



The identification of priority domains in Kosovo*.

A mapping exercise

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SMART SPECIALISATION IN

Kosovo

*This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence



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Abstract

This study supports a first identification of the economic and productive domains that might be considered in the selection of the priority areas for a Smart Specialisation Strategy in Kosovo. It includes both a quantitative and a qualitative analysis that identify a number of industries and sub-areas to be further explored in the following Entrepreneurial Discovery Process (EDP), one of the major steps in the design of a Smart Specialisation strategy. The quantitative mapping study is based on a combination of different statistical methodologies and explores the economic, scientific and innovation potential of Kosovo, whereas the qualitative analysis uses public consultations and interviews. The qualitative analysis, which integrates the outcomes of the quantitative diagnosis, identifies three “vertical” economic and productive areas (wood processing, food processing, and green energy) and two more “horizontal” ones (ICT and creative industries) as showing a great potential for triggering the transformation and drive Kosovo into a more competitive economy.

Both diagnostic stages dealt with relevant challenges related to data availability, especially during the quantitative analysis, as well as with difficulties in reaching out with the stakeholders of the priority areas selected, for a number of reasons including mistrust, post-COVID situation, and a general lack of information on Smart Specialisation.

The findings of both diagnostic phases will be further explored during the EDP that is expected to be closed early in 2023. Most importantly, this exercise is to be considered as a first step toward a better diagnosis of the economic and productive context that will need future and continuous updates.

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Executive summary

This study supports a first identification of the economic and productive domains that might be considered in the selection of the priority areas for a Smart Specialisation Strategy in Kosovo, and it includes both a quantitative and a qualitative analyses.

Smart Specialisation is one of the flagship initiatives of the Western Balkan Agenda on Research, Innovation, Education, Culture, Youth and Sport. It is also included in other EU policy documents regarding the region, such as the 2021 Communication on EU Enlargement Policy and the Economic and Investment Plan for the Western Balkans. More and more often, it is identified as a policy instrument for better and more effective public policies on innovation and territorial development, as it allows to prioritize assets and available resources.

The commitment of Kosovo in the Smart Specialisation process started in 2018 when it registered in the Smart Specialisation Platform. In July 2020, the Government approved the establishment of a National Team for the Smart Specialisation Strategy, which includes representatives from the government, the statistical office, academia, business associations and civil society. The Strategic Planning Office under the Office of the Prime Minister is in charge of coordinating the process in Kosovo. Since then, Kosovo has been implementing a roadmap for the definition of a National Strategy for Smart Specialisation, with the assistance of the EC and according to the JRC methodological framework for Smart Specialisation in the EU Enlargement and Neighbourhood region. The quantitative mapping, coordinated by the national authorities and supported by the JRC started in October 2020 and was finalized in August 2021. The qualitative mapping started in November 2021 and was closed in May 2022. Kosovo is now in the EDP phase that will be finalized in early 2023.

The Smart Specialisation approach encourages the combination of evidence-informed policy making with consultation of the key actors of a regional or national eco-system. The mapping phase is crucial to detect which sub-sectoral specialisations have appropriate critical mass, innovative activity as well as scientific and technological output to drive economic transformation in the medium-long term, and can therefore be the subject of important public investment. This technical report includes on the one side a statistical quantitative analysis mapping of the economic, innovation, scientific and technological potential of the Kosovo economy by using a variety of statistical data and methodologies, and on the other side a qualitative analysis that enables consideration of market actors' perspectives and positioning. Both diagnostic exercises have been based on the recommendations of JRC and S3 Framework for EU Enlargement and Neighbourhood region, and have been carried out by a team of international and local experts with consolidated experience in innovation and smart specialisation related topics.

The quantitative analysis looks at the economic, scientific and innovation potential of Kosovo. The economic analysis uses statistical data for individual economic industries provided by the Kosovo Agency of Statistics on number of enterprises, number of employees, turnover, wages and exports of goods for the period 2010-2020. In addition to industries with a current economic potential, the analysis could overlook industries in which Kosovo is not yet specialised, which are still small or where average wages are relatively low, but where there are clear signs of improvement over time, which could turn them into industries with a current economic potential in the few years' time. These industries have been identified as industries with a dynamic or emerging economic potential.

The report then focuses on the results of identifying the innovation potential of industries in Kosovo using data on innovation activities from different editions of the Balkan Business Barometer and World Bank Enterprise Survey. The report also analyses industries' trade specialisation by comparing Kosovo's export performance with the export performance in a pool of selected benchmark countries.

The results of the different analyses are combined in a final integrated assessment of the economic and innovation potential of Kosovo in which emerge the following sectors: - **NACE 242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel**; - **NACE 259 Manufacture of other fabricated metal products**; - **NACE 412 Construction of residential and non-residential buildings**; - **NACE 581 Publishing of books, periodicals and other publishing activities**.

An analysis of two different sources for publication data finally shows that there is empirical evidence that Kosovo is publishing intensely in areas as Economics, Environmental sciences, Mathematics and Medicine.

Going to the qualitative analysis, based on the survey and in-depth interview results, development opportunities are believed to be related to five areas, where great importance assume the automation of processes, digitalization, new digital frontiers (artificial intelligence, IoT sensors, and machine learning), and

energy transition (use of renewable sources). As the analysis reveals main positive experiences regarding inter sectorial interactions, **1) wood processing, 2) food processing, and 3) green energy have been identified as “vertical preliminary priority areas and 4) Information and Communication technologies (ICT), and 5) creative industries as “horizontal” ones** that strongly interact with the other three and create inter-industrial synergies. Based on this, a few sub-areas that should be further explored with the EDP have been detected: **for Green energy:** - Renewable Energy Sources, and - Energy Efficiency Measures; **for ICT:** - Software development; - Computer Programming Services; - Telecommunication Services; - Advanced ICT services including IOT, AI, Machine Learning; **for creative industries:** - Marketing and Digital Creation Services.

1 Introduction

This technical report has been drafted within the framework of the project “Support to Smart Specialisation in the Enlargement and Neighbourhood region” led by JRC and aimed at accompanying the Western Balkan economies in the design process of their Smart Specialisation Strategies. Smart Specialisation is one of the flagship initiatives of the Western Balkan Agenda on Research, Innovation, Education, Culture, Youth and Sport. It is also included in other EU policy documents regarding the region, such as the 2021 Communication on EU Enlargement Policy and the Economic and Investment Plan for the Western Balkans.

In 2018, JRC presented a Smart Specialisation Framework for the Enlargement and Neighbourhood region that is meant to be a guideline for the government towards the definition of their Smart Specialisation priority areas as well as related policy instruments. The Framework includes five main phases – institutional capacity building, diagnosis, stakeholders’ dialogue, definition of the policy mix, draft of the Strategy – and provides indications on how to define the main elements for an effective Smart Specialisation Strategy.

This preliminary study including the quantitative and qualitative diagnosis is fundamental for a twofold reason. On the one side, it is a necessary step to identify the economic, scientific and technological potential of the economy and possibly detect those sub-areas that could be prioritized by public investment and innovation policies; on the other side, it serves as a basis for a better knowledge of the eco-system and the starting point for improving the availability of data as well as the involvement of stakeholders in the decision making process.

Each of the two parts regarding the quantitative and qualitative study, respectively, describes the methodological framework used and the results obtained. In the Annexes, statistical tables of the analysis and the questionnaires of the qualitative study are provided.

The report comprises eight chapters. Chapters 2 and 3 focus on the quantitative mapping exercise, and describe the data and methodology used for identifying the economic and innovation potential of Kosovo. Chapter 4 provides some integrative results for the scientific potential perspective. Chapter 5 provides main findings from the quantitative analysis and some recommendations based on data availability issues encountered. Chapter 6 introduces the qualitative analysis based on previous statistical outcomes, providing information on the methodological framework. Chapter 7 describes the results of both survey and in-depth interviews used to integrate the quantitative analysis. Chapter 8 sums up the conclusions of both diagnostic phases and make a reference to the next phase of the EDP.

2 Mapping the economic potential of Kosovo

The objective of the mapping of the economic potential is to identify economic priority domains: these are industries with current or emerging¹ economic strengths having a potential to drive economic transformation.

2.1 Data availability for Kosovo

The mapping of the economic potential uses data on employment, turnover and average wages. The following annual economic data for 2010-2020 have been made available by the Kosovo Agency of Statistics:

- Number of active enterprises for 580 NACE 4-digit industries
- Turnover for 585 NACE 4-digit industries
- Number of employees for 578 NACE 4-digit industries
- Wages or salaries for 578 NACE 4-digit industries

An analysis using data for NACE 4-digit industries would be too detailed and would also complicate combining the results with those of the mapping of the innovation potential for which, at best, data are available at the NACE 3-digit level. The economic data have therefore been aggregated to the NACE 3-digit level including 264 NACE 3-digit industries. Data for a particular industry and year are only included in the analysis if for that industry and year data are available for all four above-mentioned variables.

The evolution over time of these economic variables is shown in Table 1 and Figure 1. The number of active enterprises has been increasing over time to 43,100 in 2020. Turnover, in nominal prices, has more than doubled between 2010 and 2020 and wages, also in nominal prices, have almost doubled. The number of employees has been increasing, after a decline in both 2011 and 2012, to more than 244,000 in 2020. Average wages are calculated as the ratio between wages and number of employees and average wages have been increasing up until 2019

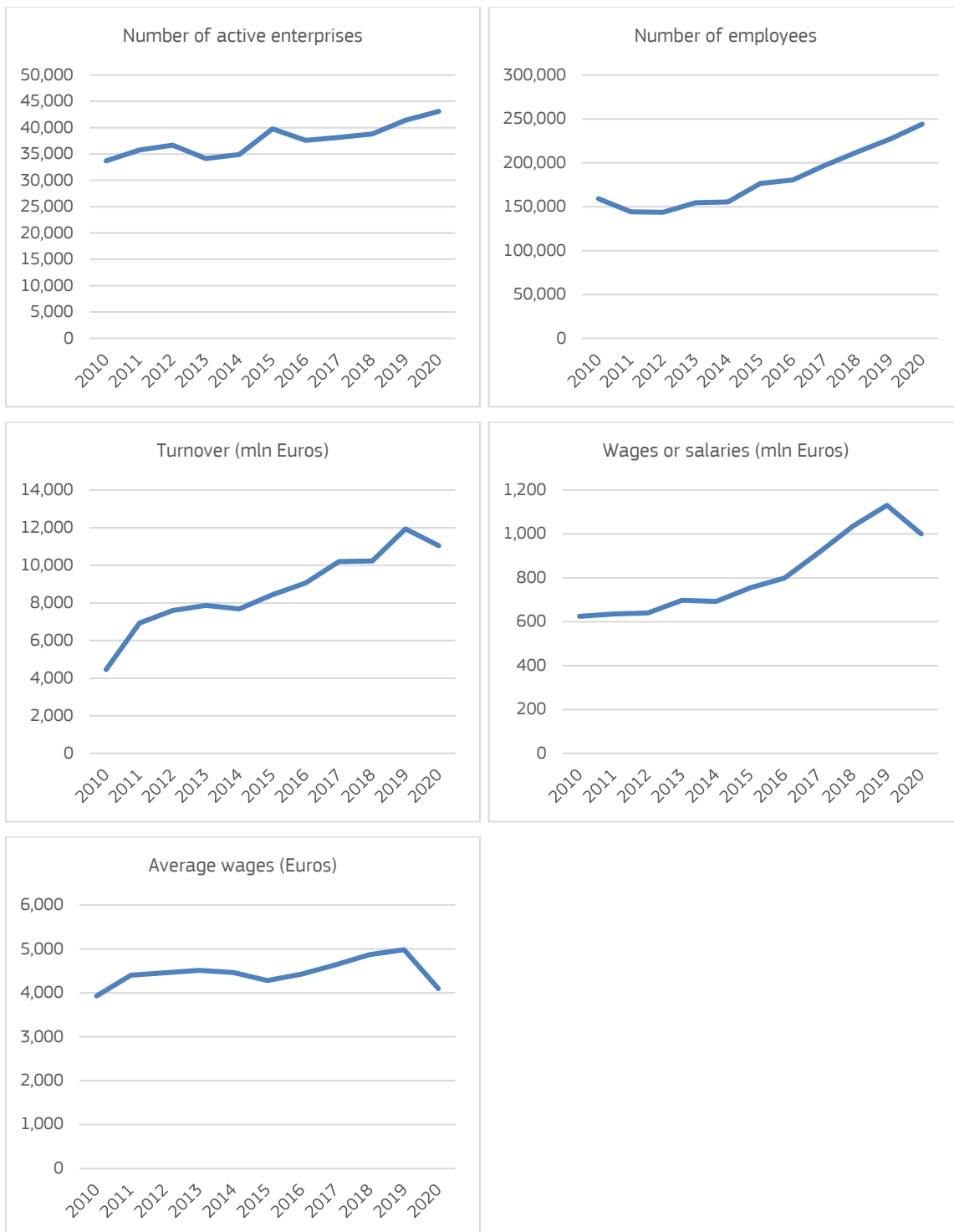
Table 1 Aggregate economic data for Kosovo

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of active enterprises	33,693	35,791	36,698	34,137	34,900	39,772	37,592	38,177	38,825	41,395	43,100
Turnover (million Euros)	4,452.5	6,920.5	7,592.4	7,862.2	7,681.5	8,439.6	9,058.4	10,195.5	10,229.0	11,935.6	11,045.7
Number of employees	158,955	144,240	143,655	154,540	155,369	176,339	180,291	197,096	212,517	226,890	244,018
Wages or salaries (million Euros)	624.5	635.0	640.3	696.8	693.0	754.2	798.4	914.3	1,034.9	1,130.4	1,000.3
Average wages (Euros)	3,928.6	4,402.2	4,457.4	4,508.9	4,460.5	4,277.2	4,428.7	4,639.1	4,869.9	4,982.1	4,099.4

Data source: Kosovo Agency of Statistics

¹ Emerging in this case only refers to the fact that these industries have been growing at above average rates. Emerging is not meant to reflect any kind of value statement as e.g. in the commonly used concept of “emerging economies”.

Figure 1 Aggregate economic data for Kosovo



Data source: Kosovo Agency of Statistics

2.2 Methodology for mapping the economic potential using economic data

The mapping exercise includes both an identification of industries with a static or current economic potential that are already highly specialised with relatively high average wages, and industries with a dynamic or emerging economic potential where employment, turnover and average wages have been growing at above average rates.

Industries with a *static or current economic potential* are established industries in which Kosovo is specialised compared to a selection of other countries. These industries should not be too small and have relatively high levels of average wages. Increasing the share of industries with high average wages will raise average wages in the country and contribute to the country's overall economic well-being. However, the mapping analysis is based on an analysis of past, although relatively recent, data. The analysis could overlook industries in which Kosovo is not yet specialised, which are still small or where average wages are relatively low, but where there are clear signs of improvement over time, which could turn these industries into industries with a current economic potential in the few years' time. These industries are identified as industries with a *dynamic or emerging economic potential* when there are positive and above average trend improvements in employment, turnover and average wages.

2.2.1 Selection of benchmark countries

For determining the degree of specialisation, the economic performance of industries in Kosovo needs to be compared to the performance of the same industries in a set of benchmark countries. For recent studies in Albania, Montenegro, and North Macedonia, the European Union (EU) was used as the benchmark. However, the EU is composed of 27 Member States of different economic size and structure. For the mapping of Kosovo, a benchmark with a selection of neighbouring countries would be more relevant as those differences between the regional economies are smaller.

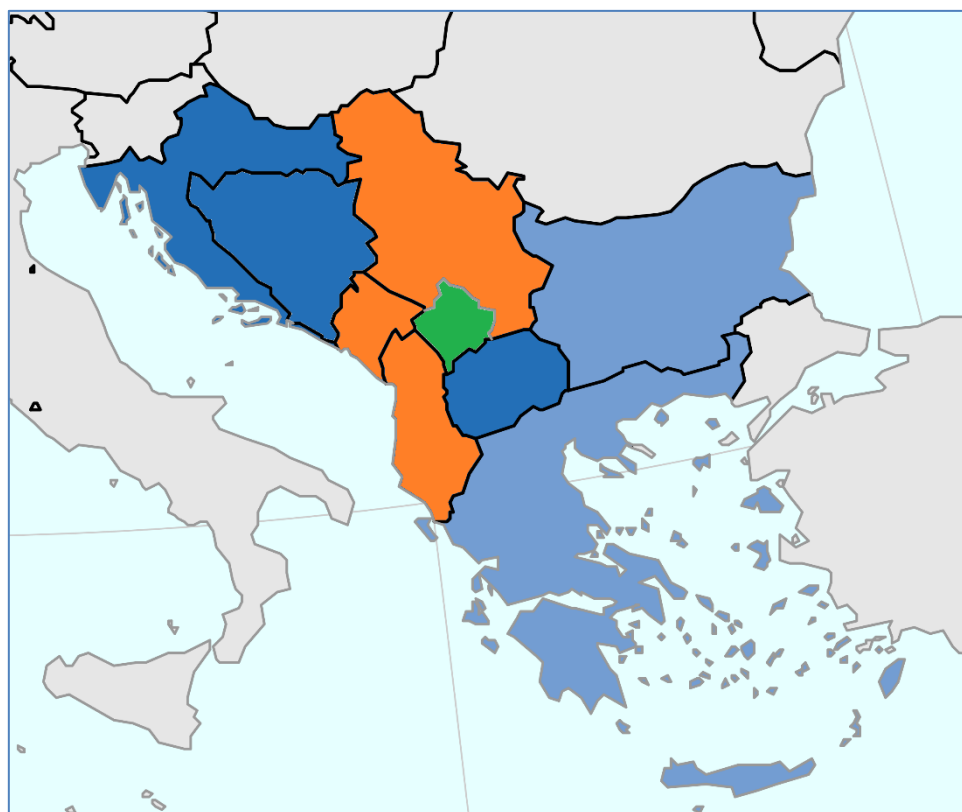
Economic data for NACE 4-digit industries for the business sector for EU Member States and several other European countries are available from Eurostat from the "Annual detailed enterprise statistics". Data for Agriculture, forestry and fishing (NACE A) and public services (NACE O-U) are not available. The business sector includes the following industries:

- B - Mining and quarrying
- C - Manufacturing
- D - Electricity, gas, steam and air conditioning supply
- E - Water supply; sewerage, waste management and remediation activities
- F - Construction
- G - Wholesale and retail trade; repair of motor vehicles and motorcycles
- H - Transportation and storage
- I - Accommodation and food service activities
- J - Information and communication
- K65 - Insurance, reinsurance and pension funding, except compulsory social security
- L - Real estate activities
- M - Professional, scientific and technical activities
- N - Administrative and support service activities
- S95 - Repair of computers and personal and household goods

For the benchmark countries, the focus will be on Western Balkans and other 'neighbouring' countries. Figure 2 shows for which of these countries data are available from Eurostat, i.e. Bosnia and Herzegovina, Croatia and North Macedonia (in dark blue). No data are available (in orange). Collecting these data from national sources would complicate the analysis as data might not be comparable. Data for Serbia are available for 3 years only (2016-2018), so it has not been included in the analysis. Bulgaria and Greece, (in light blue) have been included given their geographical proximity and the fact that both countries also face issues in their

economic development. For most of these countries data are available for at least 200 NACE 3-digit industries for the period 2012-2018. For North Macedonia data are available for less than 160 NACE 3-digit industries. There are no data available for the benchmark countries for 2019 and 2020.

Figure 2 Selected benchmark countries



Disclaimer: The designations employed and the presentation of material on the map do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Source: Map created with the European Commission's IMAGE tool (<https://gisco-services.ec.europa.eu/image>).

Compared to Kosovo, all benchmark countries have a larger population size and higher per capita income in both current US\$ and international PPP dollars (Table 2). Both the Agricultural and Industry sector in Kosovo account for a larger share of Gross Domestic Product (GDP) compared to the average of the benchmark countries, whereas the Services sector accounts for a smaller share of GDP.

Table 2 Descriptive statistics for Kosovo and benchmark countries and non-selected Western Balkan countries

	Population size (2020)	GDP capita per (current US\$) (2020)	GDP capita, per PPP (current international \$) (2020)	Agriculture, forestry, and fishing, value added (% of GDP) (2020)	Industry (including construction), value added (% of GDP) (2020)	Services, value added (% of GDP) (2020)
Kosovo	1,775,378	4,287	11,368	7.6	25.8	44.2
* Albania	2,837,743	6,032	13,818	19.3	19.7	48.4
Bosnia and Herzegovina	3,280,815	6,032	15,612	6.2	23.9	55.7
Bulgaria	6,927,288	9,976	24,367	3.4	23.0	60.2
Croatia	4,047,200	13,828	24,367	3.3	21.5	58.9
Greece	10,715,549	17,676	28,464	4.1	13.9	69.8
Montenegro ⁽¹⁾	621,718	7,686	20,567	6.4	16.1	58.7

North Macedonia	2,083,380	5,888	16,927	9.1	22.6	57.0
Serbia ⁽²⁾	6,908,224	7,666	19,231	6.5	24.8	51.5

^(1,2) Not including in analysis due to either no or limited data from Eurostat for individual industries.

Data source: World Bank, World Development Indicators (data extracted 30 June 2021)

2.2.2 Static analysis to identify industries with current economic strength

The following criteria are used to identify industries with current economic strength:

- Critical mass ('size'): too small industries, with only a small weight in the economy, are less relevant for developing and implementing policies. The absolute size of industries matters and industries' size or 'critical mass' is measured by the share of employment in that industry in the country:

$$cm_i = e_i / e$$

where

cm_i = critical mass or relative size of industry i in Kosovo

e_i = number of employees or turnover in industry i in Kosovo

e = total number of employees or turnover in Kosovo

- Specialisation: measures if, in relative terms, an industry is more important for Kosovo than it is for the selected benchmark countries. Specialisation is measured using Location Quotients (LQs), which are defined as:

$$LQ_i = (e_i / e) / (E_i / E)$$

where

LQ_i = location quotient for industry i in Kosovo

e_i = number of employees or turnover in industry i in Kosovo

e = total number of employees or turnover in Kosovo

E_i = number of employees or turnover in industry i in benchmark countries

E = total number of employees or turnover in benchmark countries

An LQ above 1 shows an above average concentration in the industry, i.e., the share of employment or turnover of that industry in Kosovo is higher than the average share of employment or turnover of that same industry in the selected benchmark countries. An LQ below 1 shows a below average concentration in the industry, i.e., the share of employment or turnover of that industry in Kosovo is lower than the average share of employment or turnover of that same industry in the selected benchmark countries.

- Average wages ('productivity'): average wages per employee (calculated as the ratio of Total wages and Number of employees) is used as an additional criterion for selecting industries with an economic potential. Industries with close to or above average wages are expected to contribute more to the economic development of Kosovo. Average wages should be above a certain threshold compared to both average wages for all industries in Kosovo and average wages in the same industry for the selected benchmark countries:

aw_i = average wages in industry i in Kosovo

aw = average wages in Kosovo

AW_i = average wages in industry i in selected benchmark countries

The mapping exercise identifies industries as having a static or current economic potential for which:

- Size is sufficiently high, i.e., above a pre-defined threshold value:

$$cm_i > X$$

Industries should account for at least X% of total number of employees or turnover in Kosovo.

- Specialisation (LQ) is sufficiently high, i.e., above a pre-defined threshold value:

$$LQ_i > Y$$

Industries with a degree of specialisation, for both number of employees and turnover, above Y are defined as specialized.

- Average wages are sufficiently high compared to average wages for all industries in Kosovo:

$$aw_i > Z_1 * aw$$

Industries with wages higher than Z_1 times the level of average wages in Kosovo perform close to or above the country's average.

- Average wages are sufficiently high compared to average wages in the same industry in the selected benchmark countries:

$$aw_i > Z_2 * AW_i$$

Industries with wages higher than Z_2 times the level of average wages in the same industry in the selected benchmark countries perform close to or above the industry average in the selected benchmark countries.

There are no set rules for determining the threshold values X, Y, Z_1 and Z_2 . The most common practice is to start with threshold values which are also used in other studies and then to either use these if the number of selected industries matches policy needs, or to decrease a threshold if the number of selected industries is too small or to increase a threshold if the number of selected industries is too high. For the results presented in section 2.3, the thresholds shown in Table 3 have been used. Industries should account for more than 0.10% of both total employment and turnover in Kosovo, their degree of specialisation for both employment and turnover should be higher than 1.1. Average wages should be higher than 80% of the level of average wages in Kosovo and should be higher than 50% of the level of average wages in the same industry in the selected benchmark countries.

Table 3 Selection criteria for mapping of current economic potential

Criteria	Threshold	Value
Size – employment and turnover	X	0.10%
Specialisation – employment and turnover	Y	1.1
Average wages relative to Kosovo	Z_1	80
Average wages relative to same industry in selected benchmark countries	Z_2	50

Data source: Author's elaboration

Industries should pass these thresholds for at least 7 out of 9 years (2012 to 2020) for size and average wages relative to Kosovo and for at least 5 out of 7 years (2012 to 2018) for specialisation and average wages relative to the same industry in the selected benchmark countries. Data for 2010 and 2011 are not used for size and average wages relative to Kosovo to ensure that the same base year is used in both comparisons, with Kosovo and the selected benchmark countries.

2.2.3 Dynamic analysis to identify industries with emerging economic strength

The following criteria are used to identify industries with emerging economic strength:

- Employment share: The trend for 2012-2020 should be positive and at least 1.5 times as high as the trend for total employment for Kosovo. Trends are defined as the ratio between the slope of a linear regression over the period 2012-2020 and the average value for employment for the same years. The trend should be statistically significant, i.e. the adjusted R^2 should be at least 0.70.
- Specialisation in employment: The trend for 2012-2018 should be positive and statistically significant. Trends are defined as the slope of the linear regression over the period 2012-2018 and the average value for the degree of specialisation for the same years. Trends are significant if the adjusted R^2 is at least 0.70.
- Turnover share: The trend for 2012-2020 should be positive and at least 1.5 times as high as the trend for total turnover for Kosovo. Trends are defined as the ratio between the slope of a linear

regression over the period 2012-2020 and the average value for turnover for the same years. The trend should be statistically significant, i.e. the adjusted R^2 should be at least 0.70.

- Specialisation in turnover: The trend for 2012-2018 should be positive and statistically significant. Trends are defined as the slope of the linear regression over the period 2012-2018 and the average value for the degree of specialisation for the same years. Trends are significant if the adjusted R^2 is at least 0.70.
- Average wages relative to Kosovo: The trend for 2012-2020 should be positive and statistically significant. Trends are defined as the ratio between the slope of a linear regression over the period 2012-2020 and the average value for average wages relative to Kosovo for the same years. Trends are significant if the adjusted R^2 is at least 0.70.
- Average wages relative to the same industry in the selected benchmark countries: The trend for 2012-2018 should be higher than the trend for total average wages relative to total average wages in the selected benchmark countries. Trends are defined as the ratio between the slope of a linear regression over the period 2012-2018 and the average value for average wages relative to the same industry in the selected benchmark countries for the same years. Trends are significant if the adjusted R^2 is at least 0.70.

An industry is defined as having a dynamic or emerging economic potential if it passes at least four of these criteria. Assuming that all criteria or at least five criteria should be passed would result in a too small number of industries with a dynamic or emerging economic potential.

2.3 Results of the mapping of the economic potential

Results for the mapping of the current economic potential are discussed in section 2.3.1. Results for the mapping of the emerging economic potential are discussed in section 2.3.2. Both results are then combined in section 2.3.3.

2.3.1 Current economic potential - results

Results for identifying industries with a current economic potential are shown in Annex A. If industries pass a threshold the value in the respective table cell is 1, otherwise it is 0. Industries for which comparable data for the selected benchmark countries are not available are highlighted in orange in the first column. The third column (EMPL SIZE) shows if and how many industries (108) passed the size criterion for employment, the fourth column (EMPL SPEC) shows if and how many industries (47) passed the specialisation criterion for employment, the fifth column (TURN SIZE) shows if and how many industries (84) passed the size criterion for turnover, the sixth column (TURN SPEC) shows if and how many industries (34) passed the specialisation criterion for turnover, the seventh column (WGS KV) shows if and how many industries (80) passed the criterion for average wages relative to those in Kosovo, and the eight column (WGS BEN) shows if and how many industries (66) passed the criterion for average wages relative to those in the same industry in the selected benchmark countries. Finally, the last column (CEP) shows how many criteria each industry passed and how many industries (9) passed all 6 criteria and would have a current economic potential.

These 9 industries with a current economic potential account for 18% of total employment and 26% of total turnover. On the following pages, for each of these 9 industries the performance on the selection criteria and the description of the included NACE 4-digit classes will be discussed.

236 Manufacture of articles of concrete, cement and plaster

Industry is part of Manufacturing (NACE C)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
1.4%	4.021	1.5%	3.577	108.0	61.4

This industry accounts for about 1.5% of employment and turnover. Compared to the benchmark countries, the industry shows a high degree of specialisation for both employment and turnover. Average wages are higher than those in Kosovo and relatively high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

- 23.61 Manufacture of concrete products for construction purposes

This class includes manufacture of precast concrete, cement or artificial stone articles for use in construction: tiles, flagstones, bricks, boards, sheets, panels, pipes, posts etc.; manufacture of prefabricated structural components for building or civil engineering of cement, concrete or artificial stone.

- 23.62 Manufacture of plaster products for construction purposes

This class includes manufacture of plaster articles for use in construction: boards, sheets, panels etc.

- 23.63 Manufacture of ready-mixed concrete

This class includes manufacture of ready-mix and dry-mix concrete and mortars. This class excludes manufacture of refractory cements (23.20).

- 23.64 Manufacture of mortars

This class includes manufacture of powdered mortars. This class excludes manufacture of refractory mortars (23.20); manufacture of dry-mixed concrete and mortars (23.63).

- 23.65 Manufacture of fibre cement

This class includes manufacture of building materials of vegetable substances (wood wool, straw, reeds, rushes) agglomerated with cement, plaster or other mineral binder; - manufacture of articles of asbestos-cement or cellulose fibre-cement or the like: corrugated sheets, other sheets, panels, tiles, tubes, pipes, reservoirs, troughs, basins, sinks, jars, furniture, window frames etc.

- 23.69 Manufacture of other articles of concrete, plaster and cement

This class includes manufacture of other articles of concrete, plaster, cement or artificial stone: statuary, furniture, bas- and haut-reliefs, vases, flowerpots etc.

412 Construction of residential and non-residential buildings

Industry is part of Construction (NACE F)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
6.5%	2.034	6.3%	2.290	86.2	71.1

This industry accounts for more than 6% of employment and turnover. Compared to the benchmark countries, the industry shows above average degrees of specialisation for both employment and turnover.

Average wages are below those in Kosovo but relatively high. Average wages are also high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

This group includes the construction of complete residential or non-residential buildings, on own account for sale or on a fee or contract basis. Outsourcing parts or even the whole construction process is possible. If only specialised parts of the construction process are carried out, the activity is classified in division 43.

— 41.20 Construction of residential and non-residential buildings

This class includes construction of all types of residential buildings: single-family houses, multi-family buildings, including high-rise buildings; construction of all types of non-residential buildings: buildings for industrial production, e.g. factories, workshops, assembly plants etc., hospitals, schools, office buildings, hotels, stores, shopping malls, restaurants, airport buildings, indoor sports facilities, parking garages, including underground parking garages, warehouses, religious buildings; assembly and erection of prefabricated constructions on the site. This class also includes remodelling or renovating existing residential structures. This class excludes construction of industrial facilities, except buildings (42.99); architectural and engineering activities (71.1); project management for construction (71.1).

421 Construction of roads and railways

Industry is part of Construction (NACE F)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
2.1%	1.801	2.8%	1.920	170.1	76.0

This industry accounts for more than 2% of employment and almost 3% of turnover. Compared to the benchmark countries, the industry shows above average degrees of specialisation for both employment and turnover. Average wages are much higher than those in Kosovo and high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

— 42.11 Construction of roads and motorways

This class includes construction of motorways, streets, roads, other vehicular and pedestrian ways; surface work on streets, roads, highways, bridges or tunnels: asphalt paving of roads, road painting and other marking, installation of crash barriers, traffic signs and the like; construction of airfield runways. This class excludes installation of street lighting and electrical signals (43.21); architectural and engineering activities (71.1); project management for construction (71.1).

— 42.12 Construction of railways and underground railways

This class includes construction of railways and subways. This class excludes installation of lighting and electrical signals (43.21); architectural and engineering activities (71.1); project management for construction (71.1).

— 42.13 Construction of bridges and tunnels

This class includes construction of bridges, including those for elevated highways; construction of tunnels. This class excludes installation of lighting and electrical signals (43.21); architectural and engineering activities (71.1); project management for construction (see 71.1).

461 Wholesale on a fee or contract basis

Industry is part of Wholesale and retail trade, repair of motor vehicles and motorcycles (NACE G)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
0.8%	1.266	3.2%	2.714	129.3	70.7

This industry accounts for almost 1% of employment and 3% of turnover. Compared to the benchmark countries, the industry shows above average degrees of specialisation for both employment and turnover. Average wages are higher than those in Kosovo and high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

This group includes activities of commission agents, commodity brokers and all other wholesalers who trade on behalf and on the account of others; activities of those involved in bringing sellers and buyers together or undertaking commercial transactions on behalf of a principal, including on the Internet.

This group also includes activities of wholesale auctioneering houses, including Internet wholesale auctions.

- 46.11 Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.12 Agents involved in the sale of fuels, ores, metals and industrial chemicals

This class includes agents involved in the sale of fuels, ores, metals and industrial chemicals, including fertilisers. This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.13 Agents involved in the sale of timber and building materials

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.14 Agents involved in the sale of machinery, industrial equipment, ships and aircraft

This class includes agents involved in the sale of machinery, including office machinery and computers, industrial equipment, ships and aircraft. This class excludes activities of commission agents for motor vehicles (45.1); auctions of motor vehicles (45.1); wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.15 Agents involved in the sale of furniture, household goods, hardware and ironmongery

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.16 Agents involved in the sale of textiles, clothing, fur, footwear and leather goods

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.17 Agents involved in the sale of food, beverages and tobacco

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

- 46.18 Agents specialised in the sale of other particular products

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99); activities of insurance agents (66.22); activities of real estate agents (68.31).

- 46.19 Agents involved in the sale of a variety of goods

This class excludes wholesale trade in own name (46.2 to 46.9); retail sale by non-store commission agents (47.99).

463 Wholesale of food, beverages and tobacco

Industry is part of Wholesale and retail trade, repair of motor vehicles and motorcycles (NACE G)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
3.1%	1.802	9.4%	1.284	104.1	53.2

This industry accounts for more than 3% of employment and 9% of turnover. Compared to the benchmark countries, the industry shows above average degrees of specialisation for both employment and turnover. Average wages are higher than those in Kosovo and relatively high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

- 46.31 Wholesale of fruit and vegetables

This class includes wholesale of fresh fruits and vegetables; wholesale of preserved fruits and vegetables.

- 46.32 Wholesale of meat and meat products
- 46.33 Wholesale of dairy products, eggs and edible oils and fats

This class includes wholesale of dairy products; wholesale of eggs and egg products; wholesale of edible oils and fats of animal or vegetable origin.

- 46.34 Wholesale of beverages

This class includes wholesale of alcoholic beverages; wholesale of non-alcoholic beverages. This class also includes buying of wine in bulk and bottling without transformation. This class excludes blending of wine or distilled spirits (11.01, 11.02).

- 46.35 Wholesale of tobacco products
- 46.36 Wholesale of sugar and chocolate and sugar confectionery

This class includes wholesale of sugar, chocolate and sugar confectionery; wholesale of bakery products.

- 46.37 Wholesale of coffee, tea, cocoa and spices
- 46.38 Wholesale of other food, including fish, crustaceans and molluscs

This class also includes wholesale of feed for pet animals.

- 46.39 Non-specialised wholesale of food, beverages and tobacco

581 Publishing of books, periodicals and other publishing activities

Industry is part of Information and communication (NACE J)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
0.7%	1.828	0.4%	1.581	122.4	50.8

This industry accounts for relatively small shares in employment and turnover. Compared to the benchmark countries, the industry shows above average degrees of specialisation for both employment and turnover. Average wages are higher than those in Kosovo and relatively high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

This group includes activities of publishing books, newspapers, magazines and other periodicals, directories and mailing lists, and other works such as photos, engravings, postcards, timetables, forms, posters and reproductions of works of art. These works are characterised by the intellectual creativity required in their development and are usually protected by copyright.

— 58.11 Book publishing

This class includes the activities of publishing of books in print, electronic (CD, electronic displays etc.) or audio form or on the Internet. Included are publishing of books, brochures, leaflets and similar publications, including publishing of dictionaries and encyclopaedias; publishing of atlases, maps and charts; publishing of audio books; publishing of encyclopaedias etc. on CD-ROM. This class excludes production of globes (32.99); publishing of advertising material (58.19); publishing of music and sheet books (59.20); activities of independent authors (90.03).

— 58.12 Publishing of directories and mailing lists

This class includes the publishing of lists of facts/information (databases) that are protected in their form, but not in their content. These lists can be published in printed or electronic form. This class includes publishing of mailing lists; publishing of telephone books; publishing of other directories and compilations, such as case law, pharmaceutical compendia etc.

— 58.13 Publishing of newspapers

This class includes the publishing of newspapers, including advertising newspapers, appearing at least four times a week. Publishing can be done in print or electronic form, including on the Internet. This class excludes news agency activities (63.91).

— 58.14 Publishing of journals and periodicals

This class includes the publishing of periodicals and other journals, appearing less than four times a week. Publishing can be done in print or electronic form, including on the Internet. Publishing of radio and television schedules is included here.

— 58.19 Other publishing activities

This class includes publishing (including on-line) of catalogues, photos, engravings and postcards, greeting cards, forms, posters, reproduction of works of art, advertising material, other printed matter; on-line publishing of statistics and other information. This class excludes publishing of advertising newspapers (58.13); on-line provision of software (application hosting and application service provisioning) (63.11).

582 Software publishing

Industry is part of Information and communication (NACE J)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
0.3%	5.144	0.2%	3.466	200.2	59.8

This industry accounts for relatively small shares in employment and turnover. Compared to the benchmark countries, the industry shows a high degree of specialisation for both employment and turnover. Average wages are much higher than those in Kosovo and relatively high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

- 58.21 Publishing of computer games

This class includes publishing of computer games for all platforms.

- 58.29 Other software publishing

This class includes publishing of ready-made (non-customised) software, including translation or adaptation of non-customised software for a particular market on own account: operating systems, business and other applications. This class excludes reproduction of software (18.20); retail sale of non-customised software (47.41); production of software not associated with publishing, including translation or adaptation of non-customised software for a particular market on a fee or contract basis (62.01); on-line provision of software (application hosting and application service provisioning) (63.11).

611 Wired telecommunications activities

Industry is part of Information and communication (NACE J)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
2.6%	4.653	1.7%	2.019	190.8	55.5

This industry accounts for 2.6% of employment and 1.7% of turnover. Compared to the benchmark countries, the industry shows a high degree of specialisation for employment and an above average degree of specialisation for turnover. Average wages are much higher than those in Kosovo and relatively high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

- 61.10 Wired telecommunications activities

This class includes operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound and video using a wired telecommunications infrastructure, including: operating and maintaining switching and transmission facilities to provide point-to-point communications via landlines, microwave or a combination of landlines and satellite linkups, operating of cable distribution systems (e.g. for distribution of data and television signals), furnishing telegraph and other non-vocal communications using own facilities. The transmission facilities that carry out these activities, may be based on a single technology or a combination of technologies. This class also includes purchasing access and network capacity from owners and operators of networks and providing telecommunications services using this capacity to businesses and households; provision of Internet access by the operator of the wired infrastructure. This class excludes telecommunications resellers (61.90).

619 Other telecommunications activities

Industry is part of Information and communication (NACE J)

Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
0.5%	4.409	0.9%	5.678	203.8	92.9

This industry accounts for relatively small shares in employment and turnover. Compared to the benchmark countries, the industry shows a high degree of specialisation for both employment and turnover. Average

wages are much higher than those in Kosovo and high compared to those in the same industry in the benchmark countries.

The industry includes the following activities:

- 61.90 Other telecommunications activities

This class includes provision of specialised telecommunications applications, such as satellite tracking, communications telemetry, and radar station operations; operation of satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems; provision of Internet access over networks between the client and the ISP not owned or controlled by the ISP, such as dial-up Internet access etc.; provision of telephone and Internet access in facilities open to the public; provision of telecommunications services over existing telecom connections: VOIP (Voice Over Internet Protocol) provision; telecommunications resellers (i.e. purchasing and reselling network capacity without providing additional services). This class excludes provision of Internet access by operators of telecommunications infrastructure (61.10, 61.20, 61.30).

2.3.2 Emerging economic potential – results

Results for identifying industries with an emerging economic potential are shown in Annex B. If industries pass a threshold the value in the respective table cell is 1, otherwise it is 0. Industries for which comparable data for the selected benchmark countries are not available are highlighted in orange in the first column. The third column (EMPL SIZE) shows if and how many industries (84) passed the change in size criterion for employment, the fourth column (EMPL SPEC) shows if and how many industries (44) passed the change in specialisation criterion for employment, the fifth column (TURN SIZE) shows if and how many industries (65) passed the change in size criterion for turnover, the sixth column (TURN SPEC) shows if and how many industries (29) passed the change in specialisation criterion for turnover, the seventh column (WGS KV) shows if and how many industries (48) passed the change criterion for average wages relative to those in Kosovo, and the eighth column (WGS BEN) shows if and how many industries (22) passed the change criterion for average wages relative to those in the same industry in the selected benchmark countries. Finally, the last column (EEP) shows how many criteria each industry passed and how many industries (18) passed at least four criteria and would have an emerging economic potential².

These 18 industries with an emerging economic potential account for 5% of total employment and 6% of total turnover. On the following pages, for each industry the performance on both the current and the emerging selection criteria and the description of the included NACE 4-digit classes will be discussed.

102 Processing and preserving of fish, crustaceans and molluscs

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.00%	0.029	0.00%	0.004	43.2	16.9
Emerging	0.253	0.655	0.494	0.911	0.221	0.558

This industry shows high trend performance on all criteria. The current economic significance is limited given very small shares for employment and turnover.

² Increasing the selection threshold to all least 5 out of the 6 criteria would reduce the number of industries with an emerging economic potential to 7 accounting for 1.1% of total employment and 0.6% of total turnover. Increasing the selection threshold to all 6 criteria would reduce the number of industries with an emerging economic potential to only 2 accounting for just above 0.00% of total employment and total turnover.

The industry includes the following activities:

- 10.20 Processing and preserving of fish, crustaceans and molluscs

This class includes preparation and preservation of fish, crustaceans and molluscs: freezing, deep-freezing, drying, cooking, smoking, salting, immersing in brine, canning etc.; production of fish, crustacean and mollusc products: fish fillets, roes, caviar, caviar substitutes etc.; production of fishmeal for human consumption or animal feed; production of meals and solubles from fish and other aquatic animals unfit for human consumption. This class also includes activities of vessels engaged only in the processing and preserving of fish; processing of seaweed. This class excludes processing and preserving of fish on vessels engaged in fishing (03.11); processing of whales on land or specialised vessels (10.11); production of oils and fats from marine material (10.41); manufacture of prepared frozen fish dishes (10.85); manufacture of fish soups (10.89).

203 Manufacture of articles of paper and paperboard

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.11%	1.688	0.11%	1.263	83.9	35.8
Emerging	0.099	0.067	0.132	0.098	0.041	0.062

This industry shows above average but not very high trend performance on all criteria. The current economic significance is already relatively high with employment and turnover shares above 0.1%, high degrees of specialisation for both employment and turnover, and relatively high average wages compared to Kosovo.

The industry includes the following activities:

- 20.30 Manufacture of paints, varnishes and similar coatings, printing ink and mastics

This class includes manufacture of paints and varnishes, enamels or lacquers; manufacture of prepared pigments and dyes, opacifiers and colours; manufacture of vitrifiable enamels and glazes and engobes and similar preparations; manufacture of mastics; manufacture of caulking compounds and similar non-refractory filling or surfacing preparations; manufacture of organic composite solvents and thinners; manufacture of prepared paint or varnish removers; manufacture of printing ink. This class excludes manufacture of dyestuffs and pigments (20.12); manufacture of writing and drawing ink (20.59).

232 Manufacture of refractory products

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.02%	1.520	0.02%	3.336	101.1	46.2
Emerging	0.220	0.221	0.211	0.377	0.107	0.088

This industry shows high trend performance on 5 criteria. The current economic significance is limited given very small shares for employment and turnover. However, Kosovo shows clear signs of specialisation in the industry with degrees of specialisation for both employment and turnover above 1. Average wages are above those in Kosovo.

The industry includes the following activities:

- 23.20 Manufacture of refractory products

This class includes the manufacture of intermediate products from mined or quarried non-metallic minerals, such as sand, gravel, stone or clay. This class includes manufacture of refractory mortars, concretes etc.; manufacture of refractory ceramic goods: heat-insulating ceramic goods of siliceous fossil meals, refractory bricks, blocks and tiles etc., retorts, crucibles, muffles, nozzles, tubes, pipes etc. This class also includes manufacture of refractory articles containing magnesite, dolomite or chromite.

235 Manufacture of cement, lime and plaster

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.01%	0.096	0.01%	0.025	57.4	11.9
Emerging	0.177	0.200	0.220	0.273	0.020	0.026

This industry shows high trend performance on 2 criteria and above average but not very high trend performance on 4 criteria. The current economic significance is limited given very small shares for employment and turnover.

The industry includes the following activities:

- 23.51 Manufacture of cement

This class includes manufacture of clinkers and hydraulic cements, including Portland, aluminous cement, slag cement and superphosphate cements. This class excludes manufacture of refractory mortars, concrete etc. (23.20); manufacture of ready-mixed and dry-mix concrete and mortars (23.63, 23.64); manufacture of articles of cement (23.69); manufacture of cements used in dentistry (32.50).

- 23.52 Manufacture of lime and plaster

This class includes manufacture of quicklime, slaked lime and hydraulic lime; manufacture of plasters of calcined gypsum or calcined sulphate. This class also includes manufacture of calcined dolomite. This class excludes manufacture of articles of plaster (23.62, 23.69).

242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.02%	0.274	0.05%	0.193	67.6	19.0

Emerging	0.414	0.916	0.544	1.400	0.148	-0.189
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This industry shows high trend performance on 5 criteria. The current economic significance is limited given very small shares for employment and turnover.

The industry includes the following activities:

- 24.20 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel

This class includes manufacture of seamless tubes and pipes of circular or non-circular cross section and of blanks of circular cross section, for further processing, by hot rolling, hot extrusion or by other hot processes of an intermediate product which can be a bar or a billet obtained by hot rolling or continuous casting; manufacture of precision and non-precision seamless tubes and pipes from hot rolled or hot extruded blanks by further processing, by cold-drawing or cold-rolling of tubes and pipes of circular cross section and by cold drawing only for tubes and pipes of non-circular cross section and hollow profiles; manufacture of welded tubes and pipes of an external diameter exceeding 406,4 mm, cold formed from hot rolled flat products and longitudinally or spirally welded; manufacture of welded tubes and pipes of an external diameter of 406,4 mm or less of circular cross section by continuous cold or hot forming of hot or cold rolled flat products and longitudinally or spirally welded and of non-circular cross section by hot or cold forming into shape from hot or cold rolled strip longitudinally welded; manufacture of welded precision tubes and pipes of an external diameter of 406,4 mm or less by hot or cold forming of hot or cold rolled strip and longitudinally welded delivered as welded or further processed, by cold drawing or cold rolling or cold formed into shape for tube and pipe of non-circular cross section; manufacture of flat flanges and flanges with forged collars by processing of hot rolled flat products of steel; manufacture of butt-welding fittings, such as elbows and reductions, by forging of hot rolled seamless tubes of steel; threaded and other tube or pipe fittings of steel. This class excludes manufacture of seamless tubes and pipes of steel by centrifugally casting (24.52).

259 Manufacture of other fabricated metal products

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.16%	0.366	0.08%	0.139	71.8	34.3
Emerging	0.109	0.041	0.128	0.081	0.020	0.014

This industry shows above average but not very high trend performance on all criteria. The current economic significance is limited, even if the employment share is above 0.1%, with low degrees of specialisation and relatively low average wages.

The industry includes the following activities:

This group includes the manufacture of a variety of metal products, such as cans and buckets; nails, bolts and nuts; metal household articles; metal fixtures; ships propellers and anchors; assembled railway track fixtures etc. for a variety of household and industrial uses.

- 25.91 Manufacture of steel drums and similar containers

This class includes manufacture of pails, cans, drums, buckets, boxes. This class excludes manufacture of tanks and reservoirs (25.2).

- 25.92 Manufacture of light metal packaging

This class includes manufacture of tins and cans for food products, collapsible tubes and boxes; manufacture of metallic closures.

— 25.93 Manufacture of wire products, chain and springs

This class includes manufacture of metal cable, plaited bands and similar articles; manufacture of uninsulated metal cable or insulated cable not capable of being used as a conductor of electricity; manufacture of coated or cored wire; manufacture of articles made of wire: barbed wire, wire fencing, grill, netting, cloth etc.; coated electrodes for electric arc-welding; manufacture of nails and pins; manufacture of springs (except watch springs): leaf springs, helical springs, torsion bar springs, leaves for springs; manufacture of chain, except power transmission chain. This class excludes manufacture of clock or watch springs (26.52); manufacture of wire and cable for electricity transmission (27.32); manufacture of power transmission chain (28.15).

— 25.94 Manufacture of fasteners and screw machine products

This class includes manufacture of rivets, washers and similar non-threaded products; manufacture of screw machine products; manufacture of bolts, screws, nuts and similar threaded products.

— 25.99 Manufacture of other fabricated metal products n.e.c.

This class includes manufacture of metal household articles: flatware: plates, saucers etc., hollowware: pots, kettles etc., dinnerware: bowls, platters etc., saucepans, frying pans and other non-electrical utensils for use at the table or in the kitchen, small hand-operated kitchen appliances and accessories, metal scouring pads; manufacture of building components of zinc: gutters, roof capping, baths, sinks, washbasins and similar articles; manufacture of metal goods for office use, except furniture; manufacture of safes, strongboxes, armoured doors etc.; manufacture of various metal articles: ship propellers and blades thereof, anchors, bells, assembled railway track fixtures, clasps, buckles, hooks, metal ladder, metal signs, including road signs; manufacture of foil bags; manufacture of permanent metallic magnets; manufacture of metal vacuum jugs and bottles; manufacture of metal badges and metal military insignia; manufacture of metal hair curlers, metal umbrella handles and frames, combs. This class excludes manufacture of swords, bayonets (25.71); manufacture of shopping carts (30.99); manufacture of metal furniture (31.01, 31.02, 31.09); manufacture of sports goods (32.30); manufacture of games and toys (32.40).

264 Manufacture of consumer electronics

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.01%	0.342	0.00%	0.123	100.3	37.4
Emerging	0.432	0.238	0.457	1.041	0.270	0.526

This industry shows high trend performance on all criteria. The current economic significance is limited given very small shares for employment and turnover. Average wages are just above those in Kosovo.

The industry includes the following activities:

— 26.40 Manufacture of consumer electronics

This class includes the manufacture of electronic audio and video equipment for home entertainment, motor vehicle, public address systems and musical instrument amplification. This class includes manufacture of video cassette recorders and duplicating equipment; manufacture of televisions; manufacture of television monitors and displays; manufacture of audio recording and duplicating systems; manufacture of stereo equipment; manufacture of radio receivers; manufacture of speaker systems; manufacture of household-type video cameras; manufacture of jukeboxes; manufacture of amplifiers for musical instruments and public address systems; manufacture of microphones; manufacture of CD and DVD players; manufacture of karaoke machines; manufacture of headphones (e.g. radio, stereo, computer); manufacture of video game consoles. This class excludes reproduction of recorded media (computer media, sound, video, etc.) (18.2); manufacture

of computer peripheral devices and computer monitors (26.20); manufacture of telephone answering machines (26.30); manufacture of paging equipment (26.30); manufacture of remote control devices (radio and infrared) (26.30); manufacture of broadcast studio equipment such as reproduction equipment, transmitting and receiving antennas, commercial video cameras (26.30); manufacture of antennas (26.30); manufacture of digital cameras (26.70); manufacture of electronic games with fixed (non-replaceable) software (32.40).

325 Manufacture of medical and dental instruments and supplies

Industry is part of Manufacturing (NACE C)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.01%	0.043	0.00%	0.005	44.2	25.8
Emerging	0.313	0.666	0.277	-0.125	0.198	0.242

This industry shows high trend performance on 5 criteria. The current economic significance is limited given very small shares for employment and turnover.

The industry includes the following activities:

— 32.50 Manufacture of medical and dental instruments and supplies

This class includes the manufacture of laboratory apparatus, surgical and medical instruments, surgical appliances and supplies, dental equipment and supplies, orthodontic goods, dentures and orthodontic appliances. Included is the manufacture of medical, dental and similar furniture, where the additional specific functions determine the purpose of the product, such as dentist's chairs with built-in hydraulic functions. This class includes manufacture of surgical drapes and sterile string and tissue; manufacture of dental fillings and cements (except denture adhesives), dental wax and other dental plaster preparations; manufacture of bone reconstruction cements; manufacture of dental laboratory furnaces; manufacture of laboratory ultrasonic cleaning machinery; manufacture of laboratory sterilisers; manufacture of laboratory type distilling apparatus, laboratory centrifuges; manufacture of medical, surgical, dental or veterinary furniture, such as operating tables, examination tables, hospital beds with mechanical fittings, dentists' chairs; manufacture of bone plates and screws, syringes, needles, catheters, cannulae, etc.; manufacture of dental instruments (including dentists' chairs incorporating dental equipment); manufacture of artificial teeth, bridges, etc., made in dental labs; manufacture of orthopaedic and prosthetic devices; manufacture of glass eyes; manufacture of medical thermometers; manufacture of ophthalmic goods, eyeglasses, sunglasses, lenses ground to prescription, contact lenses, safety goggles.

This class excludes manufacture of denture adhesives (20.42); manufacture of medical impregnated wadding, dressings etc. (21.20); manufacture of electromedical and electrotherapeutic equipment (26.60); manufacture of wheelchairs (30.92); activities of opticians (47.78).

422 Construction of utility projects

Industry is part of Construction (NACE F)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
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Current	0.04%	0.095	0.05%	0.088	83.5	37.6
Emerging	0.302	0.303	0.416	0.461	0.128	0.041

This industry shows high trend performance on 5 criteria. The current economic significance is limited given very small shares for employment and turnover. Average wages are relatively high compared to Kosovo.

The industry includes the following activities:

— 42.21 Construction of utility projects for fluids

This class includes the construction of distribution lines for transportation of fluids and related buildings and structures that are integral part of these systems. This class includes construction of civil engineering constructions for long-distance and urban pipelines, water main and line construction, irrigation systems (canals), reservoirs; construction of sewer systems, including repair, sewage disposal plants, pumping stations. This class also includes water well drilling. This class excludes project management activities related to civil engineering works (71.12).

— 42.22 Construction of utility projects for electricity and telecommunications

This class includes the construction of distribution lines for electricity and telecommunications and related buildings and structures that are integral part of these systems. This class includes construction of civil engineering constructions for: long-distance and urban communication and power lines, power plants. This class excludes project management activities related to civil engineering works (71.12).

429 Construction of other civil engineering projects

Industry is part of Construction (NACE F)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.04%	0.043	0.07%	0.129	86.0	46.4
Emerging	0.341	0.419	0.238	0.509	0.198	0.410

This industry shows high trend performance on all criteria. The current economic significance is limited given very small shares for employment and turnover. Average wages are relatively high, both compared to Kosovo and compared to the same industry in the benchmark countries.

The industry includes the following activities:

— 42.91 Construction of water projects

This class includes construction of waterways, harbour and river works, pleasure ports (marinas), locks, etc., dams and dykes; dredging of waterways. This class excludes project management activities related to civil engineering works (71.12).

— 42.99 Construction of other civil engineering projects n.e.c.

This class includes construction of industrial facilities, except buildings, such as: refineries, chemical plants; construction work, other than buildings, such as: outdoor sports facilities. This class also includes land subdivision with land improvement (e.g. adding of roads, utility infrastructure etc.). This class excludes installation of industrial machinery and equipment (33.20); land subdivision without land improvement (68.10); project management activities related to civil engineering works (71.12).

464 Wholesale of household goods

Industry is part of Wholesale and retail trade, repair of motor vehicles and motorcycles (NACE G)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	2.82%	1.450	4.56%	0.884	98.8	39.9
Emerging	0.115	0.080	0.108	0.062	0.019	-0.010

This industry shows above average but not very high trend performance on all criteria. The current economic significance is already relatively high with an employment share of almost 3%, a turnover share of about 4.5%, a degree of specialisation above 1 for employment, and average wages only just below those for Kosovo.

The industry includes the following activities:

This group includes the wholesale of household goods, including textiles.

- 46.41 Wholesale of textiles

This class includes wholesale of yarn; wholesale of fabrics; wholesale of household linen etc.; wholesale of haberdashery: needles, sewing thread etc.

This class excludes: wholesale of textile fibres (46.76)

- 46.42 Wholesale of clothing and footwear

This class includes wholesale of clothing, including sports clothes; wholesale of clothing accessories such as gloves, ties and braces; wholesale of footwear; wholesale of fur articles; wholesale of umbrellas. This class excludes wholesale of jewellery (46.48); wholesale of leather goods (46.49); wholesale of special sports equipment footwear such as ski boots (46.49).

- 46.43 Wholesale of electrical household appliances

This class includes wholesale of electrical household appliances; wholesale of radio and television equipment; wholesale of photographic and optical goods; wholesale of electrical heating appliances; wholesale of recorded audio and video tapes, CDs, DVDs. This class excludes wholesale of blank audio and video tapes, CDs, DVDs (46.52); wholesale of sewing machines (46.64).

- 46.44 Wholesale of china and glassware and cleaning materials

This class includes wholesale of china and glassware; wholesale of cleaning materials.

- 46.45 Wholesale of perfume and cosmetics

This class includes wholesale of perfumeries, cosmetics and soaps.

- 46.46 Wholesale of pharmaceutical goods

This class includes wholesale of pharmaceutical and medical goods.

- 46.47 Wholesale of furniture, carpets and lighting equipment

This class includes wholesale of household furniture; wholesale of carpets; wholesale of lighting equipment. This class excludes wholesale of office furniture (46.65).

- 46.48 Wholesale of watches and jewellery

- 46.49 Wholesale of other household goods

This class includes wholesale of woodenware, wickerwork and corkware etc.; wholesale of bicycles and their parts and accessories; wholesale of stationery, books, magazines and newspapers; wholesale of leather goods and travel accessories; wholesale of musical instruments; wholesale of games and toys; wholesale of sports goods, including special sports footwear such as ski boot.

469 Non-specialised wholesale trade

Industry is part of Wholesale and retail trade, repair of motor vehicles and motorcycles (NACE G)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.29%	0.175	0.34%	0.092	72.4	38.7
Emerging	0.150	0.121	0.154	0.140	0.064	0.050

This industry shows above average but not very high trend performance on all criteria. The current economic significance is moderate with an employment and turnover share of around 0.3%.

The industry includes the following activities:

- 46.90 Non-specialised wholesale trade

This class includes wholesale of a variety of goods without any particular specialisation.

504 Inland freight water transport

Industry is part of Transportation and Storage (NACE H)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.00%	0.082	0.00%	0.060	30.4	9.1
Emerging	0.206	0.184	0.270	0.333	0.226	0.324

This industry shows high trend performance on 5 criteria. The current economic significance is limited given very small shares for employment and turnover.

The industry includes the following activities:

This group includes the transport of freight on inland waters, involving vessels that are not suitable for sea transport.

- 50.40 Inland freight water transport

This class include transport of freight via rivers, canals, lakes and other inland waterways, including inside harbours and ports. This class also includes renting of vessels with crew for inland freight water transport. This class excludes cargo handling (52.24); renting of commercial ships or boats without crew (77.34).

582 Software publishing

Industry is part of Information and communication (NACE J)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages	Average wages
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	share	specialisation	share	specialisation	relative Kosovo to	relative to same industry in benchmark countries
Current	0.30%	3.774	0.16%	3.466	200.2	58.5
Emerging	0.176	0.242	0.184	0.171	-0.004	-0.052

This industry shows above average but not very high trend performance on 5 criteria. The current economic significance is already relatively high with an employment share of 0.3% and a turnover share above 0.1%, high degrees of specialisation and average wages being twice as high as those in Kosovo.

The industry includes the following activities:

- 58.21 Publishing of computer games

This class includes publishing of computer games for all platforms.

- 58.29 Other software publishing

This class includes publishing of ready-made (non-customised) software, including translation or adaptation of non-customised software for a particular market on own account: operating systems, business and other applications. This class excludes reproduction of software (18.20), retail sale of non-customised software (47.41); production of software not associated with publishing, including translation or adaptation of non-customised software for a particular market on a fee or contract basis (62.01); on-line provision of software (application hosting and application service provisioning) (63.11).

612 Wireless telecommunications activities

Industry is part of Information and communication (NACE J)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.06%	0.080	0.02%	0.012	77.7	13.5
Emerging	0.393	0.511	0.347	0.462	0.260	0.374

This industry shows high trend performance on all criteria. The current economic significance is limited given very small shares for employment and turnover.

The industry includes the following activities:

- 61.20 Wireless telecommunications activities

This class includes operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound, and video using a wireless telecommunications infrastructure; maintaining and operating paging as well as cellular and other wireless telecommunications networks. The transmission facilities provide omnidirectional transmission via airwaves and may be based on a single technology or a combination of technologies. This class also includes purchasing access and network capacity from owners and operators of networks and providing wireless telecommunications services (except satellite) using this capacity to businesses and households; provision of Internet access by the operator of the wireless infrastructure. This class excludes telecommunications resellers (61.90).

691 Legal activities

Industry is part of Professional, scientific and technical activities (NACE M)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.39%	0.182	0.21%	0.509	125.3	122.3
Emerging	0.152	0.360	0.155	0.098	-0.018	0.009

This industry shows above average but not very high trend performance on 5 criteria. The current economic significance is already relatively high with an employment share of 0.4%, a turnover share of 0.2%, and average wages well above those in Kosovo and in the same industry in the benchmark countries.

The industry includes the following activities:

- 69.10 Legal activities

This class includes legal representation of one party's interest against another party, whether or not before courts or other judicial bodies by, or under supervision of, persons who are members of the bar: advice and representation in civil cases, advice and representation in criminal cases, advice and representation in connection with labour disputes; general counselling and advising, preparation of legal documents: articles of incorporation, partnership agreements or similar documents in connection with company formation, patents and copyrights, preparation of deeds, wills, trusts etc.; other activities of notaries public, civil law notaries, bailiffs, arbitrators, examiners and referees. This class excludes law court activities (84.23).

743 Translation and interpretation activities

Industry is part of Professional, scientific and technical activities (NACE M)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
Current	0.07%	0.792	0.03%	1.105	83.8	97.0
Emerging	0.143	0.100	0.149	0.140	0.041	0.059

This industry shows above average but not very high trend performance on all criteria. The current economic significance is limited given very small shares for employment and turnover. For turnover the degree of specialisation is high and average wages are relatively high compared to those in Kosovo and to the same industry in the benchmark countries.

The industry includes the following activities:

- 74.30 Translation and interpretation activities

822 Activities of call centres

Industry is part of Administrative and support service activities (NACE N)

	Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to	Average wages relative to
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		specialisation		specialisation	Kosovo	same industry in benchmark countries
Current	0.65%	2.110	0.15%	1.505	127.1	56.7
Emerging	0.333	0.321	0.360	0.344	0.140	0.089

This industry shows high trend performance on 5 criteria and above average but not very high trend performance on 1 criterion. The current economic significance is already relatively high with an employment share of 0.65%, a turnover share above 0.1%, high degrees of specialisation for both employment and turnover, and average wages above those of Kosovo.

The industry includes the following activities:

— 82.20 Activities of call centres

This class includes the activities of: inbound call centres, answering calls from clients by using human operators, automatic call distribution, computer telephone integration, interactive voice response systems or similar methods to receive orders, provide product information, deal with customer requests for assistance or address customer complaints outbound call centres using similar methods to sell or market goods or services to potential customers, undertake market research or public opinion polling and similar activities for clients.

2.3.3 Summarizing the results for current and emerging economic potential

Table 4 summarizes the results for the selected industries with a current economic potential. Additional criteria are included to identify the most relevant industries, with highest shares (above 1%), degrees of specialisation (above 3) and average wages (above 150 respectively 70 compared to average wages in Kosovo and the same industry in the benchmark countries). In particular industries Manufacture of articles of concrete, cement and plaster (NACE 236), Construction of residential and non-residential buildings (NACE 412), Construction of roads and railways (NACE 421), Software publishing (NACE 582), Wired telecommunications activities (NACE 611) and Other telecommunications activities (NACE 619) stand out showing relatively high performance on at least 3 selection criteria.

Several of these industries, including Construction of residential and non-residential buildings (NACE 412), Construction of roads and railways (NACE 421), Wholesale on a fee or contract basis (NACE 461) and Wholesale of food, beverages and tobacco (NACE 463), are more focused on the domestic market and further growth in these industries depends on the growth of the domestic market limiting the growth possibilities resulting from government support. More promising are those industries that could benefit from export-driven growth, in particular those industries involving skilled employees: Publishing of books, periodicals and other publishing activities (NACE 581), Software publishing (NACE 582), Wired telecommunications activities (NACE 611) and Other telecommunications activities (NACE 619).

Table 4 Summary results for selected industries with a *current economic potential*

NACE		Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
		>1%	>3	>1%	>3	>150	>70
236	Manufacture of articles of concrete, cement and plaster	1.4%	4.021	1.5%	3.577	108.0	61.4
412	Construction of residential and non-residential buildings	6.5%	2.034	6.3%	2.290	86.2	71.1
421	Construction of roads and	2.1%	1.801	2.8%	1.920	170.1	76.0

NACE		Employment share	Employment: degree of specialisation	Turnover share	Turnover: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
		>1%	>3	>1%	>3	>150	>70
	railways						
461	Wholesale on a fee or contract basis	0.8%	1.266	3.2%	2.714	129.3	70.7
463	Wholesale of food, beverages and tobacco	3.1%	1.802	9.4%	1.284	104.1	53.2
581	Publishing of books, periodicals and other publishing activities	0.7%	1.828	0.4%	1.581	122.4	50.8
582	Software publishing	0.3%	5.144	0.2%	3.466	200.2	59.8
611	Wired telecommunications activities	2.6%	4.653	1.7%	2.019	190.8	55.5
619	Other telecommunications activities	0.5%	4.409	0.9%	5.678	203.8	92.9

Data source: Author's elaboration

Table 5 summarizes the results for the selected industries with an emerging economic potential. Table 5 also includes the performance on the criteria used for identifying industries with a current economic potential, but none of the industries in Table 5 passed these criteria (otherwise they would be included in Table 4). Additional criteria are included to identify the most relevant industries, with highest trends for shares (above 0.2), degrees of specialisation (above 0.2) and average wages (above 0.1). In particular industries Processing and preserving of fish, crustaceans and molluscs (NACE 102), Manufacture of refractory products (NACE 232), Manufacture of tubes, pipes, hollow profiles and related fittings, of steel (NACE 242), Manufacture of consumer electronics (NACE 264), Manufacture of medical and dental instruments and supplies (NACE 325), Construction of utility projects (NACE 422), Construction of other civil engineering projects (NACE 429), Inland freight water transport (NACE 504), Wireless telecommunications activities (NACE 612) and Activities of call centres (NACE 822) stand out showing relatively high performance on at least 3 selection criteria.

Table 5 Summary results for selected industries with an *emerging economic potential*

NACE	Current economic potential						Emerging economic potential					
	Employment share	Employment: degree of specialisation	Turn-over share	Turn-over: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries	Employment share	Employment: degree of specialisation	Turn-over share	Turn-over: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
	>0.1%	>1	>0.1%	>1	>80	>40	>0.2	>0.2	>0.2	>0.2	>0.1	>0.1
102	0.00%	0.029	0.00%	0.004	43.2	16.9	0.253	0.655	0.494	0.911	0.221	0.558
203	0.11%	1.688	0.11%	1.263	83.9	35.8	0.099	0.067	0.132	0.098	0.041	0.062
232	0.02%	1.520	0.02%	3.336	101.1	46.2	0.220	0.221	0.211	0.377	0.107	0.088
235	0.01%	0.096	0.01%	0.025	57.4	11.9	0.177	0.200	0.220	0.273	0.020	0.026
242	0.02%	0.274	0.05%	0.193	67.6	19.0	0.414	0.916	0.544	1.400	0.148	-0.189
259	0.16%	0.366	0.08%	0.139	71.8	34.3	0.109	0.041	0.128	0.081	0.020	0.014
264	0.01%	0.342	0.00%	0.123	100.3	37.4	0.432	0.238	0.457	1.041	0.270	0.526
325	0.01%	0.043	0.00%	0.005	44.2	25.8	0.313	0.666	0.277	-0.125	0.198	0.242
422	0.04%	0.095	0.05%	0.088	83.5	37.6	0.302	0.303	0.416	0.461	0.128	0.041
429	0.04%	0.043	0.07%	0.129	86.0	46.4	0.341	0.419	0.238	0.509	0.198	0.410

NACE	Current economic potential						Emerging economic potential					
	Employment share	Employment: degree of specialisation	Turn-over share	Turn-over: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries	Employment share	Employment: degree of specialisation	Turn-over share	Turn-over: degree of specialisation	Average wages relative to Kosovo	Average wages relative to same industry in benchmark countries
	>0.1%	>1	>0.1%	>1	>80	>40	>0.2	>0.2	>0.2	>0.2	>0.1	>0.1
464	2.82%	1.450	4.56%	0.884	98.8	39.9	0.115	0.080	0.108	0.062	0.019	-0.010
469	0.29%	0.175	0.34%	0.092	72.4	38.7	0.150	0.121	0.154	0.140	0.064	0.050
504	0.00%	0.082	0.00%	0.060	30.4	9.1	0.206	0.184	0.270	0.333	0.226	0.324
582	0.30%	5.144	0.16%	3.466	200.2	59.8	0.176	0.223	0.184	0.171	-0.004	-0.082
612	0.06%	0.080	0.02%	0.012	77.7	13.5	0.393	0.511	0.347	0.462	0.260	0.374
691	0.39%	0.182	0.21%	0.509	125.3	122.3	0.152	0.360	0.155	0.098	-0.018	0.009
743	0.07%	0.792	0.03%	1.105	83.8	97.0	0.143	0.100	0.149	0.140	0.041	0.059
822	0.65%	2.110	0.15%	1.505	127.1	56.7	0.333	0.321	0.360	0.344	0.140	0.089

*102 Processing and preserving of fish, crustaceans and molluscs; 203 Manufacture of articles of paper and paperboard; 232 Manufacture of refractory products; 235 Manufacture of cement, lime and plaster; 242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel; 259 Manufacture of other fabricated metal products; 264 Manufacture of consumer electronics; 325 Manufacture of medical and dental instruments and supplies; 422 Construction of utility projects; 429 Construction of other civil engineering projects; 464 Wholesale of household goods; 469 Non-specialised wholesale trade; 504 Inland freight water transport; 582 Software publishing; 612 Wireless telecommunications activities; 691 Legal activities; 743 Translation and interpretation activities; 822 Activities of call centres

Data source: Author's elaboration

Results show that there are growth pockets in both manufacturing and services but that most of these are still very small. More promising would be to focus on those industries which show high growth performance, and which have already an economic base, i.e. industries Manufacture of refractory products (NACE 232), Construction of other civil engineering projects (NACE 429) and Activities of call centres (NACE 822).

Emerging activities in Manufacture of consumer electronics (NACE 264) and Wireless telecommunications activities (NACE 612) underline the importance of the ICT sector with Software publishing (NACE 582), Wired telecommunications activities (NACE 611) and Other telecommunications activities (NACE 619) having a current economic potential.

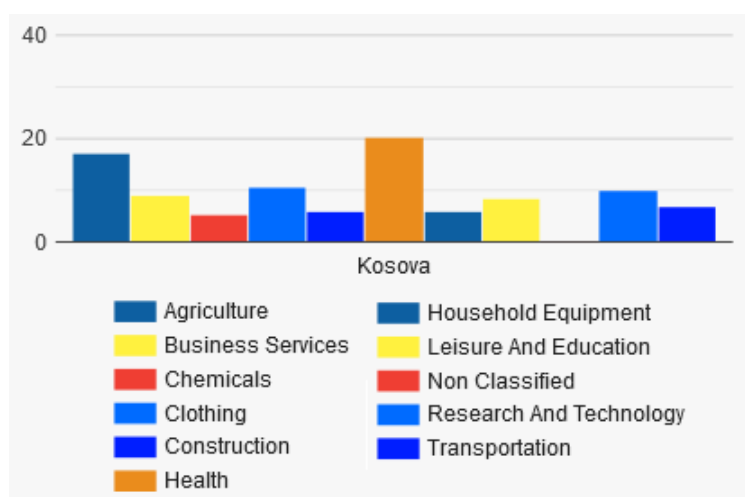
3 Mapping the innovation potential of Kosovo

For mapping the innovation potential, ideally national innovation survey data should be used, as these provide data on number of enterprises that innovate for different types of innovations. Unfortunately, such data are not available for Kosovo as there is neither a recent innovation survey nor a R&D survey. Instead, this chapter combines results from different national and international data sources, on intellectual property rights, aggregate innovation activities, and export performance.

3.1 Data availability

Data on intellectual property rights are only available at the highest level of aggregation for the whole country. The Agency for Industrial Property (API) informed that it is not possible to extract patent application statistics according to 4-digit IPC. According to API, the total number of patent applications for 2008-2021 would be 2,390 and the total number of patent registrations would be 1,127. The full list of registered patents are published in the online register <http://213.163.122.85/wopublish-search/public/home>. This register also includes data on trademarks for the period 2008-2021 and designs for the period 2010-2021. The number of designs is very small (33), the number of trademarks is more than 34,000. Most trademarks are applied for in Health (20.3%) and Agriculture (17.1%) (Figure 3).

Figure 3 Trademarks filing by Industry sector



Source: image copied from online register. Layout revised by author.

For measuring innovation activities, aggregate data are available from two sources, the Balkan Business Barometer and the World Bank Enterprise Survey.

The Balkan Barometer is an annual survey of public opinion and business sentiments in seven Balkan economies, commissioned by the Regional Cooperation Council. It is examining aspirations and expectations on life and work, prevalent socio-economic and political trends, and regional and European integration and covers two surveys, the Balkan Public Barometer and the Balkan Business Barometer. The Balkan Business Barometer includes several questions on innovation activities. Aggregate and firm-level data are available for Kosovo from the 2016 to 2021 editions of the Balkan Business Barometer and also include identifiers for different NACE 1-digit industries. All data are available at <https://www.rcc.int/balkanbarometer/>.

The World Bank Enterprise Survey includes several questions on innovation activities. Aggregate and firm-level data are available for Kosovo from the 2013 and 2019 edition of the Enterprise Survey and include identifiers for different NACE 2-digit industries. All data are available at <https://www.enterprisesurveys.org/en/data>.

Data on goods exports will be used to identify in which products and industries Kosovo has a trade specialisation compared to the same benchmark countries used for mapping the economic potential. Data on goods exports for 2010-2020 have been made available by the Kosovo Agency of Statistics for 3-digit product groups following the Standard International Trade Classification (SITC) Rev. 4³. Comparable data

³ <https://unstats.un.org/unsd/trade/sitcrev4.htm>

have been extracted for 2012-2020 for the benchmark countries from UN Comtrade (<https://comtrade.un.org/>). Data on goods exports by product groups for Kosovo and the benchmark countries are also recalculated into exports by NACE 3-digit industries based on an ad-hoc interpretation of an official concordance between 4-digit product groups and 4-digit industries. Table 6 summarises available data sources for each innovation data category selected.

Table 6 Available data for mapping the innovation potential in Kosovo

Type of data	Data source
Intellectual property rights	Not available
Innovation activities	Balkan Business Barometer; World Bank Enterprise Survey
Export performance	Kosovo Agency of Statistics; UN Comtrade

Data source: Author's elaboration

3.2 Balkan Business Barometer innovation data

The Balkan Business Barometer is an annual survey since 2016 among enterprises in at most 7 Balkan countries. The Barometer includes several questions on innovation activities which can be used to calculate shares of innovative enterprises at the country level and for some NACE 1-digit industries. Sample sizes are different over time and so is the coverage of individual industries. Results can therefore not be compared over time, but the data can be used to identify the presence of innovation activities at the country level compared to other Balkan countries and at the industry level for Kosovo. A comparison at industry level with the same industries in other Balkan countries is not possible due to the sometimes large differences in sample composition between countries.

3.2.1 Results from the 2016 Balkan Business Barometer

The 2016 Balkan Business Barometer collected responses from 1,407 enterprises of which 64 enterprises from Kosovo. Overall, 56.3% of enterprises introduced new or significantly improved products and/or services in the past twelve months, and in Kosovo 53.1% of enterprises introduced such innovations. The overall rate of product innovation in Kosovo is close to that of the Western Balkan region (Table 7). Overall, 48.6% of enterprises introduced new or significantly improved production and/or service delivery processes in the last twelve months, and in Kosovo 46.9% of enterprises introduced such innovations. The overall rate of process innovation in Kosovo is close to that of the Western Balkan region (Table 8).

Table 7 2016 Balkan Business Barometer: overall share of product innovators

		Have you introduced new or significantly improved products and/or services in the past twelve months?				Total
		Yes	Yes -% -share	No	DK/ Refuse to answer	
Country	Albania	69	59.0%	48	0	117
	Bosnia i Hercegovina	111	68.5%	50	1	162
	Croatia	271	51.9%	248	3	522
	Kosovo	34	53.1%	28	2	64
	North Macedonia	45	48.9%	46	1	92
	Montenegro	23	57.5%	16	1	40
	Serbia	239	58.3%	169	2	410
Total		792	56.3%	605	10	1,407

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 8 2016 Balkan Business Barometer: overall share of process innovators

		Have you introduced new or significantly improved production and/or service delivery processes in the last twelve months?				Total
		Yes	Yes -%-share	No	DK/ Refuse to answer	
Country	Albania	59	50.4%	57	1	117
	Bosnia i Hercegovina	94	58.0%	62	6	162
	Croatia	248	47.5%	274	0	522
	Kosovo	30	46.9%	31	3	64
	North Macedonia	34	37.0%	56	2	92
	Montenegro	19	48.7%	18	2	39
	Serbia	200	48.8%	200	10	410
Total		684	48.6%	698	24	1,406

Data source: Author's elaboration based on data from the Balkan Business Barometer

A further breakdown by industry shows that for most industries the sample size is too small to calculate representative results (Table 9). Results are only calculated for industries with at least five enterprises included in the sample. Highest shares of product innovators are for Information and communication (80%) and Financial and insurance activities (80%). Highest shares of process innovators are for Accommodation and food services (60%), Information and communication (60%) and Financial and insurance activities (60%).

Table 9 2016 Balkan Business Barometer: share of product and process innovators by industry

		Have you introduced new or significantly improved products and/or services in the past twelve months?				Total	Have you introduced new or significantly improved production and/or service delivery processes in the last twelve months?				Total
		Yes	Yes -%-share	No	DK/ Refuse to answer		Yes	Yes -%-share	No	DK/ Refuse to answer	
What is the main activity of your company?	NACE A Agriculture, forestry and fishing	0	--	0	0	0	0	--	1	0	1
	NACE B Mining	0	--	1	0	1	1	--	1	0	2
	NACE C Manufacturing	1	--	2	0	3	2	--	1	0	3
	NACE E Water supply; sewerage, waste management and remediation activities	0	--	1	0	1	0	--	1	0	1
	NACE F Construction	2	40.0%	3	0	5	3	50.0%	3	0	6
	NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles	8	47.1%	8	1	17	7	38.9%	9	2	18
	NACE H Transportation and storage	4	36.4%	7	0	11	4	33.3%	7	1	12
	NACE I Accommodation and food service activities	7	63.6%	4	0	11	6	60.0%	4	0	10
	NACE J Information and communication	4	80.0%	1	0	5	3	60.0%	2	0	5
	NACE K Financial and insurance activities	4	80.0%	1	0	5	3	60.0%	2	0	5
	NACE T Activities of households as employers; undifferentiated goods	1	--	0	0	1	1	--	0	0	1
Total		31	51.7%	28	1	60	30	46.9%	31	3	64

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.2.2 Results from the 2017 Balkan Business Barometer

The 2017 Balkan Business Barometer collected responses from 1,438 enterprises of which 69 enterprises from Kosovo. Overall, 53.4% of enterprises introduced new or significantly improved products and/or services in the past twelve months, and in Kosovo 58.0% of enterprises introduced such innovations. The overall rate of product innovation in Kosovo is above that of the Western Balkan region (Table 10). Overall, 51.0% of enterprises introduced new or significantly improved production and/or service delivery processes in the last twelve months, and in Kosovo 37.1% of enterprises introduced such innovations. The overall rate of process innovation in Kosovo is below that of the Western Balkan region (Table 11).

Table 10 2017 Balkan Business Barometer: overall share of product innovators

		Have you introduced new or significantly improved products and/or services in the past twelve months?				Total
		Yes	Yes -%-share	No	DK/refuse	
Country	Albania	60	48.0%	65	0	125
	Bosnia i Hercegovina	112	65.1%	57	3	172
	Croatia	260	49.5%	260	5	525
	Kosovo	40	58.0%	28	1	69
	North Macedonia	62	56.9%	46	1	109
	Montenegro	25	58.1%	17	1	43
	Serbia	209	52.9%	177	9	395
Total		768	53.4%	650	20	1,438

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 11 2017 Balkan Business Barometer: overall share of process innovators

		Have you introduced new or significantly improved production and/or service delivery processes in the last twelve months?				Total
		Yes	Yes -%-share	No	DK/refuse	
Country	Albania	61	49.6%	61	1	123
	Bosnia i Hercegovina	99	57.6%	70	3	172
	Croatia	260	49.4%	263	3	526
	Kosovo	26	37.1%	43	1	70
	North Macedonia	55	50.5%	53	1	109
	Montenegro	22	52.4%	19	1	42
	Serbia	209	53.0%	180	5	394
Total		732	51.0%	689	15	1,436

Data source: Author's elaboration based on data from the Balkan Business Barometer

A further breakdown by industry shows that for most industries the sample size is too small to calculate representative results (Table 12). Results are only calculated for industries with at least 5 enterprises included in the sample. Highest shares of product and process innovators are for Manufacturing and Wholesale and retail trade, repair of motor vehicles and motorcycles.

Table 12 2017 Balkan Business Barometer: share of product and process innovators by industry

		Have you introduced new or significantly improved products and/or services in the past twelve months?					Have you introduced new or significantly improved production and/or service delivery processes in the last twelve months?				
		Yes	Yes -% share	No	DK/ refuse	Total	Yes	Yes -% share	No	DK/ refuse	Total
What is the main activity of your company?	NACE C Manufacturing	3	60.0%	2	0	5	3	60.0%	2	0	5
	NACE D Electricity, gas, steam and air conditioning supply	1	--	0	0	1	1	--	0	0	1
	NACE E Water supply; wastewater management, controlling the process	1	--	1	0	2	1	--	1	0	2
	NACE F Construction	2	--	2	0	4	0	--	4	0	4
	NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles	20	66.7%	10	0	30	13	43.3%	17	0	30
	NACE H Transportation and storage	3	--	1	0	4	1	--	3	0	4
	NACE I Accommodation and food service activities	4	50.0%	4	0	8	2	25.0%	6	0	8
	NACE J Information and communication	3	50.0%	3	0	6	2	33.3%	4	0	6
	NACE K Financial and insurance activities	1	--	1	0	2	1	--	2	0	3
	NACE L Real estate activities	0	--	2	0	2	0	--	2	0	2
	NACE Q Human health and social work activities	2	--	0	0	2	1	--	0	0	1
	NACE S Other service activities	0	--	1	0	1	0	--	1	0	1
Total		40	59.7%	27	0	67	25	37.3%	42	0	67

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.2.3 Results from the 2018 Balkan Business Barometer

The 2018 Balkan Business Barometer collected responses from about 1,200 enterprises of which 89 enterprises from Kosovo. The 2018 Barometer also does not cover Croatia. Compared to the two previous editions of the Barometer, the time period to capture innovation activities has increased from the last twelve months to the last three years. With a larger time period, the share of enterprises with innovation activities should be higher. Despite the longer survey period compared to previous editions of the Balkan Business Barometer, the shares of product and process innovation innovators are significantly lower than in the 2016 and 2017 editions.

Overall, 37.7% of enterprises introduced new or significantly improved products and/or services in the past three years, and in Kosovo 31.5% of enterprises introduced such innovations. The overall rate of product innovation in Kosovo is below that of the Balkan region (Table 13). Overall, 31.5% of enterprises introduced new or significantly improved production and/or service delivery processes in the last three years, and in Kosovo 30.3% of enterprises introduced such innovations. The overall rate of process innovation in Kosovo is below that of the Balkan region (Table 14).

Table 13 2018 Balkan Business Barometer: overall share of product innovators

		Have you introduced new or significantly improved products and/or services in the last three years (2015-17)?				Total
		Yes	Yes -%-share	No	DK/refuse	
Country	Albania	42	26.3%	116	2	160
	Bosnia and Herzegovina	127	55.7%	96	5	228
	Kosovo*	28	31.5%	56	5	89
	North Macedonia	34	23.1%	109	4	147
	Montenegro	28	48.3%	29	1	58
	Serbia	193	37.4%	303	20	516
Total		452	37.7%	709	37	1,198

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 14 2018 Balkan Business Barometer: overall share of process innovators

		Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2015-17)?				Total
		Yes	Yes -%-share	No	DK/refuse	
Country	Albania	40	25.0%	118	2	160
	Bosnia and Herzegovina	91	39.9%	127	10	228
	Kosovo*	27	30.3%	55	7	89
	North Macedonia	39	26.5%	104	4	147
	Montenegro	23	38.3%	35	2	60
	Serbia	158	30.6%	336	23	517
Total		378	31.5%	775	48	1,201

Data source: Author's elaboration based on data from the Balkan Business Barometer

A further breakdown by industry shows that for most industries the sample size is too small to calculate representative results (Table 15). Results are only calculated for industries with at least five enterprises included in the sample. For only 3 industries results can be calculated as Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE G) accounts for more than half of the sample. The overrepresentation of this industry also implies that results cannot be compared with those of other editions of the Barometer.

Table 15 2018 Balkan Business Barometer: share of product and process innovators by industry

		Have you introduced new or significantly improved products and/or services in the last three years (2015-17)?					Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2015-17)?				
		Yes	Yes -%-share	No	DK/refuse	Total	Yes	Yes -%-share	No	DK/refuse	Total
What is the main activity of your company?	NACE A Agriculture, forestry and fishing	0	--	1	0	1	0	--	1	0	1
	NACE B Mining	0	--	1	0	1	0	--	1	0	1
	NACE C Manufacturing	1	--	1	0	2	1	--	1	0	2
	NACE D Electricity, gas, steam and air conditioning supply	0	--	1	0	1	0	--	1	0	1
	NACE F Construction	3	30.0%	6	1	10	3	30.0%	5	2	10
	NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles	17	34.0%	30	3	50	14	28.6%	32	3	49
	NACE H Transportation and storage	1	--	3	0	4	1	--	3	0	4
	NACE I Accommodation and food service activities	3	27.3%	7	1	11	4	36.4%	5	2	11

	NACE J Information and communication	1	--	2	0	3	1	--	2	0	3
	NACE K Financial and insurance activities	1	--	0	0	1	1	--	0	0	1
	NACE S Other service activities	0	--	2	0	2	0	--	2	0	2
Total		27	31.4%	54	5	86	25	29.4%	53	7	85

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.2.4 Results from the 2019 Balkan Business Barometer

The 2019 Balkan Business Barometer collected responses from about 1,270 enterprises of which 208 enterprises from Kosovo. Compared to previous editions of the Barometer, the sample size for Kosovo has significantly increased.

Overall, 38.7% of enterprises introduced new or significantly improved products and/or services in the past three years, and in Kosovo 41.8% of enterprises introduced such innovations. The overall rate of product innovation in Kosovo is above that of the Balkan region (Table 16). Overall, 29.3% of enterprises introduced new or significantly improved production and/or service delivery processes in the last three years, and in Kosovo 31.7% of enterprises introduced such innovations. The overall rate of process innovation in Kosovo is below that of the Balkan region (Table 17).

Table 16 2019 Balkan Business Barometer: overall share of product innovators

		Have you introduced new or significantly improved products and/or services in the last three years (2016-18)?				Total
		Yes	Yes -%share	No	DK/refuse	
Economy	Albania	100	45.5%	114	6	220
	Bosnia and Herzegovina	85	40.9%	119	4	208
	Kosovo*	87	41.8%	108	13	208
	North Macedonia	69	33.5%	134	3	206
	Montenegro	79	34.8%	141	7	227
	Serbia	72	35.5%	122	9	203
Total		492	38.7%	738	42	1,272

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 17 2019 Balkan Business Barometer: overall share of process innovators

		Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2016-18)?				Total
		Yes	Yes -%share	No	DK/refuse	
Economy	Albania	84	38.2%	125	11	220
	Bosnia and Herzegovina	58	27.8%	146	5	209
	Kosovo*	66	31.7%	127	15	208
	North Macedonia	54	26.3%	146	5	205
	Montenegro	50	22.0%	169	8	227
	Serbia	61	30.2%	136	5	202
Total		373	29.3%	849	49	1,271

Data source: Author's elaboration based on data from the Balkan Business Barometer

A further breakdown by industry shows that for most industries the sample size is too small to calculate representative results (Table 18). Results are only calculated for industries with at least 5 enterprises included in the sample. Highest shares of product innovators are for Real estate (66.7%), Manufacturing (47.8%), Wholesale and retail trade; repair of motor vehicles and motorcycles (45.1%), and Construction (44.4%). Highest shares of process innovators are for Manufacturing (47.8%), Wholesale and retail trade; repair of motor vehicles and motorcycles (36.1%), Construction (33.3%), and Real estate (33.3%).

Table 18 2019 Balkan Business Barometer: share of product and process innovators by industry

		Have you introduced new or significantly improved products and/or services in the last three years (2016-18)?				Total	Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2016-18)?				Total
		Yes	Yes -% share	No	DK/ refuse		Yes	Yes -% share	No	DK/ refuse	
What is the main activity of your company?	NACE A Agriculture, forestry and fishing	2	--	0	0	2	2	--	0	0	2
	NACE C Manufacturing	11	47.8%	10	2	23	11	47.8%	11	1	23
	NACE D Electricity, gas, steam and air conditioning supply	0	--	0	1	1	0	--	0	1	1
	NACE F Construction	4	44.4%	4	1	9	3	33.3%	5	1	9
	NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles	37	45.1%	43	2	82	30	36.1%	49	4	83
	NACE H Transportation and storage	9	32.1%	19	0	28	6	21.4%	22	0	28
	NACE I Accommodation and food service activities	13	38.2%	17	4	34	9	27.3%	20	4	33
	NACE J Information and communication	0	--	4	0	4	0	--	4	0	4
	NACE K Financial and insurance activities	2	--	2	0	4	0	--	4	0	4
	NACE L Real estate activities	4	66.7%	0	2	6	2	33.3%	0	4	6
	NACE R Arts, entertainment and recreation	0	--	0	0	0	0	--	1	0	1
	NACE S Other service activities	3	23.1%	9	1	13	3	23.1%	10	0	13
Total		85	41.3%	108	13	206	66	31.9%	126	15	207

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.2.5 Results from the 2020 Balkan Business Barometer

The 2020 Balkan Business Barometer collected responses from about 1,215 enterprises of which 87 enterprises from Kosovo. Compared to the 2019 edition of the Barometer, the sample size for Kosovo has significantly decreased and is comparable to that used in the Barometers before 2019. Remarkable and adding to the difficulties of comparing results is that the first question on product innovation covers the past 12 months whereas the second question on process innovation covers the last three years.

Overall, 28.9% of enterprises introduced new or significantly improved products and/or services in the past 12 months, and in Kosovo 21.8% of enterprises introduced such innovations. The overall rate of product innovation in Kosovo is below that of the Balkan region (Table 19). Overall, 28.1% of enterprises introduced new or significantly improved production and/or service delivery processes in the last three years, and in Kosovo 16.3% of enterprises introduced such innovations. The overall rate of process innovation in Kosovo is below that of the Balkan region (Table 20).

A further breakdown by industry shows that for most industries the sample size is too small to calculate representative results (Table 21). Results are only calculated for industries with at least 5 enterprises included in the sample. Highest shares of product innovators are for Manufacturing (40%) and Wholesale and retail trade; repair of motor vehicles and motorcycles (31.8%). Highest shares of process innovators are for Wholesale and retail trade; repair of motor vehicles and motorcycles (31.8%), Manufacturing (20%), and Construction (20%).

Table 19 2020 Balkan Business Barometer: overall share of product innovators

		Have you introduced new or significantly improved products and/or services in the past 12 months?				Total
		Yes	Yes -%-share	No	DK/refuse	
Economy	Albania	30	18.3%	130	4	164
	Bosnia and Herzegovina	91	41.7%	124	3	218
	Kosovo*	19	21.8%	65	3	87
	North Macedonia	30	21.7%	107	1	138
	Montenegro	26	43.3%	31	3	60
	Serbia	156	28.4%	388	5	549
Total		352	28.9%	845	19	1,216

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 20 2020 Balkan Business Barometer: overall share of process innovators

		Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2017-19)?				Total
		Yes	Yes -%-share	No	DK/refuse	
Economy	Albania	40	24.2%	124	1	165
	Bosnia and Herzegovina	84	38.4%	130	5	219
	Kosovo*	14	16.3%	67	5	86
	North Macedonia	25	18.2%	111	1	137
	Montenegro	22	37.3%	34	3	59
	Serbia	156	28.4%	382	11	549
Total		341	28.1%	848	26	1,215

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 21 2020 Balkan Business Barometer: share of product and process innovators by industry

		Have you introduced new or significantly improved products and/or services in the past 12 months?					Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2017-19)?				
		Yes	Yes -%-share	No	DK/refuse	Total	Yes	Yes -%-share	No	DK/refuse	Total
What is the main activity of your company?	NACE A Agriculture, forestry and fishing	0	--	1	0	1	0	--	1	0	1
	NACE C Manufacturing	2	40.0%	3	0	5	1	20.0%	4	0	5
	NACE E Water supply; wastewater management, controlling the process of removing waste and similar activities	0	--	1	0	1	0	--	1	0	1
	NACE F Construction	1	16.7%	5	0	6	1	20.0%	4	0	5
	NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles	7	31.8%	14	1	22	7	31.8%	14	1	22
	NACE H Transportation and storage	2	13.3%	13	0	15	1	6.7%	14	0	15
	NACE I Accommodation and food service activities	4	17.4%	19	0	23	3	12.5%	20	1	24
	NACE J Information and communication	1	20.0%	3	1	5	0	--	3	1	4
	NACE K Financial and insurance activities	0	--	1	0	1	0	--	1	0	1
	NACE P Education	0	--	1	0	1	0	--	1	0	1

	Have you introduced new or significantly improved products and/or services in the past 12 months?					Have you introduced new or significantly improved production and/or service delivery processes in the last three years (2017-19)?				
	Yes	Yes -%share	No	DK/refuse	Total	Yes	Yes -%share	No	DK/refuse	Total
NACE S Other service activities	0	--	1	0	1	0	--	1	0	1
Total	17	21.0%	62	2	81	13	16.3%	64	3	80

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.2.6 Results from the 2021 Balkan Business Barometer

The 2021 Balkan Business Barometer collected responses from 1,200 enterprises of which 200 enterprises from Kosovo. Compared to the 2020 edition of the Barometer, the sample size for Kosovo has significantly increased and is comparable to that used in the Barometer 2020. This survey repeats the combination of different time periods introduced in the Barometer 2020 with the first question on product innovation covering the past 12 months and the second question on process innovation covering the last three years.

Overall, 29.3% of enterprises introduced new or significantly improved products and/or services in the past 12 months, and in Kosovo 28.5% of enterprises introduced such innovations. The overall rate of product innovation in Kosovo is close to that of the Balkan region (Table 22). Overall, 22.8 % of enterprises introduced new or significantly improved production and/or service delivery processes in the last three years, and in Kosovo 15.0% of enterprises introduced such innovations. The overall rate of process innovation in Kosovo is below that of the Balkan region (Table 23).

Table 22 2021 Balkan Business Barometer: overall share of product innovators

		Introduced new or significantly improved products and/or services in the past twelve months				Total
		Yes	Yes -%share	No	DK/refuse	
Economy	Albania	64	32.0%	130	6	200
	Bosnia and Herzegovina	87	43.5%	93	20	200
	Kosovo*	57	28.5%	105	38	200
	North Macedonia	58	29.0%	131	11	200
	Montenegro	53	26.5%	123	24	200
	Serbia	32	16.0%	151	17	200
Total		351	29.3%	733	116	1,200

Data source: Author's elaboration based on data from the Balkan Business Barometer

Table 23 2021 Balkan Business Barometer: overall share of process innovators

		Introduced new or significantly improved production and/or service delivery processes in the last three years (2018-2020)				Total
		Yes	Yes -%share	No	DK/refuse	
Economy	Albania	35	17.5%	159	6	200
	Bosnia and Herzegovina	82	41.0%	98	20	200
	Kosovo*	30	15.0%	132	38	200
	North Macedonia	55	27.5%	134	11	200
	Montenegro	45	22.5%	131	24	200
	Serbia	26	13.0%	157	17	200
Total		273	22.8%	811	116	1,200

Data source: Author's elaboration based on data from the Balkan Business Barometer

A further breakdown by industry shows that for most industries the sample size is too small to calculate representative results (Table 24). Results are calculated only for industries with at least five enterprises included in the sample. Highest shares of product and process innovators are for Manufacturing and Accommodation and food service activities.

Table 24 2021 Balkan Business Barometer: share of product and process innovators by industry

		Introduced new or significantly improved products and/or services in the past 12 months				Total	Introduced new or significantly improved production and/or service delivery processes in the last three years (2018-2020)				Total
		Yes	Yes -% share	No	DK/ refuse		Yes	Yes -% share	No	DK/ refuse	
What is the main activity that your company carries out?	NACE C Manufacturing	22	50.0%	18	4	44	9	20.5%	31	4	44
	NACE D Supplier of electricity, gas, steam and air conditioner.	0	--	2	0	2	1	--	1	0	2
	NACE E Water supplier: wastewater management, controller of waste disposal processes and other related activities.	0	--	1	0	1	0	--	1	0	1
	NACE F Construction	8	17.0%	31	8	47	4	8.5%	35	8	47
	NACE G Wholesale and retail trade	9	29.0%	14	8	31	3	9.7%	20	8	31
	NACE H Transportation and storage	0	--	1	0	1	1	--	0	0	1
	NACE I Accommodation and food service activities	2	40.0%	3	0	5	1	20.0%	4	0	5
	NACE J Information and communication	0	--	1	0	1	0	--	1	0	1
	NACE K Financial and insurance activities	1	--	0	0	1	0	--	1	0	1
	NACE M Professional, scientific and technical activities	0	--	1	0	1	0	--	1	0	1
	NACE P Education	1	--	0	0	1	0	--	1	0	1
	NACE Q Public health and social work activities	0	--	2	0	2	0	--	2	0	2
	NACE R Arts, entertainment and recreation	0	--	1	0	1	0	--	1	0	1
	NACE S Other service activities	9	24.3%	17	11	37	6	16.2%	20	11	37
Other / Don't know	5	--	13	7	25	5	--	13	7	25	
Total		57	28.5%	105	38	200	30	15.0%	132	38	200

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.2.7 Summary of results from the Balkan Business Barometer

Table 25 summarizes the results from the different Balkan Business Barometers. For several NACE 1-digit industries there are no results as these industries were either not included or sample sizes were too small. Overall, there are significant innovation activities at industry level if results are available for at least 3 surveys and if average shares are at least 80% of the average share of all industries combined (respective cells are highlighted in green in Table 25).

Significant innovation activities for product innovators are observed in:

- Manufacturing (NACE C) (4 out of 6 years)
- Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE G) (all 6 years)
- Accommodation and food service activities (NACE I) (all 6 years)
- Information and communication (NACE J) (3 out of 6 years)

Significant innovation activities for process innovators are observed in:

- Manufacturing (NACE C) (4 out of 6 years)
- Construction (NACE F) (4 out of 6 years)
- Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE G) (5 out of 6 years)
- Accommodation and food service activities (NACE I) (4 out of 6 years)

Table 25 Balkan Business Barometer: 2016-2021 results by industry

	Have you introduced new or significantly improved products and/or services in the last						Have you introduced new or significantly improved production and/or service delivery processes in the last					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
	12 months	12 months	3 years	3 years	12 months	12 months	12 months	12 months	3 years	3 years	3 years	3 years
NACE C Manufacturing	--	60.0%	--	47.8%	40.0%	50.0%	----	60.0%		47.8%	20.0%	20.5%
NACE F Construction	40.0%	--	30.0%	44.4%	16.7%	17.0%	50.0%	--	30.0%	33.3%	20.0%	8.5%
NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles	47.1%	66.7%	34.0%	45.1%	31.8%	29.0%	38.9%	43.3%	28.6%	36.1%	31.8%	9.7%
NACE H Transportation and storage	36.4%	--	--	32.1%	13.3%	--	33.3%	--	--	21.4%	6.7%	--
NACE I Accommodation and food service activities	63.6%	50.0%	27.3%	38.2%	17.4%	40.0%	60.0%	25.0%	36.4%	27.3%	12.5%	20.0%
NACE J Information and communication	80.0%	50.0%	--	--	20.0%	--	60.0%	33.3%	--	--	--	--
NACE K Financial and insurance activities	80.0%	--	--	--	--	--	60.0%	--	--	--	--	--
NACE L Real estate activities	--	--	--	66.7%	--	--	--	--	--	33.3%	--	--
NACE S Other service activities	--	--	--	23.1%	--	24.3%	--	--	--	23.1%	--	16.2%
Total	51.7%	59.7%	31.4%	41.3%	21.0%	28.5%	46.9%	37.3%	29.4%	31.9%	16.3%	15.0%

Cells highlighted in green where the percentage share is above 0.8 times that of all industries combined.

Data source: Author's elaboration based on data from the Balkan Business Barometer

3.3 Enterprise Survey innovation data

Aggregate and firm-level data on innovation are available from the World Bank Enterprise Survey. Firm-level data are available for Kosovo from the 2013 and 2019 edition of the Enterprise Survey and include identifiers for different industries. These data are analysed in this section.

3.3.1 Results from the 2013 Enterprise Survey

The 2013 Enterprise Survey⁴ includes data for 381 enterprises for several NACE 2-digit industries. The 2013 Enterprise Survey includes four questions on innovation:

- H.1 During the last three years, has this establishment introduced new or significantly improved products or services?
- H.3 During the last three years, has this establishment introduced any new or significantly improved methods for the production or supply of products or services?
- H.4 During the last three years, has this establishment introduced any new or significantly improved organizational or management practices or structures?
- H.5 During the last three years, has this establishment introduced new or significantly improved marketing methods?

A fifth variable has been constructed by combining all questions to identify enterprises having introduced at least one type of innovation. For some industries, the number of enterprises is too small to derive robust results. To ensure representative results, a lower threshold of at least 5 enterprises has been used. Industries which do not meet this criterion are highlighted in red in Table 26.

Overall, 71% of enterprises introduced at least one type of innovation. The highest shares of enterprises with any type of innovation are, in descending order: Plastics & rubber (NACE 25) 100%, Furniture (NACE 36) 100%, Transport (NACE 60) 92%, Fabricated metal products (NACE 28) 83%, Supporting transport activities (NACE 63) 83%, Textiles (NACE 17) 78%, Services of motor vehicles (NACE 50) 78%, Hotel and restaurants (NACE 55) 75%, Publishing, printing and recorded media (NACE 22) 73%, IT (NACE 72) 71%, Wholesale (NACE 51) 70%, Food (NACE 15) 68%, Retail (NACE 52) 66%, Non-metallic mineral products (NACE 26) 65%, Construction (NACE 45) 57%, Chemicals (NACE 24) 43%, and Basic metals (NACE 27) 31%.

Table 26 Share of innovative enterprises by industry using 2013 World Bank Enterprise Survey data

NACE	Industry	Product innovations	Process innovations	Organizational innovations	Marketing innovations	Any type of innovation	Total number of firms	Product innovations	Process innovations	Organizational innovations	Marketing innovations	Any type of innovation
		Number	Number	Number	Number	Number	Number	%-share	%-share	%-share	%-share	%-share
15	Food	15	11	10	7	15	22	68%	50%	45%	32%	68%
17	Textiles	6	6	7	7	7	9	67%	67%	78%	78%	78%
18	Garments	2	0	0	2	2	2	100%	0%	0%	100%	100%
20	Wood	1	1	1	1	1	3	33%	33%	33%	33%	33%
21	Paper & paper products	2	2	2	2	2	2	100%	100%	100%	100%	100%
22	Publishing, printing and recorded media	4	4	5	8	8	11	36%	36%	45%	73%	73%
24	Chemicals	3	0	2	3	3	7	43%	0%	29%	43%	43%
25	Plastics & rubber	8	6	3	6	8	8	100%	75%	38%	75%	100%
26	Non-metallic mineral products	8	9	12	15	15	23	35%	39%	52%	65%	65%
27	Basic metals	4	2	2	0	4	13	31%	15%	15%	0%	31%
28	Fabricated metal products	7	3	5	5	10	12	58%	25%	42%	42%	83%
29	Machinery and	3	3	3	1	3	3	100%	100%	100%	33%	100%

⁴ <https://www.enterprisesurveys.org/./documents/country-profiles/Kosovo-2013.pdf>

NACE	Industry	Product innovations	Process innovations	Organizational innovations	Marketing innovations	Any type of innovation	Total number of firms	Product innovations	Process innovations	Organizational innovations	Marketing innovations	Any type of innovation
		Number	Number	Number	Number	Number	Number	%-share	%-share	%-share	%-share	%-share
	equipment											
31	Electronics	3	3	3	0	3	3	100%	100%	100%	0%	100%
36	Furniture	5	4	6	3	7	7	71%	57%	86%	43%	100%
37	Recycling	1	0	0	1	1	1	100%	0%	0%	100%	100%
45	Construction	6	12	16	13	16	28	21%	43%	57%	46%	57%
50	Services of motor vehicles	5	3	7	4	7	9	56%	33%	78%	44%	78%
51	Wholesale	37	27	34	40	48	69	54%	39%	49%	58%	70%
52	Retail	35	19	31	32	40	61	57%	31%	51%	52%	66%
55	Hotel and restaurants	13	9	16	15	24	32	41%	28%	50%	47%	75%
60	Transport	11	12	13	17	23	25	44%	48%	52%	68%	92%
63	Supporting transport activities	14	6	13	20	20	24	58%	25%	54%	83%	83%
72	IT	5	5	5	4	5	7	71%	71%	71%	57%	71%
	Total	198	147	196	206	272	381	52%	39%	51%	54%	71%

Data source: 2013 World Bank Enterprise Survey

3.3.2 Results from the 2019 Enterprise Survey

The 2019 Enterprise Survey⁵ includes data for 1,087 enterprises for several NACE 2-digit industries. The 2019 Enterprise Survey includes two questions on innovation:

- H.1 During the last three years, has this establishment introduced new or improved products or services?
- H.5 During the last three years, has this establishment introduced any new or improved process? (These include methods of manufacturing products or offering services; logistics, delivery, or distribution methods for inputs, products, or services; or supporting activities for processes)

A third variable has been constructed by combining all questions to identify enterprises having introduced at least one type of innovation. For some industries, the number of enterprises is too small to derive robust results. To ensure representative results, a lower threshold of at least 5 enterprises has been used. Industries which do not meet this criterion are highlighted in red in Table 27.

Overall, 29% of enterprises introduced at least one type of innovation. The highest shares of enterprises with any type of innovation are, in descending order: Machinery and equipment (NACE 29–30) 94%, Chemicals (NACE 24) 80%, Plastics & rubber (NACE 25) 72%, IT (NACE 72) 54%, Transport (NACE 60–64) 40%, Food (NACE 15) 36%, Wholesale (NACE 51) 36%, Fabricated metal products (NACE 28) 35%, Wood (NACE 20) 26%, Retail (NACE 52) 21%, Non-metallic mineral products (NACE 26) 18%, Refined petroleum products (NACE 23) 17%, Textiles (NACE 17) 13%, Paper (NACE 21) 13%, Furniture (NACE 36) 13%, Construction (NACE 45) 8%, and Hotel and restaurants (NACE 55) 5%.

Table 27 Share of innovative enterprises by industry using 2019 World Bank Enterprise Survey data

NACE	Industry	Product innovations	Process innovations	Any type of innovation	Total number of firms	Product innovations	Process innovations	Any type of innovation
		Number	Number	Number	Number	%-share	%-share	%-share
15	Food	32	12	32	89	36%	13%	36%
17	Textiles	3	1	3	23	13%	4%	13%

⁵ <https://www.enterprisesurveys.org/content/dam/enterprisesurveys/documents/country/Kosovo-2019.pdf>

NACE	Industry	Product innovations	Process innovations	Any type of innovation	Total number of firms	Product innovations	Process innovations	Any type of innovation
		Number	Number	Number	Number	%-share	%-share	%-share
18	Garments	0	0	0	9	0%	0%	0%
20	Wood	11	8	11	43	26%	19%	26%
21	Paper	1	1	1	8	13%	13%	13%
23	Refined petroleum products	0	1	1	6	0%	17%	17%
24	Chemicals	4	0	4	5	80%	0%	80%
25	Plastics & rubber	48	24	50	69	70%	35%	72%
26	Non-metallic mineral products	14	9	18	98	14%	9%	18%
28	Fabricated metal products	14	5	17	49	29%	10%	35%
29-30	Machinery and equipment	17	0	17	18	94%	0%	94%
36	Furniture	2	0	2	16	13%	0%	13%
45	Construction	3	1	3	37	8%	3%	8%
50	Services of motor vehicles	1	1	1	1	100%	100%	100%
51	Wholesale	71	13	73	204	35%	6%	36%
52	Retail	11	14	21	100	11%	14%	21%
55	Hotel and restaurants	10	0	10	189	5%	0%	5%
I: 60-64	Transport	33	7	39	97	34%	7%	40%
72	IT	14	2	14	26	54%	8%	54%
	Total	289	99	317	1,087	27%	9%	29%

Data source: 2019 World Bank Enterprise Survey

3.3.3 Summary of results from the Enterprise Survey

The results of the two Enterprise Surveys show that there are high shares⁶ of innovators in the following industries:

- Food (NACE 15) (ES 2019)
- Textiles (NACE 17) (ES 2013)
- Chemicals (NACE 24) (ES 2019)
- Plastics & rubber (NACE 25) (ES 2013 & ES 2019)
- Fabricated metal products (NACE28) (ES 2013 & ES 2019)
- Furniture (NACE 36) (ES 2013)
- Services of motor vehicles (NACE 50) (ES 2013)
- Wholesale (NACE 51) (ES 2019)
- Hotels and restaurants (NACE 55) (ES 2013)
- Transport (NACE 60-64) (ES 2013 & ES 2019)
- IT (NACE 72) (ES 2013 & ES 2019)

⁶ Industries have a high share of enterprises with innovation activities if results are available for both Enterprise Surveys and if the average share of enterprises with innovation activities is higher than the average share for all industries for at least one Enterprise Survey.

3.4 Goods exports

Export data for goods can be used to assess the competitiveness of Kosovo. Data have been made available by the Kosovo Agency of Statistics following the Standard International Trade Classification (SITC) Rev. 4⁷. Table 28 provides an example of the structure of the SITC classification.

Data on goods exports are used to identify in which products and industries Kosovo has a trade specialisation compared to the same benchmark countries used for mapping the economic potential. Data on goods exports for 2010-2020 have been made available by the Kosovo Agency of Statistics for 3-digit SITC product groups. Comparable data have been extracted for 2012-2020 for the benchmark countries from UN Comtrade. Data on goods exports by product groups for Kosovo and the benchmark countries are also recalculated into exports by NACE 3-digit industries based on an ad-hoc interpretation of an official concordance between 4-digit product groups and 4-digit NACE industries.

Table 28 Example of SITC Rev. 4 goods classification

Level		Code	Description
Section level	1-digit	5	Chemicals and related products, n.e.s.
Division level	2-digit	51	Organic chemicals
Group level	3-digit	511	Hydrocarbons, n.e.s., and their halogenated, sulphonated, nitrated or nitrosated derivatives
Subgroup level	4-digit	511.1	Acyclic hydrocarbons
Basic heading	5-digit	511.11	Ethylene

Data source: Author's elaboration

3.4.1 Export performance by product groups

Export data can be analysed by SITC product groups. Export shares are at least 1% in at least 7 years in the 2012-2020 period for the 12 product groups shown in Table 29 (cf. Annex C for export shares for all product groups). Export shares are high in Beverages (SITC 111 + 112), Metalliferous ores and metal scrap (SITC 282 + 287 + 288), Electric current (SITC 351), and Iron and steel (SITC 671 + 691). Exports of Pig-iron etc. (SITC 671) account for more than 20% of total goods exports for the 2012-2020 period, but this share has declined strongly from more than 31% in 2012-2014 to almost 13.5% in 2018-2020.

Table 29 Largest product groups by export share

Product group	Export share 2012-2020	Export share 2012-2014	Export share 2015-2017	Export share 2018-2020
111 Non-alcoholic beverages, n.e.s.	3.0%	2.3%	3.1%	3.7%
112 Alcoholic beverages	2.6%	1.7%	2.5%	3.4%
211 Hides and skins (except furskins), raw	2.8%	3.6%	3.1%	1.7%
282 Ferrous waste and scrap; remelting scrap ingots of iron or steel	5.6%	7.4%	4.1%	5.3%
287 Ores and concentrates of base metals, n.e.s.	6.7%	7.3%	7.4%	5.4%
288 Non-ferrous base metal waste and scrap, n.e.s.	4.6%	5.8%	4.3%	3.7%
351 Electric current	5.9%	5.7%	8.2%	3.7%
582 Plates, sheets, film, foil and strip, of plastics	2.1%	1.2%	2.3%	2.7%
671 Pig-iron, spiegeleisen, sponge iron, iron or steel granules and powders and ferro-alloys	21.0%	31.3%	18.4%	13.4%
679 Tubes, pipes and hollow profiles, and tube or pipe fittings, of iron or steel	4.4%	3.2%	4.6%	5.5%
691 Structures and parts of structures, n.e.s., of iron, steel or aluminium	3.2%	0.9%	6.0%	2.8%
893 Articles, n.e.s., of plastics	4.6%	1.4%	4.3%	8.0%

Data source: Author's elaboration based on data from the Kosovo Agency of Statistics

⁷ <https://unstats.un.org/unsd/trade/sitcrev4.htm>

3.4.2 Export specialisation by industries

Exports by product groups can be recalculated to exports by industries using concordance or correspondence tables. Correspondence tables are available from RAMON, Eurostat's Metadata Server⁸. The correspondence between SITC Rev. 3 and ISIC Rev. 3 links 5-digit SITC data to 4-digit ISIC data. ISIC is the International Standard Industrial Classification of All Economic Activities which is very similar but not identical to the NACE classification. As export data are available at the 3-digit level, an ad-hoc approach has been used to link these data to 3-digit industries.

The following methodology has been used to link 3-digit SITC product groups to 3-digit ISIC industries:

- First, each SITC 5-digit product group to ISIC 4-digit industry correspondence pair has been transformed into a corresponding SITC 3-digit product group to ISIC 3-digit industry correspondence pair by shortening the 5-digit SITC codes to their first 3 digits and the 4-digit ISIC codes to their first 3 digits. E.g., the correspondence pair SITC 27231 – ISIC 1421 is transformed into SITC 272 – ISIC 142.
- Second, the SITC-ISIC 3-digit correspondence pair is reversed into an ISIC-SITC 3-digit correspondence pair.
- Third, for each unique SITC-ISIC 3-digit correspondence pair the number of times such a pair occurs in the reversed correspondence table is counted. E.g., Table 30 below shows the number of occurrences for all ISIC-SITC correspondence pairs including ISIC 011 (Meat of bovine animals, fresh, chilled or frozen).

Table 30 Number of occurrences for all ISIC-SITC correspondence pairs, for product group ISIC 011

ISIC	SITC	ISIC-SITC	# Occurrences	ISIC	SITC	ISIC-SITC	# Occurrences
11	41	11-41	2	11	75	11-75	12
11	42	11-42	1	11	81	11-81	3
11	43	11-43	1	11	121	11-121	2
11	44	11-44	2	11	222	11-222	9
11	45	11-45	7	11	223	11-223	5
11	54	11-54	23	11	231	11-231	4
11	57	11-57	29	11	263	11-263	1
11	71	11-71	1	11	264	11-264	1
11	72	11-72	1	11	265	11-265	6
11	74	11-74	3	11	292	11-292	11

Data source: Author's elaboration based on data from the Kosovo Agency of Statistics

- Fourth, the contribution of each 3-digit SITC product group to an ISIC 3-digit industry is 100% if there is only one unique combination, otherwise the contribution of SITC xxx to ISIC yyy is equal to the percentage share calculated as the number of times the correspondence pair SITC xxx to ISIC yyy occurs of all correspondence pairs including SITC xxx. E.g., there are 4 occurrences of SITC-ISIC 231-11 and 1 occurrence of SITC-ISIC 231-20. SITC 231 is thus included in 5 occurrences in total. 80% of exports in SITC 231 are then allocated to ISIC 11 and 20% of exports in SITC 231 to ISIC 20.

The allocation of goods exports of SITC 3-digit product groups to ISIC 3-digit industries is shown in Annex D.

For Kosovo and the benchmark countries goods exports are then calculated for each year from 2012 to 2020 for each ISIC 3-digit industry, and goods export specialisation for each industry is calculated using Location Quotients. An industry has a current goods export specialisation if the degree of specialisation (LQ) is above 1.5 for at least 7 out of 9 years from 2012 to 2020. An industry has an emerging goods export specialisation if there is a positive and significant trend in the degree of specialisation. Trends are defined as the ratio between the slope of a linear regression over the period 2012-2020 and the average value for the degree of

⁸ <https://ec.europa.eu/eurostat/ramon>

specialisation for the same years. The trend should be statistically significant, i.e. the adjusted R² should be at least 0.70.

Results for industries with a current and an emerging goods export specialisation are shown in Table 31. In total 10 industries have a current goods export specialisation and in addition 12 more industries have an emerging goods export specialisation. For many of the industries the average goods export share is small. Of the industries with a current goods export specialisation, 271 Manufacture of basic iron and steel accounts for more than 25% of total goods exports, and 3 more industries each account for more than 5% of total goods exports. In all 12 industries with a current goods export specialisation, average degrees of specialisation are high. These 12 industries together account for 48% of average 2012-2020 goods exports, showing that Kosovo's goods exports are concentrated in a relatively small number of industries. For 2 of these industries there is also a positive and significant trend development in the degree of specialisation, for 8 industries the trend is positive but not significant, and for 2 industries the trend is negative, including 271 Manufacture of basic iron and steel.

Of the 12 additional industries with an emerging goods export specialisation, export shares are above 1% for only 3 industries, 011 Growing of crops; market gardening; horticulture, 252 Manufacture of plastics products, and 361 Manufacture of furniture. Of these industries, only 252 Manufacture of plastics products shows a high degree of specialisation. Trends are high for 020 Forestry, logging and related service activities, 201 Sawmilling and planing of wood, 222 Printing and service activities related to printing, 252 Manufacture of plastics products and 361 Manufacture of furniture.

For all industries shown in Table 31, we assume that these industries have an innovation potential as these industries are competitive on the international market. All industries combined account for almost two-thirds of average 2012-2020 goods exports. The last two columns in Table 31 show the corresponding NACE Rev. 1.1⁹ and NACE Rev. 2.2 codes¹⁰.

Table 31 Industries with a current or emerging goods export specialisation

ISIC Rev 3.1 industries	Average 2012-2020 export share	Average 2012-2020 degree of specialisation	Trend in degree of specialisation (* significant increase)	Corresponding NACE Rev. 1.1 industries	Corresponding full or partial NACE Rev. 2 industries
Current specialisation					
101 Mining and agglomeration of hard coal	0.06%	2.593	0.107	101	051, 099, 192
102 Mining and agglomeration of lignite	0.11%	4.413	0.125	102	052, 099, 192
103 Extraction and agglomeration of peat	0.06%	4.413	0.125	103	089, 099, 192
132 Mining of non-ferrous metal ores, except uranium and thorium ores	6.75%	8.631	0.031	132	072, 099
142 Mining and quarrying n.e.c.	0.37%	3.312	0.105	143+144+145	089, 099, 106, 382
155 Manufacture of beverages	5.60%	6.610	0.160*	159	110, 201
172 Manufacture of other textiles	1.76%	2.256	0.117*	175	139, 172, 331
251 Manufacture of rubber products	1.28%	5.649	-0.168	251	221, 325, 329, 331
271 Manufacture of basic iron and steel	26.13%	9.345	-0.056	271+272+273	241
401 Production, collection and distribution of electricity	5.87%	4.704	0.085	401	351, 381
Emerging specialisation					
011 Growing of crops; market gardening; horticulture	2.64%	0.247	0.071*	011	011, 012, 013, 016, 021, 023, 104, 110
020 Forestry, logging and related service activities	0.37%	1.105	0.242*	020	012, 021, 022, 023, 161

⁹ https://unstats.un.org/unsd/classifications/Econ/tables/ISIC/ISIC31_NACE11/ISIC31-NACE11.txt

¹⁰ Using the NACE Rev 1.1. to NACE Rev. 2 correspondence table from Eurostat:

<https://ec.europa.eu/eurostat/documents/1965800/1978760/CORRESPONDENCETABLENACEREV.1.1-NACEREV.2.pdf/e8200936-c2f0-4202-8bda-99fbbfc422b4>

ISIC Rev 3.1 industries	Average 2012-2020 export share	Average 2012-2020 degree of specialisation	Trend in degree of specialisation (* significant increase)	Corresponding NACE Rev. 1.1 industries	Corresponding full or partial NACE Rev. 2 industries
050 Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	0.03%	0.070	0.187*	050	031, 032, 702
201 Sawmilling and planing of wood	0.14%	0.090	0.210*	201	161
202 Manufacture of products of wood, cork, straw and plaiting materials	0.85%	1.212	0.091*	202	162
210 Manufacture of paper and paper products	0.90%	0.796	0.172*	211+212	171, 172, 181
222 Printing and service activities related to printing	0.08%	0.535	0.238*	222	172, 181, 581
241 Manufacture of basic chemicals	0.54%	0.118	0.161*	241	191, 201, 382
252 Manufacture of plastics products	7.28%	2.244	0.226*	252	222, 273, 329, 331, 332, 412, 433
272 Manufacture of basic precious and non-ferrous metals	0.77%	0.156	0.121*	274	244, 259
293 Manufacture of domestic appliances n.e.c.	0.50%	0.581	0.107*	297	275, 282, 331
361 Manufacture of furniture	2.35%	0.476	0.248*	361	282, 293, 301, 302, 303, 310, 952

Data source: Author's elaboration based on data from the Kosovo Agency of Statistics

3.5 Industries with an economic and innovation potential for Kosovo

The next step is to combine the results for the mapping of the economic potential for Kosovo in Chapter 2 with those for the mapping of the innovation potential in Chapter 3. The list of industries with an economic and innovation potential is biased towards industry as export data are only available for goods and not for services. The combined analysis suffers from a lack of detailed data for mapping the innovation potential. Results for the innovation potential are at best available for a limited number of mostly NACE 3-digit industries in Manufacturing using data on goods exports and for a limited number of NACE 2-digit industries using innovation data from the World Bank Enterprise Survey. Results from the Balkan Business Barometer are too general as they are only available for NACE 1-digit industries.

The combined results in Table 32 show that for only a few NACE 3-digit industries there is statistical evidence of both an economic and innovation potential:

- NACE 242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel,
- NACE 259 Manufacture of other fabricated metal products,
- NACE 412 Construction of residential and non-residential buildings,
- NACE 581 Publishing of books, periodicals and other publishing activities.

This list of industries can be increased by adding an alternative approach where industries with an export potential (as identified in Table 31) are also included if they qualify for 5 selection criteria used for the mapping of the static or current economic potential (cf. Annex A for detailed results for these selection criteria). In addition, the following industries would then have both an economic and innovation potential (these industries are shown in italics in Table 32 and with a different colour of green for the current economic potential):

- NACE 051 Mining of hard coal,
- NACE 106 Manufacture of grain mill products, starches and starch products,
- NACE 241 Manufacture of basic iron and steel and of ferro-alloys,
- NACE 351 Electric power generation, transmission and distribution.

Table 32 Industries with an economic and innovation potential

	Current economic potential	Emerging economic potential	Innovation potential
C MANUFACTURING			Balkan Barometer
<i>051 Mining of hard coal</i>			Goods exports
102 Processing and preserving of fish, crustaceans and molluscs			
<i>106 Manufacture of grain mill products, starches and starch products</i>			Goods exports
203 Manufacture of articles of paper and paperboard			
232 Manufacture of refractory products			
235 Manufacture of cement, lime and plaster			
236 Manufacture of articles of concrete, cement and plaster			
<i>241 Manufacture of basic iron and steel and of ferro-alloys</i>			Exports
242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel			Enterprise Survey
259 Manufacture of other fabricated metal products			Enterprise Survey
264 Manufacture of consumer electronics			
325 Manufacture of medical and dental instruments and supplies			
D ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY			
<i>351 Electric power generation, transmission and distribution</i>			Goods exports
F CONSTRUCTION			Balkan Barometer
412 Construction of residential and non-residential buildings			Goods exports
421 Construction of roads and railways			
422 Construction of utility projects			
429 Construction of other civil engineering projects			
G WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES			Balkan Barometer
461 Wholesale on a fee or contract basis			
463 Wholesale of food, beverages and tobacco			
464 Wholesale of household goods			
469 Non-specialised wholesale trade			
H TRANSPORTATION AND STORAGE			
504 Inland freight water transport			
J INFORMATION AND COMMUNICATION			Balkan Barometer
581 Publishing of books, periodicals and other publishing activities			Goods exports
582 Software publishing			
611 Wired telecommunications activities			
612 Wireless telecommunications activities			
619 Other telecommunications activities			
M PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES			
691 Legal activities			
743 Translation and interpretation activities			
N ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES			
822 Activities of call centres			

Data source: Author's elaboration

4 Mapping the scientific potential of Kosovo

For mapping the scientific potential of Kosovo different data sources are available including data from Scopus and Web of Science.

Scopus is a database from Elsevier and “combines a comprehensive, expertly curated abstract and citation database with enriched data and linked scholarly literature across a wide variety of disciplines”¹¹. Scopus includes data for most countries but not for Kosovo. Krasniqi collected data from 2010 to 2019 for Kosovo by manually searching for the number of publications for each university, research institute and private college registered in Kosovo. Krasniqi collected data for 27 subject fields (cf. Table 33) for the following types of scientific documents: articles, book chapters, books, conference papers, data papers, editorials, errata, letters, notes, reviews, and short surveys.

For 2010-2019 the total number of Scopus publications for Kosovo is 3,320 or 1,850 publications per million population. Compared to the benchmark countries, Kosovo has the lowest number of publications and almost the lowest number of publications per million population (Table 33). Most publications are in Medicine, Engineering, Social Sciences, Agricultural and Biological Sciences, Mathematics, and Environmental Science (Table 34).

Table 33 Number of scientific publications in Kosovo, 2010-2019

	Number of scientific publications	Number of scientific publications per million population
Kosovo	3,320	1,850
* Albania	4,299	1,506
Bosnia and Herzegovina	10,566	3,201
Bulgaria	46,220	6,626
Croatia	67,545	16,606
Greece	193,772	18,082
* Montenegro	3,884	6,243
North Macedonia	8,798	4,423
* Serbia	75,645	10,892

Data source: Scopus

Table 34 Scientific publications by subject field in Kosovo, 2010-2019

	%-share		%-share		%-share
Medicine	14.9	Physics and Astronomy	4.2	Health Professionals	1.1
Engineering	13.5	Materials Science	4.1	Dentistry	1.1
Social Sciences	6.6	Earth and Planetary Sciences	3.2	Veterinary	1.0
Computer Science	6.5	Energy	2.7	Immunology and Microbiology	1.0
Agricultural and Biological Sciences	6.4	Pharmacology, Toxicology and Pharmaceutics	2.4	Psychology	0.8
Mathematics	5.7	Arts and Humanities	2.1	Neuroscience	0.5
Environmental Science	5.7	Economics, Econometrics and Finance	2.0	Multidisciplinary	0.5
Chemistry	5.0	Chemical Engineering	2.0	Decision Sciences	0.4
Biochemistry, Genetics and Molecular Biology	4.6	Business, Management and Accounting	2.0	Nursing	0.3

Data source: Scopus

Web of Science offers bibliographical access to a curated collection of over 21,000 peer-reviewed, high-quality scholarly journals published worldwide (including Open Access journals) in over 250 science, social sciences, and humanities disciplines. Web of Science is currently maintained by Clarivate Analytics¹². The Web

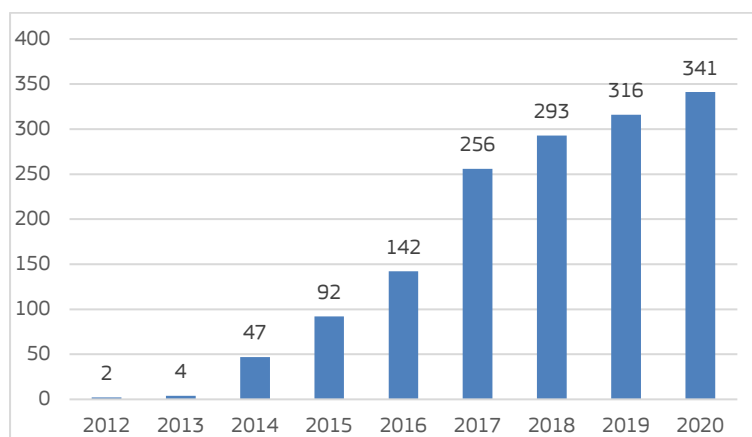
¹¹ <https://www.elsevier.com/solutions/scopus>

¹² <https://clarivate.com/webofsciencegroup/solutions/web-of-science/>

of Science schema comprises approximately 250 subject areas in science, social sciences, and arts & humanities. Data have been extracted for 2012-2020 for the following document types: articles, notes or reviews. Detailed results for 200 subject areas for which there has been at least one publication are included in Annex F.

The total number of publications has been increasing over time (Figure 4) from 2 in 2012 to 341 in 2020. Given the low number of total publications in 2012-2014, these data will not be included in the analysis.

Figure 4 Number of scientific publications in Kosovo, 2012 - 2020



Data source: Web of Science

The largest subject areas (all having 2014-2020 shares above 2.5%) include Environmental Sciences, Mathematics, Economics, Medicine General Internal, Chemistry Multidisciplinary, Public Environmental Occupational Health, and Pharmacology Pharmacy (Table 34) These results are different from those using Scopus data due to different time periods, a different coverage of document types, and a much more detailed breakdown for Web of Science publications.

Comparing the results in Tables 34 and 35 does show that for both data sources there is empirical evidence that Kosovo is publishing intensely in areas as Economics, Environmental sciences, Mathematics and Medicine.

Table 35 Science publications by subject area in Kosovo, 2014-2020

	2015-2016	2017-2018	2018-2020	2014-2020	2015-2016	2017-2018	2018-2020	2014-2020
Total	234	549	657	1493				
Environmental Sciences	30	54	69	153	12.8%	9.8%	10.5%	10.2%
Mathematics	13	32	39	84	5.6%	5.8%	5.9%	5.6%
Economics	5	22	31	58	2.1%	4.0%	4.7%	3.9%
Medicine General Internal	3	20	25	48	1.3%	3.6%	3.8%	3.2%
Chemistry Multidisciplinary	11	14	21	46	4.7%	2.6%	3.2%	3.1%
Public Environmental Occupational Health	9	11	21	41	3.8%	2.0%	3.2%	2.7%
Pharmacology Pharmacy	6	19	15	40	2.6%	3.5%	2.3%	2.7%
Mathematics Applied	5	12	18	35	2.1%	2.2%	2.7%	2.3%
Dentistry Oral Surgery Medicine	6	18	10	34	2.6%	3.3%	1.5%	2.3%
Law	4	13	17	34	1.7%	2.4%	2.6%	2.3%
Multidisciplinary Sciences	8	14	12	34	3.4%	2.6%	1.8%	2.3%
Infectious Diseases	5	12	12	29	2.1%	2.2%	1.8%	1.9%
Humanities Multidisciplinary	5	13	11	29	2.1%	2.4%	1.7%	1.9%
Surgery	9	5	13	27	3.8%	0.9%	2.0%	1.8%
Medicine Research Experimental	6	11	10	27	2.6%	2.0%	1.5%	1.8%
Physics Multidisciplinary	9	8	10	27	3.8%	1.5%	1.5%	1.8%

	2015-2016	2017-2018	2018-2020	2014-2020	2015-2016	2017-2018	2018-2020	2014-2020
Total	234	549	657	1493				
Chemistry Physical	3	6	16	25	1.3%	1.1%	2.4%	1.7%
Engineering Electrical Electronic	5	13	7	25	2.1%	2.4%	1.1%	1.7%
Psychiatry	2	5	18	25	0.9%	0.9%	2.7%	1.7%
Biochemistry Molecular Biology	5	9	10	24	2.1%	1.6%	1.5%	1.6%
Engineering Environmental	3	7	14	24	1.3%	1.3%	2.1%	1.6%
Education Educational Research	2	7	14	23	0.9%	1.3%	2.1%	1.5%
Area Studies	5	9	8	22	2.1%	1.6%	1.2%	1.5%
Chemistry Analytical	3	9	10	22	1.3%	1.6%	1.5%	1.5%
Sport Sciences	6	10	6	22	2.6%	1.8%	0.9%	1.5%
Cardiac Cardiovascular Systems	6	10	5	21	2.6%	1.8%	0.8%	1.4%
Chemistry Medicinal	5	5	11	21	2.1%	0.9%	1.7%	1.4%
Management	2	5	14	21	0.9%	0.9%	2.1%	1.4%
Food Science Technology	1	12	7	20	0.4%	2.2%	1.1%	1.3%
Business	2	9	9	20	0.9%	1.6%	1.4%	1.3%
Veterinary Sciences	5	5	10	20	2.1%	0.9%	1.5%	1.3%
Materials Science Multidisciplinary	2	4	11	17	0.9%	0.7%	1.7%	1.1%
History	2	6	8	16	0.9%	1.1%	1.2%	1.1%
Computer Science Information Systems	0	9	6	15	0.0%	1.6%	0.9%	1.0%

(All subject areas with a publication share of at least 1% for 2014-2020)

Data source: Web of Science

5 Conclusions and recommendations for future data analyses

5.1 Summary of the methodology and main findings

The first part of this study has designed a quantitative analysis framework to assess the economic and innovation potential of Kosovo compared to a number of benchmark countries, including Bosnia and Herzegovina, Bulgaria, Croatia, Greece and North Macedonia. The economic analysis uses statistical data for individual economic industries provided by the Kosovo Agency of Statistics on a number of enterprises, number of employees, turnover, wages and exports of goods. Industries with a current economic potential are established industries in which Kosovo is specialised – by having a relatively high degree of specialisation – compared to the average of the benchmark countries. These industries should not be too small and have relatively high levels of average wages, both compared to the average of Kosovo and to the average of the benchmark countries, contributing to the country's overall economic well-being. The analysis has identified 9 industries with a *current economic potential*: NACE 236 **Manufacture of articles of concrete, cement and plaster**, NACE 412 **Construction of residential and non-residential buildings**, NACE 421 **Construction of roads and railways**, NACE 461 **Wholesale on a fee or contract basis**, NACE 463 **Wholesale of food, beverages and tobacco**, NACE 581 **Publishing of books, periodicals and other publishing activities**, NACE 582 **Software publishing**, NACE 611 **Wired telecommunications activities**, and NACE 619 **Other telecommunications activities**.

The analysis could overlook industries in which Kosovo is not yet specialised, which are still small or where average wages are relatively low, but where there are clear signs of improvement over time – by having a significant upward trend over time in the different economic variables – which could turn these industries into industries with a current economic potential in the few years' time. Thus, the analysis has identified 18 industries with an *emerging economic potential*: NACE 102 **Processing and preserving of fish, crustaceans and molluscs**; NACE 203 **Manufacture of articles of paper and paperboard**; NACE 232 **Manufacture of refractory products**; NACE 235 **Manufacture of cement, lime and plaster**; NACE 242 **Manufacture of tubes, pipes, hollow profiles and related fittings, of steel**; NACE 259 **Manufacture of other fabricated metal products**; NACE 264 **Manufacture of consumer electronics**; NACE 325 **Manufacture of medical and dental instruments and supplies**; NACE 422 **Construction of utility projects**; NACE 429 **Construction of other civil engineering projects**; NACE 464 **Wholesale of household goods**; NACE 469 **Non-specialised wholesale trade**; NACE 504 **Inland freight water transport**; NACE 582 **Software publishing**; NACE 612 **Wireless telecommunications activities**; NACE 691 **Legal activities**; NACE 743 **Translation and interpretation activities**; and NACE 822 **Activities of call centres**.

The report has used data on innovation activities from different editions of the Balkan Business Barometer and World Bank Enterprise Survey and on goods export performance to identify industries with an *innovation potential*. Based on the Balkan Business Barometer, 5 NACE 1-digit industries show high shares of innovation activities in product and/or process innovation: NACE C Manufacturing, NACE F Construction, NACE G Wholesale and retail trade; repair of motor vehicles and motorcycles, NACE I Accommodation and food service activities, and NACE J Information and communication. Based on firm-level data from two editions of the World Bank Enterprise Survey, high shares of innovation activities have been identified for NACE 15 Food, NACE 17 Textiles, NACE 24 Chemicals, NACE 25 Plastics and rubber, NACE 28 Fabricated metal products, NACE 36 Furniture, NACE 50 Services of motor vehicles, NACE 51 Wholesale, NACE 55 Hotels and restaurants, NACE 60–64 Transport, and NACE 72 IT.

Based on an analysis of degrees of specialisation of goods' exports, for a number of ISIC Rev 3.1 industries either a current specialisation¹³ or an emerging specialisation¹⁴ has been identified.

¹³ ISIC 101 Mining and agglomeration of hard coal, ISIC 102 Mining and agglomeration of lignite, ISIC 103 Extraction and agglomeration of peat, ISIC 132 Mining of non-ferrous metal ores, except uranium and thorium ores, ISIC 142 Mining and quarrying n.e.c., ISIC 155 Manufacture of beverages, ISIC 172 Manufacture of other textiles, ISIC 251 Manufacture of rubber products, ISIC 271 Manufacture of basic iron and steel, ISIC 401 Production, collection and distribution of electricity

¹⁴ ISIC 011 Growing of crops; market gardening; horticulture, ISIC 020 Forestry, logging and related service activities, ISIC 050 Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing, ISIC 201 Sawmilling and planning of wood, ISIC 202 Manufacture of products of wood, cork, straw and plaiting materials, ISIC 210 Manufacture of paper and paper products, ISIC 222 Printing and service activities related to printing, ISIC 241 Manufacture of basic chemicals, ISIC 252 Manufacture of plastics products, ISIC 272 Manufacture of basic precious and non-ferrous metals, ISIC 293 Manufacture of domestic appliances n.e.c., ISIC 361 Manufacture of furniture

The results of the different analyses are combined in a final integrated assessment of the economic and innovation potential of industries in Kosovo. The following NACE 3-digit industries would have *both an economic and innovation potential*:

- NACE 051 **Mining of hard coal**
- NACE 106 **Manufacture of grain mill products, starches and starch products**
- NACE 241 **Manufacture of basic iron and steel and of ferro-alloys**
- NACE 242 **Manufacture of tubes, pipes, hollow profiles and related fittings, of steel**
- NACE 259 **Manufacture of other fabricated metal products**
- NACE 351 **Electric power generation, transmission and distribution**
- NACE 412 **Construction of residential and non-residential buildings**
- NACE 581 **Publishing of books, periodicals and other publishing activities.**

5.2 Some recommendations on data

For a proper analysis of the innovation potential at national and regional level, a survey comparable to the Community Innovation Survey (CIS) is recommended. The Community Innovation Survey (CIS)¹⁵ is a survey of innovation activity in enterprises used by most European countries following the recommendations for measuring innovation in the 2018 edition of the Oslo Manual¹⁶. The survey sample should be large enough to allow for reliable and representative results for industries at the NACE 3-digit level for Kosovo.

The use of export data for mapping the innovation potential of industries is limited to those industries (mainly) exporting goods as only data on goods exports are available. It is recommended to also collect data on services exports as these can be used for mapping the innovation potential of industries (mainly) exporting services.

The United Nations “Manual on Statistics of International Trade in Services 2020”¹⁷ provides guidelines on how to compile and collect statistics of international trade in services. It is recommended to collect data for the following EBOPS 2010 (Extended Balance of Payments Services Classification 2010) classes or at least those not shown in italics:

S – Services; SA – Services: Manufacturing services on physical inputs owned by others; SB – Services: Maintenance and repair services n.i.e.; SC – Services: Transport; *SC1 – Services: Sea transport; SC2 – Services: Air transport; SC3 – Services: Other modes of transport; SC4 – Services: Postal and courier services; SCA – Services: All modes of transport; Passenger; SCB – Services: All modes of transport; Freight; SCC – Services: All modes of transport; Other than passenger and freight; SD – Services: Travel; SD1 – Services: Travel; Personal; SDZ – Services: Tourism-related services in travel and passenger transport; SE – Services: Construction; SE1 – Services: Construction abroad; SE2 – Services: Construction in the reporting economy; SF – Services: Insurance and pension services; SF1 – Services: Direct insurance; SF2 – Services: Reinsurance; SF3 – Services: Auxiliary insurance services; SF4 – Services: Pension and standardized guarantee services; SG – Services: Financial services; SG1 – Services: Financial services explicitly charged and other financial services; SG2 – Services: Financial intermediation services indirectly measured (FISIM); SH – Services: Charges for the use of intellectual property n.i.e.; SH1 – Services: Franchises and trademarks licensing fees; SH2 – Services: Licences for the use of outcomes of research and development; SH3 – Services: Licences to reproduce and/or distribute computer software; SH4 – Services: Licences to reproduce and/or distribute audio-visual and related products; SI – Services: Telecommunications, computer, and information services; SI1 – Services: Telecommunications services; SI2 – Services: Computer services; SI3 – Services: Information services; SJ – Services: Other business services; SJ1 – Services: Research and development services; SJ2 – Services: Professional and management consulting services; SJ3 – Services: Technical, trade-related, and other business services; SK – Services: Personal, cultural, and recreational services; SK1 – Services: Audiovisual and related services; SK2 – Services: Personal, cultural, and recreational services other than audiovisual and related services; SL – Services: Government goods and services n.i.e.; SL1 – Services: Embassies and consulates; SL2 – Services: Military units and agencies; SL3 – Services: Government goods and services n.i.e. other than embassies and consulates and military units and agencies; SOX – Services: Commercial services; SN – Services: Services not allocated.*

¹⁵ https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis2_esms.htm

¹⁶ <https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm>

¹⁷ http://unstats.un.org/unsd/publication/Seriesm/seriesM_86Rev1e.pdf

6 The qualitative analysis as a step of the S3 design process in Kosovo

The quantitative analysis provides evidence based on data. In the previous chapter issues related to data availability have been reported. Nonetheless, there are some aspects relevant to the Smart Specialisation approach that cannot easily be detected by using only a quantitative diagnosis. These aspects concern for example the potential of niches or cross-sector areas that are not precisely identified by product classifications such as NACE. Therefore, a qualitative analysis is preferred to observe innovation dynamics, if any, by delving deeper into the value chains or the horizontal sector collaborations, among others.

On the basis of the results of the quantitative analysis and other quantitative contributions as well as official statistics, the Kosovo Government has considered as good candidates for Smart Specialisation the following sectors: Information and Communication Technologies (ICT), Food Processing, Creative Industries, Green Energy and Wood Processing Sector.

Information and Communication Technologies

ICT is one of the sectors with the highest growth rates in export of services, +16% during the period 2018-2020, and +38% in 2021.¹⁸ ICT was also identified as having a great economic potential in the quantitative analysis. More specifically, emerging activities in Manufacture of consumer electronics (NACE 264), Wireless telecommunications activities (NACE 612), Software publishing (NACE 582), Wired telecommunications activities (NACE 611) and Other telecommunications activities (NACE 619) have been detected to have a current economic potential.

Food Processing Industry

The Processing sector overall in Kosovo, in 2020 represented 13.4%¹⁹ of GDP and had a positive growth trend over the years. In total employment, in 2020, this sector participated with 11.8%²⁰ and its turnover increased by 8.4%.²¹

Creative Industries

Creative industries represent “those activities which have their origin in individual creativity, skill and talent and which have the potential for wealth and job creation through the generation and exploitation of intellectual property.”²²

Creative industries include businesses that offer mainly: advertisement, media representation, market research and public opinion polling, motion picture, video and television program activities, sound recording and music publishing activities, radio broadcasting, television programming and broadcasting activities, artistic creation, and retail sale of textiles in specialized stores. Based on the quantitative analysis results, some of these sub-sectors passed several of the criteria and were considered sectors with economic potential, including employee size, employee specialization, and turnover size.

Green Energy

Energy consumption in Kosovo is highly dependent on fossil fuels, as electricity generation capacity is mainly from coal-based thermal power plants. Based on the Energy Regulatory Office, thermal power plants comprise of 90.02% of the installed capacities or 87.36% of operating capacities, while the rest comes from renewable energy sources (hydropower plants, wind mills, photovoltaic panels).²³ Nonetheless, in the recent years, there have been attempts to increase energy generation through renewable sources in line with the targets set by the EU and the Energy Community and on creating the necessary conditions for investment, in line with the Acquis and the purpose of the EU, and the Energy Community. In the Economic Reform Program 2022-2024, Kosovo is including measures that increase energy efficiency and contribute to achieving the Sustainable Development Goal for Clean and Affordable Energy, as well as towards the Green Agenda for Clean, Affordable, and Secure Energy Supply. The renewable energy production sector is seen by the government as a sector with high economic potential which will be supported with international funds as well.

¹⁸ Source: Service Trade. Data 2021, Central Bank of Kosovo. Time Series

¹⁹ Source: National Accounts. 2020. Kosovo Agency of Statistics.

²⁰ Labour Force Survey. 2020. Kosovo Agency of Statistics.

²¹ Economic Reform Program 2022-2024. Ministry of Finance, Labour and Transfers

²² UK Department of Culture, Media and Sport, 1998. <https://www.gov.uk/government/publications/creative-industries-mapping-documents-1998>

²³ Source: Energy Regulatory Office <https://www.ero-ks.org/zrre/en/pjesemarresit-ne-treg/energija-elektrike/prodhimi?q=sq/pjesemarresit-ne-treg/energija-elektrike/prodhimi>

Wood Processing Sector

The Kosovo wood processing sector is considered in all competitiveness analyses including the USAID EMPOWER Sector Assessment and Selection Report of 2015, Analysis of the Wood Building Material Value Chain 2018, and Study of skills needs in the wood processing sector in Kosovo 2017. These analyses and the UNDP assessments for this subsector show that the wood sector in Kosovo has a great economic development potential.²⁴ According to KIESA, this sector has been undertaking an increasing year-on-year trend with high turnover and high exports. Based on a Ministry of Trade and Industry's report in 2019 the sector of "Manufacture of wood and of products of wood and cork" had an employment increase of 2.77% and a turnover increase of 17.36%. Furthermore, exports in the sector of "Manufacture of wood and wood products and cork", in 2019, has increased by 41.94%, compared to the previous year. From total exports, 40.54% are to EU countries is 40.54%, 24.49% to CEFTA countries, 33.89% to EFTA and other countries with 1.08%²⁵.

Furthermore, as from the previous quantitative analysis the 2019 Enterprise Survey²⁶ identifies the wood sector in Kosovo as one of the sectors introduced at least one type of innovation.

6.1 Methodological framework for qualitative insights

The qualitative analysis has been done using:

- Online Survey; and
- In-Depth Interviews (IDIs)

Both data collection activities were carried out directly by a local expert, who was also responsible for the list of stakeholders, drafting the questionnaires, and running the interviews.

The online survey was run between December 2021 and January 2022.

The main research objective was to measure stakeholders' perceptions on the developments of their respective sectors, innovation potential, challenges, growth prospects, cooperation with other sectors, pandemics impact and so on.

The methodology and its application were developed over a cooperative effort between the government, the expert and JRC, and according to the following steps:

- *Identification of the scope of the activity, research questions, and target stakeholder groups*
- *Design of the questionnaires per each category of stakeholder;*
- *Definition of the criteria for the sample of interviewees and selection of the same one;*
- *Interviews and data collection;*
- *Preliminary Result Tables, and*
- *Survey report*

The Albanian language was established as the working language for the questionnaire preparation as well as response collection.

IDIs were used to provide more detailed information on main challenges for the selected priority sectors, presenting strengths and weaknesses, specific features of value chains, current competitive advantages, relevant technologies and competences, and opportunities for innovation potential. These were conducted with relevant stakeholders from the business community, academia and research institutions, government and related agencies, and Civil Society Organisations (CSOs), belonging to the selected domains and oriented to bring out main features of the sector they belong to. The main purpose of the interviews was to focus on the same topics addressed with the online survey, but at a deeper level of detail, including a representation of stakeholder's outlook on future trends.

²⁴ KIESA, REPORT 2019 - SECTOR C - MANUFACTURING INDUSTRY

²⁵ Report-Manufacturing industry, 2019. Ministry of Trade and Industry of Kosovo

²⁶ <https://www.enterprisesurveys.org/content/dam/enterprisesurveys/documents/country/Kosovo-2019.pdf>

6.2 Implementing the qualitative approach: data collection

The Survey

The survey has been addressed to stakeholders operating in the five identified preliminary priority sectors leading to the definition of four different questionnaires, one for each stakeholder category (Businesses, Academia-Research, CSOs and Government).

The survey was designed in the Kobo Toolbox platform with relevant links for five preliminary sectors. In total there were 8 different links directed to different stakeholder categories. The questionnaire was then coded into the platform on the 2nd of December 2022.

The sources of the email addresses for businesses were obtained mainly from Kosovo Business Registry Agency, whereas the email addresses for the Government were provided by the Strategic Office in the Prime Minister Office. For academia and CSO representatives, email contacts were found on university websites and respective CSO websites.

The Government was indirectly involved in the launch and promotion of the survey. Reminders for participating in the survey were done continuously by the expert in order to increase the response rate.

Some difficulties have risen during the survey launching process. A number of emails were returned back due to technical difficulties because of incorrect email addresses. Many emails couldn't be delivered at the same time because the maximum daily limit of sent emails was reached. At the end of the survey process, a total of 266 responses were submitted reaching an overall response rate of 9%, showing that the instrument is not optimal and that needs to be integrated with further analysis.

Table 36 shows the total number of respondents per each sector.

Table 36 Survey Response Rate

The sector	Number of Responses	Response Rates
Creative industry	23	4.5%
Energy sector	13	31.0%
Wood processing	22	7.2%
Agro-processing	26	10.5%
ICT	32	5.8%
Academia	108	8.5%
CSO	12	19.7%
Government	30	28.0%
Total	266	9.0%

Source: Author's elaboration

In-Depth Interviews

The interview process began on the 25th of January 2022 and ended on the 7th of April 2022.

A list of relevant stakeholders per each priority sector was created

Interviews were conducted in a structured manner following the questions presented in each interview form. Interviews were transcribed directly and then translated to English. A total of 77 interviews have been held using a combination of face-to-face meetings and virtual meetings. On average, the length of interviews varied between 35 and 50 minutes.

As per methodological requirements, the majority of interviews (>50%) within each sector were conducted with business representatives. In all cases, interviews were held with CEO's or high level managers of the companies.

Table 37 In-depth Interview Respondents

Sector	Businesses	Academia	Government	Other	Total
ICT	9	4	3	3	19
Green Energy	9	0	3	3	15
Wood Processing	9	2	2	1	14
Creative Industries	10	3	1	1	15
Food Processing	8	1	0	5	14
Total	45	10	9	13	77

Source: Author's elaboration

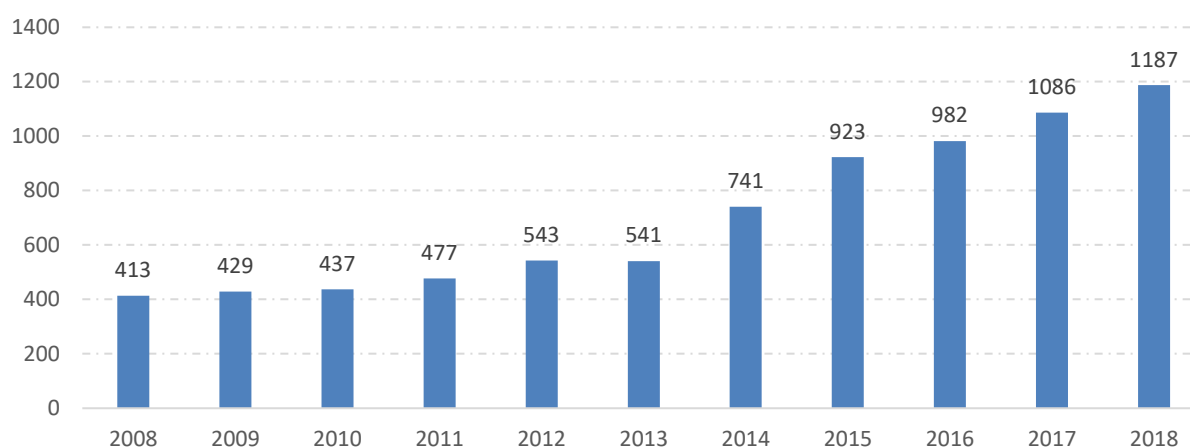
7 The results of the qualitative analysis

7.1 Information and Communication Technology

Based on 2020 national accounts, services related to information and communication, and professional activities consist of 4.0% of Gross Value Added.²⁷ According to an ICT study conducted by PWC²⁸, this sector is characterized by a positive trade balance and around 78% of the existing companies export their services. Based on this, as well as on the availability of skilled labour in the sector, the Government of Kosovo has been working to make Kosovo as a regional hub for information technology related products and services.

The ICT sector has started to play a more and more important role in Kosovo's economic growth, as stressed in the Kosovo IT Strategy.²⁹ According to Open Data Kosovo³⁰, by the end of 2018, there were 7,762 businesses registered in the ICT sector, whereby the majority of them, around 88%, were Kosovo-owned, around 3% were in equal partnership with foreign partners; and around 8% were foreign-owned (Figure 5).

Figure 5 Number of ICT companies per year, 2008-2018



Source: Open Data Kosovo

In the in-depth interview process, nine companies, four academia representatives, three government representatives and three CSO representatives were interviewed. In the survey process, there were thirty-two ICT business representative respondents, coupled with additional academia and other stakeholders whose background was more related to the ICT sector.

As per the qualitative mapping report and research sample, ICT sector consisted of:

- Software development/publishing (58.2)
- Telecommunications (61)
- Computer programming activities (62.01)
- Computer consultancy activities (62.02)
- Computer facilities management activities (62.03)
- Data processing, hosting and related activities; web portals (63.1)
- Web Portals (63.12)
- Repair of computers and communication equipment (95.1)
- Manufacture of electronic components and boards (26.1)
- Manufacture of computers and peripheral equipment (26.2)

²⁷ National Accounts. Kosovo Agency of Statistics. GDP Structure by activities 2020.

²⁸ PWC (2018). ICT Sector Study North Macedonia, Albania, Kosovo. <https://www.netherlandsworldwide.nl/binaries/en-nederlandwereldwijd/documenten/publications/2019/04/10/ict-wb/ICT+Sector+Study+-+Albania%2C+Kosovo+and+North+Macedonia.pdf>

²⁹ https://stikk.org/wp-content/uploads/2018/11/Kosovo_IT_Strategy_V01-00_29-06-2016.pdf

³⁰ The Future Workplace in the Kosovo ICT Market. (2021). Open Data Kosovo. <https://opendatakosovo.org/portfolio/the-future-workplace-in-the-kosovo-ict-market/>

- Manufacture of communication equipment (26.3)
- Manufacture of consumer electronics (26.4)
- Manufacture of magnetic and optical media (26.8)
- Wholesale of information and communication equipment (45.6)
- Publishing of Computer Games (58.21)

The companies interviewed and surveyed operated mainly in a) software development/publishing; b) computer programming activities; c) computer consultancy services; d) data processing, hosting, and related activities; and e) web portals.

These sub-sectors within the ICT sector have been identified as relevant also from STIKK- Kosovo ICT Association in the 2020 IT Barometer research report, whereby it has been identified that the most popular horizontal markets in the ICT sector are related to Custom Development / Outsourcing, followed by IT Consulting, Web design development, Mobile Solutions, E-commerce, Software Quality Assurance etc.³¹

Based on both survey and in-depth-interviews, the main factors providing the sector with competitive advantage are export capacity and human resources. Companies are strongly export-oriented within the regional market, and to the EU, and to a lesser extent to the US market.

Around 77% of the companies interviewed sell their products on both the domestic and international market, with the latter one prevailing. 23% of the sample interviewed provides either the domestic or international market. Similar findings came also from the the survey , where only 21.9 % of the respondents operated only domestically, while for the rest, the international market dominated as a percentage to total sales.

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, Artificial Intelligence, machine learning, and automation are identified as the main opportunities.

The stakeholders assess their companies as being innovative due to different products/services that have been developed. They identify the insufficient access to finance for R&D purposes as among the main bottlenecks impeding a better innovation performance. The lack of finance for R&D purposes has also been identified as a challenge in the Kosovo IT Barometer study in 2020.³²

The interviews reveal the important role of the numerous innovation networks and clusters existing in Kosovo, which include leading innovative companies. This was stressed also by stakeholders from other sectors consulted with both the survey and in-depth interview answers. Namely, stakeholders from the Green Energy, Food Processing, Wood Processing and Creative Industries suggest that innovation clusters in Kosovo are present mainly in the ICT sector.

Stakeholders from the Academia, CSOs and Government both in the survey and in-depth interviews report that the sector with the highest potential for R&D and innovation out of the five preliminary sectors, is ICT. Main reasons for this include quality workforce and export orientation.

According to the business stakeholders, the national current research and innovation priorities and available resources in support to the sector do not match the real needs R&D, according to the interviews, is not yet seen as a priority and further support is needed particularly since it is stated that it is not easy to pursue innovative ideas in Kosovo due to financial limitations and lack of places/labs to test innovative ideas. This view is shared by representatives of academia, CSOs and government, both in the in-depth interviews and survey results. The stakeholders also point out that the fact that Kosovo is not a fully recognized country and is not part of numerous international platforms is a deterrent to R&D potential.

All stakeholders point out that the science/knowledge sector cooperation is good but limited to student placements opportunities. Business stakeholders believe that the qualifications attained in universities are not enough and the new graduates still have to go through training programs, in order to be prepared for the job, since technology is advancing and universities are lagging behind. Academia's stakeholders also stress issues related to not updated curricula. The industry faces a deficit of highly skilled ICT professionals, which

³¹ Kosovo IT Barometer (2020). <https://stikk.org/wp-content/uploads/2021/06/IT-Barometri-2020.pdf>

³² Ibid

is linked to the gap between the skills developed by the education system and those needed by the labor market. In terms of joint research infrastructure, technology transfer, research labs and so on, cooperation and opportunities are very limited.

The stakeholders identify brain drain as a potential upcoming challenge considering that the highly skilled specialized profiles may leave the workforce to go to European or US markets. According to them, the sector growth potential is highly dependent on qualified human resources and there is a need for a higher number of ICT professionals.

In terms of value chain, based on the survey and interviews, the following value added operations mostly take place in Kosovo, within the company: a) Technological development component b) Operations. The interviewees suggest that most of the ICT companies do not create full value chains or have short value chains since they only participate in the production of some elements of the final software solutions. This can be explained with the fact that most ICT companies are contracted by international ICT companies to complete parts of products.

In terms of horizontal cooperation, the survey and interview results suggest that cooperation with companies within the ICT sector is beneficial and would contribute to a higher competitive advantage of the sector overall. Cooperation with other sectors, according to the stakeholders, would contribute mainly to higher digitalization levels in those sectors. The two sectors highlighted in terms of cooperation, both in the survey and in-depth interviews are Creative Industries and Banking sector.

At a time of COVID-19 crisis, the ICT sector demonstrated strong flexibility as stakeholders in the sector quickly adapted to working from home. On the contrary, the usage of digital technology in all sectors in the newly created had a positive impact for the ICT companies interviewed and surveyed. In 2020, during the peak of pandemics, most companies had a positive effect in their performance results.

Considering the wide area of the ICT sector, based on systematized data obtained from a number of sources (conducted interviews, survey responses, in-depth sectoral analysis, etc.), the following sub-areas are to be stressed:

1. Software Development; and
2. Computer Programming Activities

A third potential area would be related to advanced ICT services including the emerging technologies identified by stakeholders such as Artificial Intelligence, machine learning, and automation. However, these need to be further elaborated in the EDP process.

According to the interviews, outsourcing is currently dominating, but many companies are focusing on their specialisation related to custom software development in the following industries: e-solutions for production processes and services, health, banking, e-commerce, etc. As part of the digital transformation process taking place in many industries, almost all sectors are considered to be ICT target markets.

ICT as a potential priority for Smart Specialisation could be a valuable sector in terms of horizontal integration with other sectors, in particular by helping with the digital transformation, especially due to a rapid growth (post-pandemic) for e-services in the business and public sector, trade (e-commerce), education (e-education), etc.

Table 38 Summary of Findings for the ICT sector

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Export orientation and export opportunities ● Competitive Workforce in terms of cost of labor

Value Chain	<ul style="list-style-type: none"> ● Large part of the sector is related to outsourcing of services ● Most of the ICT companies do not create full value chains or have short value chains since they only participate in the production of some elements of the final software solutions.
Upcoming Challenges	<ul style="list-style-type: none"> ● Education Quality – unsatisfactory level of skills and knowledge obtained in the higher level education system; ● Brain Drain syndrome – emigration of highly specialized profiles to developed economies. ● Low cooperation between academia and the private sector in the process of building capacities
Innovation Dynamics	<ul style="list-style-type: none"> ● Innovative individual companies reflected by different products/services developed ● Lack of joint research infrastructure, technology transfer, and research labs ● Low cooperation with academia in terms of research ● Insufficient access to finance for R&D purposes ● Limitations stemming from the fact that Kosovo is not a fully recognized country, making it hard for the ICT sector to fully take advantage of innovation potential or create international partnerships
COVID-19 Impact	<ul style="list-style-type: none"> ● The sector hasn't been affected by the impact of the pandemic ● Most companies had a positive effect in their performance results.
Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation within the ICT sector would contribute to a higher competitive advantage of the sector overall. ● Cooperation with other sectors, according to the stakeholders, would contribute mainly to higher digitalization levels in those sectors, especially beneficial with the Creative Industries and Banking sector.

Source: Author's elaboration

7.2 Creative Industries

The creative industries sector considered for the analysis consisted of:

- Advertising (NACE 73.11)
- Media representation (NACE 73.12)
- Market research and public opinion polling (NACE 73.2)
- Motion picture, video and television programme activities (NACE 59.1)
- Sound recording and music publishing activities (NACE 59.2)
- Radio broadcasting (NACE 60.1)
- Television programming and broadcasting activities (NACE 60.2)
- Artistic creation (NACE 90.03)

Based on the survey and in-depth interview process, the respondents belonged mainly in the advertising, artistic creation, and market research/public polling sub-sectors.

In the in-depth interview process, ten companies, three academia representatives, one government representative and one CSO representative were part of the process. In the survey process, there were

twenty-three business representative respondents, coupled with additional academia and other stakeholders whose background was more related to the sector.

Based on both surveys and in-depth-interviews, the main factors providing the sector with competitive advantage were export capacity and human resources. The respondents rate this sector as strong and with high competitive advance in the external market due mainly to lower comparative costs. The results suggest that the companies operating in the sector are very export-oriented and a large share of their services is destined for exports, mainly destined to Europe, especially the UK, and the US.

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new digital frontiers such as Block Chain, Virtual Reality, and Artificial Intelligence are identified as the main opportunities.

Stakeholders assess their companies as being innovative mostly in the use of new technology and in the offer of innovative services. Insufficient access to finance is again a main challenge. In particular, respondents point out companies mainly own digital assets, which are not counted as collateral by banks, limiting their borrowing capacities. While other issues are related to Kosovo not having fully functional online payment services and lack of collaboration with R&D partners and other sectors.

Other challenges are: R&D is not yet a priority , technical issues such as international platforms not recognizing Kosovo (i.e. including here.), and the lack of investments in the sector, either public or private..

Stakeholders also stress that the science/knowledge sector cooperation with their sector is limited. Universities qualifications are not adequate, and the new graduates still have to go through training programs, in order to be prepared for the job. The respondents state that qualified workforce will be an upcoming challenge due to two main reasons: difficulties in attracting qualified workforce due to foreign competition, and the need for ongoing training in order to keep up with the fast moving technological changes.

In terms of horizontal cooperation, the survey and interview results suggest that higher business cooperation within the sector would be beneficial.

COVID-19 impact seemed to be moderate and highly dependent on the type of market. For stakeholders operating mainly in the domestic market, sales were negatively affected whereas for the most internationalized , the impact was positive due to a higher demand of services.

Table 39 Summary of Findings for Creative Industries

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> • Export orientation and export opportunities • Competitive Workforce in terms of cost of labor
Value Chain	<ul style="list-style-type: none"> • Creative industry, mostly advertising/marketing firms are mainly operating in the provision of outsourced services mainly to European countries, UK with a high emphasis. • There was limited information about the value chain of this area by the interviewed stakeholders, so more attention needs to be paid to this question in the EDP in order to identify the missing parts of the value chain that should be supported.
Upcoming challenges	<ul style="list-style-type: none"> • Lack of qualified human resources linked to the gap between skills obtained in the education system and those needed in the labor market • Insufficient access to finance- mainly since digital assets are not being counted as collateral by banks, limiting borrowing capacities • No fully functional online payment services

Innovation Dynamics	<ul style="list-style-type: none"> • Innovative individual companies reflected by different services offered • Low cooperation with academia • Insufficient access to finance for R&D purposes • R&D not yet a priority or focus • Technical issues such as international platforms not recognizing Kosovo including here PayPal, Google Analytics, AdScale, etc. • Insufficient investments either public or private to complement their own resources.
COVID-19 Impact	<ul style="list-style-type: none"> • The sector was moderately affected by the pandemic • The impact was mainly negative for the companies whose operations were mainly domestic
Horizontal Cooperation Areas	<ul style="list-style-type: none"> • Cooperation with the ICT sector would contribute to a higher competitive advantage of the sector. • Cooperation with other sectors, would be to offer services to them and mainly in terms of B2B cooperation

Source: Author's elaboration

7.3 Food Processing

Food processing in Kosovo is considered a sector with significant growth potential, both domestically and externally. According to a USAID report on sectoral assessment, food processing is one of the biggest manufacturing sectors in Kosovo, and the third largest exporter.³³ According to the Central Bank (CBK)'s statistics on external trade, exports of prepared foodstuff and fats/edible oils have been around 8% of total exports of goods in 2021.

In the qualitative mapping sample, the following sub-sectors have been identified:

- Processing and preserving of meat and production of meat products (NACE 10.1)
- Processing and preserving of fish, crustaceans and molluscs (NACE 10.2)
- Processing and preserving of fruit and vegetables (NACE 10.3)
- Manufacture of vegetable and animal oils and fats (NACE 10.4)
- Manufacture of dairy products (NACE 10.5)
- Manufacture of grain mill products, starches and starch products (NACE 10.6)
- Manufacture of bakery and farinaceous products (NACE 10.7)
- Manufacture of sugar (NACE 10.8)
- Processing of tea and coffee (NACE 10.84)
- Manufacture of prepared animal feeds (NACE 10.9)
- Manufacture of beverages (NACE 11.0)

Based on the survey and in-depth interview process, the respondents belonged mainly to the subsectors of dairy products, manufacturing of vegetable and animal oils and fats, and manufacturing of beverages.

In the in-depth interview process, eight companies, one academia representative, and five CSO representatives were involved. In the survey process, there were twenty-six Food Processing representative respondents, and additional academia and other stakeholders.

According to the stakeholders interviewed there is still room for this sector to be further developed since it produces essential goods that are always whose demand is high.

³³ SECTOR ASSESSMENTS. Wood Processing, Information and Communications Technology, and Food Processing USAID Kosovo Compete Activity. 2021.

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new and technologically advanced production machinery would offer a competitive advantage.

The stakeholders assess their companies can be considered as innovative mostly for the use of new technology in the production process. In this regard, it is also identified that challenges and bottlenecks that impede a better performance are related to insufficient access to finance and limited possibility of traveling due to Kosovo not being fully recognized and not having visa liberalization. In particular, the respondents point out to the fact that travel difficulties hinder their ability to participate in fairs and other events which would allow them to take advantage of innovation potential or create business partnerships.

The respondents state that there are no sufficient investments, neither public nor private, to complement their own resources. When it comes to the research and innovation priorities and available public resources, interviews suggest that these priorities do not satisfy sectoral needs, also because there are no sufficient diagnosis studies and analysis of the sector. Implementing innovative ideas is not as easy as companies have to rely on their own finances to do so.

The stakeholders point out that the science/knowledge cooperation is moderate, and universities qualifications often not to face the job market, which requires additional training programs and more professional preparation.

In terms of horizontal cooperation, the surveys and interviews suggest that cooperation with the ICT, Creative Industries, and Green Energy sector, would be advantageous, contributing to higher digitalization of processes and marketing of the products.

COVID-19 impact is reported to have significantly affected the sector, positively in some cases, very negatively in some others. For some of the stakeholders, the pandemic resulted in a higher demand for their healthy and organic products while for others transportation disruptions, lockdown and infection rates amongst employees, led to an overall negative impact.

Table 40 Summary of Findings in Food Processing Industry

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● High demand for essential products
Value Chain	<ul style="list-style-type: none"> ● The largest part of the sector is oriented to the domestic market, organized in small companies ● The main stage of the value chain in which most companies operate is: Operations (production activity of goods and services, transformation from raw material into a finished product). ● Some of the companies also engage in distribution activities and marketing/sale activities
Upcoming Challenges	<ul style="list-style-type: none"> ● Lack of qualified human resources resulting in a high need for in-job training. ● Insufficient access to finance ● Shortage of raw materials, particularly milk in the dairy manufacturing industry
Innovation Dynamics	<ul style="list-style-type: none"> ● Innovative individual companies reflected by different technology usage during production process ● Moderate cooperation with academia ● Insufficient access to finance for R&D purposes

	<ul style="list-style-type: none"> • Travel issues hinder participation in international fairs, thus impeding partnerships • No sufficient investments either public or private to complement their own resources
COVID-19 Impact	<ul style="list-style-type: none"> • The sector was significantly affected by the pandemic • The impact was negative for the companies whose transportation was disrupted and the production process halted due to social distancing measures.
Horizontal Cooperation Areas	<ul style="list-style-type: none"> • Cooperation with the ICT, Creative Industries, and Renewable Energy sector would contribute to a higher competitive advantage of the sector.

Source: Author's elaboration

7.4 Wood Processing

The wood processing industry in Kosovo is an important and prioritized economic sector. Based on the USAID Compete Activity Sectorial Report, the wood industry's competitiveness has improved due to the growing adoption of modern production technologies. Based on this report it is estimated that wood processors in Kosovo invested close to €30 million in technology adoption over the past five years.³⁴ This technological advancement has been complemented with an increasing number of companies operating in the sector, leading to higher employment, and higher exports.

According to the Compete Activity Sectorial Report, due to price competitiveness, Kosovo's exports of wood products to Switzerland, Germany, Belgium, and the Scandinavian countries have increased at an estimated Compounded Annual Growth Rate (CAGR) of 31.9% over the period 2015 – 2019. in the period 2015 – 2019.

The wood processing sector comprises a large number of small- and medium-sized enterprises (SMEs), with an increasing number of medium-sized firms.

The growth of the sector and in particular, the increasing export trend activities are mainly due to a) the proximity to the EU market and b) the diaspora which is heavily engaged in the construction sector in the EU. The latter positively influences the industry as it enables a higher collaboration between Kosovo businesses abroad and Kosovo businesses in Kosovo.

In the qualitative mapping sample design, the following sub-sectors have been identified as relevant:

- Manufacture of veneer sheets and wood-based panels (NACE 16.21)
- Manufacture of assembled parquet floors (NACE 16.22)
- Manufacture of other builders' carpentry and joinery (NACE 16.23)
- Manufacture of wooden containers (NACE 16.24)
- Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials (NACE 16.29)
- Manufacture of furniture (NACE 31.0)
- Manufacture of office and shop furniture (NACE 31.01)
- Manufacture of kitchen furniture (NACE 31.02)

In the in-depth interview process, nine companies, two government representatives, two academia representatives and one CSO representative was interviewed. In the survey process, there were twenty-two Wood Processing representative respondents, coupled with additional academia and other stakeholders whose background was more related to the sector.

³⁴ SECTOR ASSESSMENTS. Wood Processing, Information and Communications Technology, and Food Processing USAID Kosovo Compete Activity. 2021.

Based on the survey and in-depth interview process, the respondents belonged mainly in the a) manufacturing of furniture and b) manufacturing of kitchen furniture.

The stakeholders considered this sector to be very strong mainly because of its export capacity, low production cost, and innovation potential. The view was also supported by the academia, government and CSO representatives. The respondents assess that their companies are export oriented mainly toward other Western Balkan countries and the EU , in particular Germany and Switzerland.

Challenges relate mainly to the lack of specialized workforce and a general availability of low quality workforce, in particular due to possible migration.

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new and technologically advanced production machinery would offer a competitive advantage combined with process digitalization/automation.

Interviewees assess their companies as being innovative mostly in the use of new technology in the production process and in the development of innovative designs. Again, as in previous sectors considered, bottlenecks are strongly related to insufficient access to finance.

Investments are reported to be insufficient for the sector and support from the public sector is limited. In terms of R&D and innovation priorities, the respondents suggest that the sectoral needs do not correspond with the priorities and support resources in the country. According to stakeholders, R&D is still not seen as a priority and efforts are sufficient in that regards especially in terms of finances for that purpose. The sector believes that lack of innovation comes mainly due to the fact that when pursuing innovative ideas, they have to rely only on their own finances to do so..

The stakeholders point out that the science/knowledge cooperation with their sector is moderate. On that note, they report that the only form of cooperation is by providing students with internship opportunities; while, there is no cooperation in joint research infrastructure, technology transfer centres, and research laboratories. This view is shared by academia representatives in the in-depth interview process as well. The survey and interview results argue that the qualifications attained in universities are not sufficient and the new graduates still have to go through training programs, in order to be prepared for the job.

In terms of horizontal cooperation, the answers suggest that cooperation with the ICT, Creative Industries (in particular digital marketing), and Banking sector in terms of better financing options, would be advantageous,

COVID-19 impact for the sector is reported to have been significant. For some of the stakeholders, the pandemics resulted in a higher demand for their products while for others there were lower sales, resulting in postponement of investment plans.

Table 41 Summary of Findings for Wood Processing

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Export Potential ● Price Competitiveness ● Proximity to European markets
Value Chain	<ul style="list-style-type: none"> ● Most of the sector is oriented towards the European markets ● The main stage of the value chain in which most companies operate is: Operations (production activity of goods and services, transformation from raw material into a finished product) ● Raw materials are mostly imported from European countries and Turkey ● Some of the companies also engage in distribution activities

	<p>and marketing/sale activities</p> <ul style="list-style-type: none"> • The value chain is short as most producers' export by themselves and there are no key national wholesalers facilitating sales on international markets. There are also no innovative companies developing machinery and technology that supports cost-effective production.
Upcoming Challenges	<ul style="list-style-type: none"> • Lack of qualified human resources resulting in a high need for in-job training • Insufficient access to finance
Innovation Dynamics	<ul style="list-style-type: none"> • Innovative individual companies reflected by different technology usage during production process • Moderate cooperation with academia, mainly in terms of student placement and not research collaboration • Insufficient access to finance for R&D purposes • Insufficient investments, either public or private, to complement their own resources.
COVID-19 Impact	<ul style="list-style-type: none"> • The sector was moderately affected by the pandemic • Investment plans were postponed
Horizontal Cooperation Areas	<ul style="list-style-type: none"> • Cooperation with the ICT, Creative Industries (mainly marketing), and Banking sector would contribute to a higher competitive advantage of the sector.

Source: Author's elaboration

7.5 Green Energy

The vast majority of electricity in Kosovo is produced by two lignite-fired thermal power plants, known as Kosovo A and Kosovo B. To encourage renewable energy sources, Kosovo has established the necessary legal framework for hydropower, wind, photovoltaic, and biomass generation. In 2019, Kosovo reached its 25% target for the share of energy from renewable sources in gross final energy consumption. Nonetheless, this was mainly due to biomass consumption rather than a significant increase in renewable investments.

According to Bankwatch Network, by the end of 2020 only 10 MW of solar photovoltaics had been installed, even though the country has a solar manufacturer capable of manufacturing 200 MW per year. In 2018 Kosovo had its first major wind farm, the 32 MW Kitka plant, and in September 2021 part of the 105 MW Bajgora plant started test operations.³⁵

The energy sector is also being highly supported by the Millennium Foundation through energy efficiency measures, private-sector participation in the energy sector, and women's engagement in the energy sector. Their program Green Recovery and Opportunity Window (GROW)³⁶ is providing free technical assistance for increasing access to finance for businesses that invest in renewable energy and energy efficiency measures.

The government, in the Economic Reform Program 2022-2024 has also introduced measures that aim to prioritize energy efficiency and improve it in all sectors, especially in the residential one. The measures focus on increasing energy generation through renewable sources in line with the targets set by the EU and the Energy Community, contributing to achieving the Sustainable Development Goal for Clean and Affordable Energy, as well as towards the Green Agenda for Clean, Affordable, and Secure Energy Supply.³⁷

In the qualitative mapping sample design, the energy sector has been targeted, with a special emphasis on renewables.

³⁵ Bankwatch Network. (2020). The Energy Sector in Kosovo. <https://bankwatch.org/beyond-fossil-fuels/the-energy-sector-in-kosovo/#:~:text=Despite%20the%20slow%20progress%2C%20Kosovo,a%20real%20increase%20in%20investments>.

³⁶ <https://millenniumkosovo.org/reliable-energy/>

³⁷ Economic Reform Program 2022-2024. <https://mf.rks-gov.net/page.aspx?id=2,28>

- Production of electricity (NACE 35.1.1)
- Transmission of electricity (NACE 35.1.2)
- Distribution of electricity (NACE 35.1.3)
- Trade of electricity (NACE 35.1.4)
- In the case of renewables, the respondents had the options of choosing: Solar Power, Wood Biomass, Recycling, Hydropower, Energy Efficiency, Wind Power, Green Technology and Innovation, and Production and Wholesale of Pellets.

Respondents belong mainly to the renewables sector, representing especially solar and wind energy.

Nine companies, three government representatives and three CSO representatives were interviewed, whereas the

The business stakeholders considered this sector to have potential to grow mainly because of increased demand for energy and increased focus on renewables. The view was also supported by the government and CSO representatives.

Challenges foreseen by the stakeholders relate mainly to small company sizes, limited number of private investors, bureaucracy issues as difficult procedures for connecting to the electricity grid, and production prices.

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new and technologically advanced production machinery for producing solar panels would offer a competitive advantage.

The stakeholders assess their companies as being innovative mostly in the use of new technology in the production process. It is also identified that one of the greatest determinants for increasing innovation is cooperation with R&D partners, especially foreign companies.

Also in this case, stakeholders identify as main challenges to a better innovation performance the insufficient availability of funds, small market size, complex bureaucratic procedures, as well as insufficient investment in education and innovative labs.

Cooperation with academia is reported to be moderate as the only form of cooperation is through student placements. Furthermore, when it comes to the quality of new graduates, both the survey and interview results suggest that the skills acquired in universities are not sufficient and the new graduates still have to go through training programs, in order to be prepared for the job.

In terms of horizontal cooperation, the respondents express the belief that further expansion of the collaboration with the ICT sector and Creative Industries would create competitive advantage mainly in terms of digitalization. Cooperation with the construction sector would offer them more business opportunities.

The COVID-19 impact for the sector is reported to have been significant. For the stakeholders, the pandemics resulted in lower sales and postponement of investment plans. Most of the companies in this sector reported that they were affected negatively from the pandemic crisis. They faced lower sales and postponement of investments.

Considering the wide area of the Green Energy sector, based on systematized data obtained from a number of sources (conducted interviews, survey responses, etc.), the following sub-areas are proposed:

3. Renewable Energy Sources, and
4. Energy Efficiency Measures

The Green Energy preliminary priority sector would be considered to be a horizontal one because it would contribute to cross-sectoral relations with other proposed priority areas, especially wood and food processing industries which are more energy dependent in the production process.

Within this area, potential fields needing additional research are solar energy and wind energy, as two of the most promising fields in the Kosovo context and environment.

However, it should be noted that there are several serious deficiencies in the energy sector: 1) the country is still a net importer of electricity; 2) the use of fossil fuels for electricity production is high and causes serious environmental problems; 3) there is significant loss of electricity within the electricity distribution system; 4) the renewable energy sources are still insufficiently used (solar and wind).

Nonetheless, there is a growth potential for this sector, which appears to be attractive for foreign investments (as main wind power plants are foreign investments), as well as significant potential for further development of production of electricity with renewable energy sources.

Table 42 Summary of Findings for the Green Energy Sector

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Increased demand for energy ● Increased focus on renewables
Value Chain	<ul style="list-style-type: none"> ● With regards to energy production, the companies operating in renewables are mainly based on solar panels and wind farms ● Most of the companies import the technology and engage mainly in operations and services ● No availability of more detailed information about the value chain by the interviewed stakeholders, so more attention needs to be paid to this matter in the EDP in order to identify the missing parts of the value chain.
Upcoming Challenges	<ul style="list-style-type: none"> ● Lack of qualified human resources resulting in a high need for in-job training. ● Insufficient access to finance ● Small company sizes ● Limited number of private investors ● Bureaucracy issues i.e. procedures for connecting to the electricity grid
Innovation Dynamics	<ul style="list-style-type: none"> ● Moderate cooperation with academia, mainly in terms of student placement and not research collaboration ● Insufficient access to finance for R&D purposes ● No sufficient investments, either public or private, to complement their own resources. ● Insufficient investment in education and innovative labs
COVID-19 Impact	<ul style="list-style-type: none"> ● The sector was negatively affected by the pandemic in terms of lower sales ● Investment plans were postponed
Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation with the ICT, Creative Industries would contribute to a higher competitive advantage of the sector ● Cooperation with the Construction sector would offer more business opportunities

Source: Author's elaboration

7.6 Main conclusions of the qualitative study

In all sectors, the analysis reveals that there is a mismatch between the students and new workers competences and the labor market requirements. In particular, the academic institutions are lagging behind in the adaptation of curricula to international standards and technological innovations, which oblige businesses in all five sectors observed to invest in on-job training programs.

Overall, the research, and especially academic research, is considered below quality standards, mainly due to is the lack of R&D funds. Furthermore, collaboration between academia and businesses is considerably weak, mainly focused on students ‘mobility rather than on knowledge sharing and R&D activities.

Particularly interesting are the sub-areas related to: **automation of processes, digitalization, new digital frontiers (artificial intelligence, IoT sensors, and machine learning), and energy transition (use of renewable sources)**. In terms of horizontal integrations, main positive experiences regard the integration of ICT with the other four sectors, contributing to higher digitalization and competitive advantage. The integration of the renewable energy sector with the Food and Wood Processing sectors is also deemed as a positive horizontal integration.

To sum up three vertical areas and two horizontal thematic priority areas could be considered as to be prioritized, as shown in Table 43.

Table 43 Matrix of vertical and horizontal thematic priority areas

	Food Processing	Wood Processing	Green Energy
ICT			
Creative Industries			

Source: Author’s elaboration

After processing all information obtained from the qualitative mapping process, the following priority areas and sub-areas are proposed as being subject to further elaboration within the EDP:

1) Information and Communication technologies (ICT) sector

Software development (sub-area)

Computer Programming Services (sub-area)

Telecommunication Services (sub-area)

Advanced ICT services including IOT, AI, Machine Learning (potential sub-area)

2) Green Energy

Renewable Energy Sources (sub-area)

Energy Efficiency Measures (sub-area)

3) Creative Industry

Marketing and Digital Creation Services (sub-area)

4) Food Processing

5) Wood Processing

In terms of limitations, the analysis occasionally lacked available data to and information on value chains, so this topic should be further investigated at the EDP stage.

8 Conclusions of the mapping exercise

This report includes a quantitative and a qualitative analysis for the identification of the preliminary priority areas for the Smart Specialisation Strategy of Kosovo, which will be further defined in the EDP phase.

First, a quantitative mapping exercise has been done across three levels, the economic, innovation and scientific potential of Kosovo, using a benchmark regional pool, including Bosnia and Herzegovina, Bulgaria, Croatia, Greece and North Macedonia. The results of the different quantitative analyses are combined in a final integrated assessment which identifies the following NACE 3-digit industries having *both an economic and innovation potential*:

- NACE 051 Mining of hard coal
- NACE 106 Manufacture of grain mill products, starches and starch products
- NACE 241 Manufacture of basic iron and steel and of ferro-alloys
- NACE 242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
- NACE 259 Manufacture of other fabricated metal products
- NACE 351 Electric power generation, transmission and distribution
- NACE 412 Construction of residential and non-residential buildings
- NACE 581 Publishing of books, periodicals and other publishing activities.

The quantitative analysis cannot be considered as exhaustive for the scope of the Smart Specialisation approach, therefore a qualitative mapping exercise has been done to integrate data evidence. An online survey has been combined with interviews to more than seventy stakeholders from the quadruple helix of the national eco-system.

The qualitative analysis applied to the five sectors identified as potential priorities for Smart Specialisation, based on previous quantitative analysis results. These sectors – ICT, creative industries, food processing, wood processing, and green energy – show relevant growth potential and innovation opportunities to expand, despite structural weaknesses that should be addressed by ad hoc public policies. The analysis reveals that ICT sector has the greatest potential for R&D&I growth, followed by Green Energy and Creative Industries.

To sum up three vertical areas (wood processing, food processing, and green energy) and two horizontal areas (ICT and Creative industries) could be considered as to be prioritized through the Smart Specialisation Strategy. The next EDP will be then focused on a few sub-areas of ICT, creative industries and green energy, respectively, in addition to wood and food processing.

1) Information and Communication technologies (ICT) sector

Software development (sub-area)

Computer Programming Services (sub-area)

Telecommunication Services (sub-area)

Advanced ICT services including IOT, AI, Machine Learning (potential sub-area)

2) Green Energy

Renewable Energy Sources (sub-area)

Energy Efficiency Measures (sub-area)

3) Creative Industry

Marketing and Digital Creation Services (sub-area)

4) Food Processing

5) Wood Processing

As previously pointed out, this is an indicative outcome of the mapping exercise, and it will require further exploration during the EDP as well as internal consultation involving both the Smart Specialisation inter-

ministerial working group and main stakeholders that can provide substantial contribution. The EDP will aim at collecting the perspectives of stakeholders on main growth trends and potential of niches in relation to policy and financial instruments that exist, or are strongly needed. Furthermore, the analysis reported here stresses the importance of looking at the Smart Specialisation Strategy as a continuous process to be constantly revised and updated. As both the quantitative mapping and qualitative surveys evidenced, a number of shortcomings related to the availability of data, the uncertain data quality of some indicators, the reluctance of stakeholders and the mistrust in political institutions, compel to improve data source, strengthen the stakeholders' engagement and in some case revise the methodology. One of the main lack is related to data availability, especially innovation data and the indicators that would be used in such an analysis. Kosovo is not included in the European Innovation Scoreboard and it is currently collecting the indicators required, which will be a value added in future also for smart specialisation related analysis. On this purpose, public authorities and especially institutions directly involved in the provision and elaboration of data, such as statistical institutions, should be supported and spur towards a stronger capacity building. This is particular important in view of the accession process to EU, and its very recent agreement as a fully associate partner in the Horizon Europe programme.

Annexes

Annex A: Detailed results for the mapping of industries with a static or current economic potential

Results for identifying industries with a current economic potential are shown in the table below. If industries pass a threshold the value in the respective table cell is 1, otherwise it is 0. Industries for which comparable data for the selected benchmark countries are not available are highlighted in orange in the first column. The third column (EMPL SIZE) shows if and how many industries (108) passed the size criterion for employment, the fourth column (EMPL SPEC) shows if and how many industries (47) passed the specialisation criterion for employment, the fifth column (TURN SIZE) shows if and how many industries (84) passed the size criterion for turnover, the sixth column (TURN SPEC) shows if and how many industries (34) passed the specialisation criterion for turnover, the seventh column (WGS KV) shows if and how many industries (80) passed the criterion for average wages relative to those in Kosovo, and the eighth column (WGS BENCH) shows if and how many industries (66) passed the criterion for average wages relative to those in the same industry in the selected benchmark countries. Finally, the last column (CEP) shows how many criteria each industry passed and how many industries (9) passed all 6 criteria and would have a current economic potential (CEP).

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	CEP
	Number of industries that pass selection criteria	108	47	84	34	80	66	9
011	Growing of non-perennial crops	1	0	1	0	0	0	0
012	Growing of perennial crops	0	0	0	0	0	0	0
013	Plant propagation	0	0	0	0	0	0	0
014	Animal production	1	0	1	0	0	0	0
015	Mixed farming	0	0	0	0	0	0	0
016	Support activities to agriculture and post-harvest crop activities	0	0	0	0	0	0	0
017	Hunting, trapping and related service activities	0	0	0	0	0	0	0
021	Silviculture and other forestry activities	0	0	0	0	0	0	0
022	Logging	0	0	0	0	0	0	0
023	Gathering of wild growing non-wood products	0	0	0	0	1	0	0
024	Support services to forestry	0	0	0	0	0	0	0
031	Fishing	0	0	0	0	0	0	0
032	Aquaculture	0	0	0	0	0	0	0
051	Mining of hard coal	1	1	0	1	1	1	0
052	Mining of lignite	0	0	0	0	0	0	0
061	Extraction of crude petroleum	0	0	0	0	0	0	0
071	Mining of iron ores	0	1	0	0	1	0	0
072	Mining of non-ferrous metal ores	1	1	1	0	1	0	0
081	Quarrying of stone, sand and clay	1	1	1	1	0	0	0
089	Mining and quarrying n.e.c.	0	0	0	0	1	0	0
091	Support activities for petroleum and natural gas extraction	0	0	0	0	0	0	0
099	Support activities for other mining and quarrying	0	0	0	0	0	0	0
101	Processing and preserving of meat and production of meat products	1	0	1	0	0	0	0
102	Processing and preserving of fish, crustaceans and molluscs	0	0	0	0	0	0	0
103	Processing and preserving of fruit and vegetables	1	0	1	0	1	0	0
104	Manufacture of vegetable and animal oils and fats	0	0	0	0	0	0	0
105	Manufacture of dairy products	1	0	1	0	0	0	0
106	Manufacture of grain mill products, starches and starch products	1	1	1	1	1	0	0
107	Manufacture of bakery and farinaceous products	1	0	1	0	0	0	0
108	Manufacture of other food products	1	0	1	0	0	0	0
109	Manufacture of prepared animal feeds	0	0	0	0	1	0	0
110	Manufacture of beverages	1	1	1	0	1	0	0
120	Manufacture of tobacco products	0	0	0	0	0	0	0
131	Preparation and spinning of textile fibres	0	0	0	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	CEP
	Number of industries that pass selection criteria	108	47	84	34	80	66	9
132	Weaving of textiles	0	0	0	0	0	0	0
133	Finishing of textiles	0	1	0	1	0	1	0
139	Manufacture of other textiles	1	0	0	0	0	0	0
141	Manufacture of wearing apparel, except fur apparel	1	0	0	0	0	0	0
142	Manufacture of articles of fur	0	0	0	0	0	0	0
143	Manufacture of knitted and crocheted apparel	0	0	0	0	0	0	0
151	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	0	0	0	0	0	0	0
152	Manufacture of footwear	1	0	0	0	0	0	0
161	Sawmilling and planing of wood	1	0	0	0	0	0	0
162	Manufacture of products of wood, cork, straw and plaiting materials	1	0	1	0	0	0	0
171	Manufacture of pulp, paper and paperboard	0	0	0	0	0	0	0
172	Manufacture of articles of paper and paperboard	1	0	1	0	0	0	0
181	Printing and service activities related to printing	1	0	1	0	0	0	0
182	Reproduction of recorded media	0	1	0	1	0	0	0
191	Manufacture of coke oven products	0	0	0	0	1	0	0
192	Manufacture of refined petroleum products	0	0	0	0	0	0	0
201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	1	0	0	0	1	0	0
202	Manufacture of pesticides and other agrochemical products	0	0	0	0	0	0	0
203	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	1	1	0	1	0	0	0
204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	0	0	0	0	0	0	0
205	Manufacture of other chemical products	1	0	0	1	1	0	0
206	Manufacture of man-made fibres	0	0	0	0	0	0	0
211	Manufacture of basic pharmaceutical products	0	1	0	0	1	0	0
212	Manufacture of pharmaceutical preparations	0	0	0	0	0	0	0
221	Manufacture of rubber products	1	1	0	0	1	0	0
222	Manufacture of plastic products	1	1	1	0	0	0	0
231	Manufacture of glass and glass products	0	0	0	0	0	0	0
232	Manufacture of refractory products	0	0	0	0	0	0	0
233	Manufacture of clay building materials	1	1	1	1	0	0	0
234	Manufacture of other porcelain and ceramic products	0	0	0	0	0	0	0
235	Manufacture of cement, lime and plaster	0	0	0	0	0	0	0
236	Manufacture of articles of concrete, cement and plaster	1	1	1	1	1	1	1
237	Cutting, shaping and finishing of stone	1	1	1	1	0	1	0
239	Manufacture of abrasive products and non-metallic mineral products n.e.c.	0	1	1	1	1	0	0
241	Manufacture of basic iron and steel and of ferro-alloys	1	1	1	1	1	0	0
242	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	0	0	0	0	0	0	0
243	Manufacture of other products of first processing of steel	0	0	0	0	0	0	0
244	Manufacture of basic precious and other non-ferrous metals	0	0	0	0	0	0	0
245	Casting of metals	0	0	0	0	0	0	0
251	Manufacture of structural metal products	1	0	1	1	1	1	0
252	Manufacture of tanks, reservoirs and containers of metal	0	0	0	0	0	0	0
255	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	0	0	0	0	1	1	0
256	Treatment and coating of metals; machining	1	0	0	0	1	1	0
257	Manufacture of cutlery, tools and general hardware	0	0	0	0	0	0	0
259	Manufacture of other fabricated metal products	1	0	0	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	CEP
	Number of industries that pass selection criteria	108	47	84	34	80	66	9
261	Manufacture of electronic components and boards	0	0	0	0	1	0	0
262	Manufacture of computers and peripheral equipment	0	0	0	0	0	0	0
263	Manufacture of communication equipment	0	0	0	0	0	0	0
264	Manufacture of consumer electronics	0	0	0	0	0	0	0
265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	0	0	0	0	1	1	0
266	Manufacture of irradiation, electromedical and electrotherapeutic equipment	0	0	0	0	0	0	0
267	Manufacture of optical instruments and photographic equipment	0	0	0	0	0	0	0
271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	0	0	0	0	0	0	0
272	Manufacture of batteries and accumulators	0	0	0	0	1	0	0
273	Manufacture of wiring and wiring devices	0	0	0	0	0	0	0
274	Manufacture of electric lighting equipment	0	0	0	0	0	0	0
275	Manufacture of domestic appliances	0	0	0	0	0	0	0
279	Manufacture of other electrical equipment	0	0	0	0	0	0	0
281	Manufacture of general-purpose machinery	0	0	0	0	0	0	0
282	Manufacture of other general-purpose machinery	0	0	0	0	1	0	0
283	Manufacture of agricultural and forestry machinery	0	0	0	0	0	0	0
284	Manufacture of metal forming machinery and machine tools	0	0	0	0	0	0	0
289	Manufacture of other special-purpose machinery	0	0	0	0	0	0	0
291	Manufacture of motor vehicles	0	0	0	0	0	0	0
293	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	0	0	0	0	0	0	0
301	Building of ships and boats	0	0	0	0	0	0	0
302	Manufacture of railway locomotives and rolling stock	0	0	0	0	0	0	0
309	Manufacture of transport equipment n.e.c.	0	0	0	0	1	0	0
310	Manufacture of furniture	1	0	1	0	0	0	0
321	Manufacture of jewellery, bijouterie and related articles	0	0	0	0	0	1	0
323	Manufacture of sports goods	0	0	0	0	0	0	0
324	Manufacture of games and toys	0	0	0	0	0	0	0
325	Manufacture of medical and dental instruments and supplies	0	0	0	0	0	0	0
329	Manufacturing n.e.c.	0	0	0	0	0	1	0
331	Repair of fabricated metal products, machinery and equipment	0	0	0	0	0	0	0
332	Installation of industrial machinery and equipment	0	0	0	0	0	0	0
351	Electric power generation, transmission and distribution	1	1	1	1	1	0	0
352	Manufacture of gas; distribution of gaseous fuels through mains	0	0	0	0	1	1	0
353	Steam and air conditioning supply	1	1	0	0	1	1	0
360	Water collection, treatment and supply	1	1	1	0	1	1	0
370	Sewerage	1	1	0	1	0	0	0
381	Waste collection	1	1	1	0	1	0	0
382	Waste treatment and disposal	0	0	0	0	0	0	0
383	Materials recovery	1	0	1	0	0	0	0
390	Remediation activities and other waste management services	0	0	0	0	1	1	0
411	Development of building projects	0	0	1	0	1	1	0
412	Construction of residential and non-residential buildings	1	1	1	1	1	1	1
421	Construction of roads and railways	1	1	1	1	1	1	1
422	Construction of utility projects	0	0	0	0	0	0	0
429	Construction of other civil engineering projects	0	0	0	0	0	0	0
431	Demolition and site preparation	1	0	1	0	0	1	0
432	Electrical, plumbing and other construction installation activities	1	0	1	0	0	1	0
433	Building completion and finishing	1	0	1	0	0	1	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	CEP
	Number of industries that pass selection criteria	108	47	84	34	80	66	9
439	Other specialised construction activities	1	0	0	0	0	1	0
451	Sale of motor vehicles	1	0	1	0	1	0	0
452	Maintenance and repair of motor vehicles	1	1	1	1	0	1	0
453	Sale of motor vehicle parts and accessories	1	0	1	0	0	0	0
454	Sale, maintenance and repair of motorcycles and related parts and accessories	0	0	0	0	0	1	0
461	Wholesale on a fee or contract basis	1	1	1	1	1	1	1
462	Wholesale of agricultural raw materials and live animals	1	0	1	0	0	0	0
463	Wholesale of food, beverages and tobacco	1	1	1	1	1	1	1
464	Wholesale of household goods	1	1	1	0	1	0	0
465	Wholesale of information and communication equipment	1	0	1	0	1	0	0
466	Wholesale of other machinery, equipment and supplies	1	0	1	0	1	0	0
467	Other specialised wholesale	1	1	1	0	1	0	0
469	Non-specialised wholesale trade	1	0	1	0	0	0	0
471	Retail sale in non-specialised stores	1	0	1	1	0	1	0
472	Retail sale of food, beverages and tobacco in specialised stores	1	0	1	0	0	1	0
473	Retail sale of automotive fuel in specialised stores	1	1	1	1	0	1	0
474	Retail sale of information and communication equipment in specialised stores	1	0	1	0	1	1	0
475	Retail sale of other household equipment in specialised stores	1	1	1	1	0	1	0
476	Retail sale of cultural and recreation goods in specialised stores	1	0	1	0	0	1	0
477	Retail sale of other goods in specialised stores	1	0	1	0	0	1	0
478	Retail sale via stalls and markets	0	0	0	0	0	1	0
479	Retail trade not in stores, stalls or markets	0	0	1	0	0	1	0
491	Passenger rail transport, interurban	0	0	0	0	0	0	0
492	Freight rail transport	1	1	0	0	1	0	0
493	Other passenger land transport	1	0	1	0	0	0	0
494	Freight transport by road and removal services	1	0	1	0	0	1	0
495	Transport via pipeline	0	0	0	0	0	0	0
501	Sea and coastal passenger water transport	0	0	0	0	0	0	0
502	Sea and coastal freight water transport	0	0	0	0	0	0	0
503	Inland passenger water transport	0	0	0	0	0	0	0
504	Inland freight water transport	0	0	0	0	0	0	0
511	Passenger air transport	0	0	1	1	1	0	0
512	Freight air transport and space transport	0	0	0	0	0	0	0
521	Warehousing and storage	0	0	0	0	0	0	0
522	Support activities for transportation	1	0	1	0	1	0	0
531	Postal activities under universal service obligation	1	1	1	0	1	0	0
532	Other postal and courier activities	0	0	0	0	0	0	0
551	Hotels and similar accommodation	1	0	1	0	0	0	0
552	Holiday and other short-stay accommodation	0	0	0	0	0	1	0
553	Camping grounds, recreational vehicle parks and trailer parks	0	0	0	0	0	0	0
559	Other accommodation	0	0	0	0	0	0	0
561	Restaurants and mobile food service activities	1	0	1	0	0	1	0
562	Event catering and other food service activities	1	1	0	1	0	0	0
563	Beverage serving activities	1	0	1	0	0	1	0
581	Publishing of books, periodicals and other publishing activities	1	1	1	1	1	1	1
582	Software publishing	1	1	1	1	1	1	1
591	Motion picture, video and television programme activities	1	0	0	0	1	1	0
592	Sound recording and music publishing activities	0	0	0	0	1	1	0
601	Radio broadcasting	0	0	0	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	CEP
	Number of industries that pass selection criteria	108	47	84	34	80	66	9
602	Television programming and broadcasting activities	1	0	0	0	1	0	0
611	Wired telecommunications activities	1	1	1	1	1	1	1
612	Wireless telecommunications activities	0	0	0	0	0	0	0
613	Satellite telecommunications activities	0	1	0	0	0	0	0
619	Other telecommunications activities	1	1	1	1	1	1	1
620	Computer programming, consultancy and related activities	1	0	1	0	1	1	0
631	Data processing, hosting and related activities; web portals	0	0	0	0	1	0	0
639	Other information service activities	0	0	0	0	1	1	0
641	Monetary intermediation	1	0	1	0	1	0	0
642	Activities of holding companies	0	0	0	0	0	0	0
643	Trusts, funds and similar financial entities	0	0	0	0	0	0	0
649	Other financial service activities, except insurance and pension funding	1	0	1	0	1	0	0
651	Insurance	1	1	1	0	1	1	0
652	Reinsurance	0	0	0	0	0	0	0
653	Pension funding	0	0	0	0	0	0	0
661	Activities auxiliary to financial services, except insurance and pension funding	0	0	0	0	1	0	0
662	Activities auxiliary to insurance and pension funding	0	0	0	0	0	0	0
663	Fund management activities	0	0	0	0	0	0	0
681	Buying and selling of own real estate	0	0	0	0	0	0	0
682	Rental and operating of own or leased real estate	1	0	0	0	1	1	0
683	Real estate activities on a fee or contract basis	0	0	0	0	1	1	0
691	Legal activities	1	0	1	0	1	1	0
692	Accounting, bookkeeping and auditing activities; tax consultancy	1	0	1	0	1	1	0
701	Activities of head offices	0	0	0	0	0	0	0
702	Management consultancy activities	1	0	1	0	1	1	0
711	Architectural and engineering activities and related technical consultancy	1	0	1	0	1	1	0
712	Technical testing and analysis	1	0	1	0	1	0	0
721	Research and experimental development on natural sciences and engineering	0	0	0	0	1	0	0
722	Research and experimental development on social sciences and humanities	0	0	0	0	1	1	0
731	Advertising	1	1	1	0	1	1	0
732	Market research and public opinion polling	1	1	0	0	1	0	0
741	Specialised design activities	0	0	0	0	0	1	0
742	Photographic activities	0	0	0	0	0	1	0
743	Translation and interpretation activities	0	0	0	0	0	1	0
749	Other professional, scientific and technical activities n.e.c.	0	0	0	0	1	0	0
750	Veterinary activities	0	0	0	0	0	0	0
771	Rental and leasing of motor vehicles	0	0	1	1	0	1	0
772	Rental and leasing of personal and household goods	0	0	0	0	0	1	0
773	Rental and leasing of other machinery, equipment and tangible goods	0	0	0	0	0	0	0
774	Leasing of intellectual property and similar products, except copyrighted works	0	0	0	1	0	0	0
781	Activities of employment placement agencies	0	0	0	0	0	0	0
782	Temporary employment agency activities	0	0	0	0	1	1	0
783	Other human resources provision	0	0	0	0	0	0	0
791	Travel agency and tour operator activities	1	1	1	0	1	1	0
799	Other reservation service and related activities	0	0	0	0	1	1	0
801	Private security activities	1	1	1	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	CEP
	Number of industries that pass selection criteria	108	47	84	34	80	66	9
802	Security systems service activities	0	0	0	0	0	0	0
811	Combined facilities support activities	0	0	0	0	0	0	0
812	Cleaning activities	1	1	1	1	0	1	0
813	Landscape service activities	1	1	0	0	0	1	0
821	Office administrative and support activities	0	0	0	0	0	0	0
822	Activities of call centres	1	1	0	0	1	0	0
823	Organisation of conventions and trade shows	0	0	0	0	0	0	0
829	Business support service activities n.e.c.	1	0	1	1	0	0	0
841	Administration of the State and the economic and social policy of the community	0	0	0	0	1	0	0
842	Provision of services to the community as a whole	1	0	0	0	0	0	0
843	Compulsory social security activities	0	0	0	0	0	0	0
851	Pre-primary education	1	0	0	0	0	0	0
852	Primary education	1	0	0	0	1	0	0
853	Secondary education	0	0	0	0	0	0	0
854	Higher education	1	0	1	0	1	0	0
855	Other education	1	0	1	0	0	0	0
856	Educational support activities	0	0	0	0	0	0	0
861	Hospital activities	1	0	1	0	1	0	0
862	Medical and dental practice activities	1	0	1	0	0	0	0
869	Other human health activities	1	0	1	0	0	0	0
872	Residential care activities for mental retardation, mental health and substance abuse	0	0	0	0	0	0	0
873	Residential care activities for the elderly and disabled	0	0	0	0	0	0	0
881	Social work activities without accommodation for the elderly and disabled	0	0	0	0	0	0	0
889	Other social work activities without accommodation	0	0	0	0	0	0	0
900	Creative, arts and entertainment activities	0	0	0	0	0	0	0
910	Libraries, archives, museums and other cultural activities	0	0	0	0	0	0	0
920	Gambling and betting activities	1	0	1	0	0	0	0
931	Sports activities	1	0	0	0	0	0	0
932	Amusement and recreation activities	1	0	0	0	0	0	0
941	Activities of business, employers and professional membership organisations	0	0	0	0	0	0	0
949	Activities of other membership organisations	0	0	0	0	0	0	0
951	Repair of computers and communication equipment	0	0	0	0	0	0	0
952	Repair of personal and household goods	1	0	0	1	0	1	0
960	Other personal service activities	1	0	0	0	0	0	0
970	Activities of households as employers of domestic personnel	0	0	0	0	0	0	0
990	Activities of extraterritorial organisations and bodies	0	0	0	0	0	0	0

n.e.c. = not elsewhere classified

Annex B: Detailed results for the mapping of industries with a dynamic or emerging economic potential

Results for identifying industries with an emerging economic potential are shown in the table below. If industries pass a threshold the value in the respective table cell is 1, otherwise it is 0. Industries for which comparable data for the selected benchmark countries are not available are highlighted in orange in the first columns. The third column (EMPL SIZE) shows if and how many industries (84) passed the change in size criterion for employment, the fourth column (EMPL SPEC) shows if and how many industries (44) passed the change in specialisation criterion for employment, the fifth column (TURN SIZE) shows if and how many industries (65) passed the change in size criterion for turnover, the sixth column (TURN SPEC) shows if and how many industries (29) passed the change in specialisation criterion for turnover, the seventh column (WGS KV) shows if and how many industries (48) passed the change in the criterion for average wages relative to those in Kosovo, and the eighth column (WGS BENCH) shows if and how many industries (22) passed the change in the criterion for average wages relative to those in the same industry in the selected benchmark countries. Finally, the last column (EEP) shows how many criteria each industry passed and how many industries (18) passed at least four criteria and would have an emerging economic potential (EEP).

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	EEP
	Number of industries that pass selection criteria	84	44	65	29	48	22	18
011	Growing of non-perennial crops	0	0	1	0	0	0	1
012	Growing of perennial crops	1	0	1	0	0	0	2
013	Plant propagation	0	0	0	0	0	0	0
014	Animal production	1	0	1	0	0	0	2
015	Mixed farming	1	0	0	0	0	0	1
016	Support activities to agriculture and post-harvest crop activities	1	0	1	0	0	0	2
017	Hunting, trapping and related service activities	0	0	0	0	0	0	0
021	Silviculture and other forestry activities	0	0	0	0	0	0	0
022	Logging	1	0	1	0	0	0	2
023	Gathering of wild growing non-wood products	1	0	1	0	0	0	2
024	Support services to forestry	0	0	0	0	0	0	0
031	Fishing	0	0	0	0	0	0	0
032	Aquaculture	1	0	0	0	0	0	1
051	Mining of hard coal	0	0	0	0	0	0	0
052	Mining of lignite	0	0	0	0	0	0	0
061	Extraction of crude petroleum	0	0	0	0	0	0	0
071	Mining of iron ores	0	0	0	0	0	0	0
072	Mining of non-ferrous metal ores	0	0	0	0	0	0	0
081	Quarrying of stone, sand and clay	0	0	0	0	1	0	1
089	Mining and quarrying n.e.c.	0	0	0	0	0	0	0
091	Support activities for petroleum and natural gas extraction	0	0	0	0	0	0	0
099	Support activities for other mining and quarrying	0	0	0	0	0	0	0
101	Processing and preserving of meat and production of meat products	0	0	0	0	0	0	0
102	Processing and preserving of fish, crustaceans and molluscs	1	1	1	1	1	1	6
103	Processing and preserving of fruit and vegetables	1	0	0	0	0	0	1
104	Manufacture of vegetable and animal oils and fats	0	0	0	0	0	0	0
105	Manufacture of dairy products	0	0	1	0	1	1	3
106	Manufacture of grain mill products, starches and starch products	0	0	0	0	0	0	0
107	Manufacture of bakery and farinaceous products	0	0	0	0	1	0	1
108	Manufacture of other food products	0	0	1	0	1	1	3
109	Manufacture of prepared animal feeds	0	0	0	0	0	0	0
110	Manufacture of beverages	0	1	0	1	0	0	2
120	Manufacture of tobacco products	0	0	0	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	EEP
	Number of industries that pass selection criteria	84	44	65	29	48	22	18
131	Preparation and spinning of textile fibres	0	0	0	0	0	0	0
132	Weaving of textiles	0	0	0	0	1	0	1
133	Finishing of textiles	0	0	0	0	0	0	0
139	Manufacture of other textiles	0	0	0	0	0	0	0
141	Manufacture of wearing apparel, except fur apparel	1	0	1	0	1	0	3
142	Manufacture of articles of fur	0	0	0	0	0	0	0
143	Manufacture of knitted and crocheted apparel	0	0	0	0	0	0	0
151	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	0	0	0	0	1	1	2
152	Manufacture of footwear	0	0	0	0	0	0	0
161	Sawmilling and planing of wood	1	1	1	0	0	0	3
162	Manufacture of products of wood, cork, straw and plaiting materials	0	0	0	0	0	0	0
171	Manufacture of pulp, paper and paperboard	1	0	0	0	0	0	1
172	Manufacture of articles of paper and paperboard	1	0	1	0	1	0	3
181	Printing and service activities related to printing	0	0	0	1	0	0	1
182	Reproduction of recorded media	0	0	0	0	0	0	0
191	Manufacture of coke oven products	0	1	0	1	0	0	2
192	Manufacture of refined petroleum products	1	0	0	0	0	0	1
201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	0	1	0	0	0	0	1
202	Manufacture of pesticides and other agrochemical products	0	1	0	0	0	0	1
203	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	0	0	1	1	1	1	4
204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	0	0	1	0	1	0	2
205	Manufacture of other chemical products	0	0	0	0	0	0	0
206	Manufacture of man-made fibres	0	0	0	0	0	0	0
211	Manufacture of basic pharmaceutical products	0	0	0	0	0	0	0
212	Manufacture of pharmaceutical preparations	0	0	0	0	0	0	0
221	Manufacture of rubber products	0	0	0	0	0	0	0
222	Manufacture of plastic products	0	0	0	0	1	1	2
231	Manufacture of glass and glass products	0	0	0	0	0	0	0
232	Manufacture of refractory products	1	0	0	1	1	1	4
233	Manufacture of clay building materials	0	0	0	0	0	0	0
234	Manufacture of other porcelain and ceramic products	0	0	0	0	0	0	0
235	Manufacture of cement, lime and plaster	1	1	1	1	0	0	4
236	Manufacture of articles of concrete, cement and plaster	0	0	0	0	0	0	0
237	Cutting, shaping and finishing of stone	0	0	0	0	0	0	0
239	Manufacture of abrasive products and non-metallic mineral products n.e.c.	0	0	0	0	0	0	0
241	Manufacture of basic iron and steel and of ferro-alloys	0	0	0	0	0	0	0
242	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	1	1	1	1	0	0	4
243	Manufacture of other products of first processing of steel	0	0	0	0	1	0	1
244	Manufacture of basic precious and other non-ferrous metals	1	0	1	0	1	0	3
245	Casting of metals	0	1	0	0	0	0	1
251	Manufacture of structural metal products	0	0	0	0	0	0	0
252	Manufacture of tanks, reservoirs and containers of metal	0	0	0	0	0	0	0
255	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	0	0	0	0	0	0	0
256	Treatment and coating of metals; machining	0	0	0	0	0	0	0
257	Manufacture of cutlery, tools and general hardware	0	0	0	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	EEP
	Number of industries that pass selection criteria	84	44	65	29	48	22	18
259	Manufacture of other fabricated metal products	1	1	1	0	1	0	4
261	Manufacture of electronic components and boards	1	1	0	0	0	0	2
262	Manufacture of computers and peripheral equipment	0	0	0	0	1	1	2
263	Manufacture of communication equipment	0	0	0	0	0	0	0
264	Manufacture of consumer electronics	1	0	1	1	1	1	5
265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	0	0	0	0	0	0	0
266	Manufacture of irradiation, electromedical and electrotherapeutic equipment	0	0	0	0	0	0	0
267	Manufacture of optical instruments and photographic equipment	0	0	1	0	0	0	1
271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	0	0	0	0	0	0	0
272	Manufacture of batteries and accumulators	0	0	0	0	1	1	2
273	Manufacture of wiring and wiring devices	1	0	1	0	0	0	2
274	Manufacture of electric lighting equipment	0	0	0	0	0	0	0
275	Manufacture of domestic appliances	0	0	1	1	1	0	3
279	Manufacture of other electrical equipment	0	0	0	0	0	0	0
281	Manufacture of general-purpose machinery	0	0	0	0	0	0	0
282	Manufacture of other general-purpose machinery	0	0	1	0	0	0	1
283	Manufacture of agricultural and forestry machinery	0	0	1	0	0	1	2
284	Manufacture of metal forming machinery and machine tools	1	1	0	1	0	0	3
289	Manufacture of other special-purpose machinery	1	1	0	0	0	0	2
291	Manufacture of motor vehicles	0	0	0	0	0	0	0
293	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	1	0	1	1	0	0	3
301	Building of ships and boats	0	0	0	0	0	0	0
302	Manufacture of railway locomotives and rolling stock	0	0	0	1	0	1	2
309	Manufacture of transport equipment n.e.c.	0	0	0	0	1	0	1
310	Manufacture of furniture	1	0	1	0	1	0	3
321	Manufacture of jewellery, bijouterie and related articles	0	1	0	0	0	0	1
323	Manufacture of sports goods	0	0	0	0	0	0	0
324	Manufacture of games and toys	0	0	0	0	0	0	0
325	Manufacture of medical and dental instruments and supplies	1	1	0	0	1	1	4
329	Manufacturing n.e.c.	1	0	0	0	0	0	1
331	Repair of fabricated metal products, machinery and equipment	1	1	0	0	0	0	2
332	Installation of industrial machinery and equipment	0	0	0	0	1	0	1
351	Electric power generation, transmission and distribution	0	0	1	0	0	1	2
352	Manufacture of gas; distribution of gaseous fuels through mains	0	0	0	0	0	0	0
353	Steam and air conditioning supply	0	0	0	0	0	0	0
360	Water collection, treatment and supply	0	0	0	0	0	0	0
370	Sewerage	0	0	0	0	0	0	0
381	Waste collection	0	0	0	0	0	0	0
382	Waste treatment and disposal	0	0	0	0	0	0	0
383	Materials recovery	0	0	0	0	0	0	0
390	Remediation activities and other waste management services	0	0	1	0	0	0	1
411	Development of building projects	1	1	1	0	0	0	3
412	Construction of residential and non-residential buildings	0	0	0	0	1	0	1
421	Construction of roads and railways	0	0	0	0	0	0	0
422	Construction of utility projects	1	1	0	1	1	0	4
429	Construction of other civil engineering projects	1	1	1	1	0	1	5
431	Demolition and site preparation	0	0	0	0	0	0	0
432	Electrical, plumbing and other construction installation activities	1	1	1	0	0	0	3

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	EEP
	Number of industries that pass selection criteria	84	44	65	29	48	22	18
433	Building completion and finishing	1	1	0	0	0	0	2
439	Other specialised construction activities	1	1	0	0	0	0	2
451	Sale of motor vehicles	0	0	1	0	0	0	1
452	Maintenance and repair of motor vehicles	0	0	1	0	1	0	2
453	Sale of motor vehicle parts and accessories	1	0	1	0	0	0	2
454	Sale, maintenance and repair of motorcycles and related parts and accessories	1	0	1	1	0	0	3
461	Wholesale on a fee or contract basis	1	1	0	1	0	0	3
462	Wholesale of agricultural raw materials and live animals	0	0	0	0	0	0	0
463	Wholesale of food, beverages and tobacco	0	1	0	0	1	0	2
464	Wholesale of household goods	1	1	1	1	0	0	4
465	Wholesale of information and communication equipment	0	0	1	0	0	0	1
466	Wholesale of other machinery, equipment and supplies	0	0	0	0	0	0	0
467	Other specialised wholesale	0	0	0	0	1	0	1
469	Non-specialised wholesale trade	1	1	1	1	1	0	5
471	Retail sale in non-specialised stores	0	0	0	0	0	0	0
472	Retail sale of food, beverages and tobacco in specialised stores	0	1	0	1	1	0	3
473	Retail sale of automotive fuel in specialised stores	0	0	0	0	0	0	0
474	Retail sale of information and communication equipment in specialised stores	0	0	0	0	0	0	0
475	Retail sale of other household equipment in specialised stores	0	0	0	0	1	0	1
476	Retail sale of cultural and recreation goods in specialised stores	0	0	0	0	1	0	1
477	Retail sale of other goods in specialised stores	1	0	1	0	0	0	2
478	Retail sale via stalls and markets	0	0	0	0	0	0	0
479	Retail trade not in stores, stalls or markets	0	0	0	0	0	0	0
491	Passenger rail transport, interurban	0	0	0	0	0	0	0
492	Freight rail transport	0	0	0	0	0	0	0
493	Other passenger land transport	0	0	0	0	0	0	0
494	Freight transport by road and removal services	1	1	0	0	0	0	2
495	Transport via pipeline	0	0	0	0	0	0	0
501	Sea and coastal passenger water transport	0	0	0	0	0	0	0
502	Sea and coastal freight water transport	0	1	1	0	0	1	3
503	Inland passenger water transport	0	0	1	0	1	0	2
504	Inland freight water transport	1	1	1	1	1	1	6
511	Passenger air transport	1	0	0	0	0	0	1
512	Freight air transport and space transport	0	0	0	0	0	0	0
521	Warehousing and storage	0	0	0	0	0	0	0
522	Support activities for transportation	0	0	0	0	0	0	0
531	Postal activities under universal service obligation	0	0	1	0	0	0	1
532	Other postal and courier activities	0	0	0	0	0	0	0
551	Hotels and similar accommodation	0	0	0	0	0	0	0
552	Holiday and other short-stay accommodation	1	0	1	0	0	0	2
553	Camping grounds, recreational vehicle parks and trailer parks	1	0	0	0	0	0	1
559	Other accommodation	0	0	0	0	0	0	0
561	Restaurants and mobile food service activities	0	0	0	0	0	0	0
562	Event catering and other food service activities	1	0	0	0	0	0	1
563	Beverage serving activities	1	0	0	0	0	0	1
581	Publishing of books, periodicals and other publishing activities	0	0	0	0	0	0	0
582	Software publishing	1	1	1	1	0	0	4
591	Motion picture, video and television programme activities	0	0	0	0	0	0	0
592	Sound recording and music publishing activities	1	1	0	0	0	0	2

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	EEP
	Number of industries that pass selection criteria	84	44	65	29	48	22	18
601	Radio broadcasting	0	0	0	0	0	0	0
602	Television programming and broadcasting activities	0	0	0	0	0	0	0
611	Wired telecommunications activities	0	0	0	0	0	0	0
612	Wireless telecommunications activities	1	0	1	1	1	1	5
613	Satellite telecommunications activities	0	0	0	0	0	0	0
619	Other telecommunications activities	0	0	0	0	0	0	0
620	Computer programming, consultancy and related activities	1	1	1	0	0	0	3
631	Data processing, hosting and related activities; web portals	1	1	0	0	0	0	2
639	Other information service activities	1	0	0	1	0	0	2
641	Monetary intermediation	1	0	0	0	0	0	1
642	Activities of holding companies	1	0	0	0	0	0	1
643	Trusts, funds and similar financial entities	0	0	0	0	1	0	1
649	Other financial service activities, except insurance and pension funding	0	0	0	0	0	0	0
651	Insurance	0	0	1	0	0	0	1
652	Reinsurance	0	0	0	0	0	0	0
653	Pension funding	0	0	0	0	0	0	0
661	Activities auxiliary to financial services, except insurance and pension funding	1	0	0	0	0	0	1
662	Activities auxiliary to insurance and pension funding	1	0	0	0	1	0	2
663	Fund management activities	0	0	1	0	1	0	2
681	Buying and selling of own real estate	0	0	1	0	0	0	1
682	Rental and operating of own or leased real estate	0	0	0	0	0	0	0
683	Real estate activities on a fee or contract basis	0	0	0	0	0	0	0
691	Legal activities	1	1	1	1	0	0	4
692	Accounting, bookkeeping and auditing activities; tax consultancy	1	0	0	0	0	0	1
701	Activities of head offices	1	1	0	0	1	0	3
702	Management consultancy activities	1	0	0	0	0	0	1
711	Architectural and engineering activities and related technical consultancy	0	0	0	0	0	0	0
712	Technical testing and analysis	0	0	0	0	0	0	0
721	Research and experimental development on natural sciences and engineering	0	0	0	0	0	0	0
722	Research and experimental development on social sciences and humanities	1	0	1	0	0	0	2
731	Advertising	0	0	0	0	0	0	0
732	Market research and public opinion polling	1	0	1	0	1	0	3
741	Specialised design activities	1	1	1	0	0	0	3
742	Photographic activities	0	0	0	0	0	0	0
743	Translation and interpretation activities	1	1	1	1	0	0	4
749	Other professional, scientific and technical activities n.e.c.	1	1	0	0	0	0	2
750	Veterinary activities	1	1	0	0	0	0	2
771	Rental and leasing of motor vehicles	1	0	0	0	0	0	1
772	Rental and leasing of personal and household goods	0	0	0	0	0	0	0
773	Rental and leasing of other machinery, equipment and tangible goods	1	0	1	0	0	0	2
774	Leasing of intellectual property and similar products, except copyrighted works	0	0	0	0	0	0	0
781	Activities of employment placement agencies	1	1	0	0	0	0	2
782	Temporary employment agency activities	0	1	0	1	0	0	2
783	Other human resources provision	1	0	0	0	0	1	2
791	Travel agency and tour operator activities	0	0	0	1	0	0	1
799	Other reservation service and related activities	0	0	0	0	0	0	0

		EMPL SIZE	EMPL SPEC	TURN SIZE	TURN SPEC	WGS CTR	WGS BEN	EEP
	Number of industries that pass selection criteria	84	44	65	29	48	22	18
801	Private security activities	0	0	0	0	0	0	0
802	Security systems service activities	0	0	1	0	0	0	1
811	Combined facilities support activities	0	0	0	0	0	0	0
812	Cleaning activities	0	0	0	0	1	1	2
813	Landscape service activities	0	0	0	0	0	0	0
821	Office administrative and support activities	1	0	0	0	0	1	2
822	Activities of call centres	1	1	1	1	1	0	5
823	Organisation of conventions and trade shows	0	0	0	0	1	1	2
829	Business support service activities n.e.c.	0	0	0	0	0	0	0
841	Administration of the State and the economic and social policy of the community	0	0	0	0	0	0	0
842	Provision of services to the community as a whole	1	0	1	0	0	0	2
843	Compulsory social security activities	0	0	0	0	0	0	0
851	Pre-primary education	1	0	1	0	0	0	2
852	Primary education	0	0	0	0	0	0	0
853	Secondary education	1	0	0	0	0	0	1
854	Higher education	0	0	0	0	0	0	0
855	Other education	0	0	0	0	0	0	0
856	Educational support activities	1	0	0	0	0	0	1
861	Hospital activities	1	0	1	0	0	0	2
862	Medical and dental practice activities	1	0	1	0	1	0	3
869	Other human health activities	0	0	0	0	0	0	0
872	Residential care activities for mental retardation, mental health and substance abuse	0	0	0	0	0	0	0
873	Residential care activities for the elderly and disabled	0	0	0	0	0	0	0
881	Social work activities without accommodation for the elderly and disabled	0	0	0	0	0	0	0
889	Other social work activities without accommodation	1	0	0	0	0	0	1
900	Creative, arts and entertainment activities	0	0	0	0	0	0	0
910	Libraries, archives, museums and other cultural activities	0	0	0	0	0	0	0
920	Gambling and betting activities	0	0	0	0	0	0	0
931	Sports activities	1	0	1	0	0	0	2
932	Amusement and recreation activities	1	0	1	0	0	0	2
941	Activities of business, employers and professional membership organisations	0	0	0	0	1	0	1
949	Activities of other membership organisations	0	0	0	0	0	0	0
951	Repair of computers and communication equipment	0	0	0	0	0	0	0
952	Repair of personal and household goods	0	1	0	0	0	0	1
960	Other personal service activities	1	0	0	0	0	0	1
970	Activities of households as employers of domestic personnel	0	0	1	0	1	0	2
990	Activities of extraterritorial organisations and bodies	0	0	0	0	0	0	0

n.e.c. = not elsewhere classified

Annex C: Export performance by product groups

	2012	2013	2014	2015	2016	2017	2018	2019	2020
001: Live animals other than animals of division 03	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
011: Meat of bovine animals, fresh, chilled or frozen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
012: Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
016: Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%
017: Meat and edible meat offal, prepared or preserved, n.e.s.	0.0%	0.0%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.4%
022: Milk and cream and milk products other than butter or cheese	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
023: Butter and other fats and oils derived from milk	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
024: Cheese and curd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
025: Eggs, birds', and egg yolks, fresh, dried or otherwise preserved, sweetened or not; egg albumin	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
034: Fish, fresh (live or dead), chilled or frozen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
035: Fish, dried, salted or in brine; smoked fish (whether or not cooked before or during the smoking process); flours, meals and pellets of fish, fit for human consumption	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
036: Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
037: Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
041: Wheat (including spelt) and meslin, unmilled	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
042: Rice	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
043: Barley, unmilled	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
044: Maize (not including sweet corn), unmilled	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%
045: Cereals, unmilled (other than wheat, rice, barley and maize)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
046: Meal and flour of wheat and flour of meslin	3.0%	2.9%	2.0%	1.3%	1.3%	1.1%	0.7%	0.2%	0.2%
047: Other cereal meals and flours	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
048: Cereal preparations and preparations of flour or starch of fruits or vegetables	0.2%	0.2%	0.4%	0.5%	0.6%	0.5%	0.5%	0.5%	0.4%
054: Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s., fresh or dried	1.1%	0.8%	1.3%	0.9%	1.2%	0.9%	1.0%	1.1%	1.6%
056: Vegetables, roots and tubers, prepared or preserved, n.e.s.	0.3%	0.4%	0.5%	0.5%	1.1%	1.6%	1.3%	1.0%	1.2%
057: Fruit and nuts (not including oil nuts), fresh or dried	0.6%	0.6%	0.6%	0.7%	1.0%	1.4%	1.5%	1.4%	1.1%
058: Fruit, preserved, and fruit preparations (excluding fruit juices)	0.2%	0.3%	0.3%	0.3%	0.5%	1.2%	1.1%	1.0%	1.3%
059: Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	0.3%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
061: Sugars, molasses and honey	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
062: Sugar confectionery	0.0%	0.1%	0.0%	0.2%	0.3%	0.2%	0.2%	0.2%	0.2%
071: Coffee and coffee substitutes	0.2%	0.3%	0.6%	0.8%	0.6%	0.8%	0.9%	0.9%	0.8%
072: Cocoa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
073: Chocolate and other food preparations containing cocoa, n.e.s.	0.5%	0.6%	0.8%	0.9%	0.8%	0.5%	0.5%	0.5%	0.3%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
074: Tea and maté	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
075: Spices	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.2%	0.3%
081: Feeding stuff for animals (not including unmilled cereals)	0.3%	0.4%	0.4%	0.2%	0.3%	0.3%	0.3%	0.2%	0.2%
091: Margarine and shortening	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
098: Edible products and preparations, n.e.s.	0.2%	0.3%	0.3%	0.4%	0.3%	0.2%	0.2%	0.1%	0.1%
111: Non-alcoholic beverages, n.e.s.	2.1%	2.4%	2.4%	2.7%	3.2%	3.3%	3.7%	3.8%	3.4%
112: Alcoholic beverages	1.6%	2.1%	1.5%	2.2%	2.3%	3.1%	3.8%	3.6%	2.8%
121: Tobacco, unmanufactured; tobacco refuse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
122: Tobacco, manufactured (whether or not containing tobacco substitutes)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
211: Hides and skins (except furskins), raw	3.6%	3.9%	3.3%	3.2%	3.2%	2.9%	2.7%	1.5%	0.8%
212: Furskins, raw (including heads, tails, paws and other pieces or cuttings, suitable for furriers' use), other than hides and skins of group 211	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
222: Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
223: Oil-seeds and oleaginous fruits, whole or broken, of a kind used for the extraction of other fixed vegetable oils (including flours and meals of oil-seeds or oleaginous fruit, n.e.s.)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
231: Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms (including latex) or in plates, sheets or strip	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
232: Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
244: Cork, natural, raw and waste (including natural cork in blocks or sheets)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
245: Fuel wood (excluding wood waste) and wood charcoal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
246: Wood in chips or particles and wood waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
247: Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.2%	0.1%	0.0%
248: Wood, simply worked, and railway sleepers of wood	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0.1%
251: Pulp and waste paper	0.3%	0.3%	0.5%	0.5%	0.7%	0.7%	0.7%	0.5%	0.3%
261: Silk	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
263: Cotton	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
264: Jute and other textile bast fibres, n.e.s., raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
265: Vegetable textile fibres (other than cotton and jute), raw or processed but not spun; waste of these fibres	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
266: Synthetic fibres suitable for spinning	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
267: Other man-made fibres suitable for spinning; waste of man-made fibres	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
268: Wool and other animal hair (including wool tops)	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
269: Worn clothing and other worn textile articles; rags	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
272: Fertilizers, crude, other than those of division 56	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
273: Stone, sand and gravel	0.3%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.1%	0.3%
274: Sulphur and unroasted iron pyrites	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
277: Natural abrasives, n.e.s. (including industrial diamonds)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
278: Other crude minerals	0.6%	0.5%	0.4%	0.6%	1.1%	0.7%	0.2%	0.1%	0.1%
281: Iron ore and concentrates	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
282: Ferrous waste and scrap; remelting scrap ingots of iron or steel	8.2%	7.0%	6.9%	3.5%	3.7%	5.0%	6.6%	5.5%	3.7%
283: Copper ores and concentrates; copper mattes; cement copper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
284: Nickel ores and concentrates; nickel mattes, nickel oxide sinters and other intermediate products of nickel metallurgy	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%
285: Aluminium ores and concentrates (including alumina)	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
286: Uranium or thorium ores and concentrates	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
287: Ores and concentrates of base metals, n.e.s.	7.4%	7.3%	7.3%	4.8%	8.3%	9.0%	6.8%	5.5%	3.8%
288: Non-ferrous base metal waste and scrap, n.e.s.	7.1%	5.6%	4.8%	3.8%	3.8%	5.2%	4.6%	3.7%	2.8%
289: Ores and concentrates of precious metals; waste, scrap and sweepings of precious metals (other than of gold)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
291: Crude animal materials, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
292: Crude vegetable materials, n.e.s.	0.2%	0.3%	0.4%	0.4%	0.4%	0.5%	0.7%	1.2%	1.2%
321: Coal, whether or not pulverized, but not agglomerated	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
322: Briquettes, lignite and peat	0.0%	0.2%	0.3%	0.6%	0.2%	0.1%	0.1%	0.3%	0.1%
325: Coke and semi-coke (including char) of coal, of lignite or of peat, whether or not agglomerated; retort carbon	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
333: Petroleum oils and oils obtained from bituminous minerals, crude	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
334: Petroleum oils and oils obtained from bituminous minerals (other than crude); preparations, n.e.s., containing by weight 70% or more of petroleum oils or of oils obtained from bituminous minerals, these oils being the basic constituents of the preparation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
335: Residual petroleum products, n.e.s., and related materials	0.1%	0.0%	0.0%	0.2%	0.1%	0.2%	0.3%	0.6%	0.2%
342: Liquefied propane and butane	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
343: Natural gas, whether or not liquefied	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
344: Petroleum gases and other gaseous hydrocarbons, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
345: Coal gas, water gas, producer gas and similar gases, other than petroleum gases and other gaseous hydrocarbons	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
351: Electric current	4.8%	7.4%	4.9%	5.6%	10.1%	9.0%	6.4%	3.7%	0.9%
411: Animal oils and fats	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
421: Fixed vegetable fats and oils, 'soft', crude, refined or fractionated	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.2%
422: Fixed vegetable fats and oils, crude, refined or fractionated, other than "soft"	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
431: Animal or vegetable fats and oils, processed; waxes; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
511: Hydrocarbons, n.e.s., and their halogenated, sulphonated, nitrated or nitrosated derivatives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
512: Alcohols, phenols, phenol-alcohols, and their halogenated, sulphonated, nitrated or nitrosated derivatives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
513: Carboxylic acids and their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
514: Nitrogen-function compounds	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
515: Organo-inorganic compounds, heterocyclic compounds, nucleic acids and their salts, and sulphonamides	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
516: Other organic chemicals	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
522: Inorganic chemical elements, oxides and halogen salts	0.0%	0.0%	0.1%	0.0%	0.3%	0.2%	0.0%	0.0%	0.2%
523: Salts and peroxysalts, of inorganic acids and metals	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
524: Other inorganic chemicals; organic and inorganic compounds of precious metals	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
525: Radioactive and associated materials	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
531: Synthetic organic colouring matter and colour lakes, and preparations based thereon	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
532: Dyeing and tanning extracts, and synthetic tanning materials	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
533: Pigments, paints, varnishes and related materials	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.6%	0.8%
541: Medicinal and pharmaceutical products, other than medicaments of group 542	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
542: Medicaments (including veterinary medicaments)	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	0.5%	0.2%	0.0%
551: Essential oils, perfume and flavour materials	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
553: Perfumery, cosmetic or toilet preparations (excluding soaps)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
554: Soap, cleansing and polishing preparations	0.1%	0.2%	0.3%	0.4%	0.6%	0.5%	0.7%	0.9%	2.5%
562: Fertilizers (other than those of group 272)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
571: Polymers of ethylene, in primary forms	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%
572: Polymers of styrene, in primary forms	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
573: Polymers of vinyl chloride or of other halogenated olefins, in primary forms	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
574: Polyacetals, other polyethers and epoxide resins, in primary forms; polycarbonates, alkyd resins, polyallyl esters and other polyesters, in primary forms	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
575: Other plastics, in primary forms	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
579: Waste, parings and scrap, of plastics	0.2%	0.2%	0.3%	0.2%	0.3%	0.2%	0.2%	0.2%	0.1%
581: Tubes, pipes and hoses, and fittings therefor, of plastics	0.4%	0.5%	0.5%	0.5%	0.7%	0.7%	0.8%	0.5%	0.5%
582: Plates, sheets, film, foil and strip, of plastics	0.8%	1.4%	1.4%	2.2%	2.4%	2.3%	3.0%	3.0%	2.2%
583: Monofilament of which any cross-sectional dimension exceeds 1 mm, rods, sticks and profile shapes, whether or not surface-worked but not otherwise worked, of plastics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
591: Insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, put up in forms or packings for retail sale or as preparations or articles	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
592: Starches, inulin and wheat gluten; albuminoidal substances; glues	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
593: Explosives and pyrotechnic products	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
597: Prepared additives for mineral oils and the like; prepared liquids for hydraulic transmission; anti-freezing preparations and prepared de-icing fluids; lubricating preparations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
598: Miscellaneous chemical products, n.e.s.	0.2%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%
599: Residual products of the chemical or allied industries, n.e.s.; municipal waste; sewage sludge; other wastes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
611: Leather	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
612: Manufactures of leather or of composition leather, n.e.s.; saddlery and harness	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
613: Furskins, tanned or dressed (including heads, tails, paws and other pieces or cuttings), unassembled, or assembled (without the addition of other materials), other than those of heading 848.31	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
621: Materials of rubber (e.g., pastes, plates, sheets, rods, thread, tubes, of rubber)	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
625: Rubber tyres, interchangeable tyre treads, tyre flaps and inner tubes for wheels of all kinds	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
629: Articles of rubber, n.e.s.	2.3%	2.1%	1.5%	1.3%	1.0%	0.7%	0.7%	0.6%	0.7%
633: Cork manufactures	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
634: Veneers, plywood, particle board, and other wood, worked, n.e.s.	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
635: Wood manufactures, n.e.s.	0.5%	0.5%	0.6%	0.5%	0.8%	0.8%	1.1%	1.2%	0.9%
641: Paper and paperboard	0.2%	0.2%	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%
642: Paper and paperboard, cut to size or shape, and articles of paper or paperboard	0.1%	0.1%	0.1%	0.2%	0.3%	0.5%	0.6%	0.5%	0.5%
651: Textile yarn	2.5%	2.6%	2.5%	1.4%	0.2%	0.3%	0.2%	0.0%	0.1%
652: Cotton fabrics, woven (not including narrow or special fabrics)	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
653: Fabrics, woven, of man-made textile materials (not including narrow or special fabrics)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
654: Other textile fabrics, woven	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.4%	0.4%
655: Knitted or crocheted fabrics (including tubular knit fabrics, n.e.s., pile fabrics and openwork fabrics), n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
656: Tullies, lace, embroidery, ribbons, trimmings and other smallwares	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
657: Special yarns, special textile fabrics and related products	0.8%	0.7%	0.7%	1.0%	1.0%	0.7%	0.8%	0.6%	0.6%
658: Made-up articles, wholly or chiefly of textile materials, n.e.s.	0.1%	0.1%	0.4%	0.5%	1.1%	1.1%	1.1%	1.2%	1.2%
659: Floor coverings, etc.	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
661: Lime, cement, and fabricated construction materials (except glass and clay materials)	0.1%	0.9%	0.8%	0.7%	0.1%	0.3%	0.4%	0.3%	0.2%
662: Clay construction materials and refractory construction materials	0.1%	0.0%	0.1%	0.1%	0.1%	0.2%	0.3%	0.3%	0.3%
663: Mineral manufactures, n.e.s.	0.2%	0.2%	0.1%	0.2%	0.7%	0.7%	0.7%	0.6%	0.6%
664: Glass	0.0%	0.1%	0.5%	0.3%	0.1%	0.3%	0.5%	0.5%	0.6%
665: Glassware	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
666: Pottery	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
667: Pearls and precious or semiprecious stones, unworked or worked	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
671: Pig-iron, spiegeleisen, sponge iron, iron or steel granules and powders and ferro-alloys	30.7%	30.1%	33.1%	32.0%	7.3%	15.9%	9.8%	13.4%	17.0%
672: Ingots and other primary forms, of iron or steel; semi-finished products of iron or steel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
673: Flat-rolled products of iron or non-alloy steel, not clad, plated or coated	0.2%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%
674: Flat-rolled products of iron or non-alloy steel, clad, plated or coated	1.4%	1.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%
675: Flat-rolled products of alloy steel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
676: Iron and steel bars, rods, angles, shapes and sections (including sheet piling)	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.3%	0.1%
677: Rails or railway track construction material, of iron or steel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
678: Wire of iron or steel	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%
679: Tubes, pipes and hollow profiles, and tube or pipe fittings, of iron or steel	2.6%	3.2%	3.9%	3.8%	4.8%	5.1%	6.2%	5.0%	5.2%
681: Silver, platinum and other metals of the platinum group	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
682: Copper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
683: Nickel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
684: Aluminium	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
685: Lead	0.2%	0.3%	0.2%	0.7%	0.2%	0.5%	0.5%	0.4%	0.6%
686: Zinc	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
687: Tin	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
689: Miscellaneous non-ferrous base metals employed in metallurgy, and cermets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
691: Structures and parts of structures, n.e.s., of iron, steel or aluminium	0.8%	0.5%	1.3%	3.0%	13.5%	1.5%	2.7%	2.6%	3.0%
692: Metal containers for storage or transport	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
693: Wire products (excluding insulated electrical wiring) and fencing grills	0.3%	0.2%	0.3%	0.1%	0.3%	0.2%	0.6%	1.0%	0.9%
694: Nails, screws, nuts, bolts, rivets and the like, of iron, steel, copper or aluminium	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%
695: Tools for use in the hand or in machines	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.4%
696: Cutlery	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
697: Household equipment of base metal, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
699: Manufactures of base metal, n.e.s.	0.3%	0.3%	0.3%	0.4%	0.7%	0.7%	1.2%	1.1%	1.5%
711: Steam or other vapour-generating boilers, superheated water boilers, and auxiliary plant for use therewith; parts thereof	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
712: Steam turbines and other vapour turbines and parts thereof, n.e.s.	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
713: Internal combustion piston engines and parts thereof, n.e.s.	0.9%	1.2%	1.2%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%
714: Engines and motors, non-electric (other than those of groups 712, 713 and 718); parts, n.e.s., of these engines and motors	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
716: Rotating electric plant and parts thereof, n.e.s.	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
718: Power-generating machinery and parts thereof, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
721: Agricultural machinery (excluding tractors) and parts thereof	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
722: Tractors (other than those of headings 744.14 and 744.15)	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.3%	0.2%
723: Civil engineering and contractors' plant and equipment; parts thereof	0.4%	0.3%	0.3%	0.3%	0.1%	0.1%	0.2%	0.3%	0.2%
724: Textile and leather machinery and parts thereof, n.e.s.	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
725: Paper mill and pulp mill machinery, paper-cutting machines and other machinery for the manufacture of paper articles; parts thereof	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%
726: Printing and bookbinding machinery and parts thereof	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
727: Food-processing machines (excluding domestic); parts thereof	0.2%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
728: Other machinery and equipment specialized for particular industries; parts thereof, n.e.s.	0.5%	0.0%	0.2%	0.2%	0.3%	0.2%	0.2%	0.2%	0.1%
731: Machine tools working by removing metal or other material	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
733: Machine tools for working metal, sintered metal carbides or cermets, without removing material	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
735: Parts, n.e.s., and accessories suitable for use solely or principally with the machines falling within groups 731 and 733 (including work or tool holders, self-opening die-heads, dividing heads and other special attachments for machine tools); tool holder	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
737: Metalworking machinery (other than machine tools) and parts thereof, n.e.s.	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
741: Heating and cooling equipment and parts thereof, n.e.s.	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
742: Pumps for liquids, whether or not fitted with a measuring device; liquid elevators; parts for such pumps and liquid elevators	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
743: Pumps (other than pumps for liquids), air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; centrifuges; filtering or purifying apparatus; parts thereof	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.4%
744: Mechanical handling equipment and parts thereof, n.e.s.	0.2%	0.1%	0.1%	0.1%	0.2%	0.3%	0.3%	0.2%	0.2%
745: Non-electrical machinery, tools and mechanical apparatus and parts thereof, n.e.s.	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
746: Ball- or roller bearings	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
747: Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
748: Transmission shafts (including camshafts and crankshafts) and cranks; bearing housings and plain shaft bearings; gears and gearing; ball or roller screws; gearboxes and other speed changers (including torque converters); flywheels and pulleys	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
749: Non-electric parts and accessories of machinery, n.e.s.	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
751: Office machines	0.1%	0.0%	0.1%	0.8%	0.3%	0.1%	0.1%	0.2%	0.1%
752: Automatic data-processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, n.e.s.	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
759: Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines falling within groups 751 and 752	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
761: Monitors and projectors, not incorporating television reception apparatus; reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
762: Reception apparatus for radio-broadcasting, whether or not combined, in the same housing, with sound recording or reproducing apparatus or a clock	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
763: Sound recording or reproducing apparatus; video recording or reproducing apparatus; whether or not incorporating a video tuner	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
764: Telecommunications equipment, n.e.s., and parts, n.e.s., and accessories of apparatus falling within division 76	0.0%	0.3%	0.1%	0.2%	0.2%	0.1%	0.3%	0.8%	1.3%
771: Electric power machinery (other than rotating electric plant of group 716) and parts thereof	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%
772: Electrical apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits (e.g. switches, relays, fuses, lightning arresters, voltage limiters, surge suppressors, plugs and sockets, lamp-holders and j	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%
773: Equipment for distributing electricity, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
774: Electrodiagnostic apparatus for medical, surgical, dental or veterinary purposes, and radiological apparatus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
775: Household-type electrical and non-electrical equipment, n.e.s.	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
776: Thermionic, cold cathode or photo-cathode valves and tubes (e.g., vacuum or vapour or gas-filled valves and tubes, mercury arc rectifying valves and tubes, cathode-ray tubes, television camera tubes); diodes, transistors and similar semiconductor devices	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
778: Electrical machinery and apparatus, n.e.s.	0.7%	1.1%	0.8%	0.4%	0.5%	0.6%	0.4%	0.7%	0.3%
781: Motor cars and other motor vehicles principally designed for the transport of persons (other than motor vehicles for the transport of ten or more persons, including the driver), including station-wagons and racing cars	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.3%
782: Motor vehicles for the transport of goods and special-purpose motor vehicles	0.0%	0.1%	0.2%	0.2%	0.1%	0.0%	0.1%	0.1%	0.2%
783: Road motor vehicles, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
784: Parts and accessories of the motor vehicles of groups 722, 781, 782 and 783	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	0.4%	0.4%
785: Motor cycles (including mopeds) and cycles, motorized and non-motorized; invalid carriages	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
786: Trailers and semi-trailers; other vehicles, not mechanically-propelled; specially designed and equipped transport containers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
791: Railway vehicles (including hovertrains) and associated equipment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
792: Aircraft and associated equipment; spacecraft (including satellites) and spacecraft launch vehicles; parts thereof	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
793: Ships, boats (including hovercraft) and floating structures	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
811: Prefabricated buildings	0.1%	0.0%	0.1%	0.1%	0.9%	0.5%	0.3%	0.6%	1.2%
812: Sanitary, plumbing and heating fixtures and fittings, n.e.s.	0.4%	0.7%	0.4%	0.5%	0.7%	0.8%	0.8%	0.7%	0.5%
813: Lighting fixtures and fittings, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
821: Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	0.7%	0.6%	0.8%	1.1%	2.0%	2.0%	2.9%	4.2%	8.9%
831: Trunks, suitcases, vanity cases, executive cases, briefcases, school satchels, spectacle cases, binocular cases, camera cases, musical instrument cases, gun cases, holsters and similar containers; travelling bags, insulated food or beverages bags, toilet bags, rucksacks, handbags	0.0%	0.0%	0.2%	0.1%	0.4%	0.3%	0.3%	0.2%	0.0%
841: Men's or boys' coats, capes, jackets, suits, blazers, trousers, shorts, shirts, underwear, nightwear and similar articles of textile fabrics, not knitted or crocheted (other than those of subgroup 845.2)	0.3%	0.5%	0.5%	0.5%	0.3%	0.1%	0.2%	0.1%	0.1%
842: Women's or girls' coats, capes, jackets, suits, trousers, shorts, shirts, dresses and skirts, underwear, nightwear and similar articles of textile fabrics, not knitted or crocheted (other than those of subgroup 845.2)	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.3%	0.6%
843: Men's or boys' coats, capes, jackets, suits, blazers, trousers, shorts, shirts, underwear, nightwear and similar articles of textile fabrics, knitted or crocheted (other than those of subgroup 845.2)	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%
844: Women's or girls' coats, capes, jackets, suits, trousers, shorts, shirts, dresses and skirts, underwear, nightwear and similar articles of textile fabrics, knitted or crocheted (other than those of subgroup 845.2)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
845: Articles of apparel, of textile fabrics, whether or not knitted or crocheted, n.e.s.	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%
846: Clothing accessories, of textile fabrics, whether or not knitted or crocheted (other than those for babies)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
848: Articles of apparel and clothing accessories of other than textile fabrics; headgear of all materials	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
851: Footwear	0.1%	0.2%	0.5%	0.9%	1.1%	0.7%	0.5%	0.6%	0.5%
871: Optical instruments and apparatus, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
872: Instruments and appliances, n.e.s., for medical, surgical, dental or veterinary purposes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
873: Meters and counters, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
874: Measuring, checking, analysing and controlling instruments and apparatus, n.e.s.	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
881: Photographic apparatus and equipment, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
882: Photographic and cinematographic supplies	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
883: Cinematographic film, exposed and developed, whether or not incorporating soundtrack or consisting only of soundtrack	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
884: Optical goods, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
885: Watches and clocks	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%
891: Arms and ammunition	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
892: Printed matter	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
893: Articles, n.e.s., of plastics	1.1%	1.9%	1.1%	2.9%	4.8%	5.3%	7.3%	8.7%	8.0%
894: Baby carriages, toys, games and sporting goods	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
895: Office and stationery supplies, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
896: Works of art, collectors' pieces and antiques	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
897: Jewellery, goldsmiths' and silversmiths' wares, and other articles of precious or semiprecious materials, n.e.s.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
898: Musical instruments and parts and accessories thereof; records, tapes and other sound or similar recordings (excluding goods of groups 763 and 883)	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
899: Miscellaneous manufactured articles, n.e.s.	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%
911: Postal packages not classified according to kind	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
931: Special transactions and commodities not classified according to kind	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
961: Coin (other than gold coin), not being legal tender	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
971: Gold, non-monetary (excluding gold ores and concentrates)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
972:	0.0%	0.0%	0.0%	1.6%	0.0%	1.0%	0.8%	0.8%	0.4%
999: unknown	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%

Annex D: Allocation of exports in SITC 3-digit product groups to ISIC 3-digit industries

SITC	ISIC	%-share of exports
1	12	78.6%
1	151	21.4%
11	151	100.0%
12	12	9.1%
12	151	90.9%
16	151	100.0%
17	151	100.0%
22	152	100.0%
23	152	100.0%
24	152	100.0%
25	12	25.0%
25	154	75.0%
34	50	38.1%
34	151	61.9%
35	151	100.0%
36	50	50.0%
36	151	50.0%
37	151	100.0%
41	11	100.0%
42	11	25.0%
42	153	75.0%
43	11	100.0%
44	11	100.0%
45	11	100.0%
46	153	100.0%
47	153	100.0%
48	153	54.5%
48	154	36.4%
48	155	9.1%
54	11	85.2%
54	151	14.8%
56	151	80.0%
56	153	20.0%
57	11	100.0%
58	151	100.0%
59	151	100.0%
61	12	7.1%
61	152	7.1%
61	153	35.7%
61	154	50.0%
62	154	100.0%
71	11	16.7%
71	154	83.3%
72	11	20.0%
72	154	80.0%
73	154	100.0%
74	11	50.0%
74	154	50.0%
75	11	100.0%
81	11	18.8%
81	151	68.8%

SITC	ISIC	%-share of exports
81	153	12.5%
91	151	100.0%
98	12	6.3%
98	154	93.8%
111	155	100.0%
112	155	100.0%
121	11	100.0%
122	160	100.0%
211	12	12.5%
211	151	87.5%
212	12	100.0%
222	11	100.0%
223	11	83.3%
223	151	16.7%
231	11	80.0%
231	20	20.0%
232	241	90.0%
232	251	10.0%
244	20	33.3%
244	202	66.7%
245	20	50.0%
245	241	50.0%
246	201	100.0%
247	20	75.0%
247	201	25.0%
248	201	100.0%
251	210	100.0%
261	12	33.3%
261	171	66.7%
263	11	33.3%
263	151	33.3%
263	171	33.3%
264	11	50.0%
264	171	50.0%
265	11	46.2%
265	171	53.8%
266	171	33.3%
266	243	66.7%
267	171	33.3%
267	243	66.7%
268	12	36.4%
268	151	9.1%
268	171	54.5%
269	369	100.0%
272	142	60.0%
272	241	40.0%
273	141	88.9%
273	269	11.1%
274	142	75.0%
274	241	25.0%
277	142	60.0%

SITC	ISIC	%-share of exports
277	369	40.0%
278	111	4.2%
278	141	20.8%
278	142	75.0%
281	131	66.7%
281	241	33.3%
283	132	33.3%
283	272	66.7%
284	132	33.3%
284	272	66.7%
285	132	50.0%
285	272	50.0%
286	120	100.0%
287	132	100.0%
289	132	100.0%
291	12	20.0%
291	50	40.0%
291	151	20.0%
291	930	20.0%
292	11	44.0%
292	20	52.0%
292	50	4.0%
321	101	100.0%
322	101	25.0%
322	102	50.0%
322	103	25.0%
325	231	100.0%
333	111	100.0%
334	232	100.0%
335	231	8.3%
335	232	33.3%
335	241	50.0%
335	269	8.3%
342	232	100.0%
343	111	100.0%
344	232	100.0%
345	402	100.0%
351	401	100.0%
411	151	80.0%
411	171	20.0%
421	151	87.5%
421	153	12.5%
422	151	100.0%
431	12	14.3%
431	151	57.1%
431	241	14.3%
431	242	14.3%
511	241	100.0%
512	155	10.0%
512	241	85.0%
512	242	5.0%

SITC	ISIC	%-share of exports
513	241	95.2%
513	242	4.8%
514	241	77.3%
514	242	22.7%
515	241	66.7%
515	242	33.3%
516	241	95.0%
516	242	5.0%
522	241	97.3%
522	269	2.7%
523	241	100.0%
524	241	100.0%
525	233	57.1%
525	241	28.6%
525	401	14.3%
531	241	100.0%
532	241	100.0%
533	241	42.1%
533	242	57.9%
541	242	100.0%
542	242	100.0%
551	242	100.0%
553	242	100.0%
554	242	100.0%
562	241	100.0%
571	241	100.0%
572	241	100.0%
573	241	100.0%
574	241	100.0%
575	241	100.0%
581	252	100.0%
582	252	100.0%
583	252	100.0%
591	242	100.0%
592	152	6.7%
592	153	53.3%
592	242	40.0%
593	242	100.0%
597	242	100.0%
598	241	17.9%
598	242	75.0%
598	269	7.1%
611	191	100.0%
612	191	100.0%
613	182	100.0%
621	251	100.0%
625	251	100.0%
629	251	100.0%
633	202	100.0%
634	20	6.7%
634	201	6.7%
634	202	86.7%
635	202	100.0%
641	210	100.0%

SITC	ISIC	%-share of exports
642	210	77.8%
642	222	22.2%
651	171	71.4%
651	172	2.0%
651	243	24.5%
651	261	2.0%
652	171	100.0%
653	171	100.0%
654	171	95.2%
654	261	4.8%
655	173	100.0%
656	172	100.0%
657	172	84.0%
657	181	8.0%
657	210	4.0%
657	251	4.0%
658	172	100.0%
659	172	85.7%
659	210	7.1%
659	369	7.1%
661	269	100.0%
662	269	100.0%
663	269	100.0%
664	261	100.0%
665	261	100.0%
666	269	100.0%
667	50	18.2%
667	142	27.3%
667	241	18.2%
667	369	36.4%
671	271	100.0%
672	271	100.0%
673	271	100.0%
674	271	100.0%
675	271	100.0%
676	271	100.0%
677	271	100.0%
678	271	100.0%
679	271	100.0%
681	272	100.0%
682	272	100.0%
683	272	100.0%
684	272	100.0%
685	272	100.0%
686	272	100.0%
687	272	100.0%
689	272	100.0%
691	281	100.0%
692	281	66.7%
692	289	33.3%
693	289	100.0%
694	289	100.0%
695	289	100.0%
696	289	100.0%

SITC	ISIC	%-share of exports
697	289	69.2%
697	293	30.8%
699	272	23.3%
699	289	76.7%
711	281	100.0%
712	291	100.0%
713	291	41.7%
713	341	25.0%
713	343	16.7%
713	353	16.7%
714	291	33.3%
714	353	66.7%
716	311	100.0%
718	233	11.1%
718	281	22.2%
718	291	66.7%
721	292	100.0%
722	292	100.0%
723	291	4.5%
723	292	95.5%
724	292	100.0%
725	292	100.0%
726	222	7.1%
726	292	85.7%
726	300	7.1%
727	292	100.0%
728	292	100.0%
731	292	100.0%
733	292	100.0%
735	292	100.0%
737	292	100.0%
741	291	75.8%
741	292	15.2%
741	293	6.1%
741	331	3.0%
742	291	100.0%
743	291	80.0%
743	292	10.0%
743	293	10.0%
744	291	96.8%
744	292	3.2%
745	291	66.7%
745	292	28.6%
745	319	4.8%
746	291	100.0%
747	291	100.0%
748	291	100.0%
749	289	8.3%
749	291	16.7%
749	292	75.0%
751	300	100.0%
752	300	100.0%
759	300	100.0%
761	323	100.0%

SITC	ISIC	%-share of exports
762	323	100.0%
763	322	12.5%
763	323	87.5%
764	32	4.8%
764	322	47.6%
764	323	42.9%
764	331	4.8%
771	311	100.0%
772	312	75.0%
772	321	25.0%
773	252	7.7%
773	261	7.7%
773	269	15.4%
773	313	46.2%
773	319	23.1%
774	331	100.0%
775	293	100.0%
776	321	100.0%
778	292	10.8%
778	314	10.8%
778	315	13.5%
778	319	40.5%
778	321	24.3%
781	341	100.0%
782	341	100.0%
783	341	100.0%
784	341	12.5%
784	343	87.5%
785	359	100.0%
786	292	12.5%
786	342	75.0%
786	359	12.5%

SITC	ISIC	%-share of exports
791	352	100.0%
792	353	100.0%
793	351	100.0%
811	281	100.0%
812	269	33.3%
812	281	16.7%
812	293	50.0%
813	252	10.0%
813	261	10.0%
813	315	80.0%
821	172	8.7%
821	361	91.3%
831	191	100.0%
841	181	100.0%
842	181	100.0%
843	181	100.0%
844	181	100.0%
845	173	10.0%
845	181	90.0%
846	173	18.8%
846	173	18.8%
846	181	62.5%
848	181	56.3%
848	182	12.5%
848	251	12.5%
848	252	18.8%
851	192	100.0%
871	331	15.4%
871	332	84.6%
872	331	100.0%
873	331	100.0%
874	331	97.3%

SITC	ISIC	%-share of exports
874	369	2.7%
881	315	6.7%
881	332	93.3%
882	242	66.7%
882	749	33.3%
883	921	100.0%
884	332	100.0%
885	191	3.8%
885	333	96.2%
891	289	6.7%
891	292	93.3%
892	210	5.6%
892	221	83.3%
892	222	5.6%
892	742	5.6%
893	252	100.0%
894	369	100.0%
895	242	11.1%
895	289	22.2%
895	369	66.7%
896	921	100.0%
897	369	100.0%
898	221	27.3%
898	242	22.7%
898	315	4.5%
898	369	45.5%
899	172	2.4%
899	202	9.8%
899	331	14.6%
899	369	73.2%
961	369	100.0%
971	272	100.0%

Source: author's calculations.

Annex E: Export specialisation by industries

Code Description	LQ 2012	LQ 2013	LQ 2014	LQ 2015	LQ 2016	LQ 2017	LQ 2018	LQ 2019	LQ 2020	# LQ > 1.5	Trend (slope / average)	Adjusted R2	Trend positive and significant
A Agriculture, hunting and forestry													
011 Growing of crops; market gardening, horticulture	0.209	0.169	0.210	0.203	0.264	0.247	0.295	0.299	0.322	0	0.071	0.833	1
012 Farming of animals	0.226	0.199	0.241	0.249	0.210	0.222	0.214	0.210	0.196	0	-0.013	0.064	0
013 Growing of crops combined with farming of animals (mixed farming)													
014 Agricultural and animal husbandry service activities, except veterinary activities													
015 Hunting, trapping and game propagation including related service activities													
020 Forestry, logging and related service activities	0.405	0.336	0.496	0.740	1.004	1.054	1.244	1.821	2.845	2	0.242	0.805	1
B Fishing													
050 Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	0.027	0.026	0.078	0.036	0.056	0.066	0.077	0.131	0.138	0	0.187	0.728	1
C Mining and quarrying													
101 Mining and agglomeration of hard coal	1.439	1.690	0.000	1.804	3.471	7.989	1.879	2.718	2.345	7	0.107	-0.011	0
102 Mining and agglomeration of lignite	1.563	2.803	0.000	2.988	5.549	14.400	4.306	4.729	3.376	8	0.125	0.012	0
103 Extraction and agglomeration of peat	1.563	2.803	0.000	2.988	5.549	14.400	4.306	4.729	3.376	8	0.125	0.012	0
111 Extraction of crude petroleum and natural gas	0.007	0.077	0.134	0.181	0.206	0.372	0.859	0.176	0.013	0	0.146	-0.010	0
112 Service activities incidental to oil and gas extraction excluding surveying													
120 Mining of uranium and thorium ores													
131 Mining of iron ores	0.004	0.000	0.020	0.069	0.000	0.000	12.722	0.217	0.965	1	0.320	-0.023	0
132 Mining of non-ferrous metal ores, except uranium and thorium ores	7.359	5.591	9.609	9.385	10.811	5.933	10.240	10.609	8.147	9	0.031	0.014	0
141 Quarrying of stone, sand and clay	0.306	1.931	1.618	0.993	0.410	0.947	0.993	0.500	0.281	2	-0.107	0.083	0
142 Mining and quarrying n.e.c.	0.135	2.972	2.978	2.970	2.732	4.293	7.610	4.778	1.338	7	0.105	0.085	0
D Manufacturing													
151 Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats	0.391	0.328	0.388	0.371	0.342	0.346	0.423	0.494	0.458	0	0.034	0.360	0
152 Manufacture of dairy products	0.062	0.032	0.020	0.016	0.022	0.053	0.058	0.051	0.050	0	0.048	-0.040	0
153 Manufacture of grain mill products, starches and starch products, and prepared animal feeds	1.428	1.548	2.258	1.754	1.308	0.996	1.158	1.243	0.832	3	-0.075	0.367	0
154 Manufacture of other food products	0.200	0.082	0.195	0.226	0.323	0.430	0.392	0.309	0.329	0	0.109	0.498	0
155 Manufacture of beverages	2.130	3.247	5.069	5.493	4.847	6.713	7.410	9.213	10.868	9	0.160	0.928	1
160 Manufacture of tobacco products	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0			0
171 Spinning, weaving and finishing of textiles	2.271	2.969	3.603	3.747	3.287	1.944	0.324	0.615	0.569	6	-0.173	0.490	0
172 Manufacture of other textiles	1.626	1.656	1.526	1.412	1.769	2.369	3.498	3.305	3.138	8	0.117	0.706	1
173 Manufacture of knitted and crocheted fabrics and articles	0.011	0.019	0.032	0.023	0.032	0.033	0.036	0.057	0.190	0	0.293	0.428	0

Code Description	LQ 2012	LQ 2013	LQ 2014	LQ 2015	LQ 2016	LQ 2017	LQ 2018	LQ 2019	LQ 2020	# LQ > 1.5	Trend (slope / average)	Adjusted R2	Trend positive and significant
181 Manufacture of wearing apparel, except fur apparel	0.049	0.093	0.114	0.170	0.183	0.211	0.143	0.126	0.195	0	0.092	0.382	0
182 Dressing and dyeing of fur; manufacture of articles of fur	0.014	0.008	0.006	0.013	0.010	0.018	0.017	0.019	0.005	0	0.036	-0.088	0
191 Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness	0.015	0.003	0.349	0.169	0.338	0.128	0.768	0.492	0.550	0	0.235	0.544	0
192 Manufacture of footwear	0.008	0.015	0.027	0.126	0.316	0.587	0.625	0.432	0.319	0	0.254	0.555	0
201 Sawmilling and planing of wood	0.030	0.021	0.052	0.063	0.075	0.104	0.157	0.159	0.147	0	0.210	0.901	1
202 Manufacture of products of wood, cork, straw and plaiting materials	0.744	0.915	1.053	1.121	1.225	1.113	1.547	1.403	1.785	2	0.091	0.862	1
210 Manufacture of paper and paper products	0.265	0.425	0.587	0.551	0.754	0.775	1.204	1.309	1.291	0	0.172	0.928	1
221 Publishing	1.874	0.366	0.420	0.541	0.361	0.738	0.610	0.441	0.762	1	-0.089	-0.001	0
222 Printing and service activities related to printing	0.326	0.245	0.165	0.179	0.251	0.598	0.733	1.141	1.179	0	0.238	0.717	1
223 Reproduction of recorded media													
231 Manufacture of coke oven products	0.008	0.004	0.016	0.008	0.003	0.057	0.027	0.045	0.062	0	0.269	0.594	0
232 Manufacture of refined petroleum products	0.002	0.001	0.002	0.003	0.001	0.011	0.007	0.013	0.029	0	0.355	0.585	0
233 Processing of nuclear fuel	0.017	0.002	0.021	0.003	0.000	0.006	0.006	0.000	0.002	0	-0.249	0.229	0
241 Manufacture of basic chemicals	0.058	0.081	0.064	0.074	0.088	0.118	0.207	0.201	0.171	0	0.161	0.733	1
242 Manufacture of other chemical products	0.117	0.073	0.095	0.090	0.101	0.115	0.168	0.182	0.249	0	0.129	0.641	0
243 Manufacture of man-made fibres	4.462	5.572	6.334	6.980	6.536	4.200	0.619	1.084	0.774	6	-0.174	0.494	0
251 Manufacture of rubber products	6.957	9.628	9.534	7.832	4.893	4.200	3.327	2.222	2.249	9	-0.168	0.760	0
252 Manufacture of plastics products	0.609	0.698	1.199	1.761	1.432	2.631	3.709	3.557	4.599	5	0.226	0.919	1
261 Manufacture of glass and glass products	0.101	0.140	0.139	0.269	0.933	0.559	0.245	0.592	0.843	0	0.189	0.409	0
269 Manufacture of non-metallic mineral products n.e.c.	0.469	0.614	0.342	0.860	0.746	0.798	0.802	0.911	1.047	0	0.092	0.658	0
271 Manufacture of basic iron and steel	9.726	10.199	9.179	10.280	14.167	13.157	4.139	7.565	5.691	9	-0.056	0.081	0
272 Manufacture of basic precious and non-ferrous metals	0.129	0.074	0.117	0.130	0.099	0.193	0.187	0.223	0.249	0	0.121	0.713	1
273 Casting of metals													
281 Manufacture of structural metal products, tanks, reservoirs and steam generators	0.358	0.585	0.954	0.600	1.173	2.602	11.977	1.404	2.079	3	0.230	0.055	0
289 Manufacture of other fabricated metal products; metal working service activities	0.422	0.398	0.622	0.494	0.578	0.543	0.913	0.840	1.428	0	0.144	0.658	0
291 Manufacture of general purpose machinery	0.181	1.035	0.914	0.275	0.255	0.213	0.174	0.147	0.142	0	-0.196	0.234	0
292 Manufacture of special purpose machinery	0.855	0.637	0.742	0.340	0.539	0.423	0.428	0.330	0.514	0	-0.088	0.443	0
293 Manufacture of domestic appliances n.e.c.	0.420	0.276	0.418	0.637	0.482	0.644	0.809	0.722	0.819	0	0.107	0.765	1
300 Manufacture of office, accounting and computing machinery	0.683	0.511	0.217	0.131	0.333	1.434	0.461	0.237	0.241	0	-0.028	-0.133	0
311 Manufacture of electric motors, generators and transformers	0.184	0.180	0.098	0.066	0.151	0.098	0.243	0.101	0.093	0	-0.035	-0.087	0
312 Manufacture of electricity distribution and control apparatus	0.018	0.005	0.117	0.020	0.021	0.024	0.015	0.015	0.046	0	-0.031	-0.136	0
313 Manufacture of insulated wire and cable	0.017	0.020	0.010	0.012	0.008	0.006	0.020	0.009	0.014	0	-0.035	-0.080	0
314 Manufacture of accumulators, primary cells and primary batteries	0.589	0.708	1.420	1.891	1.285	0.704	0.860	0.843	0.600	1	-0.031	-0.102	0
315 Manufacture of electric lamps and lighting equipment	0.366	0.605	0.423	0.558	0.437	0.335	0.355	0.467	0.390	0	-0.026	-0.016	0

Code Description	LQ 2012	LQ 2013	LQ 2014	LQ 2015	LQ 2016	LQ 2017	LQ 2018	LQ 2019	LQ 2020	# LQ > 1.5	Trend (slope / average)	Adjusted R2	Trend positive and significant
319 Manufacture of other electrical equipment n.e.c.	0.258	0.344	0.528	0.691	0.442	0.240	0.305	0.294	0.224	0	-0.054	-0.005	0
321 Manufacture of electronic valves and tubes and other electronic components	0.134	0.111	0.341	0.416	0.295	0.142	0.170	0.180	0.314	0	0.022	-0.123	0
322 Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	0.303	0.268	0.120	0.809	0.165	0.515	0.607	0.355	0.753	0	0.106	0.143	0
323 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods	0.219	0.170	0.085	0.403	0.129	0.244	0.289	0.213	0.429	0	0.084	0.120	0
331 Manufacture of medical appliances and instruments and appliances for measuring, checking, testing, navigating and other purposes, except optical instruments	0.383	0.412	0.267	0.290	0.189	0.209	0.209	0.153	0.264	0	-0.092	0.519	0
332 Manufacture of optical instruments and photographic equipment	0.049	0.090	0.031	0.012	0.073	0.032	0.269	0.037	0.490	0	0.291	0.275	0
333 Manufacture of watches and clocks	0.000	0.022	0.000	0.007	0.029	0.026	0.703	1.144	1.725	1	0.480	0.647	0
341 Manufacture of motor vehicles	0.478	0.354	0.360	0.375	0.414	0.425	0.228	0.120	0.302	0	-0.080	0.379	0
342 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	0.088	0.270	0.113	0.043	0.144	0.070	0.131	0.039	0.059	0	-0.117	0.114	0
343 Manufacture of parts and accessories for motor vehicles and their engines	0.298	0.064	0.279	0.362	0.343	0.290	0.123	0.192	0.268	0	-0.008	-0.139	0
351 Building and repairing of ships and boats	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.001	0.002	0	0.397	0.223	0
352 Manufacture of railway and tramway locomotives and rolling stock	0.109	0.691	0.275	0.000	0.010	0.000	0.000	0.000	0.000	0	-0.423	0.267	0
353 Manufacture of aircraft and spacecraft	0.002	0.116	0.724	0.705	0.945	0.594	0.113	0.056	0.013	0	-0.067	-0.106	0
359 Manufacture of transport equipment n.e.c.	0.011	0.047	0.165	0.006	0.111	0.132	0.083	0.009	0.041	0	-0.009	-0.142	0
361 Manufacture of furniture	0.209	0.174	0.251	0.223	0.281	0.399	0.705	0.828	1.216	0	0.248	0.770	1
369 Manufacturing n.e.c.	1.279	0.349	0.468	0.631	0.421	0.376	0.430	0.420	0.516	0	-0.097	0.145	0
371 Recycling of metal waste and scrap													
372 Recycling of non-metal waste and scrap													
E Electricity, gas and water supply													
401 Production, collection and distribution of electricity	3.325	3.198	3.474	5.267	3.684	3.781	8.403	6.444	4.763	9	0.085	0.298	0
402 Manufacture of gas; distribution of gaseous fuels through mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0			0
403 Steam and hot water supply													
410 Collection, purification and distribution of water													
F Construction													
451 Site preparation													
452 Building of complete constructions or parts thereof; civil engineering													
453 Building installation													
454 Building completion													
455 Renting of construction or demolition equipment with operator													
G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods													

Code Description	LQ 2012	LQ 2013	LQ 2014	LQ 2015	LQ 2016	LQ 2017	LQ 2018	LQ 2019	LQ 2020	# LQ > 1.5	Trend (slope / average)	Adjusted R2	Trend positive and significant
501 Sale of motor vehicles													
502 Maintenance and repair of motor vehicles													
503 Sale of motor vehicle parts and accessories													
504 Sale, maintenance and repair of motorcycles and related parts and accessories													
505 Retail sale of automotive fuel													
511 Wholesale on a fee or contract basis													
512 Wholesale of agricultural raw materials, live animals, food, beverages and tobacco													
513 Wholesale of household goods													
514 Wholesale of non-agricultural intermediate products, waste and scrap													
515 Wholesale of machinery, equipment and supplies													
519 Other wholesale													
521 Non-specialized retail trade in stores													
522 Retail sale of food, beverages and tobacco in specialized stores													
523 Other retail trade of new goods in specialized stores													
524 Retail sale of second-hand goods in stores													
525 Retail trade not in stores													
526 Repair of personal and household goods													
H Hotels and restaurants													
551 Hotels; camping sites and other provision of short-stay accommodation													
552 Restaurants, bars and canteens													
I Transport, storage and communications													
601 Transport via railways													
602 Other land transport													
603 Transport via pipelines													
611 Sea and coastal water transport													
612 Inland water transport													
621 Scheduled air transport													
622 Non-scheduled air transport													
630 Supporting and auxiliary transport activities; activities of travel agencies													
641 Post and courier activities													
642 Telecommunications													
J Financial intermediation													
651 Monetary intermediation													
659 Other financial intermediation													

Code Description	LQ 2012	LQ 2013	LQ 2014	LQ 2015	LQ 2016	LQ 2017	LQ 2018	LQ 2019	LQ 2020	# LQ > 1.5	Trend (slope / average)	Adjusted R2	Trend positive and significant
660 Insurance and pension funding, except compulsory social security													
671 Activities auxiliary to financial intermediation, except insurance and pension funding													
672 Activities auxiliary to insurance and pension funding													
K Real estate, renting and business activities													
701 Real estate activities with own or leased property													
702 Real estate activities on a fee or contract basis													
711 Renting of transport equipment													
712 Renting of other machinery and equipment													
713 Renting of personal and household goods n.e.c.													
721 Hardware consultancy													
722 Software consultancy and supply													
723 Data processing													
724 Data base activities													
725 Maintenance and repair of office, accounting and computing machinery													
729 Other computer related activities													
731 Research and experimental development on natural sciences and engineering (NSE)													
732 Research and experimental development on social sciences and humanities (SSH)													
741 Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy													
742 Architectural, engineering and other technical activities	0.457	0.266	0.259	0.400	0.216	0.606	0.468	0.271	0.603	0	0.052	0.015	0
743 Advertising													
749 Business activities n.e.c.	0.055	0.148	0.215	0.387	0.066	0.639	0.881	0.165	0.000	0	0.083	-0.089	0
L Public administration and defence; compulsory social security													
751 Administration of the State and the economic and social policy of the community													
752 Provision of services to the community as a whole													
753 Compulsory social security activities													
M Education													
801 Primary education													
802 Secondary education													
803 Higher education													
809 Adult and other education													
N Health and social work													
851 Human health activities													

Code Description	LQ 2012	LQ 2013	LQ 2014	LQ 2015	LQ 2016	LQ 2017	LQ 2018	LQ 2019	LQ 2020	# LQ > 1.5	Trend (slope / average)	Adjusted R2	Trend positive and significant
852 Veterinary activities													
853 Social work activities													
O Other community, social and personal service activities													
900 Sewage and refuse disposal, sanitation and similar activities													
911 Activities of business, employers and professional organizations													
912 Activities of trade unions													
919 Activities of other membership organizations													
921 Motion picture, radio, television and other entertainment activities	0.026	0.036	0.000	0.000	0.044	0.204	0.257	0.240	0.629	0	0.391	0.652	0
922 News agency activities													
923 Library, archives, museums and other cultural activities													
924 Sporting and other recreational activities													
930 Other service activities	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0			0
P Private households with employed persons													
950 Private households with employed persons													
Q Extra-territorial organizations and bodies													
990 Extra-territorial organizations and bodies													

Annex F: Web of Science publications: %-shares by category

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agricultural Economics Policy	0.0%	0.0%	0.0%	0.0%	0.7%	1.2%	0.7%	1.6%	0.9%
Agricultural Engineering	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Agriculture Dairy Animal Science	0.0%	0.0%	0.0%	1.1%	2.1%	1.2%	0.7%	0.6%	0.3%
Agriculture Multidisciplinary	0.0%	0.0%	0.0%	0.0%	0.7%	0.8%	0.0%	1.6%	0.0%
Agronomy	0.0%	25.0%	0.0%	0.0%	0.7%	0.4%	1.4%	0.0%	0.3%
Allergy	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Anatomy Morphology	0.0%	0.0%	0.0%	0.0%	1.4%	0.4%	1.4%	1.3%	0.6%
Anaesthesiology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Anthropology	0.0%	0.0%	2.1%	0.0%	0.0%	0.8%	0.3%	0.3%	0.0%
Architecture	0.0%	0.0%	0.0%	2.2%	2.1%	2.0%	0.3%	0.0%	0.0%
Area Studies	0.0%	0.0%	0.0%	4.3%	0.7%	1.6%	1.7%	0.9%	1.5%
Art	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%
Automation Control Systems	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.3%	0.0%
Behavioural Sciences	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Biochemical Research Methods	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.3%	0.0%
Biochemistry Molecular Biology	0.0%	0.0%	8.5%	2.2%	2.1%	1.2%	2.0%	2.5%	0.6%
Biodiversity Conservation	0.0%	0.0%	2.1%	1.1%	0.0%	0.4%	0.3%	0.3%	0.3%
Biology	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.6%	0.0%
Biophysics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Biotechnology Applied Microbiology	50.0%	0.0%	2.1%	0.0%	0.7%	1.2%	1.7%	0.3%	0.3%
Business	0.0%	0.0%	0.0%	0.0%	1.4%	0.8%	2.4%	0.9%	1.8%
Business Finance	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.0%	0.6%
Cardiac Cardiovascular Systems	0.0%	0.0%	2.1%	4.3%	1.4%	2.0%	1.7%	0.9%	0.6%
Cell Biology	0.0%	0.0%	2.1%	1.1%	0.0%	0.4%	1.4%	0.0%	0.6%
Cell Tissue Engineering	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Chemistry Analytical	0.0%	0.0%	0.0%	0.0%	2.1%	1.2%	2.0%	0.9%	2.1%
Chemistry Applied	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.6%	0.6%
Chemistry Inorganic Nuclear	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	0.3%	0.0%	0.3%
Chemistry Medicinal	0.0%	0.0%	2.1%	4.3%	0.7%	1.6%	0.3%	2.2%	1.2%
Chemistry Multidisciplinary	0.0%	0.0%	4.3%	5.4%	4.2%	2.7%	2.4%	2.8%	3.5%
Chemistry Organic	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.3%	0.0%
Chemistry Physical	0.0%	0.0%	2.1%	0.0%	2.1%	1.2%	1.0%	1.3%	3.5%
Clinical Neurology	0.0%	0.0%	0.0%	4.3%	0.0%	0.4%	1.0%	0.0%	0.0%
Communication	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Computer Science Artificial Intelligence	0.0%	0.0%	0.0%	0.0%	1.4%	2.0%	0.7%	0.0%	0.3%
Computer Science Cybernetics	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%
Computer Science Information Systems	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	1.0%	0.9%	0.9%
Computer Science Interdisciplinary Applications	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Computer Science Theory Methods	0.0%	0.0%	0.0%	3.3%	0.7%	0.0%	0.7%	0.6%	0.0%
Construction Building Technology	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.3%	0.3%
Criminology Penology	0.0%	0.0%	0.0%	0.0%	1.4%	0.4%	0.0%	0.3%	0.9%
Crystallography	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Cultural Studies	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Dentistry Oral Surgery Medicine	0.0%	0.0%	4.3%	1.1%	3.5%	2.7%	3.8%	2.2%	0.9%
Dermatology	0.0%	0.0%	2.1%	0.0%	0.7%	0.0%	0.3%	0.6%	0.0%
Development Studies	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%
Developmental Biology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Ecology	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.3%	0.3%	1.2%
Economics	0.0%	0.0%	2.1%	2.2%	2.1%	4.3%	3.8%	5.1%	4.4%
Education Educational Research	0.0%	0.0%	0.0%	1.1%	0.7%	0.8%	1.7%	0.6%	3.5%
Education Scientific Disciplines	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.6%
Electrochemistry	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	1.7%	0.3%	0.9%
Emergency Medicine	0.0%	0.0%	2.1%	1.1%	0.0%	0.4%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Endocrinology Metabolism	0.0%	0.0%	2.1%	0.0%	1.4%	0.8%	1.0%	1.3%	0.3%
Energy Fuels	0.0%	0.0%	2.1%	1.1%	0.0%	0.0%	0.7%	0.6%	0.9%
Engineering Biomedical	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.3%	0.0%
Engineering Chemical	0.0%	0.0%	0.0%	0.0%	1.4%	0.4%	0.7%	0.6%	0.3%
Engineering Civil	0.0%	0.0%	2.1%	0.0%	1.4%	0.8%	1.0%	0.9%	1.2%
Engineering Electrical Electronic	0.0%	0.0%	2.1%	1.1%	2.8%	1.6%	3.1%	1.6%	0.6%
Engineering Environmental	0.0%	0.0%	0.0%	0.0%	2.1%	0.8%	1.7%	3.5%	0.9%
Engineering Geological	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Engineering Industrial	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%
Engineering Manufacturing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Engineering Mechanical	0.0%	25.0%	0.0%	0.0%	0.0%	1.6%	0.7%	0.0%	0.0%
Engineering Multidisciplinary	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.3%	0.9%	1.8%
Entomology	0.0%	0.0%	2.1%	1.1%	0.7%	0.8%	0.3%	0.6%	0.9%
Environmental Sciences	0.0%	0.0%	14.9%	9.8%	14.8%	12.5%	7.5%	9.8%	11.1%
Environmental Studies	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.7%	0.0%	0.0%
Ergonomics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Ethics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%
Ethnic Studies	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.3%	0.3%	0.6%
Evolutionary Biology	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Family Studies	0.0%	0.0%	0.0%	1.1%	0.0%	0.4%	0.0%	0.3%	0.6%
Fisheries	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.3%	0.3%	0.3%
Folklore	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Food Science Technology	0.0%	0.0%	2.1%	1.1%	0.0%	2.7%	1.7%	0.9%	1.2%
Forestry	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	0.3%	0.3%	0.3%
Gastroenterology Hepatology	0.0%	0.0%	2.1%	0.0%	0.7%	0.4%	0.3%	0.6%	0.0%
Genetics Heredity	0.0%	0.0%	4.3%	1.1%	0.7%	0.4%	1.0%	0.0%	0.9%
Geochemistry Geophysics	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%
Geography	0.0%	0.0%	0.0%	2.2%	0.7%	0.8%	1.4%	0.3%	0.6%
Geosciences Multidisciplinary	0.0%	0.0%	2.1%	0.0%	2.1%	0.8%	0.0%	0.6%	0.3%
Geriatrics Gerontology	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.3%	0.3%	0.3%
Green Sustainable Science Technology	0.0%	0.0%	0.0%	1.1%	0.7%	1.2%	1.4%	0.3%	0.6%
Health Care Sciences Services	0.0%	0.0%	0.0%	2.2%	2.1%	0.4%	0.3%	0.3%	0.3%
Health Policy Services	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	0.7%	0.3%	0.3%
History	0.0%	0.0%	0.0%	2.2%	0.0%	0.8%	1.4%	1.9%	0.6%
Horticulture	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Hospitality Leisure Sport Tourism	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Humanities Multidisciplinary	0.0%	0.0%	0.0%	4.3%	0.7%	1.2%	3.4%	2.2%	1.2%
Immunology	0.0%	0.0%	0.0%	1.1%	0.0%	0.4%	1.7%	0.3%	0.3%
Industrial Relations Labour	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Infectious Diseases	0.0%	0.0%	2.1%	0.0%	3.5%	2.3%	2.0%	2.2%	1.5%
Information Science Library Science	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Instruments Instrumentation	0.0%	0.0%	0.0%	1.1%	0.7%	0.8%	0.0%	0.0%	0.6%
Integrative Complementary Medicine	0.0%	0.0%	0.0%	1.1%	0.7%	0.0%	0.0%	0.6%	0.6%
International Relations	0.0%	0.0%	2.1%	1.1%	0.7%	1.2%	0.7%	0.9%	0.9%
Language Linguistics	0.0%	0.0%	0.0%	1.1%	0.0%	0.4%	0.3%	0.3%	0.3%
Law	0.0%	0.0%	0.0%	1.1%	2.1%	0.4%	4.1%	2.5%	2.6%
Limnology	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.3%
Linguistics	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.3%	0.6%
Literary Reviews	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Literature	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	0.3%	0.6%	0.0%
Management	0.0%	0.0%	0.0%	0.0%	1.4%	0.8%	1.0%	2.5%	1.8%
Marine Freshwater Biology	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.3%	0.3%	0.3%
Materials Science Biomaterials	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Materials Science Characterization Testing	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Materials Science Coatings Films	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Materials Science Composites	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.0%	0.0%
Materials Science Multidisciplinary	0.0%	25.0%	2.1%	1.1%	0.7%	0.8%	0.7%	0.3%	2.9%
Materials Science Paper Wood	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%
Mathematical Computational Biology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Mathematics	0.0%	0.0%	8.5%	6.5%	4.9%	6.6%	5.1%	6.0%	5.9%
Mathematics Applied	0.0%	0.0%	10.6%	2.2%	2.1%	3.1%	1.4%	2.5%	2.9%
Mathematics Interdisciplinary Applications	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%
Mechanics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.6%
Medical Informatics	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%
Medical Laboratory Technology	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.3%	0.0%
Medicine General Internal	0.0%	0.0%	4.3%	1.1%	1.4%	3.5%	3.8%	3.5%	4.1%
Medicine Legal	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.7%	0.0%	0.3%
Medicine Research Experimental	0.0%	0.0%	2.1%	3.3%	2.1%	0.0%	3.8%	1.6%	1.5%
Medieval Renaissance Studies	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.3%	0.0%
Metallurgy Metallurgical Engineering	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.9%
Meteorology Atmospheric Sciences	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%
Microbiology	0.0%	0.0%	2.1%	0.0%	0.0%	0.8%	0.3%	1.3%	0.3%
Mineralogy	0.0%	0.0%	0.0%	1.1%	0.7%	0.0%	0.0%	0.0%	0.0%
Mining Mineral Processing	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	0.3%	0.6%	1.2%
Multidisciplinary Sciences	0.0%	0.0%	0.0%	3.3%	3.5%	3.1%	2.0%	0.6%	2.9%
Mycology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Nanoscience Nanotechnology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%
Neurosciences	0.0%	0.0%	0.0%	2.2%	0.0%	0.8%	1.7%	0.9%	0.6%
Nuclear Science Technology	0.0%	0.0%	2.1%	0.0%	0.7%	0.4%	0.3%	0.0%	0.0%
Nursing	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Nutrition Dietetics	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.9%	0.3%
Obstetrics Gynaecology	0.0%	0.0%	0.0%	0.0%	1.4%	0.8%	1.4%	0.3%	0.6%
Oncology	0.0%	0.0%	4.3%	1.1%	0.0%	0.4%	0.3%	0.6%	0.3%
Ophthalmology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Optics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.6%
Orthopaedics	0.0%	0.0%	4.3%	1.1%	0.0%	0.8%	0.0%	0.3%	0.3%
Otorhinolaryngology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Parasitology	0.0%	0.0%	2.1%	0.0%	0.0%	0.8%	0.7%	0.3%	0.6%
Pathology	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.3%	0.6%	0.0%
Paediatrics	50.0%	0.0%	2.1%	0.0%	0.7%	0.0%	0.7%	0.6%	1.2%
Peripheral Vascular Disease	0.0%	0.0%	4.3%	1.1%	0.0%	0.0%	0.0%	0.6%	0.0%
Pharmacology Pharmacy	0.0%	0.0%	2.1%	4.3%	1.4%	5.1%	2.0%	2.5%	2.1%
Philosophy	0.0%	25.0%	0.0%	0.0%	0.7%	0.0%	1.7%	0.3%	0.9%
Physics Applied	0.0%	0.0%	0.0%	1.1%	0.0%	0.4%	0.7%	0.0%	2.1%
Physics Atomic Molecular Chemical	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	1.2%
Physics Condensed Matter	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.7%	0.0%	0.6%
Physics Mathematical	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Physics Multidisciplinary	0.0%	0.0%	0.0%	3.3%	4.2%	2.0%	1.0%	1.6%	1.5%
Physiology	0.0%	0.0%	6.4%	1.1%	0.0%	0.4%	0.7%	0.6%	0.6%
Plant Sciences	0.0%	0.0%	2.1%	2.2%	0.0%	0.8%	1.0%	0.0%	0.9%
Political Science	0.0%	0.0%	2.1%	1.1%	0.7%	0.4%	1.0%	1.3%	1.2%
Primary Health Care	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Psychiatry	0.0%	25.0%	0.0%	1.1%	0.7%	0.8%	1.0%	3.5%	2.1%
Psychology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Psychology Applied	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.6%
Psychology Biological	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Psychology Clinical	0.0%	25.0%	0.0%	1.1%	0.0%	0.4%	0.3%	1.3%	0.6%
Psychology Developmental	0.0%	0.0%	0.0%	1.1%	0.7%	0.0%	0.7%	1.6%	0.6%

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Psychology Educational	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.3%
Psychology Experimental	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Psychology Multidisciplinary	0.0%	0.0%	0.0%	0.0%	1.4%	0.4%	0.0%	0.9%	1.2%
Psychology Psychoanalysis	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Psychology Social	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.3%	0.9%
Public Administration	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.3%	1.2%
Public Environmental Occupational Health	0.0%	0.0%	4.3%	2.2%	4.9%	3.1%	1.0%	2.2%	4.1%
Quantum Science Technology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%
Radiology Nuclear Medicine Medical Imaging	0.0%	0.0%	2.1%	1.1%	0.0%	0.0%	0.3%	0.3%	0.3%
Rehabilitation	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%
Religion	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Remote Sensing	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Reproductive Biology	0.0%	0.0%	0.0%	0.0%	0.7%	0.4%	0.3%	0.0%	0.3%
Respiratory System	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Rheumatology	0.0%	0.0%	2.1%	1.1%	0.0%	0.4%	0.0%	0.6%	0.0%
Social Issues	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Social Sciences Biomedical	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.3%	0.3%	0.3%
Social Sciences Interdisciplinary	0.0%	0.0%	0.0%	0.0%	1.4%	0.8%	0.3%	0.3%	0.3%
Social Work	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.6%
Sociology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.2%
Soil Science	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Spectroscopy	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.3%	0.3%
Sport Sciences	0.0%	0.0%	0.0%	1.1%	3.5%	2.7%	1.0%	0.9%	0.9%
Statistics Probability	0.0%	0.0%	0.0%	0.0%	1.4%	1.2%	0.3%	0.0%	0.3%
Substance Abuse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.6%
Surgery	0.0%	0.0%	4.3%	6.5%	2.1%	1.2%	0.7%	3.2%	0.9%
Telecommunications	0.0%	0.0%	0.0%	0.0%	0.7%	0.8%	1.4%	0.6%	0.0%
Thermodynamics	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.3%	0.9%
Toxicology	0.0%	0.0%	4.3%	0.0%	1.4%	1.2%	1.0%	0.6%	0.3%
Transplantation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Transportation	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.6%	0.6%
Transportation Science Technology	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Tropical Medicine	0.0%	0.0%	2.1%	0.0%	0.0%	0.4%	0.7%	0.3%	0.3%
Urology Nephrology	0.0%	0.0%	4.3%	0.0%	0.0%	0.0%	0.3%	0.3%	0.6%
Veterinary Sciences	0.0%	0.0%	0.0%	1.1%	2.8%	0.8%	1.0%	0.3%	2.6%
Virology	0.0%	0.0%	2.1%	0.0%	0.7%	0.0%	0.3%	0.0%	0.0%
Water Resources	0.0%	0.0%	0.0%	0.0%	2.8%	0.8%	0.7%	0.0%	0.0%
Women S Studies	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Zoology	0.0%	0.0%	0.0%	1.1%	0.7%	0.4%	0.7%	0.3%	0.3%

Annex G Survey Questionnaires

1. Business Survey

A. Business Profile

A1. Can you please specify which of the following you represent?

1. a company
2. a cluster
3. an association of businesses

A2. In case you are a business please write down the Business Name.

[_____]

A3. In case you are an association or cluster, please write down the Name.

[_____]

A4. Year of Establishment [_____]

A5. What size is your business (by number of employees)?

1. Micro enterprise (1-9 employees)
2. Small enterprise (10-49 employees)
3. Medium enterprise (50-249 employees)
4. Large enterprise (250 and more employees)
5. Don't know/No answer

A6. Please tell us what are the main sub sectors of your business? (if not listed, please select other and describe- you can select up to three sub sectors, the NACE rev.2 Codes are included)

B. Market potential

This section contributes to explore the potential of the regional, local and Kosovo market to grow, based on both the perception and the existing conditions of the companies.

B1. Where do you see most market growth potential for your business in the near future?

1. Domestic market
2. Foreign markets (i.e., exports)
3. Equally in the domestic and in the foreign markets
4. Neither in the domestic nor in the foreign markets
5. Don't know/No answer

B2. Did the number of competitors in your market change in the last three years?

1. Yes, it increased
2. Yes, it decreased
3. It remained the same
4. Do not know/No answer

C. Research and Innovation Potential

This section contributes to exploring business potential for participating or leading research and development projects, introducing innovative products or processes, and playing as a determinant for higher competitiveness for the reference sector in Kosovo.

C1. In the last 5 years or since you founded the company, has your company introduced new or significantly improved technology?

C2. In the last 5 years or since you founded the company, has your company acquired any patent?

- C3. Does your company plan to invest more in technology in the next 3 years?
- C4. Does your company carry out research and development activities?
- C5. Do you have collaborations with academia or research institutes?
- C6. Do you have collaborations with other companies in Research & Development activities?
- C7. If you carry out research and development activities, please specify in what domain are those:
1. New products
 2. New processes
 3. Improvement to existing products
 4. Improvement to existing processes (digitalization or technology innovations)
 5. Improvement to existing processes (energy-efficiency, cost-efficiency)
 6. We don't carry out research and development activities
- C8. What do you think are the main determinants of innovation potential of your company?
1. Market structure
 2. Firm Size
 3. Technological opportunity
 4. Collaboration with R&D partners
 5. Appropriability conditions
 6. Finance
 7. Other Factors, please specify (_____)
 8. The company does not have an innovation potential
- C9. To what extent do the following factors prevent your company in carrying out innovation activities? (Barriers to innovation)
1. Firm size
 2. Lack of funds/finance
 3. Lack of qualified workforce
 4. Lack of technologies/infrastructures
 5. Low demand from the market/sector
 6. Unfavorable legislation/regulation/ standards
 7. Other Factors, please specify (_____)

D. Sector potential

This section contributes to explore the innovative potential of the whole sector to lead the growth and competitiveness of the Kosovo economy.

D1. Can you please tell us what are the factors that make your sector strong (you can select the two most important factors)?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

D2. Which are, in your opinion, the main weaknesses of the sector (you can select the two most important factors)?

1. Low potential to export

2. Low capacities for Research and Development and Innovation
3. Poorly qualified workforce
4. Mismatch Education – Labor market
5. Low quality of standard certifications
6. Poor know-how and lack of new technology
7. Lack of capital
8. Unfavorable tax regime
9. Low access to finance
10. Other, please specify (_____)

D3. Do you think that your sector or sub sectors need more adequate skills? If so, please explain

D4. What other sector, if any, is the most connected with the one of your company?

1. ICT
2. Construction
3. Agriculture
4. Food Processing
5. Marketing and Advertising
6. Wood Processing
7. Transportation/Logistics
8. Retail/Wholesale
9. Manufacturing
10. Banking
11. Energy

D5. What part of your sector has great potential and you think should be supported more?
(_____)

D6. Please read the following list of issues and then rate them from the most problematic to the least (scale 5 to 1), where the 5 is most problematic, 1 is least problematic.

	Issues/Factors	5	4	3	2	1	Dk/Na
1	Water						
2	Customs Procedures (Export-Import)						
3	Business permits						
4	Tax Administration Procedures						
5	Tax Burden						
6	Access to land						
7	Mobile coverage						
8	Labor regulations						
9	Internet service						
10	Transport						
11	Price of land						
12	Courts/conflict resolution						
13	Electricity						

14	Skilled workforce						
15	Informal sector						
16	Crimes and theft						
17	Corruption						
18	Political instability						
19	Macroeconomic Environment						

E. Value Chain positioning

This section contributes to identify the weight of Value Chains in the innovative potential of Kosovo.

E1. Where (geographically) is your Value Chain based?

(_____)

E2. Which stage of the Value Chain does your company operate? (you can select one)

1. Technological development component (design and R&D activities)
2. Inbound logistics (raw material supplier)
3. Operations (production activity of goods and services, transformation from raw material into a finished product)
4. Outbound logistics (distribution activities)
5. Marketing and sales (Marketing and communication activities, retail)
6. Services (including maintenance, refund, replacement service, customer care...)

F. Impact of COVID-19

This section contributes to explore the main effects on business and sector performance of pandemic crisis.

F1. How has the number of employees in your company changed over September 2019 – September 2021?
Increase

1. Decrease
2. Remain the same
3. Don't know/ No answer

F2. How were your sales affected by the crisis?

1. Increase
2. Decrease
3. Remain the same
4. Don't know/ No answer

F3. Have your investment plans in your business been affected by the crisis and how?

1. Yes (delayed indefinitely)
2. No
3. Delayed Investment for 1 year
4. Don't know/ No answer

2. Academia/Think Tanks/Research Institutions Survey

A. Stakeholder Profile

A1. What type of institution do you represent?

1. Public university
2. Private university
3. Public Research Institute
4. Private Research Institute
5. Science & Technology /Industrial Park Consortium

B. Research and Innovation potential

This section contributes to explore Higher Education and Research Institutions potential for participating or leading research and development projects, and playing as a determinant for higher competitiveness of Kosovo.

B1. Does your institution engage in research and development and innovation activities?

B2. In the last 5 years has your institute obtained any patent?

B3. If yes, what kind of research activity does your institution carry out?

- a) Fundamental research;
- b) Applied research;
- c) Experimental development;
- d) Innovation research;
- e) Technology transfer;
- f) Other

B4. In which areas does your institution engage most its research and development activities/projects? (up to two options)

- a) Humanities
- b) Social sciences (including law, economy and finance, psychology, pedagogy)
- c) Natural science and mathematics (including math, physics, chemistry, geology)
- d) Biomedical sciences (including biophysics, ecology, botany, zoology, agro, medicine)
- e) Technological sciences (including processing, engineering, electronics/electrical, construction, transport)

B5. Does your institution collaborate with businesses or other academic or research entities for research activities/projects?

1. Yes, with businesses
2. Yes, with university/research institutes
3. No
4. Other (Please Explain)

B6. If yes, in which of the following sectors?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Green Energy

B7. Does your institution have a technology transfer unit?

1. Yes
2. No
3. Other (Please Explain)

B8. How would you define the level of digitalization in your institution? (i.e. digitalization of processes, business models, communication and marketing, improvement of broadbands, collection of data, ...)

1. High, with current improvements and upgrades
2. Good, with occasional improvement and upgrades

3. At normal level, not showing any upgrade or improvement
4. Low, not showing any improvement
5. Very Low, almost absent

C. Sector and market potential

This section contributes to explore the innovative potential of the whole sector to lead the growth and competitiveness of the Kosovo economy.

C1. What are the main barriers in doing research development innovation in Kosovo (you can select the two most important factors)?

1. Lack of researchers
2. Poor competencies
3. Poor institutional organization,
4. Lack of funds
5. Lack of technologies/infrastructures
6. Low demand from the market/sector
7. Unfavorable legislation/regulation/ standards
8. Other Factors, please specify (_____)

C2. Does your institution receive funds for conducting research development innovation?

1. Yes, national
2. Yes, international
3. Yes, combination national/international
4. No

C3. According to your perspective, which sector has the most potential for its Research and Development and Innovation (please rank from the one that has the highest potential to the one that has the lowest)?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Green Energy

C4. Considering your first choice from the previous question, which are the main strengths of the sector?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

C5. Based on your perception, do you think that the Innovation and Research and Development potential of your country is fully supported?

1. Yes, it is fully supported
2. No, it is not fully supported
3. It is partially supported
4. Other (Please Explain)

C6. Do you think that your institution provides adequate skills and competences for the Kosovo market or regional market?

1. Yes
2. No
3. Partially
4. Other (Please Explain)
5. Not applicable

C7. If yes, what do you think would improve skills and reduce the labor market mismatch?

1. Improve the quality of teaching
2. Diversifying curricula and adapt to new professional profiles
3. Introduce or improves Doctoral and Post grade offer
4. Introduce new masters
5. Increase cooperation with businesses for research activity
6. Increase cooperation with businesses for internship opportunities
7. Increase the number of business incubators and think tank
8. Other, please specify (_____)

D. COVID-19 Impact

This section contributes to explore the main effects of the pandemic crisis on performance in Higher Education and Research institutions.

D1. Has your research development innovation activity changed due to COVID-19 impact?

1. Yes, it has increased
2. Yes, it has decreased
3. No, it has not significantly changed

D2. What do you think is the sector most affected by COVID-19 in terms of innovation and growth?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Green Energy

3. Civil Society Survey

A. Stakeholder Profile

A1. What kind of entity do you represent?

1. National or local or regional association
2. Non-governmental organization
3. Private organization

A2. Can you please tell us the name of the entity you represent? (Optional)

A3. Does the activity of your entity contribute to the development of any of the following sectors (please select all that apply)?

1. ICT
2. Green Energy
3. Wood Processing Industry
4. Agrifood/ Food Processing Industry
5. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
6. All of the above

7. Other (Please specify)

8. None of them

A4. What do you think is the most promising sector for Kosovo?

1. ICT

2. Green Energy

3. Wood Processing Industry

4. Agrifood/ Food Processing Industry

5. Creative Industries (Advertising, Graphic Design, Video Production, Fashion Design)

6. All of the above

7. Other (Please specify)

A5. Why? _____

A6. Have you been involved in any project to increase productivity/competitiveness of the Kosovo economy in the last three years?

1. Yes

2. No

3. Other (Please Explain)

A7. Please briefly specify the objective of the project.

A8. Have you been involved in any project for social innovation in the last three years?

1. Yes

2. No

3. Other (Please Explain)

A9. Please briefly specify the objective of the project

A10. Do you collaborate with other entities for your activities?

1. Universities and/or research institutes

2. Public administrations

3. Companies

4. Other associations/NGOs

5. No

A11. Are involved in a policy dialogue (including public consultations) or cooperate with government and public administration (central and local) for improving the economic environment in Kosovo?

1. Yes (Please name the institutions)

2. No

3. Other (Please Explain)

A12. How would you define the level of digitalization in your institution/association/organization? (i.e. digitalization of processes, business models, communication and marketing, improvement of broadbands, collection of data, ...)

1. High, with current improvements and upgrades

2. Good, with occasional improvement and upgrades

3. At normal level, not showing any upgrade or improvement
4. Low, not showing any improvement
5. Very Low, almost absent

4. Government Survey

A. Stakeholder Profile

A1. Can you please tell us the name of the institution you represent?

B. Kosovo Market

B1. According to your perspective, which sector has the most potential for its Research and Development and Innovation (please rank from the one that has the highest potential to the one that has the lowest)?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries ((Advertising, Graphic Design, Fashion Design, Media etc)
5. Green Energy

B2. Considering your first choice from the previous question, which are the main strengths of the sector?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

B3. What factors you think are the main barrier to innovation potential in Kosovo in the ICT sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures

5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B4. What factors you think are the main barrier to innovation potential in Kosovo in the Agri-Food sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B5. What factors you think are the main barrier to innovation potential in Kosovo in the Wood Processing sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B6. What factors you think are the main barrier to innovation potential in Kosovo in the Energy sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B7. What factors you think are the main barrier to innovation potential in Kosovo in the Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc) sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

C. Research and Development Potential

C1. Does your institution have funds for research and innovation activities?

C2. According to your perspective, which sector has the most potential for its Research and Development and Innovation (please rank from the one that has the highest potential to the one that has the lowest)?

1. ICT
2. Green Energy
3. Wood Processing Industry
4. Food Processing Industry
- D. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Other (Please specify)

C3. Considering your first choice from the previous question, which are the main strengths of the sector?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

C4. Do you have a dialogue with other public institutions (central and local) regarding Research and Development activities and innovation support?

1. Yes, current dialogue
2. Yes, but not very often
3. No

C5. Do you involve other stakeholders in consultations on how to spur the innovation potential and growth of the economy?

C6. Is there any program/action that aims to support specific sectors with innovation potential?

1. Yes (which sector.....)
2. No
3. Other (Please Explain)
4. I don't know

C7. Is your institution supporting or has supported Research and Development or innovation projects currently or in the last three years in one of the following sectors (ICT, Wood Processing, Agri-Food Processing, Creative Industries, Energy)?

C8. Did any Research and Development and innovation project you have been supporting have a positive impact on the territory? If so, please briefly explain why.

C9. How would you define the level of digitalization in your institution? (i.e. digitalization of processes, business models, communication and marketing, improvement of broadbands, collection of data, ...)

1. High, with current improvements and upgrades
2. Good, with occasional improvement and upgrades
3. At normal level, not showing any upgrade or improvement
4. Low, not showing any improvement
5. Very Low, almost absent

Annex H In-depth Interview Questionnaires

1. Businesses

Name of Representative:

Position:

Company Name:

Year of Establishment:

Sector:

Contact Email:

- Sectoral Dynamics

- Do you consider your economic sector to be strongly developed? Why?
- What makes it strong (export, human resources, innovation, access to finance...)?
- Do you believe that your area may have significant growth and innovation potential in the next 5 years? Why?

- Country Dynamics

- What are key economic sub-sectors and in which sectors are innovation networks / clusters present in Kosovo?
- Which leading enterprises (i.e. large multinational firms and/ or key entrepreneurial innovators) operate in Kosovo?
 - Do they belong to the key economic sectors or are they situated in other sectors?
- Which technologies, products, or global market opportunities do you think are promising for Kosovo's economy in the upcoming decade?
- How internationalized is your regional economy (i.e. how export-oriented is your sector, how much as a % do you export if any, what is the level of foreign direct investment) – is your sector open in that respect? To which destinations do most exports go?

- Innovation dynamics

- Do you consider your company as an innovative one (R&D activities/department, any patent, new brand/process/technology?)
- What do you think are the main determinants of innovation potential of your company? (market structure, firm size, technology, collaboration with R and D partners, finance, others)
- Do you think that regional research and innovation priorities and the type of support resources (grants, loans, guarantees, vouchers, business services, access to laboratories, qualified personnel, and cooperation partners, etc.) offered correspond to your needs? In general, do you think it is easy in your region to pursue innovative business ideas?
- What are the main challenges your region is facing with respect to RD performance (i.e. what are the major bottlenecks for a better overall innovation performance)?
- Which sectors are most active in this respect and where do you have potential for improvement?
- What would be a suitable incentive / condition for you to decide to invest (more) into research, development and demonstration activities (inside your firm, or out-sourced to other firms or to public R&D providers)?
- Are there investments from both the public and private side in place to complement your own resources and attract co-funding?

- How well does the science / knowledge & creative sector interact with the regional economy (i.e. do you have industry-science co-operations, joint research infrastructures, and/or pro-active technology transfers, contract research, living labs, student placement schemes)?
- Do local universities supply you with sufficient graduates– or do you need to look abroad for qualified personnel?
 - Identify Sub Areas in each sector
- Which subfields in your sector do you operate in? (provide a list of all for them to choose from)
- Which subfields in your sectors are the ones with greater growth and innovation potential that you would like to expand to? (we will provide a list of all for them to choose from, similar to the list in the survey question with NACE Rev2 codes)
- Identify horizontal support areas
 - Do you collaborate with firms that operate in other sectors (ICT, Wood, Food, Creative, Energy)?
 - In which fields could enhanced cross sectoral cooperation create competitive advantages? why? (With which sector do you think collaboration would be beneficial? -list the 5 sectors and allow other options)
- Impact of pandemics in the private sector dynamics
 - Has your firm had a direct impact from the pandemic crisis?
 - Was the number of employees affected by the crisis?
 - Have the sales been affected by the crisis?
 - Have your investments been affected by the crisis?
 - Has access to finance been affected by the crisis?
 - Did the pandemics influence the investment in innovation/digitalization of services/operations?
- Opportunities and constraints to growth
 - What are the main challenges your country will be facing in the next decade (economically, environmentally, socio-demographic etc.)?
 - What are the main opportunities / emerging sub-sectors that you would like to engage with?
 - How can the business sector and the science & creative sector help in responding jointly to these challenges and opportunities?
 - Do scientific, technological, creative or skills strengths and specializations fit to economic needs? Where is the best match – where do you see the strongest mismatch?
- Value Chain
 - Where (geographically) is your Global Value Chain based?
 - Which stage (of the Global Value Chain) does your company operate?
 - (Technological development component (design and R&D activities, Inbound logistics (raw material supplier),
 - Operations (production activity of goods and services, transformation from raw material into a finished product),
 - Outbound logistics (distribution activities),
 - Marketing and sales (Marketing and communication activities, retail,
 - Services (including maintenance, refund, replacement service, customer care...)

2. Government

Demographics

Name of Representative:

Position:

Institution Name:

Contact Email:

- What is the strategic approach to economic growth and innovation policy in your region (long term vision, strategic concepts and priorities...)?
- What capacities do you have in your government for strategy development and priority setting? Could you set up a policy development process with your own competencies and resources or would you have to involve external experts?
- Does the innovation support in Kosovo cover only capacity building measures for innovation or also facilitate the emergence of demand for innovations?
- Does Kosovo have capacities to cover only strategy planning or also implementation of strategies?
- Besides science or technology driven innovation, which other forms of innovation / economic transformation are supported in Kosovo? Provide evidence/examples
- Is there any innovation project that has been implemented in the last five years that has been successful? Explain.
- How stable and predictable are public funds for innovation policy measures in your region?
- According to your perspective, which sector/s has the most potential for its Research and Development and Innovation? (ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy)
- What are the main strengths of the sector/s? (Export- oriented, Research and Development potential and Know-how/ Innovation, Proximity to markets (transportation costs, distance) and distribution networks, Quality workforce, Economies of scale / low production costs (including labor costs), Access to Finance...) Why? Was there any previous study done or is this just your perception?
- What factors you think are the main barrier to innovation potential in Kosovo in the chosen sectors (you can select the two most important factors)? (Limited company size, Lack of funds/finance, Lack of skills and competences, Lack of technologies/infrastructures, Low demand from the market/sector, Unfavorable legislation/regulation/ standards....)
- Do these factors apply to all five sectors, or only some...please specify?
- Does your institution have funds for research and innovation activities?
- Do you have a dialogue with other public institutions (central and local) regarding Research and Development activities and innovation support? Please explain?
- Do you involve other stakeholders in consultations on how to spur the innovation potential and growth of the economy?
- Is there any program/action that aims to support specific sectors with innovation potential? If so, which sector?
- Is your institution supporting or has supported Research and Development or innovation projects currently or in the last three years in one of the following sectors (ICT, Wood Processing, Agri-Food Processing, Creative Industries, Green Energy)?

3. Civil Society

Demographics

Name of Representative:

Position:

Institution Name:

Contact Email:

- Which economic sectors in your region are strong in R&D investment and technology development? Where do they get their new scientific and technological knowledge? From regional universities or from international R&D partners?
- Does the activity of your entity contribute to the development of any of the following sectors? (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy).
- What do you think is the most promising sector for Kosovo? (ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy) Why?
- Have you been involved in any project to increase productivity/competitiveness of the Kosovo economy in the last three years? If yes, please explain.
- Do you collaborate with other entities for your activities? (Universities and/or research institutes, Public administrations, Companies, Other associations/NGOs)
- Are involved in a policy dialogue (including public consultations) or cooperate with government and public administration (central and local) for improving the economic environment in Kosovo?
- Is your organization involved in scientific/research activities with the local/regional stakeholders, with an interest to make advancements in the sector or area of interest of your CSO?
- Who do you think is responsible for R&D and science based improvements in the area of interest of your CSO?

4. Academia

Demographics

Name of Representative:

Position:

Institution Name:

Faculty:

Contact Email:

- Sectoral Dynamics
 - Which of the following areas do you think has higher growth potential? (ICT, Energy, Creative Industries, Food Processing, Wood Processing)
 - What makes it have high growth potential (export, human resources, innovation potential,...)?
 - In the chosen sector/s, which sub sectors do you think have the highest potential?

- Main opportunities/constraints to growth
 - Does current academic education fit to the needs of the regional economy – do regional employers absorb graduates or are graduates forced to look elsewhere? If not, what do you think would improve skills and reduce the labor market mismatch/align education with the labour market? (Improve the quality of teaching, diversifying curricula and adapt to new professional profiles, introduce or improve, Doctoral and Post grade offer, introduce new masters, increase cooperation with businesses for research activity, increase cooperation with businesses for internship opportunities, increase the number of business incubators and think tank)

- Innovation
 - Do you collaborate with businesses in terms of R and D and how much? (If yes, in which of the following sectors, ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy)
 - Which economic sectors in your region are strong in R&D investment and technology development? Where do they get their new scientific and technological knowledge? From local universities or from international R&D partners (i.e. employ/engage foreign experts or receive knowhow transfer when they purchase new technology)?
 - Are people (incl. young people, university graduates, etc.) keen to start up their own business or do they rather prefer jobs in established businesses or public sector? If not, what are the main barriers?
 - How favorable are working conditions for researchers in your region? How much mobility between the Government funded public research institutes and the private sector does exist in your region (i.e. are graduates/engineers/ professors moving easily between universities and firms and back)?
 - How many co-operations with other international lead institutions does your institution have?
 - How well does the science / knowledge & creative sector interact with the regional economy (i.e. do you have industry-science co-operations in your region, joint research infrastructures, and/or proactive technology transfers, contract research, student placement schemes)? Which sectors are most active in this respect and where do you have potential for improvement?
 - Does your institute have any patents? If yes, what kind of research activity does your institution carry out? (Fundamental research; Applied research; Experimental development; Innovation research; Technology transfer; ...)
 - In which areas does your institution engage most its research and development activities/projects? (Humanities, Social sciences (including law, economy and finance, psychology, pedagogy), Natural science and mathematics (including math, physics, chemistry, geology), Biomedical sciences

(including biophysics, ecology, botany, zoology, agro, medicine), Technological sciences (including processing, engineering, electronics/electrical, construction, transport))

- What are the main barriers in doing research development innovation in Kosovo (you can select the two most important factors)? (Lack of researchers, Poor competencies, Poor institutional organization, Lack of funds, Lack of technologies/infrastructures, Unfavorable legislation/regulation/standards, low market demand...)
 - Does your institution receive funds for conducting research development innovation? (if so from whom?)
 - According to your perspective, which sector has the most potential for its Research and Development and Innovation (ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy).
 - Based on your perception, do you think that the Innovation and Research and Development potential of your country is fully supported?
- Impact of pandemics
 - Has your research development innovation activity changed due to COVID-19 impact? How?
 - What do you think is the sector most affected by COVID-19 in terms of innovation and growth? (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy).

Annex J Timeframe

The qualitative analysis is conducted by a local expert in charge of collecting data and information on the territory. The proper implementation of the activities is ensured by the supervision of the JRC. The activity starts approximately in December 2021 and the conclusion is expected at most in May 2022. Below is reported a table with main operational steps, expected outputs and corresponding deadline.

Outputs	Deadline
Survey Questionnaire Development	15 November 2021
List of Stakeholders	30 November 2021
In-depth Interview Questionnaire Development	10 January 2022
Intermediate Annex including the results of the survey	31 January 2022
Intermediate Annex including the results of 50% of the interviews scheduled	15 March 2022
Intermediate Annex including the results of 50% of the interviews scheduled	30 April 2022
Final Report	15 May 2022

List of abbreviations and definitions

CBK	Central Bank of Republic of Kosovo
CM	Critical mass
CSO	Civil Society Organization
EBOPS	Extended Balance of Payments Services Classification
EDP	Entrepreneurial Discovery Process
EU	European Union
GDP	Gross Domestic Product
GROW	Green Recovery and Opportunity Window
IDI	In-Depth Interviews
IPC	International Patent Classification
ISIC	International Standard Industrial Classification of All Economic Activities
JRC	Joint Research Centre
LQ	Location Quotient
NACE	Nomenclature générale des Activités économiques dans les Communautés Européennes
PPP	Purchasing Power Parity
SITC	Standard International Trade Classification

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