

2021 Mapping of economic, innovation and scientific potential in the Republic of Moldova

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Data provided by National Bureau of Statistics of the Republic of Moldova and State Agency on Intellectual Property

Executive summary

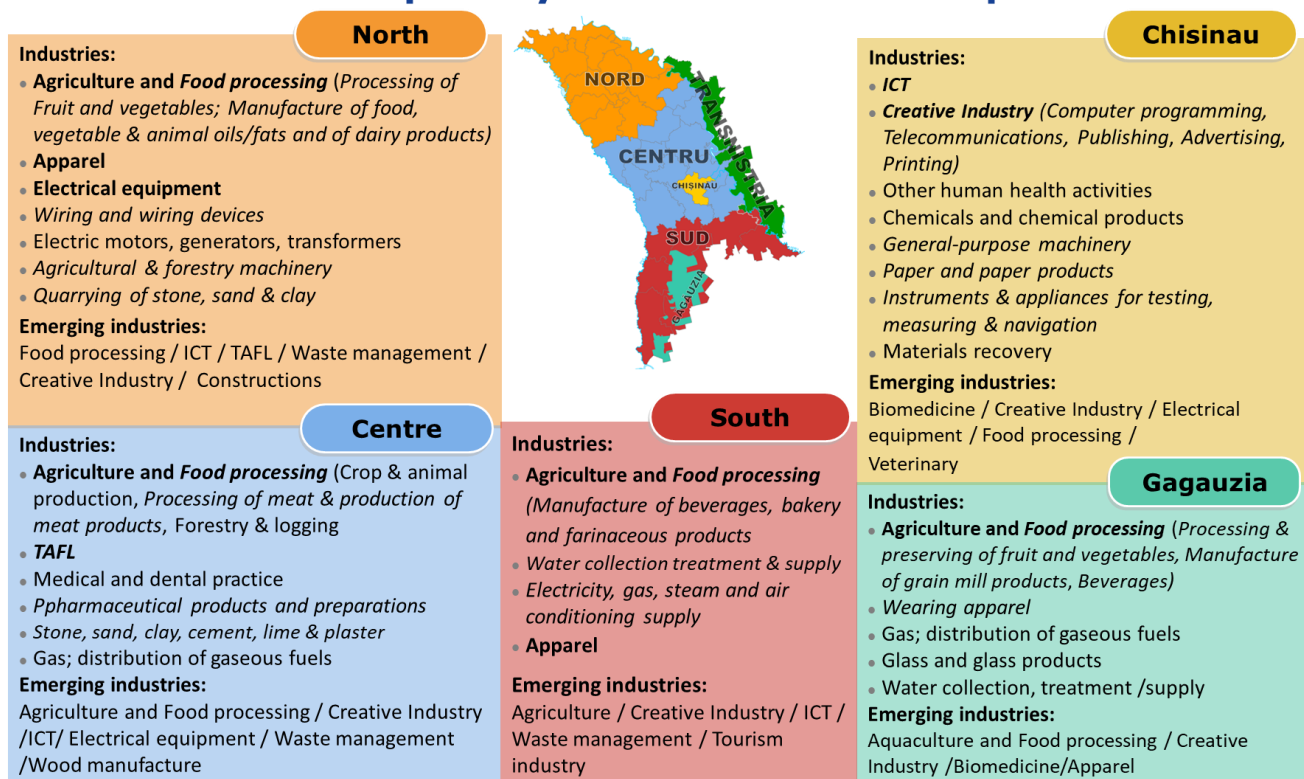
The analysis of the economic potential, using data on employment, turnover and wages, has identified economic priority areas at the sub-national or regional level in the Republic of Moldova (as shown in the Figure below). The potential priority domains for smart specialisation have been identified in the economic mapping. For Chisinau ICT and Creative industry are the most important economic areas; other areas of importance include human health activities, Chemicals and chemical products, Glass and glass products, Paper and paper products and Materials recovery. ICT is also the emerging industry in North, Centre and South.

For North, Centre, South and Gagauzia comparable priority areas for smart specialisation have been identified. For all four regions Agriculture and Food processing are very important, but there are some differences as to which specific industries are included (cf. Table 17 for details). Textiles, Apparel, Footwear and Leather (TAFL), Biomedicine, Energy and Electrical equipment are also priority areas for smart specialisation in several of these four regions. Emerging industries analysis highlighted the Creative industry in all regions, Waste management in North, Centre and South, Biomedicine in Chisinau and Gagauzia and Electrical equipment in Centre.

The analysis of the innovation potential using data from the Moldovan innovation survey and detailed patent data by region confirms several of these economic priority areas. These areas have been highlighted in italics in the Figure below and can be considered as the key economic priority areas, including Agriculture and Food processing in North, Centre, South and Gagauzia; ICT, Creative industry, Paper & paper products, Instruments & appliances for testing, measuring & navigation and Chemicals and chemical products in Chisinau; Electrical equipment, Wiring and wiring devices and Apparel in North; Textiles, Basic pharmaceutical products and pharmaceutical preparations and Medical and dental practice in Centre; Water collection, treatment & supply, Electricity, gas, steam & air conditioning in South; Wearing apparel in Gagauzia.

Data on scientific performance uses different classification schemes and can therefore not be linked to the results of the economic and innovation potential. Furthermore, data at the regional level are insufficient to provide a detailed analysis of the scientific potential at the regional level.

Potential priority domains for smart specialisation



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Introduction

The objective of the report is to provide a mapping of the economic, innovation and scientific potential in the Republic of Moldova at sub-national or regional level which would allow identifying smart specialisation domains at national level. The mapping is a statistical exercise using the indicators described in Section 1.

The mapping exercise focuses on five regions in the Republic of Moldova (cf. the map on the right):

- Municipality Chisinau or Chisinau
- Nord or North
- Centru or Centre
- Sud or South
- T.A.U. Gagauzia or Gagauzia

The Pridnestrovian Moldavian Republic (PMR) or Transnistria is not included in the mapping exercise.



Table 1 summarises some key socio-economic differences between the regions in Moldova. Centre has the largest population, Gagauzia the smallest. Chisinau, the capital region, is highly urbanised (91%) compared to the other regions. Centre, surrounding Chisinau, is the least urbanised. Unemployment is lowest in Chisinau and highest in North. Employees in Chisinau earn at least 36% more compared to other regions. North has an above average share of elderly people and faces above average unemployment.

Table 1: Socio-economic differences between the regions of the Republic of Moldova (2019)

	Population	Below working age	Working age	Above working age	Urban	Rural	Registered unemployment	Average nominal monthly earning (Lei)
Chisinau	832,865	13.8%	67.6%	18.5%	90.9%	9.1%	0.11%	8,686.4
North	974,558	16.6%	60.9%	22.5%	36.6%	63.4%	1.41%	5,916.1
Centre	1,047,681	18.7%	63.1%	18.2%	19.8%	80.2%	0.71%	5,910.6
South	525,928	17.6%	63.5%	18.8%	26.8%	73.2%	0.63%	5,572.2
Gagauzia	161,676	18.5%	62.1%	19.4%	40.8%	59.2%	0.83%	5,554.9
Moldova	3,542,708	16.8%	63.6%	19.6%	43.1%	56.9%	0.74%	7,233.7

Data source: National Bureau of Statistics (NBS).

In economic terms, differences are even more pronounced. Although the share of population in Chisinau is 23% of that of Moldova, Chisinau accounts for more than half of the registered economic activities in Moldova. The share of employment (including employed persons but excluding self-employed and informal employment) in Chisinau is about 60%, in the number of firms 64%, in turnover 72%, and in wages 68% (Table 2).

Table 2: Economic differences between the regions of Moldova

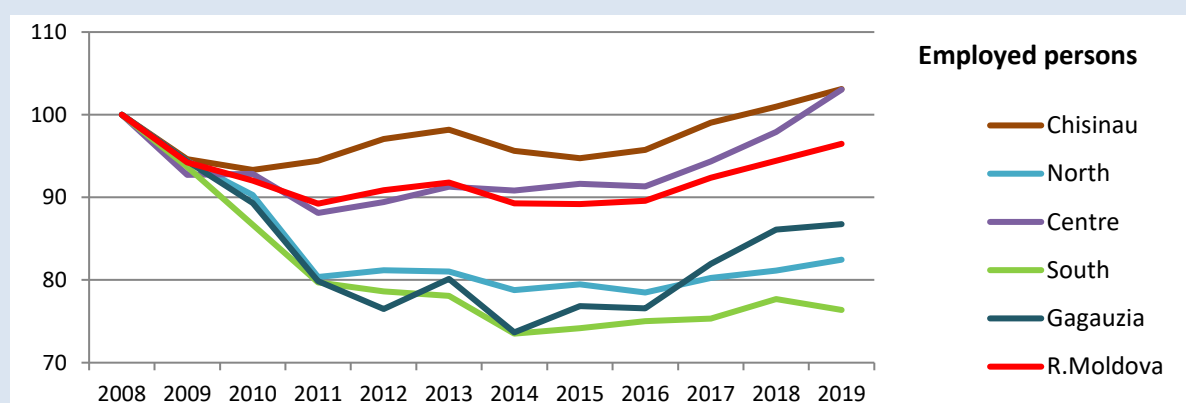
	Population	Employment	Firms	Turnover	Wages
Chisinau	23.0%	60.2%	64.2%	72.2%	68.3%
North	27.7%	16.8%	12.4%	11.6%	14.5%
Centre	29.7%	13.6%	15.3%	10.9%	10.5%
South	15.0%	6.3%	5.3%	3.1%	4.6%
Gagauzia	4.6%	3.1%	2.8%	2.2%	2.1%

Data: National Bureau of Statistics (NBS). Data for are averages for 2014-2019.

There are also differences in dynamic performance over time. Employment, measured by employed persons, has been declining since 2008, in particular in North, South and Gagauzia (Figure 1). In Chisinau the decline in employment was between 2010 and 2013 and between 2014 and 2015, with employment increasing again since 2016. The decline in Centre came to a halt in 2011 after which it increased slightly. For North, South and Gagauzia the level of employed persons is still (well) below that in 2008.

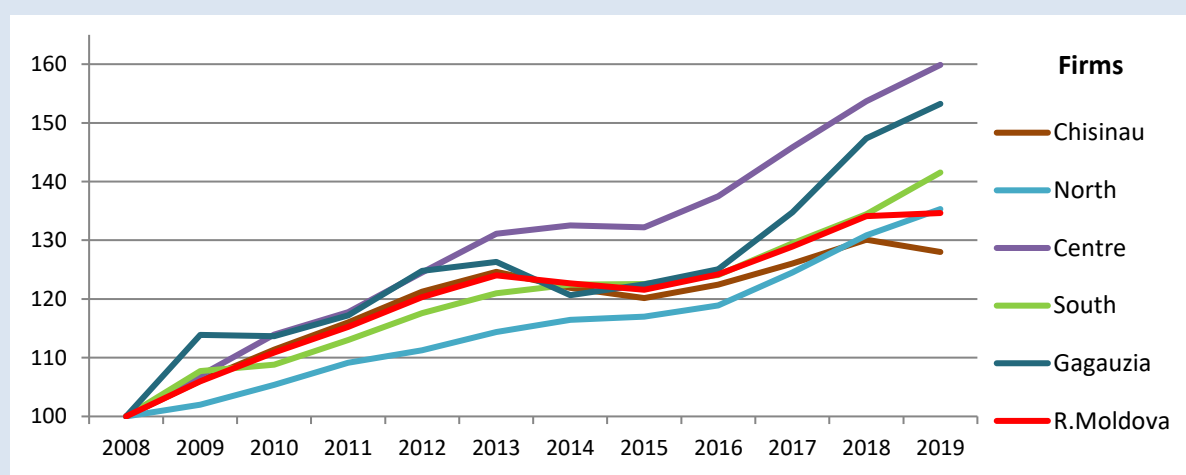
For all regions the number of firms has been increasing over time until 2013, even during the 2008-2013 crisis years (Figure 2). The rate of increase slowed down between 2013 and 2016, in Gagauzia the number of firms even decreased in 2014 and in Chisinau the number decreased between 2013 and 2015 and in 2019. Although detailed data are not available, in combination with decreasing employment, this suggests that many of these new firms are small.

Figure 1 Evolution of employed persons (2008 = 100)



Data: National Bureau of Statistics (NBS).

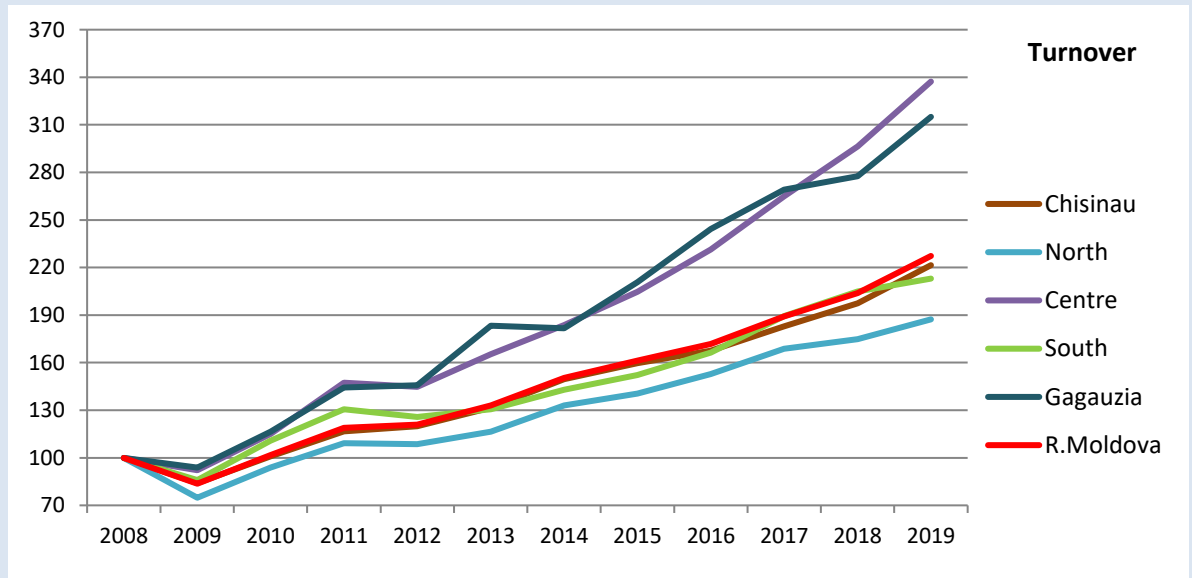
Figure 2 Evolution of number of firms (2008 = 100)



Data: National Bureau of Statistics (NBS).

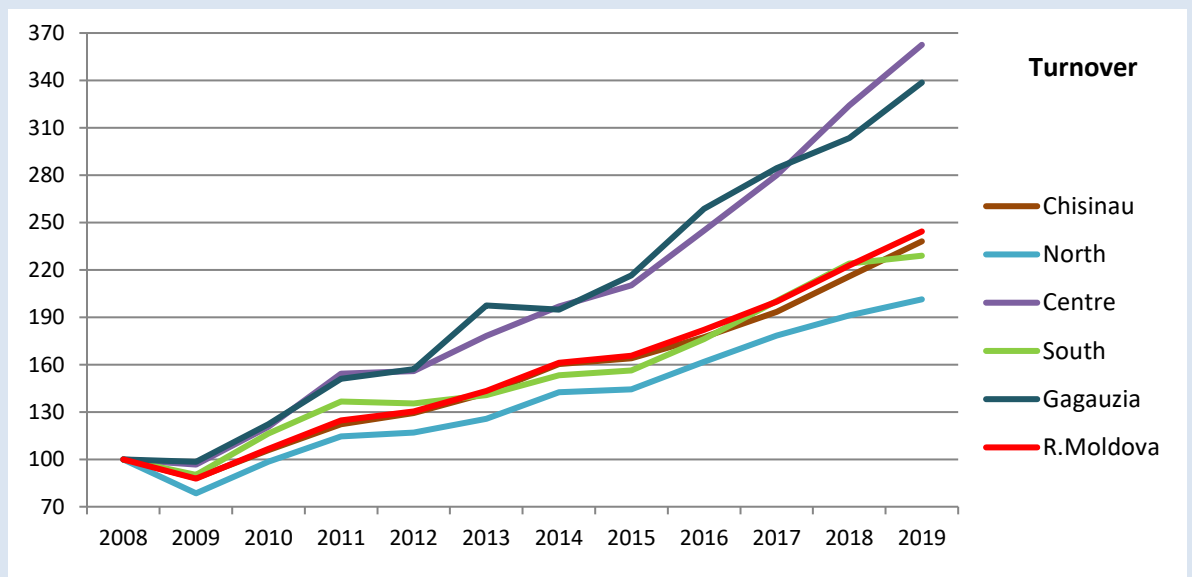
Turnover has been increasing rapidly over time after an initial decline in 2009, in particular in Gagauzia and Centre (Figure 3). This rapid increase is however partly the result of inflation. Figure 4 shows the evolution with turnover expressed in real prices. The rate of increase is a bit lower. Adjustments have been made using the Consumer Price Index (CPI) for Moldova for all five regions, but the CPI will have evolved differently over time in each of the regions. The results in Figure 4 should thus be interpreted with care as they do not necessarily show the real evolutions in regional turnover data in real prices.

Figure 3 Evolution of turnover, nominal prices (2008 = 100)



Data: National Bureau of Statistics (NBS).

Figure 4 Evolution of turnover, real prices (2008 = 100)



Data: National Bureau of Statistics (NBS).

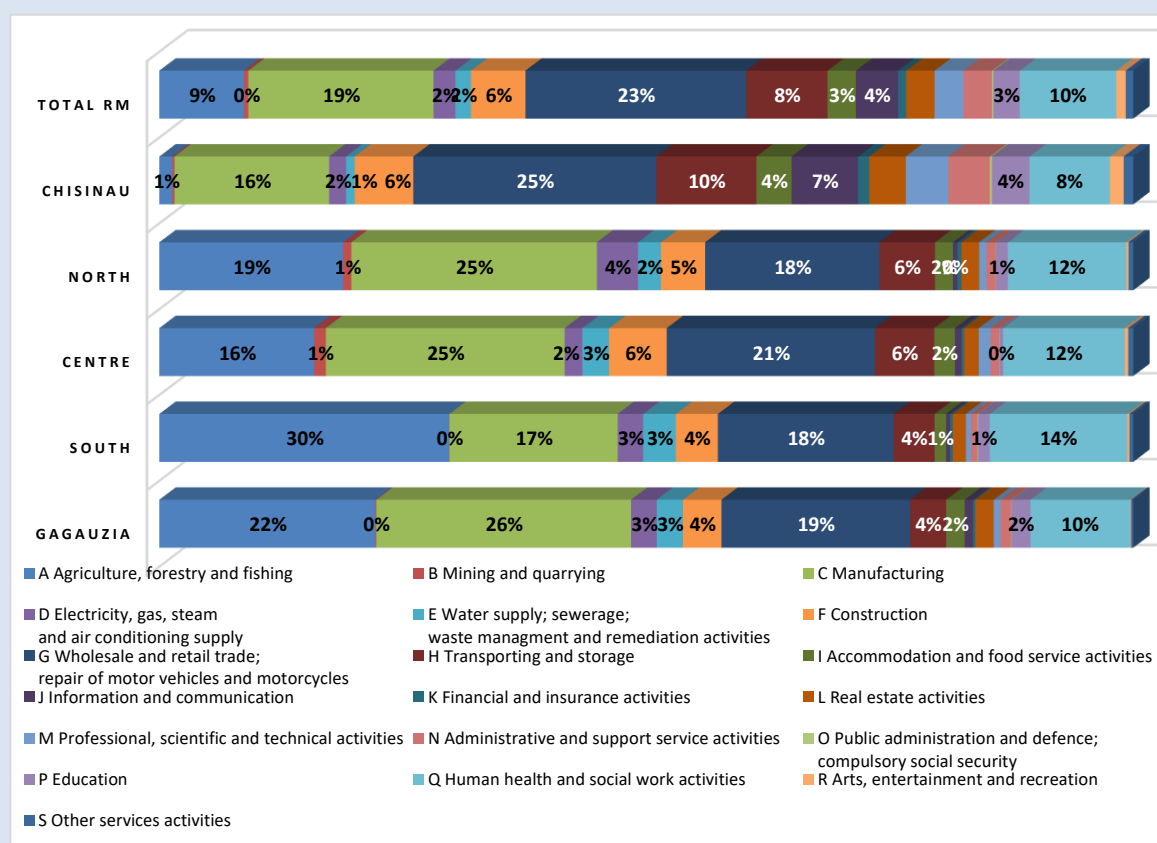
1. Methodology

1.1 Classification of regions

As stated in the Introduction, the objective of the report is to provide a mapping of the economic, innovation and scientific potential in the Republic of Moldova at sub national level. The mapping will be done for five regions: Chisinau, North, Centre, South, and Gagauzia. However, for deriving conclusions and recommendations, a distinction can be made between Chisinau, which is the capital region characterized by a high degree of urbanisation and above average shares of activities in services, and the four more 'Rural regions' North, Centre, South, and Gagauzia, all of which are characterized by a low degree of urbanisation, above average shares in agriculture, and which have more similar economic structures.

Differences in economic structures, using the average 2014-2019 employment shares of NACE one-digit industries in the regional economies, are shown in Figure 5.¹ Employment shares in Agriculture, forestry and fishing in the *Rural regions* are much higher than average, whereas in Chisinau this share is far below average. Employment shares in Manufacturing in the *Rural regions* are close to or above average, whereas in Chisinau this share is below average.

Figure 5 Economic structure of the regions in the Republic of Moldova

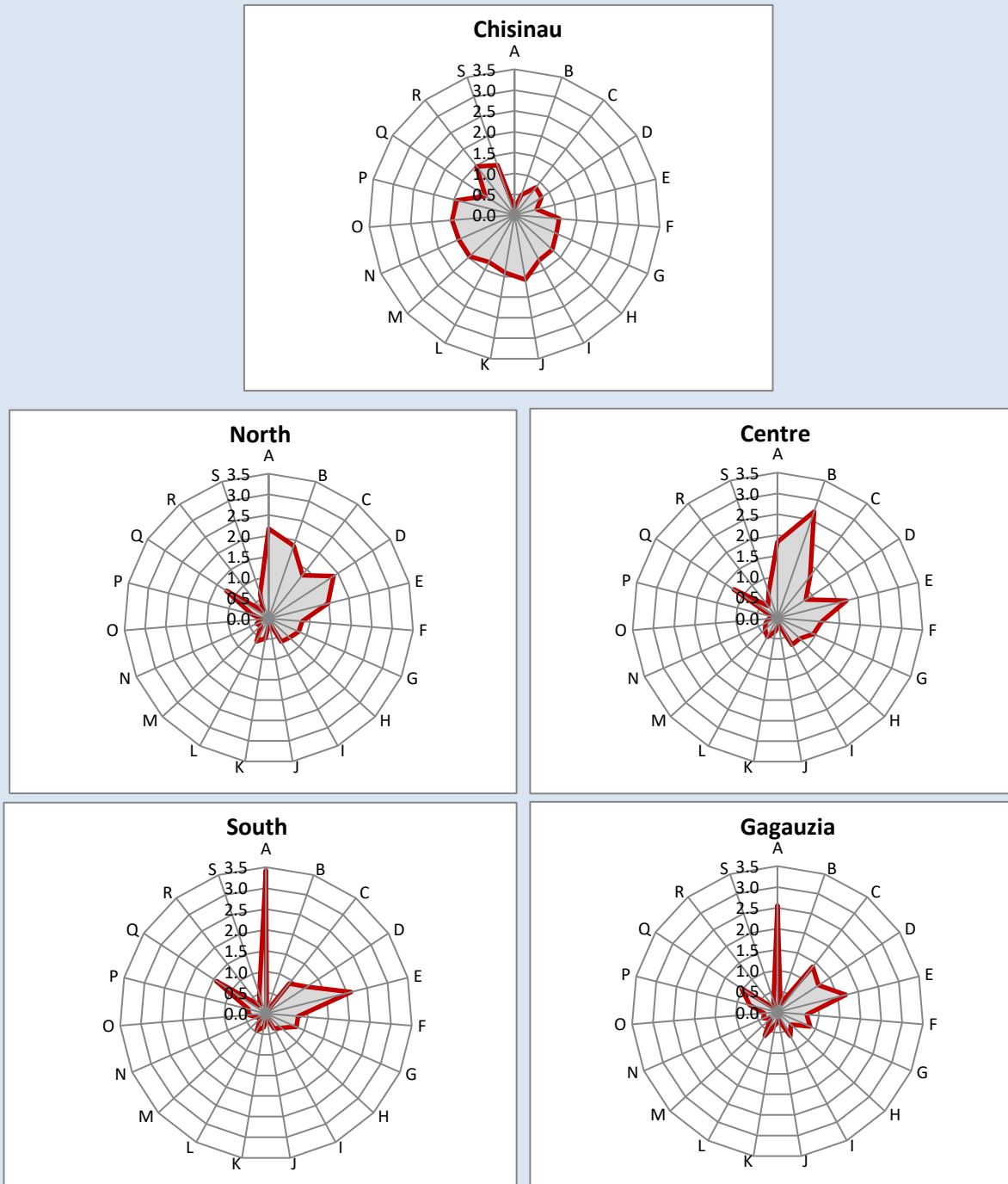


Note: the letter before the industry name shows the corresponding NACE one-digit code.

Differences in economic structures are also evident from a comparison of specialisation patterns using 2014-2019 employment shares of NACE one-digit industries, as shown in Figure 6. A comparison of the radar graphs shows that the specialisation pattern of Chisinau is significantly different from those of the *Rural regions*. Comparing the *Rural regions*, North and Centre are slightly different from South and Gagauzia, with a specialisation in Mining and quarrying.

¹ A comparable graph using 2014-2019 data on value added is shown in Annex 1.

Figure 6 Specialisation patterns of the regions in the Republic of Moldova



Specialisation is calculated using Location Quotients.

Letters show NACE one-digit codes: **A:** Agriculture, forestry and fishing; **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:** Transporting and storage; **I:** Accommodation and food service activities; **J:** Information and communication; **K:** Financial and insurance activities; **L:** Real estate activities; **M:** Professional, scientific and technical activities; **N:** Administrative and support service activities; **O:** Public administration and defence; compulsory social security; **P:** Education; **Q:** Human health and social work activities; **R:** Arts, entertainment and recreation; **S:** Other services activities.

1.2 Mapping of economic potential

The objective of mapping a region's economic potential, is to identify industries with both current strengths and emerging strengths to drive economic transformation.

1.2.1 Data availability

For the mapping of the economic potential, the following statistical data have been made available for 2014-2019 by *Statistica Moldovei*, the National Bureau of Statistics of the Republic of Moldova:

- Number of firms, 3-digit NACE Revision 2²
- Employment, 3-digit NACE Revision 2
- Turnover (in Moldovan Leu), 3-digit NACE Revision 2
- Wages (in Moldovan Leu), 3-digit NACE Revision 2

For the economic mapping, data will be used for employment, turnover, and average wages. The mapping will not use the data on the number of firms as these do not measure economic outcomes. The analysis will include both a current ('proven potential') and a dynamic ('emerging potential') analysis to identify industries where regions have or are expected to have a critical mass of economic activities and specialisation.

The current analysis identifies industries with current strengths. The dynamic analysis identifies industries where employment, turnover and average wages have grown faster than average compared to the region and the same industry in Moldova. Analysing time trends is important as these can identify industries which currently do not pass the threshold levels in the current analysis, but which are expected to pass these thresholds and become specialised industries within the near future.

1.2.2 Methodology for current analysis (proven potential)

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

- **Specialisation:** measures if, in relative terms, an industry is more important for the regional economy than it is for the national economy. 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 the regional economy

e_i = employment (or turnover) in industry i in the regional economy

e = total employment (or turnover) in the regional economy

E_i = employment (or turnover) in industry i in the national economy

E = total employment (or turnover) in the national economy

An LQ above 1 shows an above average concentration in the industry, i.e. the share of employment (or turnover) of that industry in the region is higher than the share of employment (or turnover) of that same industry in Moldova. An LQ below 1 shows a below average concentration in the industry, i.e. the share of employment (or turnover) of that

² The Statistical classification of economic activities in the European Community, abbreviated as NACE, is the classification of economic activities in the European Union (EU). Various NACE versions have been developed since 1970. NACE is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (e.g., production, employment and national accounts) and in other statistical domains developed within the European statistical system (ESS).

industry in the region is lower than the share of employment (or turnover) of that same industry in Moldova.

- **Critical mass:** specialisation is not a sufficient criterion to identify industries with an economic potential, as too small industries, with only a very small weight in the regional 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 (or turnover) in that industry in the region:

$$cm_i = e_i / e$$

where,

cm_i = critical mass or relative size of industry i in the regional economy

e_i = employment (or turnover) in industry i in the regional economy

e = employment (or turnover) in the regional economy

- **Average wages:** average wages will be used as an additional criterion for selecting industries with an economic potential. Industries with above average wages are expected to contribute more to the economic development of a region. Average wages should be above a certain threshold compared to both average wages for all industries in the region and average wages in the same industry for Moldova:

$$aw_i = w_i / e_i$$

$$aw = w / e$$

$$AW_i = W_i / E_i$$

where,

aw_i = average wages in industry i in the regional economy

w_i = total wages in industry i in the regional economy

e_i = employment in industry i in the regional economy

aw = average wages in the regional economy

w = total wages in the regional economy

e = employment in the regional economy

AW_i = average wages in industry i in Moldova

W_i = total wages in industry i in Moldova

E_i = employment in industry i in Moldova

The mapping exercise identifies those industries with a current economic potential which pass at least two of the following three criteria. Requiring that an industry should pass all three criteria would be too restrictive and result in a relatively small number of selected industries³.

1. Size and specialisation (LQs) are sufficiently high for employment, i.e. above pre-defined threshold values:

$$LQ_i > X \ \& \ cm_i > Y$$

2. Size and specialisation (LQs) are sufficiently high for turnover, i.e. above pre-defined threshold values:

$$LQ_i > X \ \& \ cm_i > Y$$

³ For all 5 regions combined, requiring that an industry passes all three criteria would result in 54 industries being selected, or, on average, about 10 per region. Requiring only two out of three criteria, increases the number of selected industries to 140, or, on average, 28 per region.

- Average wages are sufficiently high compared to average wages for all industries in the region and the same industry in the country:

$$aw_i > Z_1 * aw \text{ AND } aw_i > Z_2 * AW_i$$

The threshold values X , Y , Z_1 and Z_2 can be defined separately for each region to ensure that a representative number of industries is selected. There are no set rules for determining these threshold values, 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 expectations, 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.

The threshold values are shown in Table 3. Usually, identical threshold values should be used for all regions. However, Chisinau is different from the other four regions. Chisinau, among others, is much larger than the other four regions and accounts for more than half of the size of the Moldovan economy. Mathematically it is more difficult for an industry to have a regional share higher than the national share of that industry if the industry for that region accounts for a very large share of the country. Lower threshold values are therefore used for Chisinau to determine specialisation. For Chisinau, an industry is specialised if its LQ is above 1.25, for the other four regions the threshold is 1.5. Average wages in Chisinau are above those in the other four regions and stricter thresholds are used, demanding that average wages in an industry are at least 10% higher than those in Chisinau and at least as high as those in the same industry in Moldova. For the other four regions, average wages in an industry should be at least as high as average wages in the whole region and at least as high as 90% of average wages in the same industry in Moldova.

Table 3: Threshold values used for identifying current economic potential

	Employment & Turnover		Average wages	
	Size	Specialisation (LQ)	Relative to average wages in all industries in each region	Relative to average wages in each industry in Moldova
Chisinau	0.1 %	1.25	At least 10% higher than average wages in the region	At least as high as average wages in the same industry in Moldova
North	0.1 %	1.50	At least as high as average wages in the region	At least as high as 90% of average wages in the same industry in Moldova
Centre				
South				
UTA Gagauzia				

1.2.3 Methodology for dynamic analysis (emerging potential)

For identifying industries with an emerging economic potential, the following steps are taken:

- For every industry in the region and in Moldova *annual percentage changes in employment* are calculated for 2014-2015, 2015-2016, 2016-2017, 2017-2018 and 2018-2019.
- For every industry in the region and in Moldova the *overall percentage change in employment* is calculated for the period 2014-2019.
- For every industry in the region and in Moldova *annual percentage changes in turnover* are calculated for 2014-2015, 2015-2016, 2016-2017, 2017-2018 and 2018-2019.
- For every industry in the region and in Moldova the *overall percentage change in turnover* is calculated for the period 2014-2019.
- For every industry in the region and in Moldova *annual percentage changes in average wages* are calculated for 2014-2015, 2015-2016, 2016-2017, 2017-2018 and 2018-2019.

6. For every industry in the region and in Moldova the *overall percentage change in average wages* is calculated for the period 2014-2019.

An industry is selected as having an emerging economic potential if it passes at least two of the following three criteria. Requiring that an industry should pass all three criteria would be too restrictive and result in a relatively small number of selected industries⁴.

- Change in employment:
 - Annual change in employment in the industry is higher than annual change in employment for the *region* for at least 3 out of 5 years.
&
 - Average change in employment for the whole 2014-2019 period in the industry is higher than average change in employment for the *region* for the 2014-2019 period.
&
 - Annual change in employment in the industry is higher than annual change in employment for the *same industry in Moldova* for at least 3 out of 5 years.
&
 - Average change in employment for the whole 2014-2019 period in the industry is higher than average change in employment for the *same industry in Moldova* for the 2014-2019 period.
- Change in turnover:
 - Annual change in turnover in the industry is higher than annual change in turnover for the *region* for at least 3 out of 5 years.
&
 - Average change in turnover for the whole 2014-2019 period in the industry is higher than average change in turnover for the *region* for the 2014-2019 period.
&
 - Annual change in turnover in the industry is higher than annual change in turnover for the *same industry in Moldova* for at least 3 out of 5 years.
&
 - Average change in turnover for the whole 2014-2019 period in the industry is higher than average change in turnover for the *same industry in Moldova* for the 2014-2019 period.
- Change in average wages:
 - Annual change in average wages in the industry is higher than annual change in average wages for the *region* for at least 3 out of 5 years.
&
 - Average change in average wages for the whole 2014-2019 period in the industry is higher than average change in average wages for the *region* for the 2014-2019 period.
&
 - Annual change in average wages in the industry is higher than annual change in average wages for the *same industry in Moldova* for at least 3 out of 5 years.
&
 - Average change in average wages for the whole 2014-2019 period in the industry is higher than average change in average wages for the *same industry in Moldova* for the 2014-2019 period.

⁴ For all 5 regions combined, requiring that an industry passes all three criteria would result in 79 industries being selected, or, on average, about 16 per region. Requiring only two out of three criteria, increases the number of selected industries to 269, or, on average, 54 per region.

1.3 Mapping of innovation potential

1.3.1 Data availability

For the mapping of the innovation potential, two types of data have been used. Innovation survey data and patent data by industry will be combined to identify industries with an innovation potential. First, data have been used from the statistical survey on the innovation activity of enterprises in the Republic of Moldova in the years 2017-2018. The following Innovation data have been made available by *Statistica Moldovei*, the National Bureau of Statistics of the Republic of Moldova:

- Total number of firms.
- Number of firms which introduced at least one innovation (product or process or organisational or marketing).
- Number of firms which introduced at least one product innovation.
- Number of firms which introduced at least one process innovation.
- Number of firms which introduced at least one marketing innovation.
- Number of firms which introduced at least one organisational innovation.
- Number of firms that introduced a product innovation new to the firm's market.
- Number of firms that introduced a product innovation new to the firm.
- Number of firms with own R&D activities.
- Number of firms with external R&D activities.

Given the small number of firms with product, process, organisational or marketing innovations, with new-to-market and new-to-firm innovations, and with internal and external R&D activities, these data are not used for identifying the innovation potential of industries. Only data on the number of firms which introduced at least one innovation will be used for mapping the innovation potential.

Second, detailed data on patents granted to all national inventors have been received from State Agency on Intellectual Property (AGEPI) at 4-digit IPC subclass level for each region for four years (2017 to 2020). These patent data have then been converted to NACE industries using a concordance table between IPC subclasses and NACE 3-digit industries (cf. Annex 2)⁵.

1.3.2 Methodology for using innovation survey data

For each region, an industry is considered to have the potential to innovate if it has a critical mass of activities and specialisation:

- **Specialisation**: measures if in relative terms, an industry has more innovative firms than the national economy. Specialisation is measured using Location Quotients (LQs), which are defined as:

$$LQ_i = (\text{inn}_i / \text{inn}) / (\text{INN}_i / \text{INN})$$

where,

- LQ_i = location quotient for industry i in the regional economy
- inn_i = number of innovating firms in industry i in the regional economy
- inn = total number of innovating firms in the region
- INN_i = number of innovating firms in industry i in Moldova
- INN = total number of innovating firms in Moldova

An LQ above 1 shows an above average specialisation, an LQ below 1 shows a below average concentration.

- **Critical mass**: specialisation as such is not sufficient to identify industries as too small industries are less relevant for regional economic policies. Absolute size of industries matters, and 'critical mass' is measured by the number of innovating firms in the region: inn_i .

⁵ The concordance table is available at:

https://ec.europa.eu/eurostat/ramon/documents/IPC_NACE2_Version2_0_20150630.pdf

The methodology identifies industries with a critical mass of innovation activities and specialisation, for which size and LQs are above pre-defined threshold values. The threshold values are shown in Table 4. Usually, identical threshold values should be used for all regions. However, Chisinau is much larger than the other four regions and accounts for more than half of the innovating firms in Moldova. Mathematically it is more difficult for an industry to have a regional share higher than the national share of that industry if the industry for that region accounts for a very large share of the country. Higher respectively lower threshold values are therefore used for Chisinau to determine critical mass and specialisation. For Chisinau an industry is defined as being specialised if its LQ is above 1.25, for the other four regions the threshold is 1.5⁶. For Chisinau, an industry is considered to have critical mass if it has at least 4 innovative firms, for North and Center this should be at least 2 innovative firms, and for Gagauzia and South at least 1 innovative firm.

Table 4: Threshold values used for the mapping of innovative potential

	Size (number of innovative firms)	Specialisation (LQ)
Chisinau	4	1.25
North	2	1.5
Center	2	1.5
South	1	1.5
UTA Gagauzia	1	1.5

1.3.2 Methodology for using data on patents granted

Two types of patent data have been made available by AGEPI:

- Number of patents granted to national inventors for *First* IPC section, class and subclass
- Number of patents granted to national inventors for *All* IPC sections, classes and subclasses

As shown in Table 5, most patents are granted to Chisinau, about 88% of all patents by first IPC and also about 88% of all patents by all IPC. The difference between the distribution of percentage shares over the regions between the two types of patents are relatively small. As we assume that **First IPC highlights the most relevant IPC subclasses for each granted patent, only data for First IPC subclasses have been used in the analysis of patent data.**

Table 5: Number of patents granted to all national inventors

	First IPC section, class and subclass					All IPC sections, classes and subclasses				
	2017	2018	2019	2020	Total	2017	2018	2019	2020	Total
Chisinau	568	335	524	439	1866	1821	1033	2207	1740	6801
North	8	15	15	11	49	24	48	55	45	172
Center	46	40	34	44	164	115	139	131	170	555
South	6	6	6	5	23	10	16	24	17	67
Gagauzia	5	0	9	3	17	20	0	36	20	76
Total	638	400	589	502	2129	2009	1250	2457	1992	7708

All patent data have first been recalculated for each region using the concordance table in Annex 2 matching each 4-digit IPC subclass to one NACE 2- or 3-digit industry. Next, for each industry in every region, the percentage share of patents granted is calculated out of all patents granted for the four years 2017-2020. Industries with a percentage share above 1% are selected as having an innovation potential.

Degrees of specialisation – the ratio of the percentage share of an industry in a region and the percentage share of the same industry in Moldova – have not been used as Chisinau accounts for more 88% of all patents and no industry in Chisinau would show a specialisation in patents as for all industries the degree of specialisation would be close to 1.

⁶ The critical values for LQ are the same as those used in the economic mapping.

1.4 Mapping of scientific potential

1.4.1 Description of analytical approach

The mapping of the scientific potential will use a descriptive analysis of the below mentioned indicators linking these to the results of the economic mapping. The following indicators are available:

- Distribution of scientific publications by domain
- Researchers by R&D activity
- Share of PhD holders by R&D activity
- Admissions, students, and graduates – secondary vocational education
- Admissions, students, and graduates – post-secondary vocational education
- Admissions, students, and graduates – tertiary education
- Graduates tertiary education, by cycle and fields of study
- Number of education institutions
- Specialisation of post-secondary vocational education institutions
- Specialisation of tertiary education institutions

1.4.2 Data availability

Data availability and data sources for the indicators mentioned in the previous section are shown in Table 6. Most data have been received from the National Bureau of Statistics (NBS). Different data on publications data are available from National Bibliometric Instrument and Scimago.

Table 6: Data availability scientific potential

Indicator	Source	Level of analysis	Years covered
Scientific publications	IBN (National Bibliometric Instrument) ⁷	Country level, data for 24 science fields	1994 - 2019
Scientific publications	Scimago Journal & Country Rank (SJR) ⁸	Country level, data for 27 science fields	1996 - 2019
Researchers	National Bureau of Statistics (NBS)	Country level, data for 6 R&D activities	2011 - 2019
PhD holders	National Bureau of Statistics (NBS)	Country level, data for 6 R&D activities	2011 - 2019
Admissions, students, and graduates – secondary vocational education	National Bureau of Statistics (NBS)	Country level, regional (5 regions)	2014/2015 – 2019/2020
Admissions, students, and graduates – post-secondary vocational education	National Bureau of Statistics (NBS)	Country level, regional (5 regions)	2014/2015 – 2019/2020
Admissions, students, and graduates – tertiary education	National Bureau of Statistics (NBS)	Country level, regional (5 regions)	2014/2015 – 2019/2020
Graduates tertiary education, by cycle and fields of study	National Bureau of Statistics (NBS)	Country level, 23 fields of study	2014 - 2019
Number of education institutions	National Bureau of Statistics (NBS)	Country level, regional (5 regions)	2014/2015 – 2019/2020
Specialisation of post-secondary vocational education institutions	National Bureau of Statistics (NBS)	Regional (5 regions)	Current
Specialisation of tertiary education institutions	National Bureau of Statistics (NBS)	Regional (5 regions)	Current

1.4.3 Future needs for data collection

There is no real need for a breakdown of scientific publications into the five regions, as knowledge has a public nature and can be more easily accessed across regional borders. Education institutions, in particular in tertiary education, also serve the whole country, not just the region in which they are located. Currently there is no need for additional data.

⁷ https://ibn.idsi.md/en/Graph_Stacked?type=nrArticoleDomenii

⁸ <http://www.scimagojr.com/countrysearch.php?country=md>

2. Economic potential

2.1 Main economic sectors identified by Invest Moldova Agency (AIM)

The Invest Moldova Agency (AIM) has identified nine strategic economic sectors contributing to the economic development of the Republic of Moldova⁹: Agri-food including organic Agriculture, ICT, TAFL, Electronics, Automotive¹⁰, Renewable energy, Business Process Outsourcing and Shared Service Center (BPO & SSC), Machine Building and Creative industries. These results will be included in the interpretation of the economic mapping in the following sections. AIM provides the following information in more detailed sector reports which are available at AIM's website.

Agriculture and processing industry¹¹ are among the main pillars of Moldovan economy. Fresh and processed fruit, grapes, wines, and tobacco items make up a significant part in the exports - around 40% of all. The European Union remains the largest sale market for these products and CIS countries absorb another significant part of exports. In the year 2019, Moldova exported to the European Union 50 thousand tons of organic products. The share of agricultural production in Moldova's Gross Domestic Product stood at around 12% during the last years. Together with the processing industry it represents more than 16% of GDP. The agricultural sector employs 21% of the country's active labor force. Moldovan farmers have adopted modern technologies and techniques of cultivation, based on innovation, also increasing the irrigated fields and the areas protected against natural disasters. Some agri-enterprises have migrated to bio farming. Moldovan products are subject to strict control at any stage of production and are compliant with all phytosanitary requirements. They have certificates of conformity and quality in ISO 9001, ISO 14001, ISO 22000, among others, in order to be exported.

Key Facts: Meat produced in Moldova (2019) - 153 thousand tons; Agri-food exports (2019) - 2.78 billion USD; Canned food (2019) - 30 000 tones; Agricultural area - 75%.

The ICT industry¹² in Moldova is undoubtedly the most dynamic and fastest growing economic sector in Moldova, which offers the highest salaries, employs the youth and the creative people, digitally transforms the entire society and is a government top priority. The ICT industry has become one of the locomotives of economic growth in Moldova in 2019. As expected, the incentives offered by the innovative IT virtual Park legislation (7% single tax on turnover) gave a significant boost to the ICT sector Development. At the same time, the country's rising position in international ICT ranking plays an instrumental role in building a regionally and globally competitive economy. During 2015-2019, the IT industry recorded a triple increase of the annual sales revenue - from \$122 M to \$380 M, representing 3.1% of GDP and an increase of over \$77 M, only in 2019. The volume of exports of ICT products and services exceeded \$255 M in 2019, exceeding export sales of alcoholic beverages and wines. The IT sector's share is already comparable to the entire agricultural sector of the country, which continues to play an important role in the economy. There has been a qualitative transformation of the ICT sector from Internet access networks and services to the highest value-added, export-oriented IT products and services. The positive evolution in the ICT sector is accompanied by an increase in the number of companies to 2,300, and of the employed staff to 29,600 people, offering the best level of salary in the economy. According to AIM estimations, the IT industry employs over 15,000 professionals, servicing mainly European and US markets. Fiber optic and

⁹ <https://invest.gov.md/en/>

¹⁰ In Moldova the automotive sector (design, development and manufacturing of motor vehicles) does not exist. It is actually represented by Manufacture of electrical equipment, Manufacture of electric motors, Manufacture of wiring and wiring devices, which produce components for this sector and which are in fact part of the Electrical equipment sector.

¹¹ [https://invest.gov.md/attached_files/2021/03/04//02020_Food%20Processing%20&%20Livestock%20overview%20Brochure%20\(ENG\).pdf](https://invest.gov.md/attached_files/2021/03/04//02020_Food%20Processing%20&%20Livestock%20overview%20Brochure%20(ENG).pdf)

¹² [https://invest.gov.md/attached_files/2021/03/04/02020_ICT%20overview%20Brochure%20\(ENG\).pdf](https://invest.gov.md/attached_files/2021/03/04/02020_ICT%20overview%20Brochure%20(ENG).pdf)

wireless broadband internet, including mobile internet, is available in most of the urban and rural areas of the country (PoP- 98%) at some of the highest speeds in Europe and at some of the lowest prices. The world launch of 3G and 4G technologies took place namely in the Republic of Moldova.

Key Facts: IT professionals - 2,300 IT companies with ca. 15,000 IT professionals; Co-working spaces - 10+; Unique tax on turnover in IT virtual Parks - 7%; Yearly pipeline - 2,000 graduates in ICT related fields; Average monthly wage in IT Park (2020) - 1,500 EUR/month; Modern office stock - 500,000+ sq. meters in over 100 buildings.

T AFL manufacturing¹³ is an industry with long-standing traditions in Moldova, which started successfully developing after World War II and remains one of the most important industries in the country. Since 1990, it has been restructured, upgraded and re-equipped, in order to meet market economy demands. The industry is vibrant and it is represented by approximately 680 enterprises, ranging from micro to big. Out of the total number of companies, 31 are classified as big companies, while the majority of them are Small and Medium Enterprises (SMEs). Currently, the TAFL industry plays an important role in the Moldovan economy, representing nearly ca. 14.4% of the country's total export volume, 80% of which are exported to the EU countries, and the rest is exported to CIS and other countries. The TAFL sector employs more than 29,600 people, which represents 4 percent of the whole economy. Most of these jobs are rural-based and occupied by women (84%). The TAFL industry production volumes are represented mainly by apparel production (ca. 47%), followed by other textile production (42%) and shoes, leather goods, and others. In 2018, the most significant increases in volume production in the TAFL sector were generated by Leather products (+17%) and Textiles (+5%). The sector is export-driven with 90% of produced goods being sold to foreign markets.

Electronics.¹⁴ The tradition of manufacturing electronic equipment in Moldova is stretching over decades, being coined as the third largest supplier of electronic equipment in the Ex-Soviet Union. Today, with over 170 companies and 16 000 employees, the electronics industry is one of the most promising industrial sectors in the country in terms of GDP contribution, employment generation and FDI attraction. The success of the sector is attributed to a strong technical and engineering foundation, covering dual VET, colleges and the Technical University. The availability of a fully-fledged Dual VET system allows companies to harness highly skilled workforce at affordable cost. Moldovan local companies offer R&D and engineering services and are eager to develop innovative products and technologies. The Government is offering a special fiscal regime of only 7% flat tax rate on turnover for IT Virtual Park residents carrying out R&D in natural sciences, engineering and biotechnology.

Automotive.¹⁵ Moldova is an emerging automotive hub in Europe. Although Moldova is not yet a car manufacturing country, it plays an important role in the world automotive industry. Internationally known companies prefer to locate themselves in Moldova's Free Economic Zones (FEZ), which represents an excellent location for industrial development and production relocation oriented for exports. Production concentrates on cables, wiring harnesses for cars, seat and car covers, steering wheels, injection molding, metal processing, electronics, electronic components and systems. The industry is well integrated within global supply chains, as the main investors are well known international companies. The industrial production reached 14.2% of GDP in 2019, increasing by 2% compared to the previous year. The development was mainly driven by the growth of the manufacturing industry: the production of electrical cable and wire harnesses has increased by 24.4%, followed by metal construction industry (+18.8%) and the production of plastic and rubber products

¹³ [https://invest.gov.md/attached_files/2021/03/04//02020_TAFL%20overview%20Brochure%20\(ENG\).pdf](https://invest.gov.md/attached_files/2021/03/04//02020_TAFL%20overview%20Brochure%20(ENG).pdf)

¹⁴

[https://invest.gov.md/attached_files/2021/03/04//02020_Electronics%20overview%20Brochure%20\(ENG\).pdf](https://invest.gov.md/attached_files/2021/03/04//02020_Electronics%20overview%20Brochure%20(ENG).pdf)

¹⁵

[https://invest.gov.md/attached_files/2021/03/04//02020_Automotive%20&%20industry%20overview%20Brochure%20\(ENG\).pdf](https://invest.gov.md/attached_files/2021/03/04//02020_Automotive%20&%20industry%20overview%20Brochure%20(ENG).pdf)

(+17.8%). The total export in the automotive industry registered a growth of 30%, with a share of 20.5% in total exports.

Renewable energy industry is a growing sector in the Moldovan economy due to an increased focus on the unused industrial potential of Moldova and the maintained industrial orientation in the education system. The Republic of Moldova's renewable energy potential is one of the region's largest. In the year 2018, biofuels and wastes (including firewood and agricultural residuals) accounted for 25.5% of the primary energy sources supplied. Installed renewable energy capacity by sources: wind energy has the greatest share approximately 58% (35.6 MW), followed by hydro 26% (16.3 MW), biogas constitutes 9% (5.7 MW) and solar PV is about 7% (4 MW). The technical potential of Renewable Energy Sources (RES) for power generation in the Republic of Moldova is estimated to be 65,029 GWh, equivalent to 5,591 ktoe. Already in 2016, 26.8 % of the energy consumed in the Republic of Moldova was "green", this amount being almost totally oriented towards household heating and cooling, while renewable energy sources covered only 2 % of the country's electricity consumption.

The Business Process Outsourcing and Shared Service Center (BPO & SSC) sector¹⁶ in Moldova has a high potential, given the advantages the country offers both in terms of talented human resources and competitive costs. It is estimated that the current workforce size of Moldova's BPO & SSC industry is over 3,000 people (excluding IT outsourcing), servicing European and US markets predominantly. The service focus is across multiple industries, especially in Logistics, Travel, and Telecom sectors. In recent years, there has been a continuous increase in higher value services in the BPO sector in Moldova, through the addition of sophisticated services, including legal outsourcing, HR outsourcing, financial analysis, engineering, business intelligence, etc. The BPO & SSC sector in Moldova is developing fast due to its highly skilled and multilingual population, and excellent ICT infrastructure. Chisinau have won the "Emerging city of the year in SEE" award in one of the most important conferences in the field: "CEE Business Services Summit and Awards 2020".

The machine-building industry suffered important changes once the former state-owned industrial enterprises converted to private companies. Many of the traditional products are still manufactured today, though a lot of companies adopted innovative production processes and deliver new, innovative products. A non-comprehensive list of the key products of the industry would cover: pumps, electric public transport, machine or aviation components, metal structures for the heavy industry or civil engineering, high value electrical and electronic components and products, instrumentation and precision tool manufacture, etc. all being fully served by the domestic industrial engineering intellectual capital.

The creative industry in Moldova possesses during the past two years a great potential for development, with a positive impact on economic growth, with strong chances to comply with international market requirements. This sector encompasses a fairly large number of fields - visual arts, musical arts, performing arts, decorative arts, which in turn are divided into numerous sub-domains. In the period 2017-2018 creative sector companies generated 186 million dollars in sales, with creative industry services accounting for 61 million \$ earned from exports and creative industry commodities accounting for 75 million \$ worth of exports. In 2018 the number of companies in the Moldovan creative sector was 20% higher compared to 2015. In 2018 Moldova established a hub of excellence for creative industries - ArtCor - which represents a platform where the private and academic sectors work together for an innovation synergy, entrepreneurship, and exchange of ideas and experience.

Key Facts: Over 13,000 jobs in Creative Industry; Contribution to GDP - 3.3%; The industry generated sales - 186 million \$; Exports of creative services - 74 million \$.

¹⁶ [https://invest.gov.md/attached_files/2021/03/04//02020_BPO%20overview%20Brochure%20\(ENG\).pdf](https://invest.gov.md/attached_files/2021/03/04//02020_BPO%20overview%20Brochure%20(ENG).pdf)

2.2 Chisinau: economic priority areas

Full results for **Chisinau** are shown in Annex 3. Table 7 summarizes the results for **Chisinau** using the thresholds in Table 3. These thresholds can also be changed to select a higher or smaller number of industries. The initial selection included 335 industries; 237 industries passed at least one of the 2 selection criteria using the data for number of employees (specialisation or critical mass).

For the current analysis 96 industries have been identified using the data for number of employees and 39 industries have been identified using the data for turnover. Using data for average wages 55 industries have been identified. Combining all three criteria results in 52 industries.

For the Dynamic analysis 49 industries have been identified using the data for the change in the number of employees and 57 industries have been identified using the data for the change in turnover. Using data for the change in average wages 37 industries have been identified. Combining all three criteria results in 37 industries. Two industries passed both the current and dynamic thresholds.

Table 7: Mapping of economic potential: results for Chisinau

Criteria	Threshold	Number of selected industries
Initial number of industries included in the analysis	--	335
Current analysis - Employment		
Degree of specialisation	1.25	147
Critical mass	0.1%	186
Both	--	96
Current analysis - Turnover		
Degree of specialisation	1.25	94
Critical mass	0.001	147
Both	--	39
Current analysis - Average wages		
Relative to region	1.10	61
Relative to aggregate industry	100.0%	209
Both	--	55
Current analysis All Employment & Turnover & Average wages	--	52
Dynamic analysis - Employment change		
Relative to region	3 out of 5 years & period	113
Relative to aggregate industry	3 out of 5 years & period	93
Both	---	49
Dynamic analysis - Turnover change		
Relative to region	3 out of 5 years & period	136
Relative to aggregate industry	3 out of 5 years & period	81
Both	--	57
Dynamic analysis - Change in average wages		
Relative to region	3 out of 5 years & period	80
Relative to aggregate industry	3 out of 5 years & period	119
Both	---	37
Dynamic analysis All Employment change & Turnover change & Change in average wages	--	37
Both current and dynamic	--	2

For **Chisinau** all industries that have passed the thresholds in 2014-2019 are listed in Table 8. Industries in the public sector are not relevant as the aim of any future public support should not be to further increase employment in the public sector. Such support should focus on supporting industries in the business sector. The industries in Table 8 are at the NACE 1-digit, 2-digit and 3-digit level and there is a clear overlap between some of them. Industries at the NACE 1-digit and 2-digit level are broad for developing targeted public support and must be interpreted carefully.

Of particular interest are:

- Manufacture of computer, electronic and optical products (C26)
- Publishing activities (J58)
- Information and communication (J)
- Telecommunications(J61)
- Wired telecommunications activities (J611)
- Computer programming, consultancy and related activities (J620)
- Data processing, hosting and related activities; web portals (J631)
- Management consultancy activities (M702)
- Advertising and market research (M73)
- Other human health activities (Q869)

underlining the importance of the **ICT** and **Human health sectors** as well as Creative industry for **Chisinau**. The ICT and Creative industry sectors were also identified by AIM as strategic economic sectors.

Table 8: Identified industries for economic potential for Chisinau

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	55	39	37	52	35	37	19	37
A013	Plant propagation					X	X		X
A014	Animal production					X	X		X
C109	Manufacture of prepared animal feeds					X	X	X	X
C17	Manufacture of paper and paper products	X	X		X				
C172	Manufacture of articles of paper and paperboard	X	X		X				
C18	Printing and reproduction of recorded media	X	X		X				
C181	Printing and service activities related to printing	X	X		X				
C20	Manufacture of chemicals and chemical products	X		X	X				
C203	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	X	X	X	X				
C204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations					X	X		X
C205	Manufacture of other chemical products					X	X		X
C231	Manufacture of glass and glass products	X	X	X	X				
C235	Manufacture of cement, lime and plaster					X	X	X	X
C239	Manufacture of abrasive products and non-metallic mineral products n.e.c.			X		X	X		X
C252	Manufacture of tanks, reservoirs and containers of metal					X	X		X
C259	Manufacture of other fabricated metal products					X	X		X
C26	Manufacture of computer, electronic and optical products	X	X	X	X				
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	X	X	X	X				
C271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus					X	X		X
C282	Manufacture of other general-purpose machinery	X	X		X			X	
C325	Manufacture of medical and dental instruments and supplies					X	X	X	X
E383	Materials recovery		X	X	X	X			
F431	Demolition and site preparation						X	X	X
F432	Electrical, plumbing and other construction installation activities					X	X		X
F433	Building completion and finishing					X	X		X
G451	Sale of motor vehicles	X	X	X	X				
G453	Sale of motor vehicle parts and accessories					X	X	X	X
G454	Sale, maintenance and repair of motorcycles and related parts and accessories						X	X	X
G462	Wholesale of agricultural raw materials and live animals					X	X		X
G464	Wholesale of household goods	X	X		X				
G465	Wholesale of information and communication equipment	X	X		X		X		
G47	Retail trade, except of motor vehicles and motorcycles					X		X	X

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	55	39	37	52	35	37	19	37
G471	Retail sale in non-specialised stores					X	X		X
G474	Retail sale of information and communication equipment in specialised stores						X	X	X
G475	Retail sale of other household equipment in specialised stores					X	X	X	X
H494	Freight transport by road and removal services					X	X	X	X
H495	Transport via pipeline					X		X	X
H51	Air transport		X	X	X	X			
H511	Passenger air transport	X	X	X	X				
H52	Warehousing and support activities for transportation	X		X	X				
H522	Support activities for transportation	X		X	X				
H53	Postal and courier activities	X	X		X			X	
H531	Postal activities under universal service obligation	X	X		X				
I55	Accommodation	X				X	X		X
I551	Hotels and similar accommodation	X	X		X	X	X		X
I563	Beverage serving activities					X	X		X
J	Information and communication	X	X	X	X	X			
J58	Publishing activities	X	X	X	X				
J581	Publishing of books, periodicals and other publishing activities	X	X		X				
J582	Software publishing	X		X	X				
J61	Telecommunications	X	X	X	X				
J611	Wired telecommunications activities	X	X	X	X				
J612	Wireless telecommunications activities	X	X	X	X				
J619	Other telecommunications activities	X	X	X	X			X	
J620	Computer programming, consultancy and related activities	X	X	X	X			X	
J63	Information service activities	X	X	X	X				
J631	Data processing, hosting and related activities; web portals	X	X	X	X				
K	Financial and insurance activities	X	X	X	X				
K64	Financial service activities, except insurance and pension funding	X	X	X	X				
K649	Other financial service activities, except insurance & pension funding	X	X	X	X				
K66	Activities auxiliary to financial services and insurance activities	X	X		X				
K661	Activities auxiliary to financial services, except insurance and pension funding					X	X		X
K662	Activities auxiliary to insurance and pension funding	X	X	X	X				
M70	Activities of head offices; management consultancy activities	X		X	X				
M702	Management consultancy activities	X		X	X				
M712	Technical testing and analysis	X		X	X				
M73	Advertising and market research	X	X	X	X				
M731	Advertising	X	X		X				
M732	Market research and public opinion polling	X		X	X				
M750	Veterinary activities					X	X		X
N77	Rental and leasing activities	X				X	X	X	X
N781	Activities of employment placement agencies	X		X	X			X	
N782	Temporary employment agency activities						X	X	X
N79	Travel agency, tour operator and other reservation service and related activities	X	X		X				
N791	Travel agency and tour operator activities	X	X		X				
N80	Security and investigation activities	X	X		X		X		
N81	Services to buildings and landscape activities	X					X	X	X
N823	Organisation of conventions and trade shows					X	X		X
O	Public administration and defence; compulsory social security	X		X	X				
O841	Administration of the State and the economic and social policy of the community	X		X	X				
P	Education	X		X	X				
P854	Higher education	X		X	X				
P855	Other education	X				X	X		X
Q862	Medical and dental practice activities					X	X		X

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	55	39	37	52	35	37	19	37
Q869	Other human health activities	X	X	X	X	X	X		X
Q871	Residential nursing care activities					X	X		X
R93	Sports activities and amusement and recreation activities	X				X	X		X

2.3 North: economic priority areas

Full results for **North** are shown in Annex 4. Table 9 summarizes the results for **North** using the thresholds in Table 3. These thresholds can also be changed to select a higher or smaller number of industries. The initial selection included 280 industries; 143 industries passed at least one of the 2 selection criteria using the data for number of employees (specialisation or critical mass).

For the current analysis 31 industries have been identified using the data for number of employees and 35 industries have been identified using the data for turnover. Using data for average wages 32 industries have been identified. Combining all three criteria results in 31 industries.

For the Dynamic analysis 68 industries have been identified using the data for the change in the number of employees and 70 industries have been identified using the data for the change in turnover. Using data for the change in average wages 49 industries have been identified. Combining all three criteria results in 50 industries. Five industries passed both the current and dynamic thresholds.

Table 9: Mapping of economic potential: results for North

Criteria	Threshold	Number of selected industries
Initial number of industries included in the analysis	--	280
Current analysis - Employment		
Degree of specialisation	1.50	32
Critical mass	0.1%	142
Both	--	31
Current analysis - Turnover		
Degree of specialisation	1.5	43
Critical mass	0.001	103
Both	--	35
Current analysis - Average wages		
Relative to region	1.00	51
Relative to aggregate industry	90.0%	53
Both	--	32
Current analysis		
All Employment & Turnover & Average wages	--	31
Dynamic analysis - Employment change		
Relative to region	3 out of 5 years & period	101
Relative to aggregate industry	3 out of 5 years & period	107
Both	--	68
Dynamic analysis - Turnover change		
Relative to region	3 out of 5 years & period	107
Relative to aggregate industry	3 out of 5 years & period	92
Both	--	70
Dynamic analysis - Change in average wages		
Relative to region	3 out of 5 years & period	90
Relative to aggregate industry	3 out of 5 years & period	66
Both	--	49
Dynamic analysis		
All Employment change & Turnover change & Change in average wages	--	50
Both current and dynamic	--	5

For **North** all industries that have passed the thresholds in 2014-2019 are listed in Table 10. The industries in Table 10 are at the NACE 1-digit, 2-digit and 3-digit level and there is a clear overlap between some of them. Total agriculture (NACE A) and total manufacturing (NACE C) are too broad for developing targeted public support and should be excluded.

For **North**, important industries which account for a large share of total employment are:

- Crop and animal production, hunting and related service activities (A01)
- Growing of non-perennial crops (A011)
- Silviculture and other forestry activities (A021)
- Quarrying of stone, sand and clay (B081)
- Manufacture of food products (C10)
- Processing and preserving of fruit and vegetables (C103)
- Manufacture of vegetable and animal oils and fats (C104)
- Manufacture of dairy products (C105)
- Manufacture of other food products (C108)
- Manufacture of wearing apparel (C14)
- Manufacture of wearing apparel, except fur apparel (C141)
- Manufacture of electrical equipment (C27)
- Manufacture of wiring and wiring devices (C273)
- Land transport and transport via pipelines (H49)

underlining the importance of the **Agriculture and Food processing, Manufacture of electrical equipment** as part of the Electrical equipment sector and **Textile, Apparel, Footwear and Leather goods (TAFL) sectors** for **North**. These sectors were also identified by AIM as strategic economic sectors.

Table 10: Identified industries for economic potential for North

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	24	30	24	31	40	46	30	50
A	Agriculture, forestry and fishing	X	X		X				
A01	Crop and animal production, hunting and related service activities	X	X		X				
A011	Growing of non-perennial crops	X	X		X				
A015	Mixed farming	X	X		X				
A02	Forestry and logging		X	X	X				
A021	Silviculture and other forestry activities		X	X	X				
B	Mining and quarrying	X	X	X	X				
B081	Quarrying of stone, sand and clay	X	X	X	X				
C	Manufacturing		X	X	X	X	X		X
C10	Manufacture of food products	X	X	X	X				
C103	Processing and preserving of fruit and vegetables		X	X	X	X	X		X
C104	Manufacture of vegetable and animal oils and fats	X	X	X	X		X		
C105	Manufacture of dairy products	X	X	X	X				
C106	Manufacture of grain mill products, starches and starch products					X	X	X	X
C107	Manufacture of bakery and farinaceous products					X		X	X
C108	Manufacture of other food products	X	X	X	X				
C109	Manufacture of prepared animal feeds	X	X		X				
C13	Manufacture of textiles			X		X	X		X
C139	Manufacture of other textiles			X		X	X		X
C14	Manufacture of wearing apparel	X	X	X	X				
C141	Manufacture of wearing apparel, except fur apparel	X	X	X	X				
C15	Manufacture of leather and related products					X	X		X
C152	Manufacture of footwear					X	X		X
C162	Manufacture of products of wood, cork, straw and plaiting materials		X				X	X	X

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	24	30	24	31	40	46	30	50
C17	Manufacture of paper and paper products					X	X		X
C172	Manufacture of articles of paper and paperboard					X	X		X
C22	Manufacture of rubber and plastic products					X	X		X
C222	Manufacture of plastics products					X	X		X
C231	Manufacture of glass and glass products					X	X	X	X
C235	Manufacture of cement, lime and plaster	X	X	X	X				
C237	Cutting, shaping and finishing of stone					X		X	X
C24	Manufacture of basic metals		X	X	X				
C243	Manufacture of other products of first processing of steel		X	X	X				
C251	Manufacture of structural metal products						X	X	X
C259	Manufacture of other fabricated metal products						X	X	X
C27	Manufacture of electrical equipment	X	X	X	X				
C271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	X		X	X				
C273	Manufacture of wiring and wiring devices	X	X	X	X				
C283	Manufacture of agricultural and forestry machinery	X	X	X	X				
C32	Other manufacturing	X	X		X	X	X		X
C321	Manufacture of jewellery, bijouterie and related articles						X	X	X
C324	Manufacture of games and toys	X	X		X	X	X		X
E370	Sewerage	X		X	X			X	
E38	Waste collection, treatment and disposal activities; materials recovery					X	X	X	X
E381	Waste collection					X	X	X	X
F429	Construction of other civil engineering projects					X	X	X	X
G461	Wholesale on a fee or contract basis						X	X	X
G464	Wholesale of household goods					X		X	X
H49	Land transport and transport via pipelines		X	X	X	X			
H495	Transport via pipeline	X	X	X	X				
H512	Freight air transport and space transport	X	X		X		X	X	X
H52	Warehousing and support activities for transportation					X	X		X
H521	Warehousing and storage	X	X		X		X		
H522	Support activities for transportation					X		X	X
J	Information and communication					X	X	X	X
J61	Telecommunications						X	X	X
J611	Wired telecommunications activities						X	X	X
J612	Wireless telecommunications activities						X	X	X
J620	Computer programming, consultancy and related activities					X	X		X
J63	Information service activities					X	X		X
J631	Data processing, hosting and related activities; web portals					X	X		X
K	Financial and insurance activities					X	X	X	X
K64	Financial service activities, except insurance and pension funding						X	X	X
K649	Other financial service activities, except insurance and pension funding						X	X	X
M69	Legal and accounting activities					X	X		X
M692	Accounting, bookkeeping and auditing activities; tax consultancy					X	X	X	X
M70	Activities of head offices; management consultancy activities					X	X	X	X
M702	Management consultancy activities					X	X	X	X
N78	Employment activities					X		X	X
N80	Security and investigation activities					X	X	X	X
N802	Security systems service activities					X	X		X
N81	Services to buildings and landscape activities					X	X		X
N82	Office administrative, office support and other business support activities					X		X	X
N822	Activities of call centres					X	X	X	X
S95	Repair of computers and personal and household goods					X	X		X
S952	Repair of personal and household goods					X	X		X

2.4 Centre: economic priority areas

Full results for **Centre** are shown in Annex 5. Table 11 summarizes the results for **Centre** using the thresholds in Table 3. These thresholds can also be changed to select a higher or smaller number of industries. The initial selection included 282 industries; 146 industries passed at least one of the 2 selection criteria using the data for number of employees (specialisation or critical mass).

For the current analysis 33 industries have been identified using the data for number of employees and 26 industries have been identified using the data for turnover. Using data for average wages 26 industries have been identified. Combining all three criteria results in 25 industries.

For the Dynamic analysis 83 industries have been identified using the data for the change in the number of employees and 66 industries have been identified using the data for the change in turnover. Using data for the change in average wages 77 industries have been identified. Combining all three criteria results in 72 industries. Three industries passed both the current and dynamic thresholds.

Table 11: Mapping of economic potential: results for Centre

Criteria	Threshold	Number of selected industries
Initial number of industries included in the analysis	--	282
Current analysis - Employment		
Degree of specialisation	1.50	45
Critical mass	0.1%	134
Both	--	33
Current analysis - Turnover		
Degree of specialisation	1.5	42
Critical mass	0.001	103
Both	--	26
Current analysis - Average wages		
Relative to region	1.00	47
Relative to aggregate industry	90.0%	37
Both	--	26
Current analysis All Employment & Turnover & Average wages	--	25
Dynamic analysis - Employment change		
Relative to region	3 out of 5 years & period	101
Relative to aggregate industry	3 out of 5 years & period	125
Both	--	83
Dynamic analysis - Turnover change		
Relative to region	3 out of 5 years & period	81
Relative to aggregate industry	3 out of 5 years & period	126
Both	--	66
Dynamic analysis - Change in average wages		
Relative to region	3 out of 5 years & period	100
Relative to aggregate industry	3 out of 5 years & period	114
Both	--	77
Dynamic analysis All Employment change & Turnover change & Change in average wages	--	72
Both current and dynamic	--	3

For **Centre** all industries that have passed the thresholds in 2014-2019 are listed in Table 12. The industries in Table 12 are at the NACE 1-digit, 2-digit and 3-digit level and there is a clear overlap between some of them. Total manufacturing (NACE C) is too broad for developing targeted public support and should be excluded.

For **Centre**, important industries which account for a large share of total employment are:

- Crop and animal production, hunting and related service activities (A01)
- Growing of perennial crops (A012)
- Animal production (A014)
- Silviculture and other forestry activities (A021)
- Processing and preserving of meat and production of meat products (C101)
- Manufacture of textiles (C13)
- Manufacture of footwear (C152)
- Manufacture of basic pharmaceutical products and pharmaceutical preparations (C21)
- Manufacture of gas; distribution of gaseous fuels through mains (D352)
- Waste collection (E381)
- Medical and dental practice activities (Q862)

underlining the importance of the **Agriculture and Food processing, Medicine and Pharmaceuticals, Renewable energy** and **Textile, Apparel, Footwear and Leather goods (TAFL)** sectors for **Centre**. **Agriculture, TAFL** and **Renewable energy** are also identified by AIM as strategic economic sectors.

Table 12: Identified industries for economic potential for Centre

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	24	25	20	25	62	58	52	72
A	Agriculture, forestry and fishing	X	X		X				
A01	Crop and animal production, hunting and related service activities	X	X		X				
A012	Growing of perennial crops	X	X		X		X	X	X
A014	Animal production	X	X	X	X				
A016	Support activities to agriculture and post-harvest crop activities	X	X		X				
A02	Forestry and logging	X	X	X	X				
A021	Silviculture and other forestry activities	X	X	X	X				
B	Mining and quarrying	X	X	X	X				
B081	Quarrying of stone, sand and clay	X	X	X	X				
C	Manufacturing					X		X	X
C10	Manufacture of food products					X		X	X
C101	Processing and preserving of meat and production of meat products	X	X		X	X		X	X
C102	Processing and preserving of fish, crustaceans and molluscs					X	X		X
C104	Manufacture of vegetable and animal oils and fats					X		X	X
C107	Manufacture of bakery and farinaceous products					X	X	X	X
C108	Manufacture of other food products						X	X	X
C13	Manufacture of textiles	X	X	X	X				
C139	Manufacture of other textiles	X	X	X	X				
C143	Manufacture of knitted and crocheted apparel	X		X	X	X			
C15	Manufacture of leather and related products	X	X	X	X	X			
C152	Manufacture of footwear	X	X	X	X	X			
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials					X	X	X	X
C161	Sawmilling and planing of wood					X	X	X	X
C162	Manufacture of products of wood, cork, straw and plaiting materials		X			X	X		X
C17	Manufacture of paper and paper products						X	X	X
C172	Manufacture of articles of paper and paperboard						X	X	X
C201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms					X		X	X
C206	Manufacture of man-made fibres		X	X	X				
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	X	X	X	X				
C212	Manufacture of pharmaceutical preparations	X	X	X	X				
C23	Manufacture of other non-metallic mineral products		X	X	X	X			

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	24	25	20	25	62	58	52	72
C231	Manufacture of glass and glass products						X	X	X
C233	Manufacture of clay building materials					X	X		X
C235	Manufacture of cement, lime and plaster	X	X	X	X				
C236	Manufacture of articles of concrete, cement and plaster						X	X	X
C237	Cutting, shaping and finishing of stone						X	X	X
C255	Forging, pressing, stamping and roll-forming of metal; powder metallurgy					X		X	X
C256	Treatment and coating of metals; machining	X	X	X	X				
C259	Manufacture of other fabricated metal products					X	X		X
C27	Manufacture of electrical equipment					X	X	X	X
C273	Manufacture of wiring and wiring devices						X	X	X
C293	Manufacture of parts and accessories for motor vehicles					X	X		X
C32	Other manufacturing					X		X	X
C321	Manufacture of jewellery, bijouterie and related articles					X		X	X
C329	Manufacturing n.e.c.					X	X		X
D352	Manufacture of gas; distribution of gaseous fuels through mains	X		X	X				
E38	Waste collection, treatment and disposal activities; materials recovery	X				X	X		X
E381	Waste collection	X	X		X	X	X		X
F41	Construction of buildings					X	X		X
F412	Construction of residential and non-residential buildings					X	X		X
F429	Construction of other civil engineering projects	X	X	X	X				
G	Wholesale and retail trade; repair of motor vehicles and motorcycles					X	X	X	X
G45	Wholesale and retail trade and repair of motor vehicles and motorcycles						X	X	X
G451	Sale of motor vehicles					X	X	X	X
G452	Maintenance and repair of motor vehicles						X	X	X
G46	Wholesale trade, except of motor vehicles and motorcycles					X	X	X	X
G462	Wholesale of agricultural raw materials and live animals		X			X		X	X
G465	Wholesale of information and communication equipment					X		X	X
G466	Wholesale of other machinery, equipment and supplies			X		X	X	X	X
G467	Other specialised wholesale					X		X	X
G47	Retail trade, except of motor vehicles and motorcycles						X	X	X
G472	Retail sale of food, beverages and tobacco in specialised stores					X	X	X	X
G473	Retail sale of automotive fuel in specialised stores					X	X	X	X
G476	Retail sale of cultural and recreation goods in specialised stores						X	X	X
G478	Retail sale via stalls and markets					X	X	X	X
H521	Warehousing and storage					X	X		X
I	Accommodation and food service activities					X	X		X
I562	Event catering and other food service activities					X	X	X	X
J582	Software publishing					X	X	X	X
J601	Radio broadcasting					X	X		X
J612	Wireless telecommunications activities					X	X		X
J631	Data processing, hosting and related activities; web portals					X		X	X
K	Financial and insurance activities					X	X		X
K64	Financial service activities, except insurance and pension funding					X	X		X
K649	Other financial service activities, except insurance and pension funding					X	X	X	X
L681	Buying and selling of own real estate						X	X	X
M69	Legal and accounting activities					X		X	X
M692	Accounting, bookkeeping and auditing activities; tax consultancy					X	X	X	X
M72	Scientific research and development					X	X		X
M721	Research and experimental development on natural sciences and engineering					X	X		X
M742	Photographic activities					X	X	X	X

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	24	25	20	25	62	58	52	72
N78	Employment activities					X	X	X	X
N781	Activities of employment placement agencies					X		X	X
N79	Travel agency, tour operator and other reservation service and related activities					X	X	X	X
N791	Travel agency and tour operator activities					X	X	X	X
N801	Private security activities					X	X	X	X
N821	Office administrative and support activities					X	X	X	X
P	Education					X	X	X	X
P853	Secondary education					X	X	X	X
Q862	Medical and dental practice activities	X	X	X	X				
S	Other services activities						X	X	X
S95	Repair of computers and personal and household goods					X	X		X
S951	Repair of computers and communication equipment					X	X	X	X
S960	Other personal service activities					X	X		X

2.5 South: economic priority areas

Full results for **South** are shown in Annex 6. Table 13 summarizes the results for **South** using the thresholds in Table 3. These thresholds can also be changed to select a higher or smaller number of industries. The initial selection included 243 industries; 104 industries passed at least one of the 2 selection criteria using the data for number of employees (specialisation or critical mass).

For the current analysis 19 industries have been identified using the data for number of employees and 23 industries have been identified using the data for turnover. Using data for average wages 11 industries have been identified. Combining all three criteria results in 16 industries.

For the Dynamic analysis 59 industries have been identified using the data for the change in the number of employees and 67 industries have been identified using the data for the change in turnover. Using data for the change in average wages 69 industries have been identified. Combining all three criteria results in 56 industries. Five industries passed both the current and dynamic thresholds.

Table 13: Mapping of economic potential: results for South

Criteria	Threshold	Number of selected industries
Initial number of industries included in the analysis	--	243
Current analysis - Employment		
Degree of specialisation	1.50	21
Critical mass	0.1%	102
Both	--	19
Current analysis - Turnover		
Degree of specialisation	1.5	27
Critical mass	0.001	82
Both	--	23
Current analysis - Average wages		
Relative to region	1.00	25
Relative to aggregate industry	90.0%	20
Both	--	11
Current analysis All Employment & Turnover & Average wages	--	16
Dynamic analysis - Employment change		
Relative to region	3 out of 5 years & period	87
Relative to aggregate industry	3 out of 5 years & period	89
Both	--	59
Dynamic analysis - Turnover change		

Criteria	Threshold	Number of selected industries
Relative to region	3 out of 5 years & period	90
Relative to aggregate industry	3 out of 5 years & period	89
Both	--	67
Dynamic analysis - Change in average wages		
Relative to region	3 out of 5 years & period	81
Relative to aggregate industry	3 out of 5 years & period	99
Both	--	69
Dynamic analysis		
All Employment change & Turnover change & Change in average wages	--	56
Both current and dynamic	--	5

For **South** all industries that have passed the thresholds in 2014-2019 are listed in Table 14. The industries in Table 14, are at the NACE 1-digit, 2-digit and 3-digit level and there is a clear overlap between some of them. Total agriculture (NACE A) is too broad for developing targeted public support and should be excluded.

For **South**, important industries which account for a large share of total employment are:

- Crop and animal production, hunting and related service activities (A01)
- Growing of non-perennial crops (A011)
- Growing of perennial crops (A012)
- Mixed farming (A015)
- Manufacture of bakery and farinaceous products (C107)
- Manufacture of beverages (C110)
- Manufacture of gas; distribution of gaseous fuels through mains (D352)
- Water collection, treatment and supply (E360)

underlining the importance of the **Agriculture and Food processing**, and **Energy sectors** for **South**. These sectors were also identified by AIM as strategic economic sectors contributing to the economic development of Moldova.

Table 14: Identified industries for economic potential for South

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	18	16	7	16	40	54	42	56
A	Agriculture, forestry and fishing	X	X		X			X	
A01	Crop and animal production, hunting and related service activities	X	X		X		X	X	X
A011	Growing of non-perennial crops	X	X		X			X	
A012	Growing of perennial crops	X	X		X				
A013	Plant propagation						X	X	X
A015	Mixed farming	X	X		X			X	
A016	Support activities to agriculture and post-harvest crop activities	X	X		X		X	X	X
A02	Forestry and logging	X	X	X	X				
A021	Silviculture and other forestry activities	X	X	X	X				
A03	Fishing and aquaculture	X				X	X	X	X
A032	Aquaculture	X				X	X	X	X
C106	Manufacture of grain mill products, starches and starch products	X	X		X		X		
C107	Manufacture of bakery and farinaceous products	X	X	X	X		X	X	X
C110	Manufacture of beverages	X	X		X			X	
C143	Manufacture of knitted and crocheted apparel	X	X		X		X		
C23	Manufacture of other non-metallic mineral products					X	X	X	X
C233	Manufacture of clay building materials	X					X	X	X

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	18	16	7	16	40	54	42	56
C237	Cutting, shaping and finishing of stone					X	X	X	X
D352	Manufacture of gas; distribution of gaseous fuels through mains	X		X	X				
E360	Water collection, treatment and supply	X	X		X	X	X		X
E38	Waste collection, treatment and disposal activities; materials recovery						X	X	X
E381	Waste collection						X	X	X
F421	Construction of roads and railways		X	X	X	X	X		X
F431	Demolition and site preparation					X		X	X
F433	Building completion and finishing					X	X		X
F439	Other specialised construction activities						X	X	X
G452	Maintenance and repair of motor vehicles					X	X	X	X
G466	Wholesale of other machinery, equipment and supplies					X	X	X	X
G467	Other specialised wholesale					X		X	X
G471	Retail sale in non-specialised stores	X	X		X				
H	Transporting and storage						X	X	X
H49	Land transport and transport via pipelines						X	X	X
H494	Freight transport by road and removal services		X			X	X		X
H52	Warehousing and support activities for transportation					X	X	X	X
H522	Support activities for transportation					X	X	X	X
I	Accommodation and food service activities					X	X	X	X
I55	Accommodation					X	X	X	X
I551	Hotels and similar accommodation						X	X	X
I552	Holiday and other short-stay accommodation					X	X		X
I56	Food and beverage service activities					X	X	X	X
I561	Restaurants and mobile food service activities					X	X	X	X
J61	Telecommunications					X	X		X
J611	Wired telecommunications activities						X	X	X
J620	Computer programming, consultancy and related activities					X		X	X
K662	Activities auxiliary to insurance and pension funding						X	X	X
L682	Renting and operating of own or leased real estate						X	X	X
L683	Real estate activities on a fee or contract basis					X	X		X
M	Professional, scientific and technical activities					X	X		X
M69	Legal and accounting activities					X	X	X	X
M692	Accounting, bookkeeping and auditing activities; tax consultancy					X	X	X	X
M70	Activities of head offices; management consultancy activities					X	X	X	X
M702	Management consultancy activities					X		X	X
M711	Architectural and engineering activities and related technical consultancy					X	X		X
M731	Advertising						X	X	X
M74	Other professional, scientific and technical activities					X	X		X
M742	Photographic activities					X	X	X	X
N	Administrative and support service activities					X	X		X
N79	Travel agency, tour operator and other reservation service and related activities					X	X	X	X
N791	Travel agency and tour operator activities					X	X		X
N82	Office administrative, office support and other business support activities					X	X		X
N829	Business support service activities n.e.c.					X	X	X	X
R	Arts, entertainment and recreation			X		X	X		X
R900	Creative, arts and entertainment activities			X		X	X		X
R93	Sports activities and amusement and recreation activities					X	X		X
R931	Sports activities					X	X		X
S952	Repair of personal and household goods						X	X	X
S960	Other personal service activities					X	X		X

2.6 Gagauzia: economic priority areas

Full results for **Gagauzia** are shown in Annex 7. Table 15 summarizes the results for **Gagauzia** using the thresholds in Table 3. These thresholds can also be changed to select a higher or smaller number of industries. The initial selection included 235 industries; 109 industries passed at least one of the 2 selection criteria using the data for number of employees (specialisation or critical mass).

For the current analysis 20 industries have been identified using the data for number of employees and 17 industries have been identified using the data for turnover. Using data for average wages 8 industries have been identified. Combining all three criteria results in 16 industries.

For the Dynamic analysis 62 industries have been identified using the data for the change in the number of employees and 73 industries have been identified using the data for the change in turnover. Using data for the change in average wages 48 industries have been identified. Combining all three criteria results in 54 industries. Three industries passed both the current and dynamic thresholds.

Table 15: Mapping of economic potential: results for Gagauzia

Criteria	Threshold	Number of selected industries
Initial number of industries included in the analysis	--	235
Current analysis - Employment		
Degree of specialisation	1.50	22
Critical mass	0.1%	107
Both	--	20
Current analysis - Turnover		
Degree of specialisation	1.5	20
Critical mass	0.001	80
Both	--	17
Current analysis - Average wages		
Relative to region	1.00	31
Relative to aggregate industry	90.0%	13
Both	--	8
Current analysis All Employment & Turnover & Average wages	--	16
Dynamic analysis - Employment change		
Relative to region	3 out of 5 years & period	70
Relative to aggregate industry	3 out of 5 years & period	94
Both	--	62
Dynamic analysis - Turnover change		
Relative to region	3 out of 5 years & period	82
Relative to aggregate industry	3 out of 5 years & period	92
Both	--	73
Dynamic analysis - Change in average wages		
Relative to region	3 out of 5 years & period	64
Relative to aggregate industry	3 out of 5 years & period	70
Both	--	48
Dynamic analysis All Employment change & Turnover change & Change in average wages	--	54
Both current and dynamic	--	3

For **Gagauzia** all industries that have passed the thresholds in 2014-2019 are listed in Table 16. The industries in Table 16 are at the NACE 1-digit, 2-digit and 3-digit level and there is a clear overlap between some of them. Total agriculture (NACE A) is too broad for developing targeted public support and should be excluded.

For **Gagauzia**, important industries which account for a large share of total employment are:

- Crop and animal production, hunting and related service activities (A01)
- Growing of non-perennial crops (A011)
- Animal production (A014)
- Processing and preserving of fruit and vegetables (C103)
- Manufacture of beverages (C110)
- Manufacture of wearing apparel (C14)
- Manufacture of glass and glass products (C231)
- Manufacture of gas; distribution of gaseous fuels through mains (D352)
- Water collection, treatment and supply (E360)

underlining the importance of the **Agriculture and Food processing, Textile, Apparel, Footwear and Leather goods (TAFL)** and **Energy sectors** for **Gagauzia**. These sectors were also identified by AIM as strategic economic sectors.

Table 16: Identified industries for economic potential for Gagauzia

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	16	15	4	16	42	55	34	54
A	Agriculture, forestry and fishing	X	X		X		X		
A01	Crop and animal production, hunting and related service activities	X	X		X		X		
A011	Growing of non-perennial crops	X	X		X		X		
A014	Animal production	X	X		X			X	
A016	Support activities to agriculture and post-harvest crop activities	X	X		X				
A03	Fishing and aquaculture					X	X		X
A031	Fishing					X	X		X
B	Mining and quarrying					X	X	X	X
B081	Quarrying of stone, sand and clay					X	X	X	X
C10	Manufacture of food products						X	X	X
C103	Processing and preserving of fruit and vegetables	X	X		X		X	X	X
C105	Manufacture of dairy products					X	X		X
C106	Manufacture of grain mill products, starches and starch products	X	X		X				
C107	Manufacture of bakery and farinaceous products					X	X	X	X
C110	Manufacture of beverages	X	X		X	X			
C139	Manufacture of other textiles						X	X	X
C14	Manufacture of wearing apparel	X	X		X	X	X	X	X
C141	Manufacture of wearing apparel, except fur apparel	X	X		X	X	X	X	X
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials					X	X	X	X
C162	Manufacture of products of wood, cork, straw and plaiting materials					X	X	X	X
C19	Manufacture of coke and refined petroleum products	X	X	X	X				
C192	Manufacture of refined petroleum products	X	X	X	X				
C231	Manufacture of glass and glass products	X	X		X				
C251	Manufacture of structural metal products						X	X	X
C256	Treatment and coating of metals; machining						X	X	X
C259	Manufacture of other fabricated metal products					X	X		X
D352	Manufacture of gas; distribution of gaseous fuels through mains	X		X	X				
E360	Water collection, treatment and supply	X	X		X				
F421	Construction of roads and railways					X	X		X
F422	Construction of utility projects					X		X	X
F432	Electrical, plumbing and other construction installation activities			X		X	X		X
G45	Wholesale and retail trade and repair of motor vehicles and motorcycles					X	X		X
G462	Wholesale of agricultural raw materials and live animals	X	X		X				

NACE rev.2	Industries	Current analysis				Dynamic analysis			
		Employment	Turnover	Average wages	All	Employment change	Turnover change	Average wages change	All
	# of selected industries	16	15	4	16	42	55	34	54
G464	Wholesale of household goods					X	X	X	X
G466	Wholesale of other machinery, equipment and supplies					X	X	X	X
G467	Other specialised wholesale					X		X	X
G469	Non-specialised wholesale trade					X	X		X
G474	Retail sale of information and communication equipment in specialised stores						X	X	X
H	Transporting and storage					X	X	X	X
H49	Land transport and transport via pipelines					X	X	X	X
H493	Other passenger land transport					X	X		X
H494	Freight transport by road and removal services					X	X	X	X
H52	Warehousing and support activities for transportation					X	X	X	X
H521	Warehousing and storage					X	X	X	X
I	Accommodation and food service activities					X	X	X	X
I55	Accommodation					X	X	X	X
I551	Hotels and similar accommodation					X	X		X
I56	Food and beverage service activities					X	X	X	X
K66	Activities auxiliary to financial services and insurance activities					X	X		X
L	Real estate activities						X	X	X
L682	Renting and operating of own or leased real estate						X	X	X
M	Professional, scientific and technical activities					X	X		X
M692	Accounting, bookkeeping and auditing activities; tax consultancy					X	X		X
M70	Activities of head offices; management consultancy activities						X	X	X
M702	Management consultancy activities						X	X	X
M71	Architectural and engineering activities; technical testing and analysis					X	X		X
M712	Technical testing and analysis					X	X		X
M73	Advertising and market research						X	X	X
M74	Other professional, scientific and technical activities					X	X	X	X
N77	Rental and leasing activities					X	X		X
N773	Renting and leasing of other machinery, equipment and tangible goods					X	X		X
N82	Office administrative, office support and other business support activities					X	X		X
Q861	Hospital activities						X	X	X
R	Arts, entertainment and recreation					X	X	X	X
R93	Sports activities and amusement and recreation activities					X	X		X
R932	Amusement and recreation activities					X	X		X
S	Other services activities						X	X	X

2.7 Summary assessment based on economic NACE 2-digit & 3-digit data

Table 17 summarizes the potential priority domains for smart specialisation. The table confirms that Chisinau and the other four regions are different and may have different relevant domains for smart specialisation.

Agriculture and Food processing is a common priority area For North, Centre, South and Gagauzia. But there are differences: the Growing of non-perennial crops is relevant in North, South and Gagauzia and is less relevant in Centre, which relies more on a strong Meat industry, including crop and animal production and the Processing and preserving of meat and production of meat products. Centre also has a strong Forestry and logging industry.

In the Manufacture of food products ('Food processing') there are different patterns of specialisation. Processing and preserving of fruit and vegetables, Manufacture of vegetable and animal oils and fats

and Manufacture of dairy products are priority areas for North; the Manufacture of grain mill products and the Manufacture of beverages, including wine, are priority domains in South and Gagauzia.

Textile, Apparel, Footwear and Leather goods (TAFL) is a priority domain in all rural regions. Biomedicine is very present in Centre, Electrical equipment for North. Energy is a priority domain in Centre, South and Gagauzia. For Chisinau the ICT and Creative industries are the most relevant industries for receiving policy support. Waste management is a priority domain in all five regions.

These broad groupings coincide with the strategic economic sectors identified by the Invest Moldova Agency (section 2.1).

Other potential priority areas include the following activities in manufacturing (cf. Table 17):

- Manufacture of paper and paper products (C17) in Chisinau;
- Manufacture of chemicals and chemical products (C20) in Chisinau;
- Manufacture of other non-metallic mineral products (C23) in Centre;
- Manufacture of glass and glass products (C231) in Chisinau and Gagauzia;
- Manufacture of basic metals (C24) in North.

Table 17: Potential economic priority domains for smart specialisation

NACE rev.2	Industries	Chisinau	North	Centre	South	Gagauzia
Agriculture and Food processing			X	X	X	X
A01	Crop and animal production, hunting and related service activities		X	X	X	X
A011	Growing of non-perennial crops		X		X	X
A012	Growing of perennial crops			X	X	
A014	Animal production			X		X
A015	Mixed farming		X		X	
A016	Support activities to agriculture and post-harvest crop activities			X	X	X
A02	Forestry and logging		X	X	X	
A021	Silviculture and other forestry activities		X	X	X	
C10	Manufacture of food products		X			
C101	Processing and preserving of meat and production of meat products			X		
C103	Processing and preserving of fruit and vegetables		X			X
C104	Manufacture of vegetable and animal oils and fats		X			
C105	Manufacture of dairy products		X			
C106	Manufacture of grain mill products, starches and starch products				X	X
C107	Manufacture of bakery and farinaceous products				X	
C108	Manufacture of other food products		X			
C109	Manufacture of prepared animal feeds		X			
C110	Manufacture of beverages				X	X
ICT		X				
J582	Software publishing	X				
J61	Telecommunications	X				
J611	Wired telecommunications activities	X				
J612	Wireless telecommunications activities	X				
J619	Other telecommunications activities	X				
J620	Computer programming, consultancy and related activities	X				
J63	Information service activities	X				
J631	Data processing, hosting and related activities; web portals	X				
C26	Manufacture of computer, electronic and optical products	X				
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	X				
Energy				X	X	X
C19	Manufacture of coke and refined petroleum products					X
C192	Manufacture of refined petroleum products					X
D352	Manufacture of gas; distribution of gaseous fuels through mains			X	X	X
Biomedicine		X		X		

NACE rev.2	Industries	Chisinau	North	Centre	South	Gagauzia
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations			X		
C212	Manufacture of pharmaceutical preparations			X		
Q862	Medical and dental practice activities			X		
Q869	Other human health activities	X				
Textile, Apparel, Footwear and Leather goods (TAFL)			X	X	X	X
C13	Manufacture of textiles			X		
C139	Manufacture of other textiles			X		
C14	Manufacture of wearing apparel		X			X
C141	Manufacture of wearing apparel, except fur apparel		X			X
C143	Manufacture of knitted and crocheted apparel			X	X	
C15	Manufacture of leather and related products			X		
C152	Manufacture of footwear			X		
Electrical equipment		X	X			
C27	Manufacture of electrical equipment		X			
C271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus		X			
C273	Manufacture of wiring and wiring devices		X			
C282	Manufacture of other general-purpose machinery	X				
C283	Manufacture of agricultural and forestry machinery		X			
Waste management		X	X	X	X	X
E360	Water collection, treatment and supply				X	X
E370	Sewerage		X			
E381	Waste collection			X		
E383	Materials recovery	X				
Creative industry¹⁷						
J582	Software publishing	X				
J61	Telecommunications	X				
J611	Wired telecommunications activities	X				
J612	Wireless telecommunications activities	X				
J619	Other telecommunications activities	X				
J620	Computer programming, consultancy and related activities	X				
J63	Information service activities	X				
J631	Data processing, hosting and related activities; web portals	X				
C18	Printing and reproduction of recorded media	X				
C181	Printing and service activities related to printing	X				
C324	Manufacture of games and toys		X			
J58	Publishing activities	X				
J581	Publishing of books, periodicals and other publishing activities	X				
M712	Technical testing and analysis	X				
M73	Advertising and market research	X				
M731	Advertising	X				
M732	Market research and public opinion polling	X				
Other						
B081	Quarrying of stone, sand and clay		X	X		
C17	Manufacture of paper and paper products	X				
C172	Manufacture of articles of paper and paperboard	X				
C20	Manufacture of chemicals and chemical products	X				
C203	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	X				
C206	Manufacture of man-made fibres			X		
C23	Manufacture of other non-metallic mineral products			X		
C231	Manufacture of glass and glass products	X				X
C235	Manufacture of cement, lime and plaster		X	X		
C24	Manufacture of basic metals		X			

¹⁷ Creative industries also include ICT industries. For this reason, they can be found twice in this table in the ICT section and in the Creative industries section.

NACE rev.2	Industries	Chisinau	North	Centre	South	Gagauzia
C243	Manufacture of other products of first processing of steel		X			
C256	Treatment and coating of metals; machining			X		
C32	Other manufacturing		X			
F421	Construction of roads and railways				X	
F429	Construction of other civil engineering projects			X		
H49	Land transport and transport via pipelines		X			
H495	Transport via pipeline		X			
H51	Air transport	X				
H511	Passenger air transport	X				
H512	Freight air transport and space transport		X			
H522	Support activities for transportation	X				
I551	Hotels and similar accommodation	X				
N79	Travel agency, tour operator and other reservation service and related activities	X				
N791	Travel agency and tour operator activities	X				
P854	Higher education	X				

2.8 Industries with an emerging economic potential

Table 18 summarizes the identified emerging industries e where emerging industries have been highlighted if they passed the thresholds changes in employment, turnover and average wages.

Agriculture and Food Processing and **Creative Industry** are emerging domains in all five regions.

But there are differences: Within **Agriculture and Food Processing**, Crop and animal production are emerging industries in South, Plant propagation and Animal production in Chisinau, Processing and preserving of meat and production of meat products and of fish, crustaceans and molluscs – in Centre, Manufacture of grain mill products – in North; Manufacture of dairy products – in Gagauzia. Manufacture of bakery and farinaceous products are emerging industries in all four rural regions.

Within **Creative Industry**, Manufacture of jewellery, bijouterie and related articles, Manufacture of games and toys, Telecommunications, Wired and Wireless telecommunications activities, Information service activities, Data processing, hosting and related activities; web portals are emerging industries in the North, Computer programming, consultancy and related activities – in North and South, Software publishing, Radio broadcasting, Photographic activities - in Centre, Advertising, Other professional, scientific and technical activities, Creative, arts and entertainment activities, Sports activities and amusement and recreation activities - in South, Architectural and engineering activities; technical testing and analysis, Technical testing and analysis, Advertising and market research - in Gagauzia and Amusement and recreation activities are emerging industries in Chisinau and Gagauzia.

ICT is the emerging industry in North, Centre and South. **Biomedicine** in Chisinau (Manufacture of medical and dental instruments and supplies, Medical and dental practice activities) and Gagauzia (Hospital activities).

Textile, Apparel, Footwear and Leather goods (TAFL) is the emerging industry in North (Manufacture of leather and related products and Manufacture of footwear) and Gagauzia (Manufacture of wearing apparel).

Electrical equipment is the emerging industry in Chisinau and Centre and **Waste management** in North, Centre and South.

These broad groupings also coincide with the strategic economic sectors identified by the Invest Moldova Agency (section 2.1).

Other potential priority areas include the following activities in manufacturing (cf. Table 18):

- Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (C16) in North and Centre;
- Manufacture of paper and paper products (C17) in North and Centre;

- Manufacture of rubber and plastic products (C22) in North;
- Manufacture of other non-metallic mineral products (C23) in South;
- Manufacture of glass and glass products (C231) in North and Centre;
- Manufacture of tanks, reservoirs and containers of metal (C252) in North and Centre.

Also, activities related to the tourism industry are emerging industries in South and Gagauzia.

Retail sale, Wholesale, Warehousing, Real estate, Renting, Security activities, Financial service activities, Head offices activities, and Employment activities, have been excluded because of their low relevance for smart specialization.

Table 18: Specialisation in Emerging industries

		Chisinau	North	Centre	South	Gagauzia
Agriculture and Food processing		X	X	X	X	X
A01	Crop and animal production, hunting and related service activities				X	
A012	Growing of perennial crops			X		
A013	Plant propagation	X			X	
A014	Animal production	X				
A016	Support activities to agriculture and post-harvest crop activities				X	
A03	Fishing and aquaculture				X	X
A031	Fishing					X
A032	Aquaculture				X	
C10	Manufacture of food products			X		X
C101	Processing and preserving of meat and production of meat products			X		
C102	Processing and preserving of fish, crustaceans and molluscs			X		
C103	Processing and preserving of fruit and vegetables		X			X
C104	Manufacture of vegetable and animal oils and fats			X		
C105	Manufacture of dairy products					X
C106	Manufacture of grain mill products, starches and starch products		X			
C107	Manufacture of bakery and farinaceous products		X	X	X	X
C108	Manufacture of other food products			X		
C109	Manufacture of prepared animal feeds	X				
M750	Veterinary activities	X				
ICT			X	X	X	
J582	Software publishing			X		
J601	Radio broadcasting			X		
J61	Telecommunications		X		X	
J611	Wired telecommunications activities		X		X	
J612	Wireless telecommunications activities		X	X		
J620	Computer programming, consultancy and related activities		X		X	
J63	Information service activities		X			
J631	Data processing, hosting and related activities; web portals		X	X		
S95	Repair of computers and personal and household goods		X	X		
S951	Repair of computers and communication equipment			X		
Biomedicine		X				X
C325	Manufacture of medical and dental instruments and supplies	X				
Q861	Hospital activities					X
Q862	Medical and dental practice activities	X				
Q869	Other human health activities	X				
Q871	Residential nursing care activities	X				
Textile, Apparel, Footwear and Leather goods (TAFL)			X			X
C13	Manufacture of textiles		X			
C139	Manufacture of other textiles		X			X
C14	Manufacture of wearing apparel					X
C141	Manufacture of wearing apparel, except fur apparel					X
C15	Manufacture of leather and related products		X			
C152	Manufacture of footwear		X			
Electrical equipment		X		X		
C27	Manufacture of electrical equipment			X		
C271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	X				
C273	Manufacture of wiring and wiring devices			X		
C293	Manufacture of parts and accessories for motor vehicles			X		
Waste management			X	X	X	
E360	Water collection, treatment and supply				X	
E38	Waste collection, treatment and disposal activities; materials recovery		X	X	X	
E381	Waste collection		X	X	X	

		Chisinau	North	Centre	South	Gagauzia
Creative industry¹⁸		X	X	X	X	X
C321	Manufacture of jewellery, bijouterie and related articles		X	X		
C324	Manufacture of games and toys		X			
J582	Software publishing			X		
J601	Radio broadcasting			X		
J61	Telecommunications		X		X	
J611	Wired telecommunications activities		X		X	
J612	Wireless telecommunications activities		X	X		
J620	Computer programming, consultancy and related activities		X		X	
J63	Information service activities		X			
J631	Data processing, hosting and related activities; web portals		X	X		
M71	Architectural and engineering activities; technical testing and analysis					X
M711	Architectural and engineering activities and related technical consultancy				X	
M712	Technical testing and analysis					X
M73	Advertising and market research					X
M731	Advertising				X	
M74	Other professional, scientific and technical activities				X	X
M742	Photographic activities			X	X	
R900	Creative, arts and entertainment activities				X	
R93	Sports activities and amusement and recreation activities	X			X	X
R931	Sports activities				X	
R932	Amusement and recreation activities					X
Other						
B081	Quarrying of stone, sand and clay					X
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials			X		X
C161	Sawmilling and planing of wood			X		
C162	Manufacture of products of wood, cork, straw and plaiting materials		X	X		X
C17	Manufacture of paper and paper products		X	X		
C172	Manufacture of articles of paper and paperboard		X	X		
C201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms			X		
C204	Manufacture of soap & detergents, cleaning and polishing preparations, perfumes and toilet preparations	X				
C205	Manufacture of other chemical products	X				
C22	Manufacture of rubber and plastic products		X			
C222	Manufacture of plastics products		X			
C23	Manufacture of other non-metallic mineral products				X	
C231	Manufacture of glass and glass products		X	X		
C233	Manufacture of clay building materials			X	X	
C235	Manufacture of cement, lime and plaster	X				
C236	Manufacture of articles of concrete, cement and plaster			X		
C237	Cutting, shaping and finishing of stone		X	X	X	
C239	Manufacture of abrasive products and non-metallic mineral products n.e.c.	X				
C251	Manufacture of structural metal products		X			X
C252	Manufacture of tanks, reservoirs and containers of metal	X				
C255	Forging, pressing, stamping and roll-forming of metal; powder metallurgy			X		
C256	Treatment and coating of metals; machining					X
C259	Manufacture of other fabricated metal products	X	X	X		X
C32	Other manufacturing		X	X		
C329	Manufacturing n.e.c.			X		
F41	Construction of buildings			X		
F412	Construction of residential and non-residential buildings			X		
F421	Construction of roads and railways				X	X
F422	Construction of utility projects					X
F429	Construction of other civil engineering projects		X			
F431	Demolition and site preparation	X			X	
F432	Electrical, plumbing and other construction installation activities	X				X
F433	Building completion and finishing	X			X	
F439	Other specialised construction activities				X	
H49	Land transport and transport via pipelines				X	X
H493	Other passenger land transport					X
H494	Freight transport by road and removal services	X			X	X

¹⁸ Creative industries also include ICT industries. For this reason, they can be found twice in this table in the ICT section and in the Creative industries section.

		Chisinau	North	Centre	South	Gagauzia
H495	Transport via pipeline	X				
H512	Freight air transport and space transport		X			
H522	Support activities for transportation		X		X	
I55	Accommodation	X			X	X
I551	Hotels and similar accommodation	X			X	X
I552	Holiday and other short-stay accommodation				X	
I56	Food and beverage service activities				X	X
I561	Restaurants and mobile food service activities				X	
I562	Event catering and other food service activities			X		
I563	Beverage serving activities	X				
M69	Legal and accounting activities		X	X	X	
M692	Accounting, bookkeeping and auditing activities; tax consultancy		X	X	X	X
M70	Activities of head offices; management consultancy activities		X		X	X
M702	Management consultancy activities		X		X	X
M72	Scientific research and development			X		
M721	Research and experimental development on natural sciences and engineering			X		
N79	Travel agency, tour operator and other reservation service and related activities			X	X	
N791	Travel agency and tour operator activities			X	X	
N802	Security systems service activities		X			
N81	Services to buildings and landscape activities	X	X			
N82	Office administrative, office support and other business support activities		X		X	X
N821	Office administrative and support activities			X		
N822	Activities of call centres		X			
N823	Organisation of conventions and trade shows	X				
N829	Business support service activities n.e.c.				X	
P853	Secondary education			X		
P855	Other education	X				
S952	Repair of personal and household goods		X		X	
S960	Other personal service activities			X	X	

2.9 Summary assessment of economic priority areas

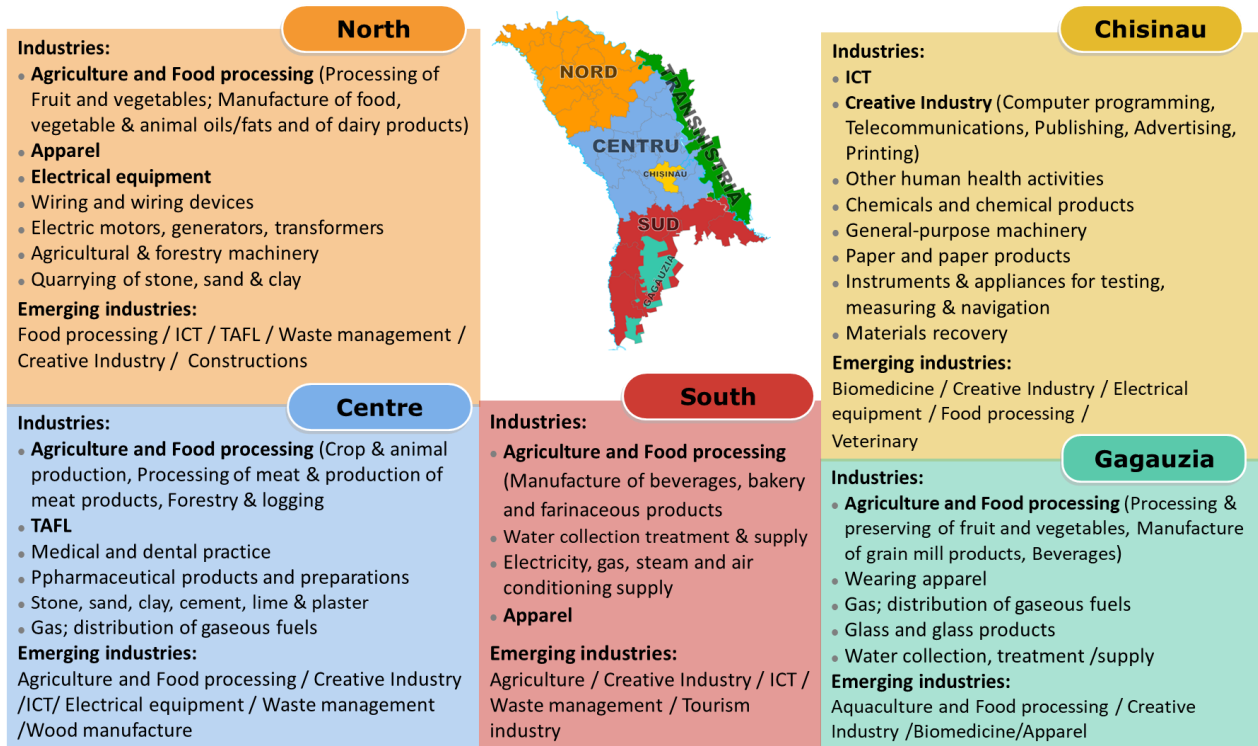
The potential priority domains for smart specialisation have been identified in the economic mapping (as shown in Figure 7 below). For Chisinau ICT and Creative Industries are the most important economic areas; other areas of importance include Human health activities, Chemicals and chemical products, Glass and glass products, Paper and paper products and Materials recovery.

For North, Centre, South and Gagauzia comparable priority areas for smart specialisation have been identified. For all four regions Agriculture and Food processing are very important, but there are some differences as to which specific industries are included (cf. Table 17 for details). Textiles, Apparel, Footwear and Leather (TAFL), Biomedicine, Energy and Electrical equipment are also priority areas for smart specialisation in several of these four regions.

In addition, several industries have been identified as having an emerging economic potential: ICT in North, Centre and South, Creative industries in all regions, Waste management in North, Centre and South, Biomedicine in Chisinau and Gagauzia and Electrical equipment in Centre (cf. Table 18 for details).

Figure 7 Economic potential for smart specialisation

Economic priority areas



3. Innovation potential

3.1 Innovation activities

For the mapping of the innovation potential, data have been used from the statistical survey on the innovation activity of enterprises in the Republic of Moldova in the years 2017-2018¹⁹. NACE 3-digit data at the regional level have been made available by the National Bureau of Statistics for the following:

- Total number of firms;
- Number of firms which introduced at least one innovation (product or process or organisational or marketing);
- Number of firms which introduced at least one product innovation;
- Number of firms which introduced at least one process innovation;
- Number of firms which introduced at least one marketing innovation;
- Number of firms which introduced at least one organisational innovation;
- Number of firms that introduced a product innovation new to the firm's market;
- Number of firms that introduced a product innovation new to the firm;
- Number of firms with own R&D activities;
- Number of firms with external R&D activities.

Table 19 provides summary statistics for several indicators. For Moldova about 18% of firms have introduced at least one innovation (product, process, organisational or marketing). About 8% of all firms have introduced a product or a process innovation, almost 10% an organisational innovation, and almost 11% a marketing innovation. So-called 'non-technological innovation' is used by more firms than 'technological innovation'. Of the firms with product innovations, 43.4% have introduced an innovation that was new to their market and almost 57% have introduced an innovation that was new to the firm. Less than 1% of all firms have own R&D expenditures and or purchased external R&D.

Table 69: Innovation activities in the regions of the Republic of Moldova

	Moldova	Chisinau	North	Center	South	Gagauzia
Sample size (# firms)	3326	2067	457	506	175	121
Innovators (% of all firms)	18.2%	18.8%	19.0%	13.6%	22.3%	17.4%
Product innovators (% of all firms)	8.0%	8.1%	8.5%	6.7%	10.3%	5.8%
Process innovators (% of all firms)	7.5%	7.7%	7.9%	5.7%	10.9%	5.0%
Organisational innovators (% of all firms)	9.9%	10.7%	9.4%	6.7%	10.9%	9.9%
Marketing innovators (% of all firms)	10.8%	11.85%	9.85%	7.5%	11.4%	9.9%
New-to-market innovations (% of product innovators)	43.4%	49.7%	35.9%	29.4%	38.9%	14.3%
New-to-firm innovations (% of product innovators)	56.6%	53.3%	66.7%	55.9%	61.1%	71.4%
Own R&D expenditures	0.66%	1.03%	-	-	-	-
External R&D expenditures	0.33%	0.51%	-	-	-	-

Source: Moldovan innovation survey, National Bureau of Statistics of the Republic of Moldova.

Note: Results are calculated aggregating NACE 3-digit results. No industry weights have been used.

There are differences in innovativeness across the regions. In South about 22% of firms are innovators, in North and Chisinau about 19% and in Gagauzia about 17% of firms are innovators. The highest share of firms with product, process and organisational innovations is for South with 10.3%, 10.9% and 10.9% respectively and for firms with marketing innovations for Chisinau (11.9%). These results however should be interpreted with care as the sample size for each region is relatively small and the breakdown by industry might not be representative at the regional level.

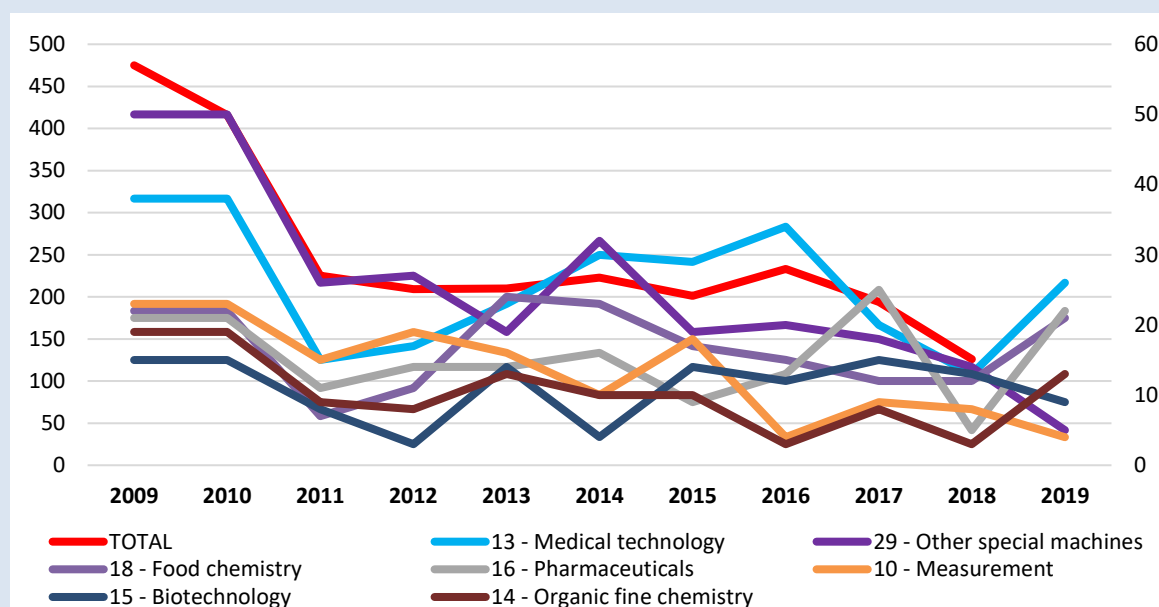
Using the data on innovative firms and the methodology explained in Section 1.3, for each region industries with an innovation potential can be identified.

¹⁹ Cf. <https://statistica.gov.md/newsview.php?l=ro&idc=168&id=6541>

3.2 Patent activities²⁰

Data on international patent applications in 35 technology fields are available from the World Intellectual Property Office (WIPO) for the period 2009 to 2019. The number of total international patent applications in the Republic of Moldova is showing a cyclical pattern over time (Figure 8), with the number of applications declining between 2010 and 2013 and increasing in 2014, 2015 and 2017, after which it decreased again.

Figure 7 Total number of patent applications



Source: WIPO statistics database. Total patent applications are shown on the vertical axis on the left, patent applications by field on the vertical axis on the right.

The top-7 technology fields with most international patent applications are: Medical technology, Other special machines, Food chemistry, Pharmaceuticals, Measurement, Biotechnology, Organic fine chemistry (Table 20). Although patents are an imperfect indicator for innovation²¹, high patent activities in Food chemistry, Organic fine chemistry and Biotechnology match the results of the economic mapping for the four *Rural regions* having an economic specialisation in Agriculture and Food processing. These top-7 technology fields are relatively consistent over time, but in the most recent 2017-2019 period patent applications in Pharmaceuticals have replaced those in Other special machines among the top-7 technology fields and the applications in Engine, pumps, and turbines have replaced those in Measurement. Food chemistry has been among the fastest growing technology fields²², together with Medical technology, Pharmaceuticals and Biotechnology.

Data on international patent applications were used to confirm the scientific potential of the proposed priority domains for smart specialisation (Table 39).

²⁰ Patent activities can also be seen as scientific activities, but as many patents contain new knowledge derived from applied research activities, patent data are in this report analysed as part of the mapping of the innovation potential of the Republic of Moldova.

²¹ Mostly firms in manufacturing apply for patents; the share of firms in services applying for a patent is much smaller. In manufacturing there are also significant differences, with very high patent intensities in e.g. Medical technology and Pharmaceuticals and low patent intensities in other manufacturing industries. An issue is that patents can be costly to maintain, which makes applying for a patent less attractive for small firms.

²² Growth here is defined as the percentage increase between the number of patent applications in 2017-2019 and those in 2009-2016.

Table 20: International patent applications by technology field

Field of technology	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2009-2019	2017-2019		
1 - Electrical machinery, apparatus, energy	8	14	3	5	4	6	8	9	2	2	4	40	2.28%	8	1.67%
2 - Audio-visual technology	2	5	10	1	1	2	1	9	1	1		21	1.19%	2	0.42%
3 - Telecommunications		2	1	2	1	4	3	10		1		10	0.57%	1	0.21%
4 - Digital communication				1		2	2	8	1			3	0.17%	1	0.21%
5 - Basic communication processes	2	2	2	1	2	1	1					10	0.57%	0	0.00%
6 - Computer technology	3	17	4	4	3	2	2	9	4			33	1.88%	4	0.84%
7 - IT methods for management	2					1	1					3	0.17%	0	0.00%
8 - Semiconductors	4	6	5	3	3	2	4		2	2	2	23	1.31%	6	1.25%
9 - Optics	7	3	1	2	1	1				1	1	15	0.85%	2	0.42%
10 - Measurement	9	23	15	19	16	10	18	4	9	8	4	92	5.23%	21	4.38%
11 - Analysis of biological materials	2	3	2	2	1	1	3	2	2	3	3	11	0.63%	8	1.67%
12 - Control	2	5	5	3	2	2		9	2	1	3	19	1.08%	6	1.25%
13 - Medical technology	122	38	15	17	23	30	29	34	20	13	26	245	13.94%	59	12.32%
14 - Organic fine chemistry	18	19	9	8	13	10	10	3	8	3	13	77	4.38%	24	5.01%
15 - Biotechnology	9	15	8	3	14	4	14	12	15	13	9	53	3.01%	37	7.72%
16 - Pharmaceuticals	35	21	11	14	14	16	9	13	25	5	22	111	6.31%	52	10.86%
17 - Macromolecular chemistry, polymers	2	2	1	1	1	1			1		1	8	0.46%	2	0.42%
18 - Food chemistry	38	22	7	11	24	23	17	15	12	12	21	125	7.11%	45	9.39%
19 - Basic materials chemistry	15	10	8	6	8	8	5	5	5	3	6	55	3.13%	14	2.92%
20 - Materials, metallurgy	14	16	7	3	4	5	5	10	13	1	4	49	2.79%	18	3.76%
21 - Surface technology, coating	12	14	10	13	5	5	4	3	4	3	4	59	3.36%	11	2.30%
22 - Micro-structural and nano-technology	3	5	2	1	1	2	3	2	1	1	1	14	0.80%	3	0.63%
23 - Chemical engineering	25	14	7	5	5	8	8	7	5	13	1	64	3.64%	19	3.97%
24 - Environmental technology	13	18	6	3	2	5	4	2	3	2	1	47	2.67%	6	1.25%
25 - Handling	3	2	2	6	3	3	1	1	3	2	4	19	1.08%	9	1.88%
26 - Machine tools	17	24	14	18	8	5	3	3	8	4	1	86	4.89%	13	2.71%
27 - Engines, pumps, turbines	31	12	7	2	15	5	8	10	10	3	9	72	4.10%	22	4.59%
28 - Textile and paper machines	1	3	3	2	1				1			10	0.57%	1	0.21%
29 - Other special machines	34	50	26	27	19	32	19	20	18	14	5	188	10.69%	37	7.72%
30 - Thermal processes and apparatus	11	10	3	2	4	3	5	4	2	9	3	33	1.88%	14	2.92%
31 - Mechanical elements	18	10	3	1	2	2	3	2	4	1		36	2.05%	5	1.04%
32 - Transport	1	15		12		4	4	4	1		1	32	1.82%	2	0.42%
33 - Furniture, games	2	3	3	2	2	1	2	2	2	3	3	13	0.74%	8	1.67%
34 - Other consumer goods	5	1	3	2	1	2	1	2	2		1	14	0.80%	3	0.63%
35 - Civil engineering	5	12	22	7	7	15	4	19	8	2	6	68	3.87%	16	3.34%
TOTAL	475	416	225	209	210	223	201	233	194	126	159	1758	100.00%	479	100.00%

Regional data on patents are available from Moldova’s State Agency on Intellectual Property (AGEPI). Two types of patent data have been made available by AGEPI: Number of patents granted to national inventors for First IPC section, class and subclass, and Number of patents granted to national inventors for All IPC sections, classes and subclasses. **First IPC highlights the most relevant IPC subclasses for each granted patent and respectively, data for First IPC subclasses have been used in the analysis of patent data for innovation potential identification.**

As shown in Table 21, Most national inventors (about 85%), originate from Chisinau, 5% from North, 8% from Centre and 3% of all national inventors originate from South and Gagauzia.

Correspondingly, most patents are granted to Chisinau, about 88% of all patents²³. North accounts for about 2% of all granted patents, Centre account for about 8% and South and Gagauzia account for about 2% of all granted patents.

The total number of national granted patents in Moldova’s regions presents a cyclical pattern over time. In Chisinau the number of national granted patents decreased by 41% in 2018 and increased by 56% in 2019, after which it decreased again. In the Centre it is declining between 2017 and 2019 with about 13-15% annually and increasing again in 2020. In Gagauzia in 2018 no national granted patent was registered but in 2019 the total number increased to twice the value in 2017, after which it decreased again by 67%.

In the North on the contrary, the total number of national granted patents has increased almost double in 2018 and slightly decreased in 2020 and in the South, it remained practically constant over the last four years.

Table 7: Patent activities by region

	National inventors ²⁴		First IPC section, class and subclass					%share
	Volume (persons)	%share	Volume (number)					
			2017	2018	2019	2020	Total	
Chisinau	4141	85%	568	335	524	439	1866	88%
North	231	5%	8	15	15	11	49	2%
Centre	379	8%	46	40	34	44	164	8%
South	94	2%	6	6	6	5	23	1%
Gagauzia	49	1%	5	0	9	3	17	1%
Total	4894		638	400	589	502	2129	

Source: Moldova’s State Agency on Intellectual Property (AGEPI)

Table 22 shows the top technology fields by national applications. Areas which are related to the economic areas identified in the economic mapping are highlighted in bold.

Full results for granted patents are shown in Table 23. The high number of granted patents in these areas confirms the importance of Agriculture and Food processing for North, Centre, South and Gagauzia, Electrical equipment for North, Biomedicine for Centre Chisinau and Gagauzia and Chemicals and chemical products for Chisinau.

²³ The explanation is that patent activities of enterprises with establishments in multiple regions and having their head office in Chisinau, register all patent activities in Chisinau, or the basic applicant has its head office in Chisinau, irrespective of where patent activities actually take place.

²⁴ Numbers of inventors are aggregate numbers for multiple years, but which years is not specified http://www.db.agepi.md/Inventions/panorama/1#columnchart_16.

Table 22: Top areas of interest of national applicants

Subclass	Total	Description
A61K	1649	Preparations for medical, dental, or toilet purposes
A61B	971	Diagnosis; surgery; identification
A61P	673	Specific therapeutic activity of chemical compounds or medicinal preparations
C02F	565	Treatment of water, waste water, sewage, or sludge
C07C	483	Acyclic or carbocyclic compounds
C12N	470	Micro-organisms or enzymes; compositions thereof; propagating, preserving, or maintaining micro-organisms; mutation or genetic engineering; culture media
A23L	469	Foods, foodstuffs, or non-alcoholic beverages, not covered by subclasses A21D or A23B-A23J; their preparation or treatment, e.g. cooking, modification of nutritive qualities, physical treatment; preservation of foods or foodstuffs, in general
G01N	428	Investigating or analysing materials by determining their chemical or physical properties
A01G	415	Horticulture; cultivation of vegetables, flowers, rice, fruit, vines, hops, or seaweed; forestry; watering
C12G	413	Wine; other alcoholic beverages; preparation thereof
A01N	385	Preservation of bodies of humans or animals or plants or parts thereof; biocides, e.g. as disinfectants, as pesticides or as herbicides; pest repellants or attractants; plant growth regulators
H01L	267	Semiconductor devices; electric solid state devices not otherwise provided for
B01D	236	Separation
B01J	215	Chemical or physical processes, e.g. catalysis, colloid chemistry; their relevant apparatus
C01G	209	Compounds containing metals not covered by subclasses C01D or C01F
G01R	209	Measuring electric variables; measuring magnetic variables
C07F	204	Acyclic, carbocyclic, or heterocyclic compounds containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen, sulfur, selenium or tellurium
F03D	200	Wind motors
C12R	196	Indexing scheme associated with subclasses C12C-C12Q, relating to micro-organisms
A01C	195	Planting; sowing; fertilising

Source: AGEPI http://www.db.agepi.md/Inventions/panorama/1#columnchart_13. Numbers are aggregate numbers for multiple years, but which years is not specified.

Table 23: Areas of interest of national applicants (2017-2020)

NACE rev.2		First IPC section, class and subclass						Relative to region (%-share)					
		Chisinau	North	Centre	South	Gagauzia	Moldova	Chisinau	North	Centre	South	Gagauzia	Moldova
C10	Manufacture of food products	136	4.5	18.5	1.5	1	162	7.3%	9.2%	11.3%	6.5%	5.9%	7.6%
C110	Manufacture of beverages	74	0.5	12.5	3.5	0	91	4.0%	1.0%	7.6%	15.2%	0.0%	4.3%
C14	Manufacture of wearing apparel	3	0	0	0	0	3	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%
C16	Manufacture of wood & of products of wood and cork, except furniture; manufacture of articles of straw & plaiting materials	1	0	0	0	0	1	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
C201	Manuf. of basic chemicals, fertilisers & nitrogen compounds, plastics & synthetic rubber in primary forms	195	6	9	0	0	210	10.5%	12.2%	5.5%	0.0%	0.0%	9.9%
C202	Manufacture of pesticides and other agrochemical products	39	0	7	0	1	47	2.1%	0.0%	4.3%	0.0%	5.9%	2.2%
C204	Manufacture of soap and detergents, cleaning & polishing preparations, perfumes & toilet preparations	78.5	2.5	2	0.5	1.5	85.5	4.2%	5.1%	1.2%	2.2%	8.8%	4.0%
C205	Manufacture of other chemical products	52	0	1	0	0	53	2.8%	0.0%	0.6%	0.0%	0.0%	2.5%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	289.5	10.5	28	6.5	8.5	345.5	15.5%	21.4%	17.1%	28.3%	50.0%	16.2%
C231	Manufacture of glass and glass products	1	0	3	0	0	4	0.1%	0.0%	1.8%	0.0%	0.0%	0.2%
C235	Manufacture of cement, lime and plaster	2	0	1	0	0	3	0.1%	0.0%	0.6%	0.0%	0.0%	0.1%
C24	Manufacture of basic metals	2	0	0	0	0	2	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
C256	Treatment and coating of metals; machining	10	0	1	0	0	11	0.5%	0.0%	0.6%	0.0%	0.0%	0.5%
C257	Manufacture of cutlery, tools and general hardware	1	0	0	0	0	1	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
C259	Manufacture of other fabricated metal products	5	0	2	0	0	7	0.3%	0.0%	1.2%	0.0%	0.0%	0.3%
C261	Manufacture of electronic components and boards	54	1	6	0	0	61	2.9%	2.0%	3.7%	0.0%	0.0%	2.9%
C263	Manufacture of communication equipment	14	0	0	0	0	14	0.8%	0.0%	0.0%	0.0%	0.0%	0.7%
C264	Manufacture of consumer electronics	3	0	0	0	0	3	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	60	3	6	1	0	70	3.2%	6.1%	3.7%	4.3%	0.0%	3.3%
C271	Manufacture of electric motors, generators, transformers & electricity distribution and control apparatus	13	0	0	0	0	13	0.7%	0.0%	0.0%	0.0%	0.0%	0.6%
C273	Manufacture of wiring and wiring devices	0	1	0	0	0	1	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
C275	Manufacture of domestic appliances	16	1	1	0	0	18	0.9%	2.0%	0.6%	0.0%	0.0%	0.8%
C279	Manufacture of other electrical equipment	14	0	0	0	0	14	0.8%	0.0%	0.0%	0.0%	0.0%	0.7%
C281	Manufacture of general-purpose machinery	65	1	8	2	0	76	3.5%	2.0%	4.9%	8.7%	0.0%	3.6%
C282	Manufacture of other general-purpose machinery	61	2	2	0	2	67	3.3%	4.1%	1.2%	0.0%	11.8%	3.1%
C283	Manufacture of agricultural and forestry machinery	145	4	13	1	0	165	7.8%	8.2%	7.9%	4.3%	0.0%	7.8%
C284	Manufacture of metal forming machinery and machine tools	72	0	0	0	0	72	3.9%	0.0%	0.0%	0.0%	0.0%	3.4%
C289	Manufacture of other special-purpose machinery	16	1	5	1	0	24	0.9%	2.0%	3.0%	4.3%	0.0%	1.1%
C291	Manufacture of motor vehicles	6	0	0	0	0	6	0.3%	0.0%	0.0%	0.0%	0.0%	0.3%
C30	Manufacture of other transport equipment	2	0	0	0	0	2	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
C32	Other manufacturing	6	0	4	1	0	11	0.3%	0.0%	2.4%	4.3%	0.0%	0.5%
C325	Manufacture of medical and dental instruments and supplies	388	3	23	5	3	422	20.8%	6.1%	14.0%	21.7%	17.6%	19.8%
C329	Manufacturing n.e.c.	10	1	3	0	0	14	0.5%	2.0%	1.8%	0.0%	0.0%	0.7%
F43	Specialised construction activities	17	4	2	0	0	23	0.9%	8.2%	1.2%	0.0%	0.0%	1.1%
Other		15	3	6	0	0	27	0.8%	6.1%	3.7%	0.0%	0.0%	1.3%

The total for Moldova is slightly higher than the aggregate for the five regions as it also includes 10 granted patents for T.A.U. of the Left Bank of the Dniester (Transnistria).

3.3 Chisinau: Innovation potential

Full results for **Chisinau** are shown in Annex 8 and in Table 25. Annex 8 also shows the shares of innovators, the different types of innovators, new-to-market and new-to-firm sales and R&D activities. Table 24 summarizes the results for **Chisinau** using the thresholds defined in section 1.3. The initial selection using innovation survey data included 139 industries; 41 industries have an innovation potential relative to the region and 22 industries passed the degree of specialisation threshold and 20 industries passed both selection criteria. In addition, for Chisinau 14 industries were identified with an innovation potential where the patent share passed the threshold. Combining the results using innovation survey data and patent data shows that 55 industries have an innovation potential.

Table 24: Mapping of innovation potential: results for Chisinau

Criteria	Threshold	Number of selected industries
Initial number of industries for which innovation survey data are available	--	139
Critical mass	4	--
Specialisation (LQ)	1.25	22
Share (relative to the region)	15%	41
Both: share and specialisation	--	20
Patents share	> 1%	14
LQ or %-share or PAT	--	55

For **Chisinau**, out of 55 industries with an innovation potential, 16 industries also have an economic potential, identified in the economic mapping. These are highlighted in green in Table 25.

For **Chisinau**, of particular interest for smart specialization are the following industries identified with an innovation potential:

- C17 Manufacture of paper and paper products;
- C282 Manufacture of other general-purpose machinery;
- J61 Telecommunications;
- J620 Computer programming, consultancy and related activities.

Table 25: Chisinau: industries with innovation potential

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
C10	Manufacture of food products		X	X	0.51	26.5%	7.3%
C101	Processing and preserving of meat and production of meat products		X		0.58	40.0%	--
C107	Manufacture of bakery and farinaceous products		X		0.48	22.5%	--
C108	Manufacture of other food products		X		0.69	28.6%	--
C110	Manufacture of beverages		X	X	0.65	41.9%	4.0%
C13	Manufacture of textiles	X	X		1.56	26.7%	--
C139	Manufacture of other textiles	X	X		1.56	30.8%	--
C14	Manufacture of wearing apparel		X		1.05	29.8%	--
C141	Manufacture of wearing apparel, except fur apparel		X		1.05	28.4%	--
C15	Manufacture of leather and related products	X	X		1.30	38.5%	--
C151	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	X	X		1.30	45.5%	--
C152	Manufacture of footwear	X	X		1.30	33.3%	--

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials		X		1.17	37.5%	--
C162	Manufacture of products of wood, cork, straw and plaiting materials		X		1.11	33.3%	--
C17	Manufacture of paper and paper products		X		1.11	20.0%	--
C172	Manufacture of articles of paper and paperboard		X		1.11	20.8%	--
C181	Printing and service activities related to printing		X		1.24	17.4%	--
C201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms			X	--	--	10.5%
C202	Manufacture of pesticides and other agrochemical products			X	--	--	2.1%
C204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations			X	1.56	20.0%	4.2%
C205	Manufacture of other chemical products			X	--	--	2.8%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations			X	--	--	15.5%
C22	Manufacture of rubber and plastic products		X		1.04	29.1%	--
C222	Manufacture of plastics products		X		1.01	27.8%	--
C23	Manufacture of other non-metallic mineral products		X		1.17	18.0%	--
C236	Manufacture of articles of concrete, cement and plaster	X	X		1.30	16.7%	--
C251	Manufacture of structural metal products		X		1.17	22.2%	--
C261	Manufacture of electronic components and boards			X	--	--	2.9%
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks			X	1.56	20.0%	3.2%
C28	Manufacture of machinery and equipment n.e.c.		X		1.04	18.2%	--
C281	Manufacture of general-purpose machinery			X	--	--	3.5%
C282	Manufacture of other general-purpose machinery			X	1.56	22.2%	3.3%
C283	Manufacture of agricultural and forestry machinery			X	0.52	16.7%	7.8%
C284	Manufacture of metal forming machinery and machine tools			X	--	--	3.9%
C310	Manufacture of furniture		X		1.24	30.8%	--
C325	Manufacture of medical and dental instruments and supplies			X	0.78	100.0%	20.8%
C33	Repair and installation of machinery and equipment		X		1.11	20.0%	--
G46	Wholesale trade, except of motor vehicles and motorcycles		X		1.16	15.7%	--
G463	Wholesale of food, beverages and tobacco		X		1.05	18.5%	--
G464	Wholesale of household goods	X	X		1.44	19.0%	--
G467	Other specialised wholesale	X	X		1.31	17.5%	--
J58	Publishing activities	X	X		1.56	15.8%	--
J581	Publishing of books, periodicals and other publishing activities	X	X		1.56	18.2%	--
J60	Programming and broadcasting activities	X	X		1.56	35.3%	--
J602	Television programming and broadcasting activities	X	X		1.56	38.5%	--
J61	Telecommunications	X	X		1.56	17.4%	--
J620	Computer programming, consultancy and related activities	X	X		1.44	22.8%	--
J63	Information service activities	X	X		1.33	17.1%	--
K64	Financial service activities, except insurance and pension funding	X	X		1.43	31.4%	--
K642	Activities of holding companies	X	X		1.56	80.0%	--
K649	Other financial service activities, except insurance and pension funding	X	X		1.36	23.3%	--
M71	Architectural and engineering activities; technical testing and analysis	X	X		1.44	16.2%	--
M712	Technical testing and analysis	X	X		1.40	33.3%	--
M73	Advertising and market research	X			1.36	14.3%	--
M731	Advertising	X			1.30	13.9%	--

3.4 North: Innovation potential

Full results for **North** are shown in Annex 9 and in Table 27. Annex 9 also shows the shares of innovators, the different types of innovators, new-to-market and new-to-firm sales and R&D activities. Table 26 summarizes the results for **North** using the thresholds defined in section 1.3. The initial selection using innovation survey data included 157 industries; 18 industries have an innovation potential relative to the region and 16 industries passed the degree of specialisation threshold and 13 industries passed both selection criteria. In addition, for **North** 16 industries were identified with an innovation potential where the patent share passed the threshold. Combining the results using innovation survey data and patent data shows that 35 industries have an innovation potential.

Table 26: Mapping of innovation potential: results for North

Criteria	Threshold	Number of selected industries
Initial number of industries for which innovation survey data are available	--	157
Critical mass	2	--
Specialisation (LQ)	1.5	16
Share (relative to the region)	15%	18
Both: share and specialisation	--	13
Patents share	> 1%	16
LQ or %-share or PAT	--	35

For **North**, out of 35 industries with an innovation potential, 10 industries also have an economic potential, identified in the economic mapping. These are highlighted in green in Table 27.

For **North**, of particular interest for smart specialization are the following industries identified with an innovation potential:

- C10 Manufacture of food products;
- C103 Processing and preserving of fruit and vegetables;
- C104 Manufacture of vegetable and animal oils and fats;
- C105 Manufacture of dairy products;
- C273 Manufacture of wiring and wiring devices;
- C283 Manufacture of agricultural and forestry machinery.

Table 27: North: industries with innovation potential

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
B081	Quarrying of stone, sand and clay	X			2.32	13.3%	--
C10	Manufacture of food products	X	X	X	1.95	35.4%	9.2%
C101	Processing and preserving of meat and production of meat products		X		1.30	33.3%	--
C103	Processing and preserving of fruit and vegetables	X	X		2.32	100.0%	--
C104	Manufacture of vegetable and animal oils and fats	X	X		3.48	40.0%	--
C105	Manufacture of dairy products	X	X		5.80	71.4%	--
C108	Manufacture of other food products	X	X		3.09	66.7%	--
C110	Manufacture of beverages		X	X	0.45	40.0%	1.0%
C201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms			X	3.48	50.0%	12.2%
C204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations			X	--	--	5.1%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations			X	--	--	21.4%

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share				
C22	Manufacture of rubber and plastic products	X	X		1.74	60.0%	--
C222	Manufacture of plastics products	X	X		1.81	60.0%	--
C25	Manufacture of fabricated metal products, except machinery and equipment	X	X		1.85	66.7%	--
C261	Manufacture of electronic components and boards			X	--	--	2.0%
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks			X	--	--	6.1%
C273	Manufacture of wiring and wiring devices			X	--	--	2.0%
C275	Manufacture of domestic appliances			X	--	--	2.0%
C281	Manufacture of general-purpose machinery			X	--	--	2.0%
C282	Manufacture of other general-purpose machinery			X	--	--	4.1%
C283	Manufacture of agricultural and forestry machinery			X	2.32	50.0%	8.2%
C289	Manufacture of other special-purpose machinery			X	--	--	2.0%
C310	Manufacture of furniture		X		0.70	33.3%	--
C32	Other manufacturing	X	X		4.64	33.3%	--
C325	Manufacture of medical and dental instruments and supplies			X	3.48	100.0%	6.1%
C329	Manufacturing n.e.c.			X	--	--	2.0%
D35	Electricity, gas, steam and air conditioning supply	X	X		1.99	22.2%	--
E360	Water collection, treatment and supply	X	X		2.78	21.1%	--
F43	Specialised construction activities			X	--	--	8.2%
G462	Wholesale of agricultural raw materials and live animals	X			1.74	13.3%	--
G463	Wholesale of food, beverages and tobacco		X		0.87	20.0%	--
H494	Freight transport by road and removal services	X			1.62	12.1%	--
H52	Warehousing and support activities for transportation	X	X		1.74	18.8%	--
H521	Warehousing and storage	X	X		6.95	22.2%	--
J620	Computer programming, consultancy and related activities		X		0.50	40.0%	--

3.5 Centre: Innovation potential

Full results for **Centre** are shown in Annex 10 and in Table 29. Annex 10 also shows the shares of innovators, the different types of innovators, new-to-market and new-to-firm sales and R&D activities. Table 28 summarizes the results for **Centre** using the thresholds defined in section 1.3. The initial selection using innovation survey data included 88 industries; 12 industries have an innovation potential relative to the region and 9 industries passed the degree of specialisation threshold and 9 industries passed both selection criteria. In addition, for **Centre** 18 industries were identified with an innovation potential where the patent share passed the threshold. Combining the results using innovation survey data and patent data shows that 27 industries have an innovation potential.

Table 28: Mapping of innovation potential: results for Centre

Criteria	Threshold	Number of selected industries
Initial number of industries for which innovation survey data are available	--	88
Critical mass	2	--
Specialisation (LQ)	1.5	9
Share (relative to the region)	15%	12
Both: share and specialisation	--	9
Patents share	> 1%	18
LQ or %-share or PAT	--	27

For **Centre**, out of 27 industries with an innovation potential, 4 industries also have an economic potential, identified in the economic mapping. These are highlighted in green in Table 29.

For **Centre**, of particular interest for smart specialization are the following industries identified with an innovation potential:

- C10 Manufacture of food products;
- C15 Manufacture of leather and related products;
- C21 Manufacture of basic pharmaceutical products and pharmaceutical preparations;
- C283 Manufacture of agricultural and forestry machinery;
- C325 Manufacture of medical and dental instruments and supplies.

Table 29: Centre: industries with innovation potential

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
B081	Quarrying of stone, sand and clay	X	X		5.85	20.0%	--
C10	Manufacture of food products	X	X	X	2.14	25.6%	11.3%
C101	Processing and preserving of meat and production of meat products	X	X		3.29	33.3%	--
C107	Manufacture of bakery and farinaceous products	X	X		3.02	29.4%	--
C110	Manufacture of beverages		X	X	1.41	17.9%	7.6%
C15	Manufacture of leather and related products		X		1.46	28.6%	--
C17	Manufacture of paper and paper products	X	X		2.51	40.0%	--
C172	Manufacture of articles of paper and paperboard	X	X		2.51	40.0%	--
C201	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms			X	4.38	100.0%	5.5%
C202	Manufacture of pesticides and other agrochemical products			X	--	--	4.3%
C204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations			X	--	--	1.2%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	X	X	X	8.77	33.3%	17.1%
C231	Manufacture of glass and glass products			X	--	--	1.8%
C25	Manufacture of fabricated metal products, except machinery and equipment	X	X		1.75	18.8%	--
C259	Manufacture of other fabricated metal products			X	4.38	12.5%	1.2%
C261	Manufacture of electronic components and boards			X	--	--	3.7%
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks			X	--	--	3.7%
C281	Manufacture of general-purpose machinery			X	--	--	4.9%
C282	Manufacture of other general-purpose machinery			X	--	--	1.2%
C283	Manufacture of agricultural and forestry machinery			X	2.92	100.0%	7.9%
C289	Manufacture of other special-purpose machinery			X	--	--	3.0%
C32	Other manufacturing			X	--	--	2.4%
C325	Manufacture of medical and dental instruments and supplies			X	--	--	14.0%
C329	Manufacturing n.e.c.			X	--	--	1.8%
E360	Water collection, treatment and supply	X	X		3.51	17.4%	--
F43	Specialised construction activities			X	--	--	1.2%
G463	Wholesale of food, beverages and tobacco		X		1.32	16.2%	--

3.6 South: Innovation potential

Full results for **South** are shown in Annex 11 and in Table 31. Annex 11 also shows the shares of innovators, the different types of innovators, new-to-market and new-to-firm sales and R&D activities. Table 30 summarizes the results for **South** using the thresholds defined in section 1.3. The initial selection using innovation survey data included 41 industries; 22 industries have an innovation potential relative to the region and 17 industries passed the degree of specialisation threshold and 13 industries passed both selection criteria. In addition, for **South** 10 industries were identified with an innovation potential where the patent share passed the threshold. Combining the results using innovation survey data and patent data shows that 34 industries have an innovation potential.

Table 30: Mapping of innovation potential: results for South

Criteria	Threshold	Number of selected industries
Initial number of industries for which innovation survey data are available	--	41
Critical mass	1	--
Specialisation (LQ)	1.5	17
Share (relative to the region)	15%	22
Both: share and specialisation	--	13
Patents share	> 1%	10
LQ or %-share or PAT	--	34

For **South**, out of 34 industries with an innovation potential, 4 industries also have an economic potential, identified in the economic mapping. These are highlighted in green in Table 31.

For **South**, of particular interest for smart specialization are the following industries identified with an innovation potential:

- C10 Manufacture of food products;
- C107 Manufacture of bakery and farinaceous products;
- C110 Manufacture of beverages;
- D35 Electricity, gas, steam and air conditioning supply;
- E360 Water collection, treatment and supply.

Table 31: South: industries with innovation potential

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
C10	Manufacture of food products		X	X	1.32	26.9%	6.5%
C101	Processing and preserving of meat and production of meat products		X		0.97	50.0%	--
C103	Processing and preserving of fruit and vegetables		X		1.29	33.3%	--
C107	Manufacture of bakery and farinaceous products	X	X		2.67	31.3%	--
C110	Manufacture of beverages	X	X	X	4.00	34.8%	15.2%
C14	Manufacture of wearing apparel	X	X		1.68	30.8%	--
C141	Manufacture of wearing apparel, except fur apparel	X	X		1.83	44.4%	--
C204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations			X	--	--	2.2%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations			X	--	--	28.3%
C23	Manufacture of other non-metallic mineral products		X		1.29	25.0%	--
C233	Manufacture of clay building materials	X	X		7.76	100.0%	--

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks			X	--	--	4.3%
C281	Manufacture of general-purpose machinery			X	--	--	8.7%
C283	Manufacture of agricultural and forestry machinery			X	--	--	4.3%
C289	Manufacture of other special-purpose machinery			X	--	--	4.3%
C29	Manufacture of motor vehicles, trailers and semi-trailers	X	X		5.17	100.0%	--
C293	Manufacture of parts and accessories for motor vehicles	X	X		5.17	100.0%	--
C310	Manufacture of furniture		X		0.78	100.0%	--
C32	Other manufacturing			X	--	--	4.3%
C325	Manufacture of medical and dental instruments and supplies			X	--	--	21.7%
D35	Electricity, gas, steam and air conditioning supply	X	X		4.43	40.0%	--
D352	Manufacture of gas; distribution of gaseous fuels through mains	X	X		7.76	50.0%	--
E360	Water collection, treatment and supply	X			1.55	7.1%	--
G46	Wholesale trade, except of motor vehicles and motorcycles		X		0.92	25.0%	--
G461	Wholesale on a fee or contract basis	X	X		3.88	25.0%	--
G462	Wholesale of agricultural raw materials and live animals	X			1.94	14.3%	--
G463	Wholesale of food, beverages and tobacco		X		0.39	20.0%	--
G467	Other specialised wholesale		X		1.22	37.5%	--
G469	Non-specialised wholesale trade	X	X		2.22	33.3%	--
H49	Land transport and transport via pipelines	X			1.62	14.7%	--
H493	Other passenger land transport	X			1.72	10.5%	--
H494	Freight transport by road and removal services	X	X		1.55	20.0%	--
H52	Warehousing and support activities for transportation		X		1.29	33.3%	--
H522	Support activities for transportation	X	X		1.55	50.0%	--

3.7 Gagauzia: Innovation potential

Full results for **Gagauzia** are shown in Annex 12 and in Table 33. Annex 12 also shows the shares of innovators, the different types of innovators, new-to-market and new-to-firm sales and R&D activities. Table 32 summarizes the results for **Gagauzia** using the thresholds defined in section 1.3. The initial selection using innovation survey data included 52 industries; 20 industries have an innovation potential relative to the region and 14 industries passed the degree of specialisation threshold and 14 industries passed both selection criteria. In addition, for **Gagauzia** 6 industries were identified with an innovation potential where the patent share passed the threshold. Combining the results using innovation survey data and patent data shows that 25 industries have an innovation potential.

Table 32: Mapping of innovation potential: results for Gagauzia

Criteria	Threshold	Number of selected industries
Initial number of industries for which innovation survey data are available	--	52
Critical mass	1	--
Specialisation (LQ)	1.5	14
Share (relative to the region)	15%	20
Both: share and specialisation	--	14
Patents share	> 1%	6
LQ or %-share or PAT	--	25

For **Gagauzia**, out of 25 industries with an innovation potential, 6 industries also have an economic potential, identified in the economic mapping. These are highlighted in green in Table 33.

For **Gagauzia**, of particular interest for smart specialization are the following industries identified with an innovation potential:

- C10 Manufacture of food products;
- C103 Processing and preserving of fruit and vegetables;
- C106 Manufacture of grain mill products, starches and starch products;
- C110 Manufacture of beverages;
- C14 Manufacture of wearing apparel.

Table 33: Gagauzia: industries with innovation potential

Industries with innovation potential (LQ or %-share or PAT) NACE rev.2		Selected industries			Innovation activities		Patents
		Innovation activities		Patents	LQ (1.25)	Share (15%)	Share (> 1%)
		LQ	%-share	%-share			
C10	Manufacture of food products	X	X	X	1.76	31.3%	5.88%
C103	Processing and preserving of fruit and vegetables	X	X		4.80	66.7%	--
C104	Manufacture of vegetable and animal oils and fats	X	X		7.20	100.0%	--
C106	Manufacture of grain mill products, starches and starch products	X	X		9.60	33.3%	--
C107	Manufacture of bakery and farinaceous products		X		0.99	16.7%	--
C110	Manufacture of beverages	X	X		2.79	18.8%	--
C14	Manufacture of wearing apparel	X	X		2.34	33.3%	--
C141	Manufacture of wearing apparel, except fur apparel	X	X		1.69	25.0%	--
C143	Manufacture of knitted and crocheted apparel	X	X		9.60	100.0%	--
C202	Manufacture of pesticides and other agrochemical products			X	--	--	5.88%
C204	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations			X	--	--	8.82%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations			X	--	--	50.0%
C22	Manufacture of rubber and plastic products		X		1.20	33.3%	--
C222	Manufacture of plastics products		X		1.25	33.3%	--
C282	Manufacture of other general-purpose machinery			X	--	--	11.76%
C310	Manufacture of furniture		X		1.44	33.3%	--
C325	Manufacture of medical and dental instruments and supplies			X	--	--	17.65%
E38	Waste collection, treatment and disposal activities; materials recovery	X	X		9.60	50.0%	--
E381	Waste collection	X	X		9.60	50.0%	--
G462	Wholesale of agricultural raw materials and live animals	X	X		3.60	16.7%	--
G463	Wholesale of food, beverages and tobacco		X		0.72	20.0%	--
G464	Wholesale of household goods		X		1.11	100.0%	--
H49	Land transport and transport via pipelines	X	X		2.40	25.0%	--
H493	Other passenger land transport	X	X		3.20	28.6%	--
H494	Freight transport by road and removal services	X	X		1.92	22.2%	--

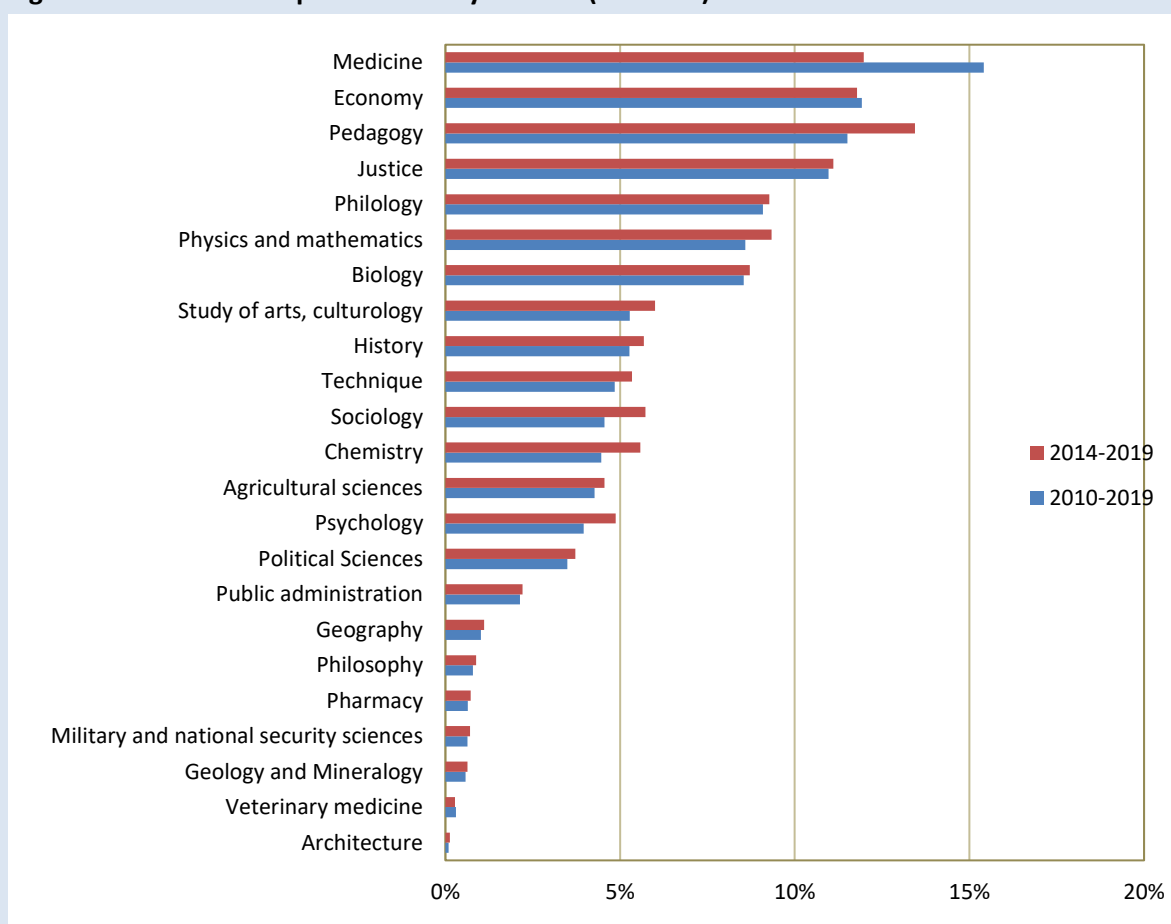
4. Scientific potential

4.1 Scientific publications

For scientific publications the focus will be on numbers of published articles since 2010. Country level data will be used from two sources: national publications are available from Instrumentul Bibliometric Național (IBN)²⁵, international publications are available from Scimago Journal & Country Rank (SJR)²⁶. Data showing publications per region are not available.

Between 2010 and 2019 there were more than 66,800 national publications, of which about 64% were in the following seven domains: Medicine, Economy, Pedagogy, Justice, Philology, Physics and Mathematics and Biology (Figure 9). Only some of these domains are relevant for the preliminary priority areas identified in the economic mapping. Technique represents about 4.8% of all national publications, Chemistry – 4.5% and Agricultural sciences represent about 4.3% of all publications.

Figure 8 Distribution of publications by domain (IBN data)



Data source: Instrumentul Bibliometric Național (IBN)

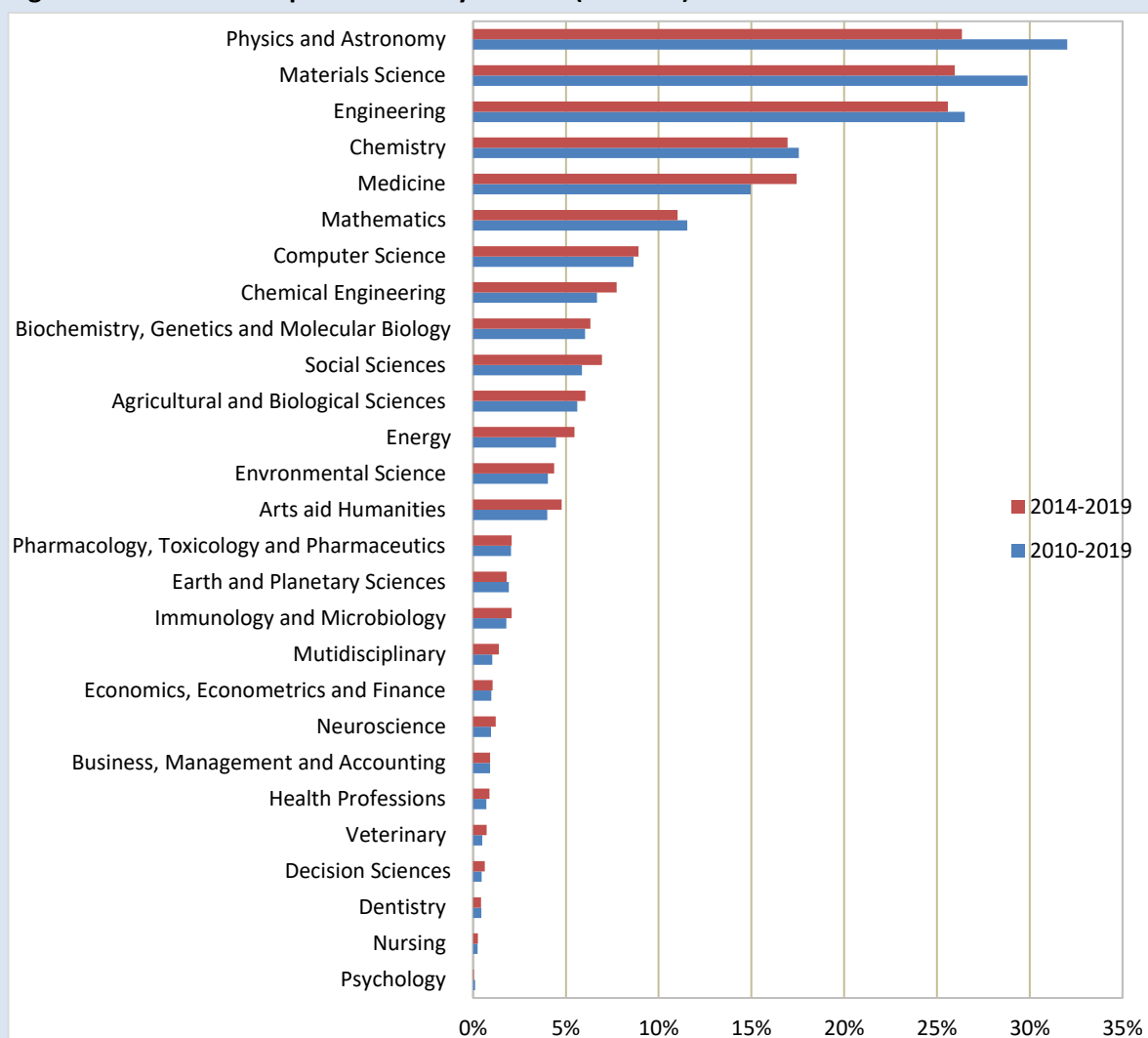
²⁵ National Bibliometric Instrument is a scientific electronic library which stores, classifies and measures public data regarding scientific publications of researchers from the Republic of Moldova. The data refers specifically to scientific articles published in national scientific journals of A, B and C categories (especially those found in electronic format), evaluated and accredited according to the requirements approved by the Supreme Council for Science and Technological Development (SCSTD) and the National Council for Accreditation and Attestation (CNAA).

²⁶ The Scimago Journal & Country Rank is a publicly available portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.).

Data on international publications are available from SJR. The total number of publications between 2010 and 2019, is almost 15 times lower compared to IBN, but these publications can be considered to be of higher quality as they have been published in international journals. The distribution across domains is also very different compared to that for national publications. The largest domain is Physics and Astronomy, followed by Materials Science, Engineering, Chemistry, Medicine, Mathematics and Computer Science. These seven domains account for almost 75% of all international publications (Figure 10).

The output of international publications is more relevant for the preliminary priority domains identified in the economic mapping with relatively more publications in e.g. Computer science, Agricultural and Biological Sciences, Energy, Medicine and Environmental Sciences.

Figure 9 Distribution of publications by domain (SJR data)



Data source: Scimago Journal & Country Rank (SJR)

4.2 Educational attainment

4.2.1 Researchers by R&D activity

The number of researchers has been above 3,000 between 2014 and 2018, with the largest number in 2015 (3,368), and decreased in 2019 (2,767) by over 14% compared to the average of 2014-2018 and by over 9% compared to 2018 (Figure 11).

Most researchers, about 36% of all researchers, are found in Natural sciences. Researchers in Engineering and technology and Social science each represent about 15% and those in Agricultural science and Medical science each represent about 13%.

Of all researchers more than half hold a PhD degree (Figure 12). The share of PhD holders is lowest in Engineering and technology (31%) and Agricultural science (42%). This relatively low share can be explained by the fact that in business having a PhD is much less important than in academia. In Humanities, Medical sciences, Humanities and Social sciences, the share of PhD holders is more than 60%, but most researchers in these domains work at universities or research institutes. The growing shares of PhD holders in almost all domains show that the average formal skill levels of researchers in Moldova is increasing.

Figure 10 Distribution of researchers

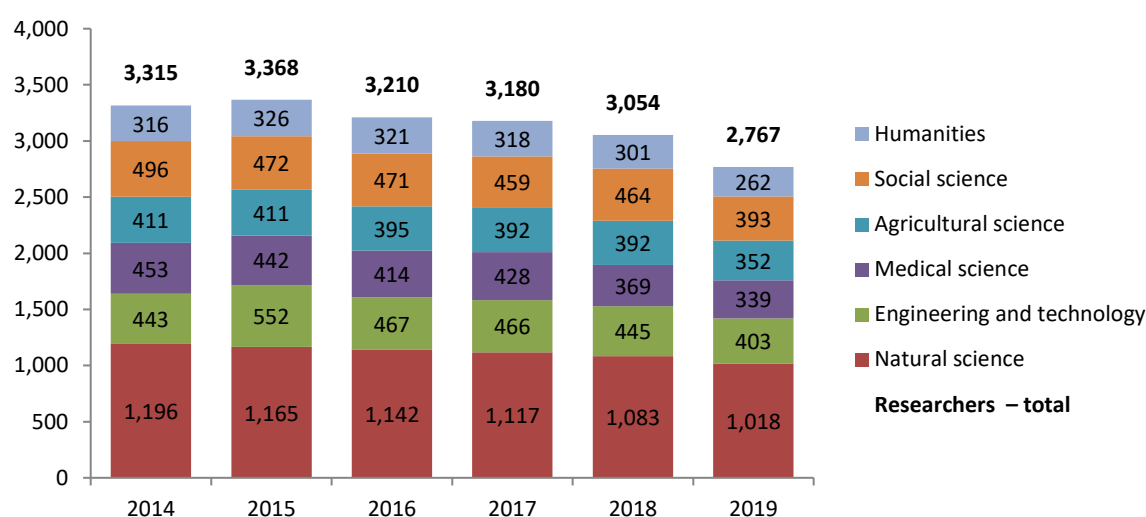
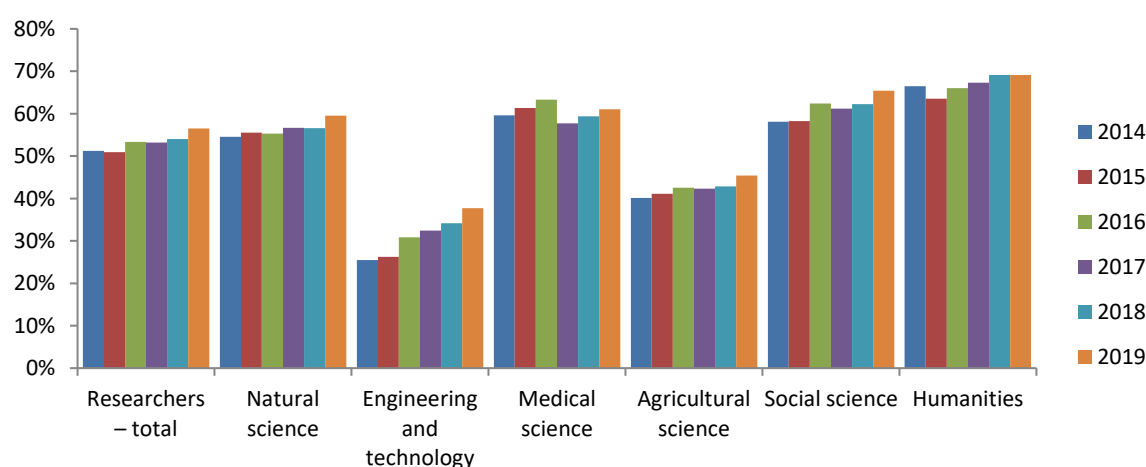


Figure 11 Share of PhD holders



4.2.2 Number of highly-skilled students and graduates

At the level of secondary vocational education (ISCED 4), there are above share shares, compared to population (cf. Table 2), of students in Chisinau and North (Table 34). Above 37% of students or pupils are in Chisinau, with comparable percentage share for the number of new students and graduates.

For post-secondary vocational education, Chisinau accounts for 59.4% of all students, 59.3% of all new students and 60% of all graduates (Table 35).

For tertiary education (ISCED 6) Chisinau accounts for almost 90% of all students, all new students and all graduates (Table 36). These numbers clearly show that the educational activities are concentrated in the capital city of Moldova, with Chisinau attracting large numbers of students from the four other regions.

Chisinau clearly benefits with an above average supply of newly skilled workers, whereas the other regions will have more difficulties in providing a sufficiently large supply of newly skilled workers. This is most visible for Centre, where there are no students in tertiary education.

Table 8: Secondary vocational education (ISCED 4) (2019-2020)

	Admission	%-share	Pupils	%-share	Graduates	%-share
Moldova	7,223	--	14,673	--	5,659	--
Chisinau	2,705	37.45%	5,430	37.01%	2,126	37.56%
North	1,993	27.59%	4,259	29.03%	1,699	30.02%
Centre	1,085	15.02%	2,176	14.83%	852	15.05%
South	933	12.92%	1,861	12.68%	661	11.68%
Gagauzia	507	7.02%	947	6.45%	322	5.69%

Table 35: Post-secondary vocational education (ISCED 5) (2019-2020)

	Admission	%-share	Pupils	%-share	Graduates	%-share
Moldova	8,324	--	28,891	--	6,433	--
Chisinau	4,943	59.38%	17,172	59.44%	3,882	60.35%
North	1,874	22.51%	6,627	22.94%	1,507	23.42%
Centre	823	9.89%	2,539	8.79%	565.5	8.79%
South	390	4.69%	1,528	5.29%	264	4.10%
Gagauzia	294	3.53%	1025	3.55%	214.5	3.33%

Table 36: Tertiary education (ISCED 6) (2019-2020)

	Admission	%-share	Pupils	%-share	Graduates	%-share
Moldova	19,413	--	56,840	--	16,266	--
Chisinau	17,050	87.83%	50,034	88.03%	14,390	88.47%
North	1,259	6.49%	3,682	6.48%	1,023	6.29%
Centre	-	-	-	-	-	-
South	473	2.44%	1,345	2.37%	394	2.42%
Gagauzia	631	3.25%	1779	3.13%	459	2.82%

Most graduates in tertiary education are in Economic science, Law, Education and Engineering and engineering trades, both in the share of graduates with a bachelor or a master degree (Table 37). Remarkable is the small share of graduates in Environmental sciences and Agriculture.

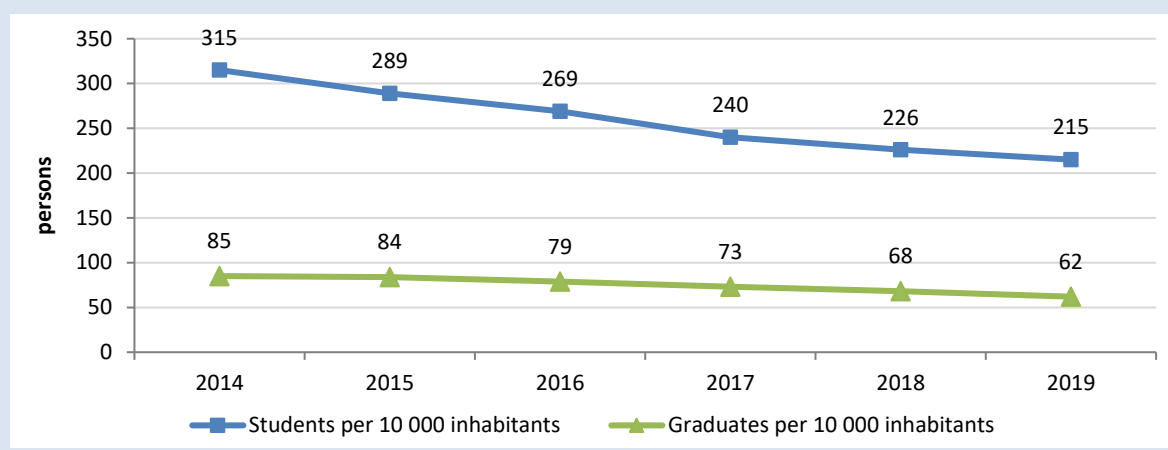
An increase in the number of graduates in these fields of study would be needed to support the priority areas Energy and Agriculture.

Table 37: Graduates by high education, by cycle and fields of study

	Total							
	Cycle I, bachelor				Cycle II, master			
	2017	2018	2019	2017-2019	2017	2018	2019	2017-2019
Total	13,421	11,952	10,763	--	5,744	5,399	4,754	--
of which:								
Economic sciences	3,686	3,276	2,669	26.7%	1,113	1,037	864	16.5%
Law	2,205	1,751	1,634	15.5%	1,164	1,069	1,083	18.2%
Education	2,097	1,721	1,634	15.1%	1,180	1,173	914	17.9%
Engineering and engineering trades	1,099	1,008	945	8.4%	302	349	225	4.8%
Social and behavioral sciences	684	655	572	5.3%	407	390	369	6.4%
Information and communication technologies	525	604	566	4.7%	198	124	206	2.9%
Manufacturing and processing	337	320	296	2.6%	90	83	51	1.2%
Personal services	311	326	272	2.5%	98	85	57	1.3%
Architecture and construction	341	302	248	2.5%	187	177	162	2.9%
Languages	380	213	296	2.5%	156	104	129	2.1%
Security services	278	302	279	2.4%	48	45	55	0.8%
Arts	266	345	239	2.4%	131	86	86	1.7%
Science of sports	289	207	270	2.1%	86	116	108	1.7%
Journalism and information	222	234	183	1.8%	59	57	33	0.8%
Administration sciences	168	191	176	1.5%	174	164	165	2.8%
Environmental sciences	105	136	126	1.0%	87	61	53	1.1%
Agriculture	125	97	94	0.9%	117	97	84	1.6%
Forestry	75	72	79	0.6%	5	35	39	0.4%
Humanities	74	60	55	0.5%	142	125	72	1.9%
Chemical sciences	49	43	57	0.4%	22	24	26	0.4%
Biological sciences	56	37	26	0.3%	17	23	24	0.4%
Physical sciences	25	19	28	0.2%	14	14	13	0.2%
Mathematics and statistics	12	17	12	0.1%	14	14	5	0.2%
Transport services	12	16	7	0.1%	0	0	0	0.0%
Health	0	0	0	0.0%	680	700	632	11.0%
Veterinary	0	–	–	–	31	38	48	0.6%

The number of students and graduates of tertiary education institutions is constantly decreasing. This is due to the tendency of young people in recent years to go abroad to study, especially in European Union countries, where their parents who migrated years ago for work are settled. This becomes more visible in the analysis over the years of the average number of students and graduates of higher education institutions per 10 thousand inhabitants (Figure 13).

Figure 13 Students and graduates of higher education institutions per 10 000 inhabitants



Regional differences in the training of skilled students are a direct result of differences in the availability of educational institutions. The number of institutions for secondary vocational education is highest in North and for post-secondary vocational education in Chisinau. For tertiary education 23 out of 27 institutions are in Chisinau where there are no institutions in Centre (Table 38).

Table 38: Number of educational institutions (2018-2019)

	Secondary vocational education (ISCED 4)		Post-secondary vocational education (ISCED 5)		Tertiary education (ISCED 6)	
	Number	%-share	Number	%-share	Number	%-share
Moldova	44	--	46		27	--
Chisinau	11	25.0%	20.5	44.6%	23	85.2%
North	15	34.1%	14.5	31.5%	1	3.7%
Centre	8	18.2%	7	15.2%	0	0.0%
South	7	15.9%	2	4.3%	2	7.4%
Gagauzia	3	6.8%	2	4.3%	1	3.7%

5. Priority domains

5.1 Proposed priority domains for smart specialisation

Table 39 summarizes the priority domains for smart specialisation for the economic, innovation and scientific potential. The results of the mapping exercise are graphically summarized in Figures 14 to 18. The potential economic priority domains for smart specialisation have been identified in the economic mapping. Several of these have been confirmed for having an innovation potential, highlighted in bold in the following.

For Chisinau **ICT** and **Creative industry** are the most important areas; other areas of importance include Manufacture of paper and paper products, Manufacture of instruments and appliances for measuring, testing and navigation, Manufacture of other general-purpose machinery, Technical testing and analysis, Advertising and market research.

For North, Centre, South and Gagauzia comparable economic areas for smart specialisation have been identified. Several of these have been confirmed for having an innovation potential, highlighted in bold in the following. For all four regions **Agriculture and Food processing** is very important, but there are some differences as to which specific industries are included. **Textiles, Apparel, Footwear and Leather (TAFL)** is a priority area in Centre and Gagauzia, **Electrical equipment industry** is a priority area in Chisinau and North, **Energy** and **Waste management** are priority areas in South, **Biomedicine in Centre**.

Most patent activities are in Chisinau accounting for about 88% of Moldovan patent applications. Although patents are an imperfect indicator for innovation, high patent activities in Food chemistry, Organic fine chemistry match the results of the economic mapping for the four Rural regions having an economic specialisation in Agriculture and Food processing. Medical technology and Pharmaceuticals also stand out showing the importance of Biomedicine industry.

Data on scientific potential are not available at the regional level. These data are also less relevant at the regional level as knowledge is a public good which can be easily accessed. The output of international publications appears to be relevant for the identified economic domains with relatively more publications in Computer Science, Medicine, Biochemistry, Genetics and Molecular Biology, Agricultural and Biological Sciences, Energy, and Environmental Sciences.

The education system shows a concentration of activities in Chisinau, which hosts about 90% of universities and other institutions in higher education. Relevant specialisations are being taught at least one of these institutions.

Table 9: Potential priority domains for smart specialisation

		Economic potential (E) & Innovation potential (I)					Scientific potential	
		Chisinau	North	Centre	South	Gagauzia	International publications	International patents
Agriculture and Food processing			E&I	E&I	E&I	E&I		
A01	Crop and animal production, hunting and related service activities		E	E	E	E		
A011	Growing of non-perennial crops		E		E	E		
A012	Growing of perennial crops			E	E			
A014	Animal production			E		E		
A015	Mixed farming		E		E			
A016	Support activities to agriculture & post-harvest crop activities			E	E	E		
A02	Forestry and logging		E	E	E			
A021	Silviculture and other forestry activities		E	E	E			
C10	Manufacture of food products		E&I					
C101	Processing and preserving of meat and production of meat products			E&I				
C103	Processing and preserving of fruit and vegetables		E&I			E&I		

		Economic potential (E) & Innovation potential (I)					Scientific potential	
		Chisinau	North	Centre	South	Gagauzia	International publications	International patents
C104	Manufacture of vegetable and animal oils and fats		E&I					
C105	Manufacture of dairy products		E&I					
C106	Manufacture of grain mill products, starches and starch products				E	E&I		
C107	Manufacture of bakery and farinaceous products				E&I			
C108	Manufacture of other food products		E&I					
C109	Manufacture of prepared animal feeds		E					
C110	Manufacture of beverages				E&I	E&I		
ICT		E&I						
J582	Software publishing	E						
J61	Telecommunications	E&I						
J611	Wired telecommunications activities	E						
J612	Wireless telecommunications activities	E						
J619	Other telecommunications activities	E						
J620	Computer programming, consultancy and related activities	E&I						
J63	Information service activities	E&I						
J631	Data processing, hosting and related activities; web portals	E						
C26	Manufacture of computer, electronic and optical products	E						
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	E&I						
Energy				E	E&I	E	Energy	Energy
C19	Manufacture of coke and refined petroleum products					E		
C192	Manufacture of refined petroleum products					E		
D352	Manufacture of gas; distribution of gaseous fuels through mains			E	E&I	E		
Biomedicine		E		E&I			Medicine, Pharmacology , Toxicology and Pharmaceutics , Immunology & Microbiology, Dentistry, Nursing Neuroscience	Medical technology, Pharmaceuticals, Biological materials
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations			E&I				
C212	Manufacture of pharmaceutical preparations			E				
Q862	Medical and dental practice activities			E				
Q869	Other human health activities	E						
Textile, Apparel, Footwear and Leather goods (TAFL)			E	E&I	E	E&I		
C13	Manufacture of textiles			E				
C139	Manufacture of other textiles			E				
C14	Manufacture of wearing apparel		E			E&I		
C141	Manufacture of wearing apparel, except fur apparel		E			E&I		
C143	Manufacture of knitted & crocheted apparel			E	E			
C15	Manufacture of leather & related products			E&I				
C152	Manufacture of footwear			E				
Electrical equipment		E&I	E&I					
C27	Manufacture of electrical equipment		E					
C271	Manufacture of electric motors, generators, transformers and electricity distribution & control apparatus		E					
C273	Manufacture of wiring and wiring devices		E&I					
C282	Manufacture of other general-purpose machinery	E&I						
C283	Manufacture of agricultural and forestry machinery		E&I					
Waste management		E	E	E	E&I	E	Environmental Science	Environmental technology
E360	Water collection, treatment and supply				E&I	E		
E370	Sewerage		E					

		Economic potential (E) & Innovation potential (I)					Scientific potential	
		Chisinau	North	Centre	South	Gagauzia	International publications	International patents
E381	Waste collection			E				
E383	Materials recovery	E						
Creative industry		E&I						
J582	Software publishing	E					Computer Science	Telecommunications, Digital communication, Audio-visual technology
J61	Telecommunications	E&I						
J611	Wired telecommunications activities	E						
J612	Wireless telecommunications activities	E						
J619	Other telecommunications activities	E						
J620	Computer programming, consultancy and related activities	E&I						
J63	Information service activities	E&I						
J631	Data processing, hosting and related activities; web portals	E						
C18	Printing & reproduction of recorded media	E						
C181	Printing & service activities related to printing	E&I						
C324	Manufacture of games and toys		E					
J58	Publishing activities	E&I						
J581	Publishing of books, periodicals and other publishing activities	E&I						
M712	Technical testing and analysis	E&I						Measurement
M73	Advertising and market research	E&I						
M731	Advertising	E&I						
M732	Market research and public opinion polling	E						
Other								
B081	Quarrying of stone, sand and clay		E&I	E&I				
C17	Manufacture of paper and paper products	E&I						
C172	Manufacture of articles of paper and paperboard	E&I						
C20	Manufacture of chemicals and chemical products	E					Materials Science, Chemistry, Chemical Engineering	Macromolecular chemistry, polymers, Basic materials chemistry, Chemical engineering
C203	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	E						
C206	Manufacture of man-made fibres			E				
C23	Manufacture of other non-metallic mineral products			E				
C231	Manufacture of glass and glass products	E				E		
C235	Manufacture of cement, lime and plaster		E	E				
C24	Manufacture of basic metals		E					Materials, metallurgy, Surface technology, coating
C243	Manufacture of other products of first processing of steel		E					
C256	Treatment and coating of metals; machining			E				
C32	Other manufacturing		E&I					
F421	Construction of roads and railways				E			
F429	Construction of other civil engineering projects			E				
H49	Land transport and transport via pipelines		E					
H495	Transport via pipeline		E					
H51	Air transport	E					Transport	Transport
H511	Passenger air transport	E						
H512	Freight air transport and space transport		E					
H522	Support activities for transportation	E						
I551	Hotels and similar accommodation	E						
N79	Travel agency, tour operator and other reservation service and related activities	E						
N791	Travel agency and tour operator activities	E						
P854	Higher education	E						

Figure 12 Economic, innovative and scientific priority areas in Chisinau

Chisinau

Industries

- **ICT: Telecommunications; Computer programming, consultancy and related activities; Information service activities; Computer, electronic and optical products**
- **Creative Industry: Computer programming, consultancy and related activities, Telecommunications, Printing & service activities related to printing, Publishing activities, Technical testing and analysis, Advertising and market research**
International patents in Telecommunications, Computer technology, Semiconductors, Optics, Digital communication, Audio-visual technology, Measurement
International publications in Computer science
- **Paper and paper products; Articles of paper and paperboard**
- **Technical testing and analysis**
- Chemicals and chemical products
International patents in Macromolecular chemistry, polymers & basic materials chemistry; Chemical engineering
International publications in Materials Science, Chemistry, Chemical Engineering
- Materials recovery
International publications in Environmental Science
International patents in Environmental technology



Emerging industries

- Biomedicine
- Creative Industries
- Electrical equipment
- Food processing
- Veterinary

Industries with both an economic and innovation potential are highlighted in bold. Scientific areas are shown in italics.

Figure 13 Economic, innovative and scientific priority areas in North

North

Industries

- **Agriculture and Food processing:** Crop and animal production, Forestry & logging; Growing of perennial & non-perennial crops; **Manufacture of food products (Fruit and vegetables, Vegetable and animal oils and fats; Dairy products; Other food products)**

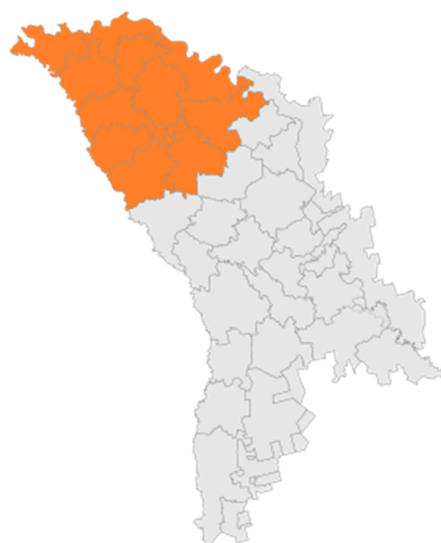
International publications in Agricultural and Biological Sciences, Biochemistry, Genetics and Molecular Biology

International patents in Organic fine chemistry, Biotechnology, Analysis of biological materials, Food chemistry

- **Wearing apparel**
- Electrical equipment
- **Wiring and wiring devices**
- Electric motors, generators, transformers
- **Agricultural & forestry machinery**

International patents in Electrical machinery, apparatus, Machine tools, Engines, pumps, turbines

- **Quarrying of stone, sand & clay**



Emerging industries

- Food processing
- ICT
- TAFL
- Waste management
- Creative Industry
- Constructions

Industries with both an economic and innovation potential are highlighted in bold. Scientific areas are shown in italics.

Figure 14 Economic, innovative and scientific priority areas in Centre

Centre

Industries

- **Agriculture and Food processing: Processing and preserving of meat and production of meat products;** Crop and animal production, hunting and related service activities; Growing of perennial crops; Animal production; Forestry and logging;

International publications in Agricultural and Biological Sciences, Biochemistry, Genetics and Molecular Biology

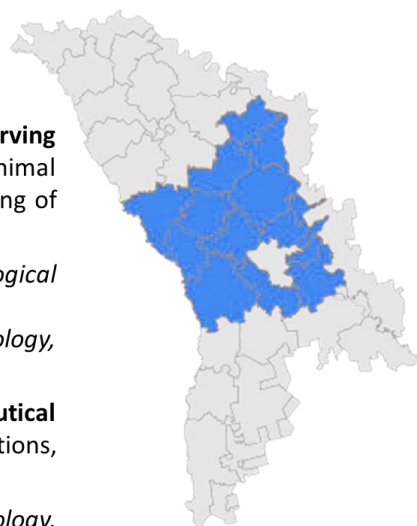
International patents in Organic fine chemistry, Biotechnology, Analysis of biological materials, Food chemistry

- **Basic pharmaceutical products and pharmaceutical preparations,** Manufacture of pharmaceutical preparations, Medical and dental practice activities

International publications in Medicine, Pharmacology, Toxicology and Pharmaceuticals, Immunology and Microbiology, Dentistry, Neuroscience, Nursing

International patents in Medical technology, Pharmaceuticals, Biological materials

- **Manufacture of leather and related products;** Footwear; Knitted and crocheted apparel
- Gas; distribution of gaseous fuels through mains
- *International publications & patents in Energy*



Emerging industries

- Agriculture and Food processing
- Creative Industry
- ICT
- Electrical equipment
- Waste management
- Wood manufacture

Industries with both an economic and innovation potential are highlighted in bold. Scientific areas are shown in italics.

Figure 15 Economic, innovative and scientific priority areas in South

South

Industries

- **Agriculture and Food processing:** Crop and animal production, hunting and related service activities; Growing of perennial & non-perennial crops; Mixed farming; Forestry and logging; **Manufacture of bakery and farinaceous products; Manufacture of beverages**

International publications in Agricultural and Biological Sciences, Biochemistry, Genetics and Molecular Biology

International patents in Organic fine chemistry, Biotechnology, Analysis of biological materials, Food chemistry

- **Water collection treatment & supply**

International publications in Environmental Science

International patents in Environmental technology

- **Gas; distribution of gaseous fuels through mains**

International publications & patents in Energy

- Knitted and crocheted apparel
- Construction of roads and railways



Emerging industries

- Agriculture
- Creative Industry
- ICT
- Waste management
- Tourism industry

Industries with both an economic and innovation potential are highlighted in bold. Scientific areas are shown in italics.

Figure 16 Economic, innovative and scientific priority areas in Gagauzia

Gagauzia

Industries

- **Agriculture and Food processing:** Crop and animal production, hunting and related service activities; Growing of non-perennial crops; Animal production; **Processing and preserving of fruit and vegetables; Manufacture of grain mill products, starches and starch products; Manufacture of beverages**

International publications in Agricultural and Biological Sciences, Biochemistry, Genetics and Molecular Biology

International patents in Organic fine chemistry, Biotechnology, Analysis of biological materials, Food chemistry

- Coke and refined petroleum products
- Gas; distribution of gaseous fuels
- Refined petroleum products

International publications & patents in Energy

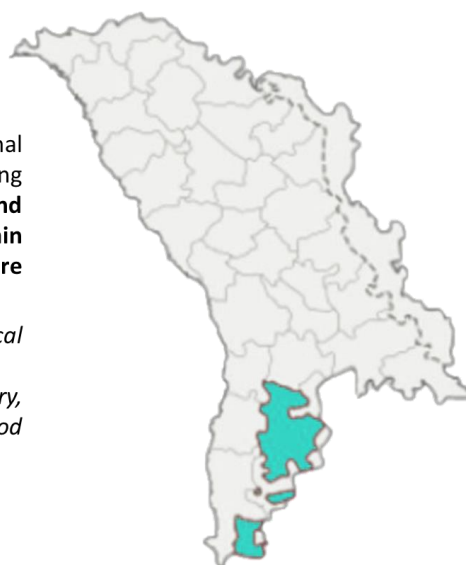
- **Wearing apparel**

- Water collection, treatment and supply

International publications in Environmental Science

International patents in Environmental technology

- Glass and glass products



Emerging industries

- Aquaculture and Food processing
- Creative Industry
- Biomedicine
- Apparel

Industries with both an economic and innovation potential are highlighted in bold. Scientific areas are shown in italics.

5.2 Recommendations for further mapping analysis and next steps

The mapping exercise in this study has relied on the most recent economic data for 2014-2019. With the availability of longer time series, this report has not only identified industries with an already existing current economic potential, but also industries with an emerging economic potential if growth on the different economic variables was high. The economic mapping should be updated once longer time series become available also including data for the years facing the current Covid-19 pandemic, which would be in 2022, assuming 2014-2021 data will be available. The mapping can then be repeated once every two or three years.

The mapping of the innovation potential could be updated with the results of the next edition of the Moldovan innovation survey. The analysis could be limited to NACE 2 digit industries to avoid working with small sample sizes, such that more detailed statistics (e.g. product-process innovators, marketing-organisational innovators, innovators with or without R&D activities) could also be used. This report has also benefited from additional data on patents granted to national inventors. It is recommended to combine innovation survey and patent data in all future updates of the report.

For the mapping of scientific potential available data are not adequate. What would be needed is an analysis linking the output of the national science system to the demands of domestic industry, to identify if science delivers the new knowledge needed by Moldovan firms to increase their competitiveness.

Table 40 provides recommendations for possible updates of the mapping exercise in 2022.

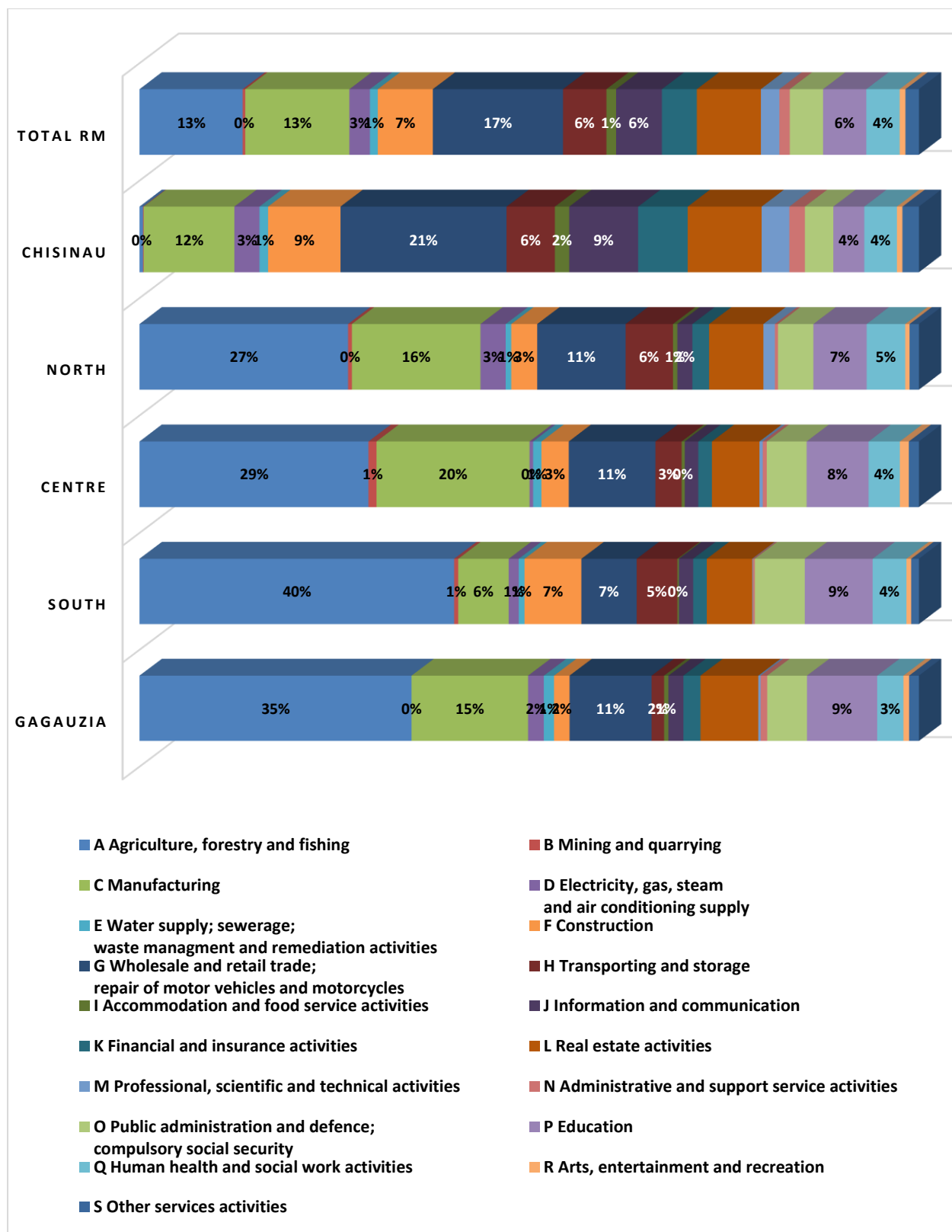
Table 40 Potential priority domains for smart specialisation

	Mapping of economic priority areas	Mapping of innovation priority areas	Mapping of scientific priority areas
Update in 2022	Repeat analysis using NACE 3-digit data for 8 years (2014-2021) Ask for NACE 4-digit data for 2020 and/or 2021: update cluster analysis	Ask AGEPI for patent data by patent fields for individual years and update the identification of most important patent fields by industry	Ask IBN for scientific publications for more detailed science fields, update the identification of most important science fields

Annexes

Annex 1: Economic structure of regions in the Republic of Moldova

Average 2014-2018 shares for regional value added



Source: National Bureau of Statistics of the Republic of Moldova

Annex 2: Concordance between IPC and NACE

NACE	IPC
10	A01H A21D A23B A23C A23D A23F A23G A23J A23K A23L A23P C12J C13B C13F C13J C13K
10.5	A01J
11	A23L C12C C12F C12G C12H
12	A24B A24D A24F
13	D04D D04G D04H D06C D06J D06M D06N D06P D06Q
14	A41B A41C A41D A41F
15	A43B A43C B68B B68C
16	B27D B27H B27M B27N
17	B42F D21C D21H D21J
18.1	B41M B42D B44F
19	C10G C10L
20.1	B01J B09B B09C C01B C01C C01D C01F C01G C02F C05B C05C C05D C05F C05G C07B C07C C07F C07G C08B C08F C08G C08J C08K C08L C09B C09C C09K C10B C10C C10H C10J C10K C12S C25B F17C F17D F25J G21F
20.2	A01N A01P
20.3	B27K C09D
20.4	A61K A61Q C09F C11D D06L
20.5	A62D C06B C06C C06D C08H C09G C09H C09J C10M C10N C11B C11C C14C C23F C23G C40B D01C F42B F42D
20.6	D01F
21	A61K A61P C07D C07H C07J C07K C12N C12P C12Q
22	B29C B29D B60C B67D
22.1	C08C
23	B32B
23.1	C03B C03C
23.3	B28B B28C
23.4	E03D
23.5	C04B
24	B21C B22D C21B C21C C21D C22B C22C C22F C25C C25F
24.4	G21H
25.1	A44B A47H B21G F27D
25.2	F16T F22B F22G F24J
25.3	G21B G21C G21D
25.4	B63G F41A F41B F41C F41F F41G F41H F41J F42C G21J
25.5	B22F
25.6	C23D C25D
25.7	E05B E05D E05F E06B
25.9	A01L E05C F16B
26.1	B81B B81C B82B B82Y C30B G11C H01C H01F H01G H01J H01L H05K
26.2	G02F G06C G06D G06E G06F G06G G06J G06N G06T G09C
26.3	G03H G08B H01Q H01S H03B H03C H03D H03G H03H H03J H03M H04B H04H H04J H04K H04L H04M H04N H04Q H04R H04S H04W
26.4	H03F H03K H03L
26.5	F15C G01B G01C G01D G01F G01H G01J G01K G01L G01M G01N G01Q G01R G01S G01V G01W G04B G04C G04D G04F G04G G04R G05B G05F G08C G12B
26.6	A61N G21K H05G H05H
26.7	G02B G02C G03B
26.8	G03C
27.1	H02B H02J H02K H02N H02P H02S
27.2	H01M
27.3	H01B H01H H01R H02G

NACE	IPC
27.4	F21H F21K F21L F21M F21P F21Q F21S F21V F21W F21Y H01K
27.5	A21B A45D A47G A47J A47L B01B D06F E06C F24B F24C F24D F25C F25D H05B
27.9	B60M B61L G08G G10K H01P H01T H02H H02M H05C
28.1	A47K B23F F01B F01C F01D F01K F01M F01N F01P F02C F02G F02K F03B F03C F03D F03G F04B F04C F04D F15B F16C F16D F16F F16H F16K F16M F23R G05D G05G
28.2	A62C B01D B04C B05B B41J B41K B43M B60S B61B B65G B66B B66C B66D B66F C10F C12L E02C F16G F22D F23B F23C F23D F23G F23H F23J F23K F23L F23M F23N F24F F24H F25B F27B F28B F28C F28D F28F F28G G01G G03G G06K G06M G07B G07C G07D G07F G07G G09D G09G G10L G11B H05F
28.3	A01B A01C A01D A01F A01G A01K A01M B27L
28.4	B21D B21F B21H B21J B21K B21L B23B B23C B23D B23G B23H B23K B23P B23Q B24B B24C B24D B25B B25C B25D B25F B25G B25H B25J B26B B26F B27B B27C B27F B27G B27J B28D B30B
28.9	A21C A22B A22C A23N A24C A41H A42C A43D B01F B02B B02C B03B B03C B03D B05C B05D B06B B07B B07C B08B B21B B22C B26D B31B B31C B31D B31F B33Y B41B B41C B41D B41F B41G B41L B41N B42B B42C B44B B44C B65B B65C B65F B65H B67B B67C B68F C13C C13D C13G C13H C14B C23C D01B D01D D01G D01H D02G D02H D02J D03C D03D D03J D04B D04C D05B D05C D06B D06G D06H D21B D21D D21F D21G E01C E01D E01F E01H E02D E02F E05G E21B E21C E21D E21F F04F F15D F16N F16P F26B
29.1	B60B B60D B60G B60H B60J B60K B60L B60N B60P B60Q B60R B60T B62D F01L F02B F02D F02F F02M F02N F02P F16J G01P
29.3	B60W
30	B60F B60V B61C B61D B61F B61G B61H B61J B61K B62C B62H B62J B62K B62L B62M B63B B63C B63H B63J B64B B64C B64D B64F B64G B65F E01B F03H
31	A47B A47C A47D A47F
32	A41G A42B A44C A45B A45C A45F A46B A46D A63B A63C A63D A63F A63G A63H A63J A63K B43K B43L B44D B62B B68G C06F D07B F16L F23Q G10B G10C G10D G10F G10G G10H
32.5	A61B A61C A61D A61F A61G A61H A61J A61L A61M A62B B04B C12M B01L G01T G21G
32.9	B65D G03D G03F G09B G09F
42.2	E03B E03C
42.9	E02B
43	E03F E04B E04C E04D E04F E04G E04H
62	G06Q

Annex 3: Economic mapping for Chisinau: industries passing threshold criteria

NACE	Industry	Employment			Turnover				Wages	
		Volume (persons)	%-share	LQ	Volume (mln Lei)	%-share	LQ	Per worker (Lei)	Volume (000s Lei)	Per worker (Lei)
Current	Industries	316,715			232,555			734,274	19,731,120	62,299
C17	Manufacture of paper and paper products	1,156	0.37%	1.394	903	0.39%	1.295	781,306	66,295	57,340
C172	Manufacture of articles of paper and paperboard	1,147	0.36%	1.393	901	0.39%	1.294	785,097	66,082	57,596
C18	Printing and reproduction of recorded media	1,082	0.34%	1.456	407	0.18%	1.299	376,002	61,673	56,999
C181	Printing and service activities related to printing	1,076	0.34%	1.455	406	0.18%	1.299	377,082	61,609	57,284
C20	Manufacture of chemicals and chemical products	1,846	0.58%	1.420	1,596	0.68%	1.186	864,694	156,692	84,890
C203	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	1,138	0.36%	1.627	1,211	0.52%	1.342	1,064,093	117,510	103,276
C231	Manufacture of glass and glass products	1,164	0.37%	1.396	1,226	0.54%	1.268	1,053,520	131,249	112,789
C26	Manufacture of computer, electronic and optical products	1,517	0.49%	1.407	607	0.27%	1.345	400,380	100,453	66,226
C265	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	1,254	0.40%	1.364	483	0.21%	1.337	385,023	87,049	69,435
C282	Manufacture of other general-purpose machinery	407	0.13%	1.503	283	0.12%	1.298	695,751	25,001	61,429
E383	Materials recovery	288	0.09%	1.415	1,261	0.55%	1.364	4,373,608	32,660	113,272
G451	Sale of motor vehicles	676	0.21%	1.490	3,440	1.48%	1.283	5,091,636	60,105	88,956
G464	Wholesale of household goods	6,615	2.09%	1.536	12,289	5.31%	1.310	1,857,780	401,148	60,642
G465	Wholesale of information and communication equipment	824	0.26%	1.571	2,808	1.16%	1.356	3,408,943	58,035	70,445
H51	Air transport	848	0.27%	1.328	3,562	1.51%	1.356	4,203,431	170,756	201,481
H511	Passenger air transport	691	0.22%	1.645	3,357	1.43%	1.382	4,859,696	151,112	218,739
H52	Warehousing and support activities for transportation	4,637	1.47%	1.306	4,018	1.76%	1.220	866,637	394,024	84,980
H522	Support activities for transportation	4,423	1.40%	1.417	3,744	1.64%	1.274	846,575	381,637	86,288
H53	Postal and courier activities	5,404	1.71%	1.659	549	0.24%	1.381	101,629	233,646	43,239
H531	Postal activities under universal service obligation	5,094	1.61%	1.660	407	0.18%	1.383	79,983	206,659	40,568
I551	Hotels and similar accommodation	1,279	0.40%	1.424	420	0.18%	1.303	328,505	82,350	64,386
J	Information and communication	21,638	6.82%	1.575	12,024	5.20%	1.365	555,693	2,792,025	129,033
J58	Publishing activities	2,353	0.75%	1.531	686	0.31%	1.332	291,461	244,346	103,859
J581	Publishing of books, periodicals and other publishing activities	1,581	0.51%	1.469	434	0.20%	1.316	274,840	106,188	67,172
J582	Software publishing	772	0.24%	1.623	251	0.11%	1.353	325,503	138,157	178,999
J61	Telecommunications	6,077	1.92%	1.552	7,109	3.12%	1.371	1,169,854	813,216	133,826
J611	Wired telecommunications activities	4,064	1.29%	1.531	2,596	1.15%	1.355	638,898	443,425	109,111
J612	Wireless telecommunications activities	1,368	0.43%	1.606	4,117	1.80%	1.381	3,009,578	296,581	216,826
J619	Other telecommunications activities	600	0.19%	1.577	384	0.17%	1.376	640,609	71,217	118,760
J620	Computer programming, consultancy and related activities	7,311	2.30%	1.596	2,555	1.07%	1.353	349,477	1,169,033	159,893
J63	Information service activities	3,906	1.22%	1.635	1,311	0.54%	1.377	335,579	441,786	113,114
J631	Data processing, hosting and related activities; web portals	3,638	1.14%	1.640	1,192	0.49%	1.377	327,767	409,580	112,584
K	Financial and insurance activities	3,605	1.14%	1.400	7,418	3.26%	1.347	2,058,094	309,970	85,995
K64	Financial service activities, except insurance and pension funding	1,960	0.62%	1.442	2,178	0.92%	1.350	1,111,748	220,939	112,753

NACE	Industry	Employment			Turnover				Wages	
		Volume (persons)	%-share	LQ	Volume (mln Lei)	%-share	LQ	Per worker (Lei)	Volume (000s Lei)	Per worker (Lei)
K649	Other financial service activities, except insurance and pension funding	1,748	0.55%	1.429	2,059	0.86%	1.349	1,178,040	205,689	117,693
K66	Activities auxiliary to financial services and insurance activities	1,645	0.52%	1.353	5,240	2.35%	1.323	3,186,336	89,032	54,139
K662	Activities auxiliary to insurance and pension funding	753	0.24%	1.504	4,906	2.20%	1.363	6,518,421	50,431	67,003
M70	Activities of head offices; management consultancy activities	2,464	0.78%	1.492	516	0.23%	1.212	209,484	225,825	91,644
M702	Management consultancy activities	2,452	0.77%	1.498	508	0.22%	1.243	207,247	224,895	91,738
M712	Technical testing and analysis	1,392	0.44%	1.446	280	0.12%	1.243	201,253	112,470	80,788
M73	Advertising and market research	3,101	0.98%	1.561	1,451	0.63%	1.322	468,046	239,927	77,379
M731	Advertising	2,171	0.69%	1.546	1,269	0.55%	1.322	584,824	92,817	42,760
M732	Market research and public opinion polling	930	0.29%	1.596	182	0.08%	1.323	195,480	147,110	158,183
N781	Activities of employment placement agencies	1,013	0.32%	1.612	128	0.06%	1.372	126,177	76,881	75,932
N79	Travel agency, tour operator and other reservation service and related activities	1,407	0.44%	1.440	2,003	0.86%	1.252	1,423,949	58,034	41,251
N791	Travel agency and tour operator activities	1,248	0.39%	1.421	1,916	0.82%	1.249	1,534,996	46,857	37,535
N80	Security and investigation activities	5,916	1.87%	1.492	562	0.24%	1.258	94,985	243,028	41,081
O	Public administration and defence; compulsory social security	683	0.22%	1.505	1,373	0.49%	1.383	2,009,928	150,257	219,996
O841	Administration of the State and the economic and social policy of the community	641	0.20%	1.498	134	0.06%	1.383	208,482	141,521	220,782
P	Education	12,185	3.85%	1.433	1,626	0.70%	1.232	133,444	897,847	73,685
P854	Higher education	9,304	2.95%	1.459	1,230	0.53%	1.241	132,172	732,729	78,757
Q869	Other human health activities	3,228	1.01%	1.459	821	0.34%	1.290	254,419	303,998	94,166

Annex 4: Economic mapping for North: industries passing threshold criteria

NACE	Industry	Employment			Turnover				Wages	
		Volume (persons)	%-share	LQ	Volume (mln Lei)	%-share	LQ	Per worker (Lei)	Volume (000s Lei)	Per worker (Lei)
Current	Industries	88,310			37,445			424,015	4,192,620	47,476
A	Agriculture, forestry and fishing	16,677	18.90%	2.171	5,718	15.16%	3.357	342,838	552,036	33,101
A01	Crop and animal production, hunting and related service activities	15,659	17.75%	2.237	5,641	14.95%	3.395	360,234	499,034	31,869
A011	Growing of non-perennial crops	12,607	14.29%	2.577	4,611	12.22%	3.979	365,722	403,605	32,015
A015	Mixed farming	800	0.91%	2.966	191	0.51%	4.249	238,094	32,056	40,053
A02	Forestry and logging	899	1.02%	1.470	72	0.19%	1.930	80,317	49,953	55,545
A021	Silviculture and other forestry activities	899	1.02%	1.481	72	0.19%	1.996	80,347	49,953	55,566
B	Mining and quarrying	737	0.83%	1.860	276	0.74%	2.567	375,044	38,970	52,864
B081	Quarrying of stone, sand and clay	693	0.78%	1.859	266	0.70%	2.586	384,087	36,995	53,358
C	Manufacturing	22,283	25.21%	1.325	10,013	26.65%	1.780	449,348	1,300,816	58,376
C10	Manufacture of food products	6,729	7.62%	1.548	5,438	14.58%	2.750	808,167	378,211	56,210
C103	Processing and preserving of fruit and vegetables	866	0.98%	1.596	590	1.53%	2.027	680,731	47,616	54,973
C104	Manufacture of vegetable and animal oils and fats	666	0.75%	3.782	1,076	2.80%	4.715	1,617,277	50,742	76,247
C105	Manufacture of dairy products	1,864	2.11%	2.769	1,322	3.55%	3.797	709,436	129,392	69,423
C108	Manufacture of other food products	1,019	1.16%	2.229	1,554	4.29%	5.215	1,524,580	72,040	70,697
C109	Manufacture of prepared animal feeds	139	0.16%	4.378	62	0.17%	6.103	442,220	6,100	43,779
C14	Manufacture of wearing apparel	5,486	6.21%	1.875	695	1.85%	2.385	126,664	272,474	49,669
C141	Manufacture of wearing apparel, except fur apparel	5,471	6.20%	2.011	693	1.85%	2.536	126,721	272,131	49,738
C235	Manufacture of cement, lime and plaster	121	0.14%	1.952	357	0.97%	2.860	2,950,089	22,658	187,000
C24	Manufacture of basic metals	41	0.05%	0.916	48	0.13%	1.918	1,182,085	1,922	46,871
C243	Manufacture of other products of first processing of steel	25	0.03%	1.008	47	0.13%	2.039	1,863,557	1,283	50,637
C27	Manufacture of electrical equipment	1,897	2.17%	3.792	1,430	3.84%	6.219	753,555	153,911	81,127
C271	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	263	0.30%	4.741	31	0.08%	4.267	117,430	14,134	53,673
C273	Manufacture of wiring and wiring devices	1,543	1.76%	3.714	1,394	3.75%	6.756	903,242	137,213	88,907
C283	Manufacture of agricultural and forestry machinery	170	0.19%	2.633	70	0.19%	4.441	411,595	12,190	71,707
C32	Other manufacturing	618	0.70%	3.014	78	0.20%	3.293	125,626	24,504	39,682
C324	Manufacture of games and toys	533	0.60%	5.822	61	0.16%	8.411	114,208	19,808	37,187
E370	Sewerage	222	0.25%	3.723	37	0.10%	6.314	164,860	10,953	49,373
H49	Land transport and transport via pipelines	4,257	4.82%	0.805	1,754	4.70%	1.579	412,088	225,203	52,906
H495	Transport via pipeline	604	0.68%	5.778	527	1.43%	8.578	873,349	93,385	154,653
H512	Freight air transport and space transport	208	0.24%	3.320	71	0.19%	2.112	343,824	9,874	47,545
H521	Warehousing and storage	328	0.37%	2.748	161	0.43%	3.045	492,894	13,055	39,863

Annex 5: Economic mapping for Centre: industries passing threshold criteria

NACE	Industry	Employment			Turnover				Wages	
		Volume (persons)	%-share	LQ	Volume (mln Lei)	%-share	LQ	Per worker (Lei)	Volume (000s Lei)	Per worker (Lei)
Current	Industries	71,646			35,150			490,611	3,048,789	42,553
A	Agriculture, forestry and fishing	11,387	15.95%	1.830	3,659	10.51%	2.333	321,330	399,187	35,055
A01	Crop and animal production, hunting and related service activities	9,483	13.29%	1.672	3,483	10.00%	2.276	367,329	294,158	31,019
A012	Growing of perennial crops	1,274	1.77%	1.853	332	0.91%	2.599	260,437	34,793	27,306
A014	Animal production	1,558	2.20%	3.020	1,067	3.22%	4.276	685,103	64,522	41,427
A016	Support activities to agriculture and post-harvest crop activities	596	0.83%	2.426	85	0.24%	2.475	142,512	17,543	29,442
A02	Forestry and logging	1,757	2.46%	3.545	159	0.46%	4.603	90,689	101,043	57,504
A021	Silviculture and other forestry activities	1,753	2.45%	3.561	158	0.46%	4.737	90,430	101,002	57,633
B	Mining and quarrying	869	1.22%	2.709	354	1.03%	3.601	406,942	54,191	62,372
B081	Quarrying of stone, sand and clay	869	1.22%	2.878	354	1.03%	3.793	406,942	54,191	62,372
C101	Processing and preserving of meat and production of meat products	1,755	2.42%	2.710	1,337	3.70%	3.357	761,962	86,548	49,329
C13	Manufacture of textiles	2,409	3.35%	4.130	1,882	5.45%	7.702	781,136	149,342	61,989
C139	Manufacture of other textiles	2,329	3.24%	4.356	1,836	5.31%	7.832	788,256	143,908	61,785
C143	Manufacture of knitted and crocheted apparel	312	0.44%	1.896	28	0.08%	1.682	88,292	15,506	49,647
C15	Manufacture of leather and related products	953	1.33%	1.859	114	0.32%	1.984	119,790	46,069	48,341
C152	Manufacture of footwear	915	1.27%	2.441	107	0.30%	2.438	117,118	45,086	49,266
C206	Manufacture of man-made fibres	40	0.05%	5.742	102	0.29%	8.165	2,580,995	2,715	68,735
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	354	0.50%	3.048	290	0.86%	4.487	817,377	34,486	97,326
C212	Manufacture of pharmaceutical preparations	250	0.35%	2.987	242	0.72%	5.051	966,207	28,144	112,576
C23	Manufacture of other non-metallic mineral products	768	1.07%	1.147	930	2.74%	1.975	1,210,712	52,448	68,262
C235	Manufacture of cement, lime and plaster	227	0.32%	4.515	710	2.12%	6.111	3,125,550	35,637	156,875
C256	Treatment and coating of metals; machining	198	0.28%	4.201	57	0.17%	6.000	290,479	19,150	96,882
D352	Manufacture of gas; distribution of gaseous fuels through mains	1,223	1.71%	1.875	405	1.27%	0.539	331,146	124,265	101,621
E381	Waste collection	431	0.60%	1.879	56	0.15%	1.874	129,600	20,846	48,329
F429	Construction of other civil engineering projects	474	0.66%	1.935	179	0.54%	2.313	377,667	22,220	46,910
Q862	Medical and dental practice activities	4,510	6.32%	1.701	527	1.53%	1.825	116,827	260,580	57,778

Annex 6: Economic mapping for South: industries passing threshold criteria

NACE	Industry	Employment			Turnover				Wages	
		Volume (persons)	%-share	LQ	Volume (mln Lei)	%-share	LQ	Per worker (Lei)	Volume (000s Lei)	Per worker (Lei)
Current	Industries	32,998			9,858			298,756	1,318,390	39,954
A	Agriculture, forestry and fishing	9,826	29.78%	3.428	2,724	27.53%	6.083	277,237	343,680	34,978
A01	Crop and animal production, hunting and related service activities	9,162	27.77%	3.508	2,669	26.97%	6.109	291,343	308,529	33,674
A011	Growing of non-perennial crops	6,484	19.65%	3.557	2,141	21.62%	7.021	330,141	224,995	34,701
A012	Growing of perennial crops	1,305	3.95%	4.107	239	2.37%	6.925	182,928	39,092	29,963
A015	Mixed farming	613	1.86%	6.075	141	1.46%	12.054	230,355	19,495	31,812
A016	Support activities to agriculture and post-harvest crop activities	476	1.44%	4.257	30	0.30%	2.989	62,566	13,281	27,930
A02	Forestry and logging	606	1.84%	2.649	50	0.52%	5.172	82,954	33,719	55,611
A021	Silviculture and other forestry activities	603	1.83%	2.653	50	0.51%	5.318	82,903	33,690	55,886
C106	Manufacture of grain mill products, starches and starch products	121	0.37%	2.602	72	0.72%	5.332	594,833	2,842	23,459
C107	Manufacture of bakery and farinaceous products	1,048	3.17%	1.863	383	3.85%	4.743	365,041	57,623	54,992
C110	Manufacture of beverages	1,769	5.37%	3.095	1,176	12.15%	6.881	664,686	74,525	42,136
C143	Manufacture of knitted and crocheted apparel	510	1.54%	6.732	43	0.44%	9.242	85,283	21,285	41,762
D352	Manufacture of gas; distribution of gaseous fuels through mains	835	2.53%	2.778	245	2.59%	1.147	292,879	87,451	104,711
E360	Water collection, treatment and supply	846	2.56%	2.278	84	0.85%	2.459	99,158	34,305	40,533
F421	Construction of roads and railways	534	1.62%	1.634	180	1.76%	1.916	336,057	38,881	72,765
G471	Retail sale in non-specialised stores	2,431	7.37%	1.615	749	7.58%	1.930	308,079	61,355	25,242

Annex 7: Economic mapping for Gagauzia: industries passing threshold criteria

NACE	Industry	Employment			Turnover				Wages	
		Volume (persons)	%-share	LQ	Volume (mln Lei)	%-share	LQ	Per worker (Lei)	Volume (000s Lei)	Per worker (Lei)
Current	Industries	16,089			6,941			431,387	617,838	38,401
A	Agriculture, forestry and fishing	3,571	22.21%	2.556	1,003	14.22%	3.131	281,009	114,859	32,164
A01	Crop and animal production, hunting and related service activities	3,423	21.28%	2.689	994	14.08%	3.178	290,395	108,764	31,771
A011	Growing of non-perennial crops	2,850	17.75%	3.202	810	11.50%	3.714	284,188	90,667	31,811
A014	Animal production	214	1.33%	1.913	131	1.85%	2.636	610,756	6,961	32,501
A016	Support activities to agriculture and post-harvest crop activities	151	0.93%	2.705	18	0.26%	2.596	119,485	5,916	39,137
C103	Processing and preserving of fruit and vegetables	241	1.49%	2.435	191	2.69%	3.628	794,223	10,612	44,062
C106	Manufacture of grain mill products, starches and starch products	102	0.65%	4.379	106	1.57%	11.282	1,034,752	3,386	33,085
C110	Manufacture of beverages	1,095	6.79%	3.951	946	13.52%	7.743	863,984	47,910	43,753
C14	Manufacture of wearing apparel	1,612	9.99%	3.016	137	1.96%	2.528	85,013	65,756	40,783
C141	Manufacture of wearing apparel, except fur apparel	1,531	9.48%	3.077	129	1.84%	2.523	84,141	62,657	40,926
C19	Manufacture of coke and refined petroleum products	78	0.49%	31.366	275	4.46%	46.661	3,537,280	3,776	48,615
C192	Manufacture of refined petroleum products	78	0.49%	32.652	275	4.46%	46.756	3,537,280	3,776	48,615
C231	Manufacture of glass and glass products	187	1.16%	4.427	102	1.50%	3.530	544,728	9,429	50,375
D352	Manufacture of gas; distribution of gaseous fuels through mains	385	2.40%	2.631	124	1.91%	0.836	322,823	39,664	103,024
E360	Water collection, treatment and supply	373	2.32%	2.063	40	0.57%	1.655	106,227	15,611	41,909
G462	Wholesale of agricultural raw materials and live animals	242	1.53%	2.291	713	10.75%	2.704	2,941,727	9,927	40,963

Annex 8: Innovation activities mapping for Chisinau: industries passing threshold criteria

NACE rev.2		Selected industries		Product innovators	Process innovators	Organisational innovators	Marketing innovators	New-to-market innovations	New-to-firm innovations	Own R&D expenditures	External R&D expenditures
		LQ (1.25)	%-share								
C10	Manufacture of food products	0.51	26.5%	15%	12%	18%	19%	40%	67%	0%	0%
C101	Processing and preserving of meat and production of meat products	0.58	40.0%	7%	13%	33%	27%	100%	0%	0%	0%
C107	Manufacture of bakery and farinaceous products	0.48	22.5%	15%	13%	8%	13%	33%	50%	0%	0%
C108	Manufacture of other food products	0.69	28.6%	21%	14%	29%	29%	33%	67%	0%	0%
C110	Manufacture of beverages	0.65	41.9%	29%	13%	19%	39%	78%	44%	0%	0%
C13	Manufacture of textiles	1.56	26.7%	20%	13%	0%	13%	67%	33%	0%	0%
C139	Manufacture of other textiles	1.56	30.8%	23%	15%	0%	15%	67%	33%	0%	0%
C14	Manufacture of wearing apparel	1.05	29.8%	12%	10%	17%	18%	40%	40%	0%	0%
C141	Manufacture of wearing apparel, except fur apparel	1.05	28.4%	11%	10%	15%	19%	44%	33%	0%	0%
C15	Manufacture of leather and related products	1.30	38.5%	12%	15%	27%	23%	100%	0%	0%	0%
C151	Tanning and dressing of leather; manuf. of luggage, handbags, saddlery and harness; dressing and dyeing of fur	1.30	45.5%	9%	18%	36%	9%	100%	0%	0%	0%
C152	Manufacture of footwear	1.30	33.3%	13%	13%	20%	33%	100%	0%	0%	0%
C16	Manuf. of wood and of wood and cork products except furniture; manufacture of articles of straw and plaiting mat.	1.17	37.5%	19%	25%	25%	31%	33%	67%	0%	0%
C162	Manufacture of products of wood, cork, straw and plaiting materials	1.11	33.3%	13%	20%	27%	27%	50%	50%	0%	0%
C17	Manufacture of paper and paper products	1.11	20.0%	8%	8%	8%	12%	100%	0%	0%	0%
C172	Manufacture of articles of paper and paperboard	1.11	20.8%	8%	8%	8%	13%	100%	0%	0%	0%
C181	Printing and service activities related to printing	1.24	17.4%	17%	17%	4%	17%	25%	75%	0%	0%
C22	Manufacture of rubber and plastic products	1.04	29.1%	16%	15%	18%	18%	44%	67%	0%	0%
C222	Manufacture of plastics products	1.01	27.8%	15%	15%	19%	19%	50%	63%	0%	0%
C23	Manufacture of other non-metallic mineral products	1.17	18.0%	12%	6%	8%	10%	33%	17%	0%	0%
C236	Manufacture of articles of concrete, cement and plaster	1.30	16.7%	17%	7%	7%	3%	40%	20%	0%	0%
C251	Manufacture of structural metal products	1.17	22.2%	11%	15%	19%	15%	67%	67%	0%	0%
C28	Manufacture of machinery and equipment n.e.c.	1.04	18.2%	14%	9%	0%	0%	0%	100%	0%	0%
C310	Manufacture of furniture	1.24	30.8%	19%	19%	17%	17%	30%	80%	0%	0%
C33	Repair and installation of machinery and equipment	1.11	20.0%	16%	8%	12%	12%	50%	50%	0%	0%
G46	Wholesale trade, except of motor vehicles and motorcycles	1.16	15.7%	4%	6%	9%	12%	72%	55%	1%	1%
G463	Wholesale of food, beverages and tobacco	1.05	18.5%	8%	9%	12%	14%	67%	33%	4%	4%
G464	Wholesale of household goods	1.44	19.0%	5%	9%	10%	14%	83%	67%	0%	0%
G467	Other specialised wholesale	1.31	17.5%	3%	4%	8%	14%	100%	40%	0%	0%
J58	Publishing activities	1.56	15.8%	5%	5%	5%	13%	0%	50%	0%	0%
J581	Publishing of books, periodicals and other publishing activities	1.56	18.2%	5%	5%	0%	14%	0%	0%	0%	0%
J60	Programming and broadcasting activities	1.56	35.3%	6%	12%	12%	18%	100%	0%	0%	0%
J602	Television programming and broadcasting activities	1.56	38.5%	8%	8%	15%	23%	100%	0%	0%	0%
J61	Telecommunications	1.56	17.4%	17%	13%	13%	13%	25%	75%	25%	0%
J620	Computer programming, consultancy and related activities	1.44	22.8%	10%	11%	17%	11%	45%	45%	8%	4%
J63	Information service activities	1.33	17.1%	0%	3%	14%	6%	-	-	0%	0%
K64	Financial service activities, except insurance and pension funding	1.43	31.4%	11%	6%	20%	23%	0%	25%	0%	0%
K642	Activities of holding companies	1.56	80.0%	20%	20%	60%	60%	0%	0%	0%	0%
K649	Other financial service activities, except insurance and pension funding	1.36	23.3%	10%	3%	13%	17%	0%	33%	0%	0%
M71	Architectural and engineering activities; technical testing and analysis	1.44	16.2%	7%	8%	11%	7%	80%	40%	0%	0%
M712	Technical testing and analysis	1.40	33.3%	11%	15%	22%	15%	100%	67%	0%	0%
M73	Advertising and market research	1.36	14.3%	4%	2%	6%	6%	0%	50%	0%	0%
M731	Advertising	1.30	13.9%	6%	0%	8%	6%	0%	50%	0%	0%

Annex 9: Innovation activities mapping for North: industries passing threshold criteria

NACE rev.2		Selected industries		Product innovators	Process innovators	Organisational innovators	Marketing innovators	New-to-market innovations	New-to-firm innovations	Own R&D expenditures	External R&D expenditures
		LQ (1.25)	%-share								
B081	Quarrying of stone, sand and clay	2.32	13.3%	7%	13%	0%	0%	0%	100%	0%	0%
C10	Manufacture of food products	1.95	35.4%	14%	12%	18%	25%	56%	67%	0%	0%
C101	Processing and preserving of meat and production of meat products	1.30	33.3%	22%	11%	0%	11%	0%	100%	0%	0%
C103	Processing and preserving of fruit and vegetables	2.32	100.0%	50%	50%	50%	75%	50%	50%	0%	0%
C104	Manufacture of vegetable and animal oils and fats	3.48	40.0%	20%	20%	40%	20%	100%	0%	0%	0%
C105	Manufacture of dairy products	5.80	71.4%	43%	29%	29%	43%	100%	67%	0%	0%
C108	Manufacture of other food products	3.09	66.7%	0%	17%	50%	67%	-	-	0%	0%
C110	Manufacture of beverages	0.45	40.0%	40%	20%	20%	20%	50%	50%	0%	0%
C22	Manufacture of rubber and plastic products	1.74	60.0%	30%	30%	40%	50%	0%	67%	0%	0%
C222	Manufacture of plastics products	1.81	60.0%	30%	30%	40%	50%	0%	67%	0%	0%
C25	Manufacture of fabricated metal products, except machinery and equipment	1.85	66.7%	33%	0%	17%	33%	50%	50%	0%	0%
C310	Manufacture of furniture	0.70	33.3%	17%	17%	17%	33%	100%	0%	0%	0%
C32	Other manufacturing	4.64	33.3%	0%	17%	17%	17%	-	-	0%	0%
D35	Electricity, gas, steam and air conditioning supply	1.99	22.2%	11%	11%	11%	11%	0%	100%	0%	0%
E360	Water collection, treatment and supply	2.78	21.1%	11%	16%	5%	0%	0%	100%	0%	0%
G462	Wholesale of agricultural raw materials and live animals	1.74	13.3%	7%	13%	7%	0%	0%	0%	0%	0%
G463	Wholesale of food, beverages and tobacco	0.87	20.0%	8%	8%	8%	16%	0%	100%	0%	0%
H494	Freight transport by road and removal services	1.62	12.1%	9%	2%	5%	0%	20%	60%	0%	0%
H52	Warehousing and support activities for transportation	1.74	18.8%	6%	13%	13%	13%	100%	0%	0%	0%
H521	Warehousing and storage	6.95	22.2%	11%	11%	22%	22%	100%	0%	0%	0%
J620	Computer programming, consultancy and related activities	0.50	40.0%	40%	20%	20%	20%	100%	0%	0%	0%

Annex 10: Innovation activities mapping for Centre: industries passing threshold criteria

NACE rev.2		Selected industries		Product innovators	Process innovators	Organisational innovators	Marketing innovators	New-to-market innovations	New-to-firm innovations	Own R&D expenditures	External R&D expenditures
		LQ (1.25)	%-share								
B081	Quarrying of stone, sand and clay	5.85	20.0%	15%	15%	10%	0%	0%	33%	0%	0%
C10	Manufacture of food products	2.14	25.6%	13%	12%	8%	17%	40%	50%	0%	0%
C101	Processing and preserving of meat and production of meat products	3.29	33.3%	17%	17%	11%	17%	33%	67%	0%	0%
C107	Manufacture of bakery and farinaceous products	3.02	29.4%	18%	12%	3%	21%	33%	50%	0%	0%
C110	Manufacture of beverages	1.41	17.9%	18%	11%	4%	11%	40%	40%	0%	0%
C15	Manufacture of leather and related products	1.46	28.6%	0%	14%	29%	14%	-	-	0%	0%
C17	Manufacture of paper and paper products	2.51	40.0%	0%	0%	20%	40%	-	-	0%	0%
C172	Manufacture of articles of paper and paperboard	2.51	40.0%	0%	0%	20%	40%	-	-	0%	0%
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	8.77	33.3%	17%	0%	17%	17%	100%	100%	0%	0%
C25	Manufacture of fabricated metal products, except machinery and equipment	1.75	18.8%	13%	0%	13%	19%	50%	50%	0%	0%
E360	Water collection, treatment and supply	3.51	17.4%	4%	0%	4%	9%	100%	0%	0%	0%
G463	Wholesale of food, beverages and tobacco	1.32	16.2%	3%	5%	11%	11%	0%	0%	0%	0%

Annex 11: Innovation activities mapping for South: industries passing threshold criteria

NACE rev.2		Selected industries		Product innovators	Process innovators	Organisational innovators	Marketing innovators	New-to-market innovations	New-to-firm innovations	Own R&D expenditures	External R&D expenditures
		LQ (1.25)	%-share								
C10	Manufacture of food products	1.32	26.9%	12%	8%	23%	15%	100%	67%	0%	0%
C101	Processing and preserving of meat and production of meat products	0.97	50.0%	0%	0%	50%	0%	-	-	0%	0%
C103	Processing and preserving of fruit and vegetables	1.29	33.3%	0%	0%	0%	33%	-	-	0%	0%
C107	Manufacture of bakery and farinaceous products	2.67	31.3%	19%	13%	31%	19%	100%	67%	0%	0%
C110	Manufacture of beverages	4.00	34.8%	26%	17%	13%	26%	33%	50%	0%	0%
C14	Manufacture of wearing apparel	1.68	30.8%	8%	8%	23%	23%	100%	0%	0%	0%
C141	Manufacture of wearing apparel, except fur apparel	1.83	44.4%	11%	11%	33%	33%	100%	0%	0%	0%
C23	Manufacture of other non-metallic mineral products	1.29	25.0%	25%	25%	25%	25%	0%	100%	0%	0%
C233	Manufacture of clay building materials	7.76	100.0%	100%	100%	100%	100%	0%	100%	0%	0%
C29	Manufacture of motor vehicles, trailers and semi-trailers	5.17	100.0%	100%	100%	100%	0%	0%	100%	0%	0%
C293	Manufacture of parts and accessories for motor vehicles	5.17	100.0%	100%	100%	100%	0%	0%	100%	0%	0%
C310	Manufacture of furniture	0.78	100.0%	100%	100%	0%	0%	100%	0%	0%	0%
D35	Electricity, gas, steam and air conditioning supply	4.43	40.0%	20%	40%	0%	0%	0%	100%	0%	0%
D352	Manufacture of gas; distribution of gaseous fuels through mains	7.76	50.0%	25%	50%	0%	0%	0%	100%	0%	0%
E360	Water collection, treatment and supply	1.55	7.1%	0%	7%	0%	0%	-	-	0%	0%
G46	Wholesale trade, except of motor vehicles and motorcycles	0.92	25.0%	6%	9%	6%	13%	0%	100%	0%	0%
G461	Wholesale on a fee or contract basis	3.88	25.0%	25%	0%	0%	0%	0%	100%	0%	0%
G462	Wholesale of agricultural raw materials and live animals	1.94	14.3%	0%	14%	0%	0%	-	-	0%	0%
G463	Wholesale of food, beverages and tobacco	0.39	20.0%	0%	0%	20%	0%	-	-	0%	0%
G467	Other specialised wholesale	1.22	37.5%	13%	25%	13%	25%	0%	100%	0%	0%
G469	Non-specialised wholesale trade	2.22	33.3%	0%	0%	0%	33%	-	-	0%	0%
H49	Land transport and transport via pipelines	1.62	14.7%	6%	6%	9%	6%	0%	50%	0%	0%
H493	Other passenger land transport	1.72	10.5%	0%	0%	11%	11%	-	-	0%	0%
H494	Freight transport by road and removal services	1.55	20.0%	13%	13%	7%	0%	0%	50%	0%	0%
H52	Warehousing and support activities for transportation	1.29	0.0%	100%	0%	0%	0%	0%	0%	-	-
H522	Support activities for transportation	1.55	50.0%	0%	50%	0%	0%	-	-	0%	0%

Annex 12: Innovation activities mapping for Gagauzia: industries passing threshold criteria

NACE rev.2		Selected industries		Product innovators	Process innovators	Organisational innovators	Marketing innovators	New-to-market innovations	New-to-firm innovations	Own R&D expenditures	External R&D expenditures
		LQ (1.25)	%-share								
C10	Manufacture of food products	1.76	31.3%	6%	6%	19%	19%	0%	100%	0%	0%
C103	Processing and preserving of fruit and vegetables	4.80	66.7%	0%	0%	33%	33%	-	-	0%	0%
C104	Manufacture of vegetable and animal oils and fats	7.20	100.0%	0%	0%	100%	100%	-	-	0%	0%
C106	Manufacture of grain mill products, starches and starch products	9.60	33.3%	0%	0%	33%	0%	-	-	0%	0%
C107	Manufacture of bakery and farinaceous products	0.99	16.7%	17%	17%	0%	17%	0%	100%	0%	0%
C110	Manufacture of beverages	2.79	18.8%	6%	0%	13%	13%	100%	0%	0%	0%
C14	Manufacture of wearing apparel	2.34	33.3%	22%	11%	11%	22%	0%	100%	0%	0%
C141	Manufacture of wearing apparel, except fur apparel	1.69	25.0%	25%	13%	13%	13%	0%	100%	0%	0%
C143	Manufacture of knitted and crocheted apparel	9.60	100.0%	0%	0%	0%	100%	-	-	0%	0%
C22	Manufacture of rubber and plastic products	1.20	33.3%	33%	0%	0%	0%	0%	100%	0%	0%
C222	Manufacture of plastics products	1.25	33.3%	33%	0%	0%	0%	0%	100%	0%	0%
C310	Manufacture of furniture	1.44	33.3%	33%	33%	0%	33%	0%	0%	0%	0%
E38	Waste collection, treatment and disposal activities; materials recovery	9.60	50.0%	50%	50%	50%	50%	0%	100%	0%	0%
E381	Waste collection	9.60	50.0%	50%	50%	50%	50%	0%	100%	0%	0%
G462	Wholesale of agricultural raw materials and live animals	3.60	16.7%	0%	0%	17%	0%	-	-	0%	0%
G463	Wholesale of food, beverages and tobacco	0.72	20.0%	0%	0%	20%	20%	-	-	0%	0%
G464	Wholesale of household goods	1.11	100.0%	0%	100%	100%	0%	-	-	0%	0%
H49	Land transport and transport via pipelines	2.40	25.0%	0%	6%	13%	13%	-	-	0%	0%
H493	Other passenger land transport	3.20	28.6%	0%	0%	14%	14%	-	-	0%	0%
H494	Freight transport by road and removal services	1.92	22.2%	0%	11%	11%	11%	-	-	0%	0%