.

Notwithstanding its importance, smart specialisation cannot serve as a replacement for a broad innovation policy framework, and is less suitable for countries that are yet to achieve greater innovation capacity and holistic institutional frameworks. However, where a specific sub-sector or technology has been identified as having an indigenous advantage, smart specialisation may complement broader, multiple-sector innovation strategies.

State of play in the Western Balkans and Turkey

Overall, smart specialisation efforts remain in their infancy in the WBT economies, with strategies still in the drafting stage. However, with a strong push from the European Union, smart specialisation is rising to the top of policy makers' agendas in the region.

In 2017, the heads of government of Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia endorsed a Multi-annual Action Plan for a Regional Economic Area in the region. This encompasses economic development strategies based on knowledge and innovation and builds on the experience of smart specialisation from EU Member States and regions. Echoing this ambition, the EU's 2018 strategy for the Western Balkans also outlines how smart specialisation can be implemented through technology transfer and start-up support, in order to boost entrepreneurship and innovation across the entire region (EC, 2018_[10]).

Against this background, the EU offers support through the EC's Joint Research Centre to help the WBT economies to develop smart specialisation strategies and apply a dedicated methodology.

Serbia and Montenegro are the frontrunners in the region, with both economies expected to adopt the first two strategies by 2019. Table 10.5 summarises the current status of smart specialisation efforts in the region.

Table 10.5. Overview of smart specialisation in the Western Balkans and Turkey

ALB	Preparations to develop a smart specialisation strategy started in 2017 under the leadership of the Ministry of Education, Sports and Youth with EU support.
BIH	No ongoing or planned activities.
KOS	No current activities but a smart specialisation strategy was being planned at the time of writing.
MKD	Preparations for a smart specialisation strategy began in 2018.

MNE	A smart specialisation strategy is being prepared by the Ministry of Science in collaboration with the Ministry of Economy; adoption is expected by early 2019. An inter-ministerial working group has been set up including business, academia and non-government organisations (NGOs). Priority sectors identified include information and communications technology, renewable energy, sustainable agriculture and food value chains, new materials and sustainable technologies, and sustainable and health tourism.
SRB	Since 2016, the Joint Research Centre has been conducting a pilot project to build capacity for participatory and evidence-based processes in Serbia; insights will provide input for designing and implementing smart specialisation policies in other enlargement economies. As part of this project, a smart specialisation strategy for Serbia is being prepared; adoption is expected in 2019.
TUR	Three out of Turkey's 26 NUTS-II regions ³ have set up smart specialisation strategies (Kocaeli, Manisa and Konya sub-regions). However, there is no strategy at the national level for the whole economy.

Sources: EC (2018_[12]), *What is Smart Specialisation?*, <http://s3platform.jrc.ec.europa.eu/what-is-smart-specialisation>; EC (2018_[13]), *Innovation Agenda for the Western Balkans - Tools and Methodologies*, <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/supporting-innovation-agenda-western-balkans-tools-and-methodologies>.

Government institutional support services for innovative SMEs (Sub-dimension 8b.2)

This section looks at public sector institutional support services for innovative SMEs, in particular the presence of incubators and accelerators, and the quality of services they provide to young enterprises. In addition, it looks at the availability of technology extension services, such as technology centres or other specialised support services for established enterprises.

Incubators are essential components for supporting companies in the early and seed stages, providing services that would not otherwise be easily available to young companies. The most common and best-known types of incubator services include providing office and collaborative spaces, along with targeted training and mentoring.

Accelerators target innovative start-ups with high growth potential and a preliminary business model in place, and provide them with seed capital funding in exchange for equity. Accelerator programmes usually have a short time span, during which companies receive intensive entrepreneurship-focused business training, access to local and regional mentorship networks, and advice from well-established companies. The programme's completion is usually linked to a pitching event to possible investors.

Accelerators can either be run by the public or the private sector but, due to their nature, are usually commercially driven. In contrast, incubators are open to a broader range of start-up companies that need support to bring an idea to the market. Incubators work over a much longer time span and offer more general business skills. They usually do not provide any capital and are typically established by universities, local governments, economic development organisations or other public sector institutions.

Innovation is not confined to start-ups and high-growth enterprises, however. Many enterprises, particularly SMEs, “purchase” knowledge, rather than “create” it. They outsource R&D to specialised firms and rent patents, licences or other know-how, and new products often emerge from the adoption of existing technologies. While this type of incremental innovation may not advance global technological frontiers, it is however key to developing a knowledge economy and boosting economic productivity, with more established SMEs usually more inclined to adopt an incremental approach. As a result,

policy support measures should be designed to address both types of innovation and recognise incremental innovation as well as breakthroughs.

Dedicated technology extension services (TESs) can help to improve the use of “new-to-firm”⁷⁴ innovation in SMEs through technological and other solutions. These do not focus on creating new technologies, but aim instead to increase access to existing innovative products and processes. By stimulating the diffusion of modernised ways of manufacturing, TESs can raise SMEs’ adoption capacity, and thus pave the way for future innovations.

Overall, public institutional infrastructure supporting SME innovative activities has expanded in the region, but there is much room for further development. Incubators operate in all WBT economies, including outside major economic hubs, while accelerators are less common (Table 10.6). Comprehensive TESs are largely absent across the Western Balkans, while Turkey offers these services for SMEs operating in certain sectors. Turkey continues to outperform the rest of the region in this sub-dimension.

Table 10.6. Scores for Sub-dimension 8b.2: Government institutional support services for innovative SMEs

	ALB	BIH	KOS	MKD	MNE	SRB	TUR	WBT average
Incubators and accelerators	1.71	2.24	3.00	3.14	3.00	3.43	4.43	2.99
Technology extension services for established SMEs	2.50	1.00	1.00	2.67	1.00	1.00	3.00	1.74
Weighted average	2.03	1.74	2.20	2.95	2.20	2.46	3.86	2.49

Note: See the Policy Framework and Assessment Process chapter and Annex A for information on the assessment methodology.

Institutional support services are expanding, especially incubators

Turkey continues to have the most developed infrastructure for incubators and accelerators, running a comprehensive Incubation Centre and Accelerator Support Programme that supports start-ups. A total of 60 technology development zones (TDZs) now operate throughout the country, hosting thousands of innovative start-ups and providing them with incubation services. Additional incubators, run by KOSGEB and TÜBİTAK, are also available throughout the country. In addition, KOSGEB has been operating more than 20 technology incubators (TEKMERS), the majority of which are based outside of economic hubs. However, TEKMERs are currently being restructured, and many were not operating at the time of writing. TÜBİTAK supports accelerators through the Bireysel Genç Girişim Programme.

Incubators are also common throughout the Western Balkans region. However, the services provided usually do not go beyond office space, basic information and communication technology (ICT) equipment and general business and management training, without extending technical skills or a specific focus on innovation. They largely lack product and prototype development facilities, such as fabrication laboratories, leading to a proliferation of start-ups in the ICT sector that do not require these advanced facilities. Moreover, many incubators are donor-supported and need to increase their scale and impact to ensure self-sustainability in the medium term. In Albania and Bosnia and

Herzegovina, a limited number of incubators operate but are not yet properly developed beyond a few pilot experiences.

Governments have scaled up financial support for incubators, albeit from low levels. In Kosovo, the Investment and Enterprise Support Agency (KIESA) operates a number of incubator services, located in a growing number of industrial parks and economic zones. In addition, the newly established Ministry of Innovation and Entrepreneurship has recently allocated a budget of EUR 1.1 million to establish regional innovation centres. In Montenegro, incubators have no specific focus on innovation for high-growth companies and their scale has reduced since the last assessment. Due to the government's increasing focus on science and technology parks (STPs), there is no public sector support for incubators in place. However, recently established incubators have been supported financially at the local level. North Macedonia operates a few incubators and accelerators throughout the economy (Seavus, CEED, NewMans, YES incubator in Skopje and SEEU incubator in Tetovo), although the only genuinely operational incubator is YES and, to some extent, CEED. The scope of services is limited and activities remain largely donor dependent. FITD has launched a public co-financing grant scheme to support business incubators and accelerators in North Macedonia, and four providers were chosen during the scheme's first call in October 2018. In Serbia, the support infrastructure for innovative SMEs has also expanded since the last assessment. The University of Belgrade co-funds a well-established Business Technology Incubator, which has produced several successful companies now operating in the Belgrade Science and Technology Park.

At the time of writing, Serbia hosted the only accelerator programmes in the Western Balkans. StartLabs has already operated successfully for several years, while Start-It and ImpactHub are gradually establishing themselves. However, equity ticket⁵ sizes remain small, at below EUR 50 000 in most cases, and more seed funding is needed.

Across the region, the emerging infrastructure of institutional support services to help developing innovation is primarily focused on start-ups and developing the potential for high-tech innovations. In contrast, little support is available for established enterprises, with TEs largely unavailable in all WBT economies. Most economies offer consultancy services and training in business skills to SMEs (for more information, see Chapter 5 on support services for SMEs). However, these are primarily focused on general business skills rather than specialised technology extension. They also remain relatively small scale and are not co-ordinated with policies that present SMEs with "new-to-firm" innovation opportunities, e.g. in quality standards and resource efficiency.

The European Bank for Reconstruction and Development's Advice for Small Businesses programme, operating in all seven economies, provides additional advisory support to established SMEs, including, though not exclusively, in areas related to innovation and technology transfer (EBRD, 2014_[3]).

As for public programmes aimed at technology diffusion among SMEs, there are very few initiatives across the region. In Turkey, SMEs can access technology extension services offered through TEKMERs. However, at the time of writing, TEKMERs are being transformed into incubation centres. North Macedonia launched a grant scheme for technology extension in 2018. In Albania, a programme is available to businesses in manufacturing offering innovation audits of their innovation capacity and gaps. However, this funding is largely underused.

Notwithstanding the proliferation of institutional support services, policy makers in the Western Balkans and Turkey do not, by and large, have an all-encompassing picture of

their economies' infrastructure landscape. Therefore, they are usually unable to assess their infrastructure needs in order to determine the priority areas for future investment.

The way forward for government institutional support services for innovative SMEs

- **Explore cross-border collaboration and promote an ecosystem approach to innovation.** There have been considerable efforts to build a conducive ecosystem for innovation since the last assessment, but demand continues to exceed supply. Regional institutional and firm co-operation could bolster cross-national R&D and innovation activity, and provide high-potential firms with the services they need. Governments should build greater awareness of European programmes that support innovation in the WBT region – for instance, through the Enterprise Europe Network and Horizon 2020 – and build local capacity to increase their take-up. On the other hand, regional co-operation could be harnessed to create innovation infrastructure at the regional level, which would be a cost-efficient way to promote an ecosystem approach for Western Balkan economies.
- **Step up the efforts to accelerate technology diffusion among SMEs.** Most SMEs in the Western Balkans and Turkey are users of new technology, rather than creators of them. Therefore, policy makers in the region should give increased emphasis to promoting “new-to-firm” innovation that would contribute to improving SMEs’ productivity and competitiveness. Overemphasis on new-to-market innovation can prevent the region from capitalising on the broader gains to be made from facilitating the absorption and adoption of technology. The region could consider offering technology extension services through the types of arrangements operating in some OECD countries (Box 10.2).
- **Map the innovation infrastructure.** A complete picture of the research and innovation infrastructure in the Western Balkan economies and Turkey is, by and large, not available. Given that donors and civil society are actively involved in providing innovation services and infrastructure, it is not always clear where governments should step in. Therefore, there is a clear need to create a long-term research and innovation infrastructure investment roadmap for each economy based on an understanding of existing infrastructure. This would enable policy makers to better grasp the innovation needs and gaps, and also avoid potential duplication of efforts, most notably by donors.

Box 10.2. Selected technology extension programmes in OECD countries

In OECD countries, technology extension services are not only provided by public institutions, but also by private or public-private entities. In many countries though, firms are still directed to public financing (co-financing or credit lines) to finance these services.

Examples of technology extension programmes targeted at SMEs in OECD countries include:

1. **United States:** the Manufacturing Extension Partnership focuses on direct interventions at the firm level to increase the productivity, competitiveness and innovation potential of SME manufacturers. With 1 300 technical experts operating out of over 60 regional centres, the partnership provides resources and

in-depth audits to SME manufacturers across the United States.

2. **Mexico:** the Technological and Business Assistance System (SATE) was created in 2001 as a US-Mexico Foundation for Science programme funded by the Ministry of Economy's Support Fund for SMEs (Fondo PYME). Its mission is to provide managerial and technological assistance for the technological upgrading of SMEs through a network of certified advisors. Initially focused on the automotive and machinery industry, it extended its activities in 2004 to cover all technology-based SMEs, to include services related to certification and intellectual property, and to facilitate the integration of these SMEs in regional or national value-added production networks. SATE also has an important role in facilitating technology-based SMEs' access to sources of knowledge in research institutions and to federal and state sources of support for innovative investment. SATE built its competences through adopting best practices for the provision of technology assistance and transfer services developed in North American institutions.
3. **Japan:** manufacturing extension programmes in Japan are provided by 262 *kohsetsushi* centres (public industrial technology research institutes), which offer a range of services to Japanese SME manufacturers, including technology guidance; technical assistance and training; networking; testing, analysis and instrumentation; and access to open laboratories and test beds.

Sources: Adapted from OECD (2017), Innovation Policy Platform (2019^[14]), *Innovation Policy Platform website*, www.innovationpolicyplatform.org/; Andes, Ezell and Leal (2013^[15]), *An Alternative to Mercantilism: Manufacturing Extension Services in Latin American and Caribbean Countries*, www2.itif.org/2013-manufacturing-extension-services-latin-america-caribbean.pdf.

Government financial support services for innovative SMEs (Sub-dimension 8b.3)

Access to finance remains one of the most significant obstacles to SMEs in the Western Balkans and Turkey, as discussed in Chapter 7 on access to finance for SMEs. High-growth and innovative companies, in particular start-ups, are disproportionately affected by funding constraints, mainly due to having fewer tangible assets and less collateral.

Innovation is often costly, as innovative firms require significant funding throughout all stages of the innovation process, including salaries for high-skilled employees, developing prototypes, legal fees for patent applications or even purchasing equipment needed to implement innovations.

As the local banking sector continues to impose steep requirements for collateral and credit histories, public sector financial support schemes can help fill the financing gap for early-stage innovative SMEs.

Policy measures that support enterprises to innovate and invest in R&D can come in a variety of forms. Direct financial support can include grants, subsidised loans, loan guarantees or investments in pioneer venture capital and business angel financing. In addition, governments can provide indirect financial assistance in the form of fiscal incentives, such as tax breaks and credits on R&D spending or purchases of innovative equipment. Other forms of indirect financial support include demand-side instruments such as emphasising innovation in public procurement, which can both stimulate firms to

innovate to deliver the services demanded and encourage the early use of pre-commercialised innovations.

This section reviews both direct and indirect financial support to stimulate innovation in small businesses in the Western Balkans and Turkey. Reflecting the importance of financial support, the section analyses in detail the existence and structure of financial schemes or grants and their accessibility. In addition, it looks at indirect channels of financial assistance, such as fiscal support and demand-side policies such as public procurement.

All economies have made progress in this area, as they have all introduced or scaled up financial schemes to support innovative SMEs (Table 10.7). In contrast, indirect financial incentives remain significantly underused, except by Turkey. As a result, Turkey scores highest in this sub-dimension, followed by Serbia and North Macedonia.

Table 10.7. Scores for Sub-dimension 8b.3: Government financial support services for innovative SMEs

	ALB	BIH	KOS	MKD	MNE	SRB	TUR	WBT average
Direct financial support	3.80	2.53	3.40	4.20	3.40	4.20	4.80	3.76
Indirect financial support	1.00	1.00	1.00	1.22	1.00	1.00	3.44	1.38
Weighted average	2.68	1.92	2.44	3.01	2.44	2.92	4.26	2.81

Note: See the Policy Framework and Assessment Process chapter and Annex A for information on the assessment methodology.

Direct financial support for innovation and R&D has been scaled up, but its impact is low

All economies have made progress in this area and have put financial schemes in place to support innovation in SMEs. Some economies have dedicated institutions to co-ordinate financial support schemes for innovation. While in Turkey, Serbia and increasingly in North Macedonia these institutions are well established, other economies need to make efforts to increase their bodies' capacities, or even to establish them.

Most programmes are implemented with international donor support, although increasingly some are co-financed through national budgets, thereby strengthening their long-term sustainability and local ownership. However, the scale, level of disbursements and impact vary significantly across the region.

SMEs in Turkey can access a large variety of direct funding to support innovation activities and R&D. Both KOSGEB and TÜBİTAK offer a number of comprehensive financing programmes focused on all stages of the innovation process, such as the R&D and Innovation Support Programme and the R&D Start-up Funding Programme for SMEs.

The Serbian Innovation Fund has accelerated disbursements and has, during this assessment period, successfully completed the pilot of the EU-funded Mini and Matching grant programme to support enterprises in developing technical innovations. This has awarded over EUR 6 million to 52 innovative projects and has started to yield results

during the assessment period. To meet business demand it has expanded its financial support through a EUR 2.7 million World Bank loan, and has introduced two additional financial instruments of almost EUR 10 million in total, geared at increasing industry-academia collaboration (see SMEs and research institution collaboration and technology transfer (Sub-dimension 8b.4) below). In addition, the Ministry of Education, Science and Technological Development of Serbia supported 397 innovation projects through 8 public calls between 2007 and 2017.

Following its inauguration in 2015, the FITD in North Macedonia is now fully staffed and operational. Through funding provided by a World Bank loan of EUR 17.7 million in 2014 under the Skills, Development and Innovation Support Project, it offers a variety of financing options for innovation, including grant support for start-ups and commercialising innovation. By early 2018, 52 companies had received support. Moreover, as part of the Economic Growth Plan, FITD also provided co-financing grants for high-growth companies, among others.

Albania, Bosnia and Herzegovina, Kosovo and Montenegro provide small-scale financial instruments for innovation. In early 2018, the Albanian government allocated approximately EUR 115 000 to the Innovation Fund administered by AIDA. Enterprises can now benefit from up to EUR 3 100 for a project, and around EUR 4 700 for the purchase of technological equipment.

Innovative SMEs in Bosnia and Herzegovina can benefit from small-scale grant support at both state and entity level, including through the recently established Challenge to Change project supported by Sweden. In 2018, Kosovo rolled out a new fund for innovation dedicated to start-ups, SMEs and NGOs. Its Opportunity Fund grant scheme targets companies in certain sectors that introduce innovations relevant to export markets. In Montenegro, there were several small-scale funds up to 2018, but these instruments were generally designed to support the acquisition of services rather than fully fledged R&D or commercialisation activities. The Ministry of Economy extended its programme of innovation support for SMEs beyond the processing industry in 2018, and allocated a total of EUR 340 000 for 2018.

In addition, all economies in the Western Balkan region, except for Bosnia and Herzegovina, have made investments in the donor-supported Enterprise Innovation Fund (ENIF), sending an important signal about their motivation to invest in innovation in local economies. ENIF is implemented under the framework of the Western Balkan Enterprise Development and Innovation Facility (WB EDIF), and has become fully operational since the last assessment. As of late 2018, ENIF had made 16 investments, mostly in North Macedonia and Serbia, amounting to more than EUR 14 million.

In Turkey, venture capital is relatively well developed and actively supported through KOSGEB, particularly in and around the economic hubs to the west of the country. Between 2014 and 2016, venture and growth capital in Turkey nearly tripled; however the level of venture capital, at TRY 343 million (around EUR 104 million) in 2016, was still lower than the highest level reached in 2011, at TRY 373 million (around EUR 160 million) (for more information, see Chapter 7 on access to finance for SMEs).

Tax incentives to foster innovation remain unused in the WBT

Research and development tax incentives aim to encourage beneficiary firms to invest in R&D by reducing their effective costs. Unlike most types of direct subsidies, R&D tax incentives tend to be designed to allow firms to decide the nature and orientation of their

R&D activities, on the assumption that the businesses themselves are best placed to identify research areas (OECD, 2016^[16]). R&D tax incentives are in principle more market-friendly and neutral than direct support instruments (Box 10.3)

Box 10.3. Tax incentives for R&D and innovation

Tax incentives for business R&D can involve either advantageous tax treatment of R&D expenditure (expenditure-based provisions) or preferential treatment of incomes from licensing or asset disposal attributable to R&D or patents (income-based provisions).

Expenditure-based R&D tax incentives are widely available to businesses across most OECD countries and many other economies. Within the OECD, only Estonia, Germany and Switzerland do not currently offer specific tax relief for R&D at central or federal level. Tax relief is available to individuals acting as companies (unincorporated businesses) in most of these countries, and some (e.g. Colombia, Denmark, Korea and Turkey) also provide direct relief to individuals for their earnings as employees, for example, to encourage the inward mobility of highly qualified personnel and indirectly reduce the costs incurred by firms or other organisations in attracting those individuals. Tax relief for charitable giving by individuals and corporations often refers explicitly to donations intended to support research and related activities (e.g. Denmark and Hungary).

Income-based incentives are currently less widely used than expenditure-based schemes but, in recent years, their adoption rate has increased within and outside the OECD area. Recent examples include the patent box introduced in Italy, Ireland's Knowledge Development Box regime and the Tax Exemption for Income from Technology Acquisition scheme introduced by Korea in 2015 as a temporary measure for SMEs and high-potential enterprises. The OECD Action Plan on Base Erosion and Tax Profit Shifting seeks to limit the potential harmful effect of such provisions by setting a number of rules that limit their use, and links tax relief to substantive knowledge-development activity (OECD, 2015a). Appelt et al. (2016^[17]) discusses the rationale for and emerging evidence on the effectiveness of such schemes.

The distinction between expenditure and income-based incentives can also apply to innovation activities in general and the outcomes of such activities. A few countries, such as France and Spain, provide explicit forms of tax relief for companies that engage in innovation activities other than R&D. Overall, it is more difficult to identify schemes as being innovation-oriented because they tend to adopt very different perspectives for the eligible innovation activity for which relief is provided. The range of tax support measures with a potential incentive effect on innovation is significantly broader, especially in relation to the treatment of capital gains or start-up business activity.

Source: adapted from OECD (2016), Appelt et al. (2016^[17]), "R&D tax incentives: Evidence on design, incidence and impacts", <https://doi.org/10.1787/5jlr8fldqk7j-en>.

As governments across the WBT economies focus on scaling up and implementing direct financial support schemes, tax policies remain nascent.

Albania and Kosovo provide tax relief for purchasing ICT equipment or value-added tax (VAT) exemptions for certain categories of scientific equipment – neither of these, however, are directly aimed at boosting innovation. Some strategic documents have mentioned the possibility of conducting feasibility studies for R&D fiscal incentives, but no concrete steps have yet been taken.

The Turkish Government, in contrast, offers small-scale fiscal measures such as R&D tax incentives and VAT exemptions. In addition, legal regulations exempt revenues stemming from the R&D activities of companies located in TDZs from income and corporate taxes until 2023 (Box 10.4.).

Box 10.4. Turkey's tax incentives to foster R&D and innovation

On 1 March 2016, the Turkish Government introduced an extensive support package for research and development and innovation-related activities, in an effort to become an innovation-driven, high-tech economy. The R&D and Innovation Reform Package was first unveiled by the Prime Minister in January 2016 with the aim of increasing the competitiveness of vital industries, strengthening university-industry co-operation and increasing R&D spending.

As part of this package, an allowance is available until 31 December 2023 to companies that carry out qualifying R&D and design activities. The allowance is equal to 100% of the R&D and design expenditure, and is in addition to a deduction for this expenditure in the statutory accounts. Moreover, 80% of the income tax on the wages of R&D and design personnel is exempt from income-withholding tax – 90% for employees with a PhD or master's degree in any field and a bachelor's degree in the liberal arts.

Half of the social security premium contributions paid for each R&D and design employee will be reimbursed by the Ministry of Finance (up to 10% of the total number of full-time R&D employees), and documents prepared with respect to R&D and innovation and design activities are exempt from stamp duty.

In addition, capital spending on certain machinery is also eligible for tax relief.

To qualify for the benefits, the R&D and design centre must have at least 15 full-time R&D and 10 full-time design centre employees.

Sources: STIPCOMPASS (2016^[18]), *R&D and Innovation Reform Package*, <https://stip.oecd.org/stip/policy-initiatives/2017%2Fdata%2FpolicyInitiatives%2F17030>; Deloitte (2018^[19]), *International Tax: Turkey Highlights 2018*, www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-turkeyhighlights-2018.pdf.

Public procurement is an untapped policy tool to promote innovation

In the field of innovation policies, governments have traditionally directed their efforts towards the supply side, ensuring that the private sector operates in an environment conducive to innovation. In recent years, however, demand-side policies to support innovation have gained a more prominent role (OECD, 2011^[20]). Among such policies, public procurement is increasingly recognised as a potentially strategic instrument and a policy lever for stimulating innovation. Public procurement for innovation has the potential to improve productivity and to meet social needs. For example, it can steer future investments in a way that addresses existing or future social challenges, or it may allow potential vendors to enter the market with new, innovative goods or services, thus encouraging innovative solutions to pressing challenges (OECD, 2017^[21]).

The strategic use of public procurement to boost innovation is closely connected to a government's power to shape and create market conditions. In fact, given the size of

public procurement, governments, among other actors, can influence demand at national or sub-national levels.

Against this backdrop, no policies exist in the Western Balkans to harness the potential of public procurement to encourage innovation. With the exception of North Macedonia's innovation strategy, no official strategies or documents even refer to procurement for innovation. Even North Macedonia has yet to develop any concrete actions in that regard. Nevertheless, it also needs to be acknowledged that given the small size of most Western Balkan economies and their public institutions, the pull effect of public procurement for innovation on a particular product or service would be limited.

In Turkey, however, public procurement is well established as a tool to stimulate innovation in SMEs. The Programme for Technology Development and Domestic Production through Public Procurement is one of 25 primary transformation programmes within the framework of 10th National Development Plan (2014-18), approved in 2013. The programme aims to use public procurement to promote innovation, domestic production, technology transfer and innovative entrepreneurship. Following its adoption, a stand-alone action plan – the Programme for Technology Development through Public Procurement – has also been prepared, co-ordinated by the Ministry of Science, Industry and Technology. The action plan consists of 17 policy issues in 5 main components and 17 actions assigned to a consortium of ministries, public bodies, NGOs and chambers of industry.

To foster R&D-based procurement methods, Turkey launched the Public Institutions Research and Development Projects Support Programme in 2005. This programme has been designed to fulfil the R&D needs of public institutions via dedicated calls for projects by universities, industry and public research institutes. The public sector's R&D-based requirements are met by results-oriented R&D projects with no budgetary limitations. However, public procurement procedures under this programme are not entirely compliant with the EU *acquis*, since they give preference to domestic operators (for more information, see Chapter 6 on public procurement). There are no impact assessments, evaluation studies and/or accounts of the state of play for any type of procurement for innovation undertaken in Turkey.

The way forward for government financial support services for innovative SMEs

- **Consolidate financial support measures and increase disbursements.** Regular monitoring and evaluation of financial schemes would enable governments to identify those instruments most needed and demanded. As financial support remains small in most economies, governments should aim at accelerating disbursement rates, focusing both on building the absorption capacity of local markets and also on increasing the skills and expertise of local innovation agencies. Moreover, the instruments need to be flexible, meaning that they should be adjusted as lessons are drawn from experience. They should also be predictable, ensuring that calls for proposals occur regularly and the necessary budgets are earmarked annually.
- **Diversify public support to business R&D.** OECD countries' experience shows that direct funding to SMEs is not the only policy tool available to foster innovation in firms. With a view to stimulating business R&D, they use a mix of instruments that include both direct funding programmes and tax incentives. Given the over-reliance on direct funding in the Western Balkans, policy makers

should gradually diversify their policy tools, and make more use of tax incentives as is done in OECD countries.

SMEs and research institution collaboration and technology transfer (Sub-dimension 8b.4)

A strong partnership between the private sector and academia can help accelerate value creation for innovation. Research institutes can be driven by demand, and receive feedback from businesses on the commercial viability of their research; firms get first-hand access to research. These partnerships would also benefit from the involvement of relevant public actors – in other words, a “triple helix” approach. Such involvement can give governments valuable insights into the obstacles preventing knowledge transfer, which helps them to develop policy measures in response to spur industry-academia collaboration.

In reality, however, there are several practical challenges in implementing triple helix partnerships and creating effective co-operation among the three stakeholders. Academics may have limited time to co-operate with businesses, and may not receive support from their institutions to engage in partnerships. Besides, while academics’ priorities may be to translate research into products with tangible impact, financial goals are usually the focus of businesses. This may result in problems with ethics and IPR rights, among other issues. An environment that encourages engagement between businesses and research is needed to overcome these barriers, requiring governments to step in to create a framework fostering co-operation.

Public support for the transfer of knowledge and commercialisation can come in various forms. To alleviate funding barriers and boost R&D, governments can provide financial support, for instance through innovation voucher schemes and co-operative grants. Innovation vouchers enable enterprises to purchase small-scale services from research institutions or universities, often for preliminary research purposes and to test the ground for further co-operation. In contrast, co-operative R&D grants are more substantial and aim at competitive multi-institutional R&D and partner matching.

Policy tools also include enhancing the physical infrastructure to create better links between academia and the private sector. For instance, this can be done by establishing competence centres, technology transfer offices, and science and technology parks. All of these aim to facilitate knowledge transfer between academia and businesses, and often provide R&D services, access to equipment and other business services. STPs in particular can be an important tool to implement high-tech cluster policies and can serve as a platform of co-innovation among incubating enterprises.

Finally, a comprehensive legal framework for protecting intellectual property rights is critical for boosting technology transfer and commercialisation. Regulating ownership of IPR and how royalties are split for publicly funded research creates certainty and increases incentives for R&D and patent applications.

This section looks at policy measures in the WBT region to encourage R&D and linkages between academia and industry. In particular, this sub-dimension assesses the availability of voucher schemes and collaborative grants and the institutional infrastructure for industry-academia co-operation, such as STPs, technology transfer offices and competence centres. It also reviews the legal IPR framework (Table 10.8).

Table 10.8. Scores for Sub-dimension 8b.4: SME and research institution collaboration and technology transfer

	ALB	BIH	KOS	MKD	MNE	SRB	TUR	WBT average
Innovation voucher schemes and co-operative grants	2.00	1.67	2.00	3.00	2.00	4.00	3.00	2.52
Institutional infrastructure for industry-academia co-operation	1.80	1.67	2.40	2.80	2.80	3.00	4.60	2.72
Intellectual property rights	2.50	2.50	2.50	3.00	2.50	3.50	4.50	3.00
Weighted average	2.02	1.83	2.26	2.92	2.42	3.50	3.94	2.70

Note: See the Policy Framework and Assessment Process chapter and Annex A for information on the assessment methodology.

Overall, collaboration between academia and industry remains below potential in all WBT economies, and evidence from the interviews conducted as part of this assessment suggests that there is low demand from both sides to form partnerships. Turkey and Serbia significantly outperform the rest of the region in this area.

Most economies operate basic voucher schemes, whereas some have introduced more sophisticated collaborative grants. These, however, need to be well designed to meet the absorption capacity of local markets. The institutional infrastructure to support industry-academia collaboration has developed further since the last assessment, but a clear impact is not yet fully evident. Some economies have reformed or are currently reforming their intellectual property rights framework, which may lead to further patent applications in the medium term.

Although all economies have made efforts to bridge the gap between academia and industry, co-operation between the two is still quite limited. Interviews with SMEs revealed a generally negative perception of the research capabilities of universities, leaving them unconvinced of the benefits of collaborating with academia. Intellectual property protection exists in the legal framework of all economies, but does not sufficiently stimulate technology transfer and commercialisation.

Voucher schemes and collaborative grants exist across the region

Innovation vouchers are small lines of credit provided by governments to SMEs to purchase services from public knowledge providers with a view to introducing innovations in their business operations (OECD, 2010_[22]). The main purpose of an innovation voucher is to build new relationships between SMEs and public research institutions which will stimulate knowledge transfer directly, and act as a catalyst for the formation of longer-term, more in-depth relationships. In a nutshell, innovation vouchers are intended as pump-priming funding through which initial industry-university relationships can be established.

Some governments have introduced financial incentives for collaboration in the form of innovation voucher schemes and other co-operative grants, though they are largely underused. Albania and Kosovo have launched small-scale innovation vouchers, but both programmes have failed due to insufficient capacity and awareness among local SMEs.

Montenegro has been running a small-scale fund similar to innovation vouchers since 2012; however, between 2015 and 2017 it only supported four firms. Due to the low interest, the Ministry of Economy decided in 2018 to extend the support to all SMEs, instead of just those operating in the processing industry. In 2018, the Ministry of Science also allocated EUR 1 million for a new collaborative grant programme, in which individual projects can be awarded up to EUR 100 000. In Bosnia and Herzegovina, no grants are available or planned.

North Macedonia also has a voucher scheme; however it remains heavily underfunded. In May 2018, the FITD launched a call for co-financed grants and conditional loans for commercialising innovation, and awarded EUR 490 000 to six projects by mid-2018.

The most progress in this area has been made in Serbia, where the Innovation Fund launched an innovation voucher scheme as part of its broader Technology Transfer Facility in 2016, as well as the Collaborative Grant Scheme. The Technology Transfer Facility provides a blend of financial and technical assistance to bring new ideas to market, providing grants of up to EUR 50 000 to facilitate commercialising research projects. To complement this effort, the fund provides small-scale financial incentives to SMEs to use services from public research institutes, triggering great demand for this type of service in the market. In addition, the Collaborative Grant Scheme provides co-financing of up to EUR 300 000 for joint industry-academia R&D projects (see Box 10.5 for more details).

In Turkey, TÜBİTAK runs a collaborative grant scheme to stimulate university-industry collaboration, for instance through the Frontier R&D Laboratory Support Programme and the Support Programme for R&D projects. TÜBİTAK also offers a dedicated patent grant programme, providing financial support for patent applications. However, despite the ongoing work, there is no evidence yet of greater capacity to commercialise research outcomes.

Box 10.5. Fostering industry-academia collaboration in Serbia

Following its successful pilot of two grant programmes for innovative companies, the Serbian Innovation Fund recognised that over 30% of all project proposals had included some form of co-operation with R&D institutions. In response, the fund designed a new grant programme, the Collaborative Grant Scheme for R&D Organisations and Private Sector Enterprises, with the aim of encouraging SMEs and public sector R&D institutions to engage in joint scientific research and development projects. The programme, launched in 2016, is supported by EUR 2.4 million in EU Instrument for Pre-accession Assistance funds, and an additional EUR 1 million from the Ministry of Education, Science and Technological Development of the Republic of Serbia.

Under the programme, the Innovation Fund provides co-financing of up to 70% of the cost of commercially oriented research and development projects. It has a cap of EUR 300 000 per project, helping to significantly reduce the financial risk of failure. Funds are disbursed on a quarterly basis against deliverables, ensuring transparent financial management of the grant financing and procedural compliance.

The projects are selected through a highly competitive international, independent and meritocratic two-step evaluation process, including both technical peer reviewers and a five-member investment committee with ample international expertise in technology and investments.

During the pilot, the Innovation Fund received 96 applications, greatly exceeding the originally expected turnout. Of these, 28 projects were pre-selected for consideration, and 14 projects were awarded EUR 3 million in total. This was complemented with an additional EUR 1.37 million in private sector co-financing. By mid-2018, after approximately 1.5 years of development, 5 projects had already seen new products developed and 4 had successfully adopted transferred technology.

The design and functionality of the programme is very much demand driven and responding to specific market failures identified during the implementation of previous programmes. The two-stage independent and international evaluation processes ensured selection was based on merit and the potential for commercialisation and market impact. The programme also benefitted from a strong communication campaign, including the organisation of open days and matchmaking activities between SMEs and R&D institutions, to raise awareness and encourage applications.

Source: Serbian Innovation Fund (2018^[23]), *Collaborative Grant Scheme Program*, www.innovationfund.rs/cgs-program/.

The infrastructure to link industry and academia is limited

All WBT economies continue to invest in creating infrastructure that enhances linkages between businesses and academia, but the impact is yet to be seen. In Albania, Bosnia and Herzegovina and Kosovo, the OECD has organised triple helix competitions bringing together academia, business and public sector institutions but the hard infrastructure to support more intensive engagement, such as STPs, is still weak. Albania's Triple Helix action plan mentions a feasibility study to explore ways to increase industry-academia collaboration and Kosovo has recently opened an Office for Sponsored Programmes and Research at the University of Pristina. In Bosnia and Herzegovina, some support is provided through INTERA, a private foundation; however, it functions more like an incubator.

Both Montenegro and Serbia have made progress, but despite these efforts, synergies are only slowly emerging. Montenegro is in the process of completing an STP at the University of Montenegro, and the innovative entrepreneurship centre Technopolis has become fully operational. Serbia has numerous technology institutes and STPs, including some with a sectoral focus. The largest STP in Belgrade, opened in 2016, now hosts over 60 companies.

Turkey continues to operate large-scale programmes to increase collaboration between academia and industry and enhance commercialisation. TEKMERs have been established at various universities and the TDZs support business-academia co-operation. In addition, KOSGEB involves local researchers in the evaluation of innovation projects.

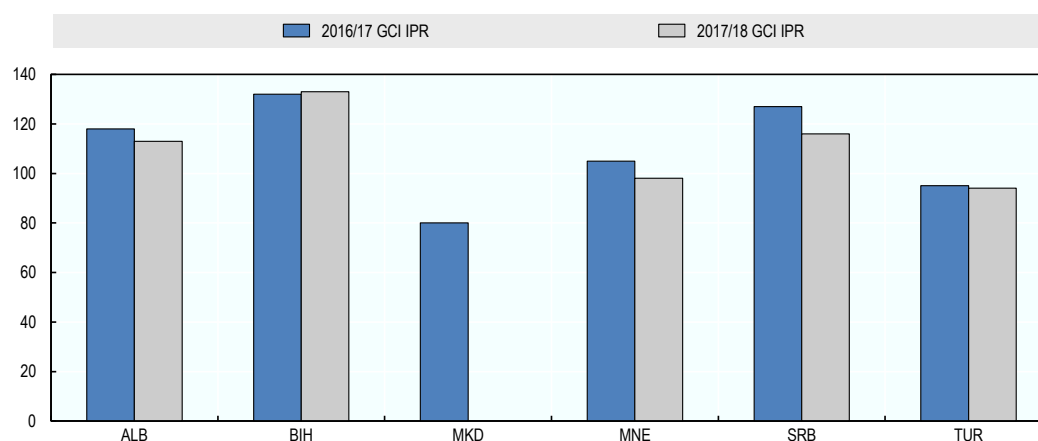
Poor awareness of the importance of an IPR regime is a common limitation

In order to increase SMEs' innovative capabilities and stimulate innovation through different channels, for instance by encouraging R&D collaboration, it is vital to enhance SMEs' awareness of the potential of an IPR regime. Firms must be advised on how to benefit from IPR systems to achieve their innovation policy goals (Ordowich et al., 2012^[24]).

Despite legislation for intellectual property protection largely being in place, all WBT economies perform poorly in the World Economic Forum's Global Competitiveness

Index (GCI) for intellectual property protection, suggesting that enforcement is weak and not aligned with best practice (Figure 10.6). The region's poor performance in this area may also be a reason for the overall low level of patent applications.

Figure 10.6. Intellectual property protection scores in the Global Competitiveness Index (2016-18)



Note: Data for Kosovo not available. Data for North Macedonia are from 2017. Performance is ranked on a scale from 1 to 137, with 1 being the highest possible.

Sources: WEF (2016^[25]), *The Global Competitiveness Report 2016-2017*, www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf; WEF (2017^[7]), *The Global Competitiveness Report 2017-2018*, www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf.

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Some economies have taken steps to improve their IPR frameworks to provide more certainty and encourage R&D. Serbia has established rules governing the splitting of IPR between individuals and institutions, which should encourage researchers to patent their discoveries in the future. Turkey is also carrying out legislative reform that has the potential to boost patent applications. Other economies have not clearly defined the split of royalties. North Macedonia envisages measures to increase awareness of IPR among SMEs in its Competitiveness Strategy, but has yet to take any concrete steps to do so.

Despite the improved IPR frameworks across the region, interviews with stakeholders revealed that lack of awareness about IPR and of a coherent IPR strategy are common limitations for SMEs. A large majority of SMEs do not integrate IPR into their overall business strategy, and they struggle to grasp which intellectual property instruments are relevant for them to enhance their competitiveness.

The way forward for SMEs and research institution collaboration and technology transfer

- **Intensify co-operation between academia and the private sector.** Policies have emerged to encourage research institutions to develop applied technologies; however, synergies with the private sector are few and incentives for firms to commercialise new technologies are underutilised. More efforts are needed to close the gap, for instance through more dialogue and joint project development

under a triple helix framework or active work exchange placements. Better use of innovation voucher schemes could offer further incentives to businesses and academic institutions to start collaborating, by reducing the risks involved in initial exploration. Sweden's experience can offer valuable lessons for the Western Balkan and Turkey economies (Box 10.6).

- **Scale up IPR support services for SMEs.** Only a small number of SMEs use IPRs, either because they lack the necessary knowledge and expertise, or they find procedures to protect their rights too costly (EC, 2016^[26]). There is a real need for SMEs to better grasp what intellectual property is and how they can make effective use of it. In this context, policy makers should raise awareness of the strategic opportunities offered by IPRs with the help of tailored information and training programmes. These programmes should also be customised so as to better meet the needs of SMEs operating in different sectors. The programmes could be designed by SME agencies in co-operation with the existing institutions, such as STPs and incubators.

Box 10.6. Sweden's National Incubator Programme: Performance-based support

Sweden is an innovation leader, according to the EC's 2018 Innovation Scoreboard (EC, 2018^[6]). Private sector investment in R&D, non-R&D innovation expenditure and ICT training are higher than the EU averages, and the country benefits from an attractive research system.

This achievement is the result of a targeted and holistic policy framework to support innovation which Swedish governments have pursued consistently over the past two decades. In 2001 the Swedish Innovation Agency VINNOVA was established, consolidating the scope of three former innovation and R&D funding agencies and providing a unique common vision for Sweden's knowledge economy. Following a triple helix approach, the agency's focus (particularly in its early years) has been on strengthening innovation co-operation among government, businesses and academia. While this focus has broadly remained, increasing emphasis has also been given to supporting entrepreneurship and business innovation.

In 2003, the authorities established the large-scale National Incubation Program (NIP), originally under VINNOVA's leadership, with the aim of boosting the innovation ecosystem for start-ups by providing funding to incubators. The NIP has gone through various iterations and changes of leadership over the years, but was reassigned to VINNOVA in 2015. Throughout this time, a consistent focus of the programme was on quantitative and qualitative performance measurement, aiming at identifying and supporting those incubators generating impact and effectiveness. The NIP broadly comprises three dimensions of funding for incubators:

- **Basecamp:** widely available to most incubators that meet basic requirements related to operations and number of firms served.
- **Explorer:** facilitating joint programmes to enhance collaboration between individual incubators on innovative projects.
- **Summit:** performance-based funding to selected incubators that have successfully achieved a variety of performance metrics.

The NIP's three-tiered approach allows for a flexible deployment of funding in a

transparent and comprehensive way. The design also takes into consideration regional discrepancies in overall innovation and start-up performance, and provides incentives to incubators to develop long-term strategies to improve their performance and impact. The NIP also ensures that funding is well synchronised and available to start-ups at different stages of development and capacity.

Today, Sweden enjoys one of the most active and comprehensive networks of incubators operating relatively evenly across economic hubs and less developed regions.

In addition to providing funding, the main goal – and subsequent success – of the NIP has been the creation of a large-scale incubator community which is based on benchmarking and performance monitoring and evaluation. A self-reporting database tool, accessible to incubators and both current and graduated companies, assesses key performance indicators, both at incubator and firm level. It includes key metrics such as public or private funding received, sales, employment, client satisfaction and survival rates. In 2010, a qualitative assessment in the form of on-site visits to incubators was further incorporated into the monitoring and evaluation framework.

Sweden's approach provides not only an efficient internal management tool for incubators that allows them to benchmark their performance against peers, but also a comprehensive set of performance data for Sweden's start-up community, which is an essential baseline for formulating future policy interventions in this space.

Sources: Sweden's Innovation Agency (2018^[27]), *Sweden's Innovation Agency website*, <https://www.vinnova.se/en/>; Swedish Incubators and Science Parks (2018^[28]), *Swedish Incubators and Science website*, <https://www.sisp.se/>; Centre for Digital Entrepreneurship and Economic Performance (2015^[29]), *Centre for Digital Entrepreneurship and Economic Performance website*, <http://deepcentre.com/>

Conclusions

Since the last assessment, it is evident that the WBT economies have recognised the importance of innovation policies for their development. They have made significant progress in developing holistic innovation frameworks, and the majority have an innovation strategy in place. However, implementing the strategies effectively is still proving to be a challenge. Horizontal co-ordination among the relevant ministries and agencies has room for improvement.

All the governments have implemented new policy measures to support innovation in SMEs, though scale and output has been somewhat mixed. The disbursement of funds allocated for innovation remains low, pointing to the need to better inform SMEs on how to access and absorb the available funds.

Incubators and accelerators have become more widespread, but the public funds supporting them remain scarce. Co-operation between academia and the private sector remains an ongoing challenge which warrants further attention across the region.

Notes

¹ Horizon 2020 is the biggest EU-funded research and innovation programme, and covers the period from 2014 to 2020. The overall objective of the programme is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation. With nearly EUR 80 billion of funding it promotes research and innovation by facilitating the commercialisation of innovative ideas from the lab to the market. In particular, Horizon 2020 provides grants to research and innovation projects through open and competitive calls for proposals. Legal entities from any country are eligible to submit project proposals to these calls. Participation from outside the European Union is explicitly encouraged (EC, 2020^[31]).

² For a description of the complex administrative set-up in Bosnia and Herzegovina and how this was handled in the scoring process, please refer to Annex B.

³ The NUTS classification (Nomenclature of Territorial Units for Statistics) is a hierarchical system for dividing up the economic territory. For more information see Eurostat (2018^[30]).

⁴ This refers to innovations which are only new to the firm but available on the market.

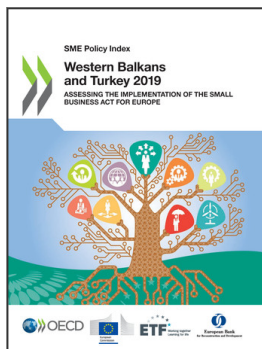
⁵ An equity ticket represents the amount of funding that an accelerator, incubator or any other investor gives to a startup in exchange for equity in the firm.

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