Business in the north

Business activities in the north are the key foundation for value creation, jobs and sustainable societies.

Worker
Photo: Momek Group, Bjørn Leirvik

In this chapter we focus on business activities in the BIN area measured in terms of turnover and profits of regional companies, as well as regional gross value added (GVA). GVA is a measure of total output and income in the economy. It indicates the value of the amount of goods and services produced in an economy after deducting the cost of inputs and raw materials that have gone into the production of those goods and services. To measure turnover and profit for the Nordic BIN regions we use the statistics of limited liability companies with headquarters in one of the BIN regions, excluding the banking and finance sector, and excluding oil and gas companies. Turnover data from Russia includes companies operating in the BIN regions with exception of small businesses, state budget organizations, banks, insurance companies and other types of financial-credit organizations. Although the Russian and the Nordic turnover data can be compared with some limitations, the generalizations made here highlight key trends.

We address the following questions:

1. What are the trends in business activities in the North?
2. How does the BIN area contribute to value creation?

We look at trends over the last 10 years from 2009 to 2018 across the BIN regions and main industries. When comparing relative size of regions and industries, we employ turnover converted into EUR at annual average currency rates. When comparing growth over time, we employ indices calculated from national currencies from the base years 2009 or 2011. Due to marked inflation, all Russian currencies were deflated in order to be comparable or converted into Euro. Turnover and profit data for the Nordic BIN are based on the Odin database up to 2017. Data for the Russian BIN regions up to 2017 are based on Rosstat publications. Figures for 2018 are estimates (based on analysis of 10-year time series and economic development forecasts for countries and regions made by central banks and statistics agencies in the BIN countries).

Key findings

- In 2018 business turnover reached 99 billion Euro including the Russian BIN regions (86.5 in the Scandinavian Northern Areas). Average growth reached 5.4% annually over the last 3 years, which is well above the 2.9% of the national economies
- The Russian BIN regions experienced negative annual turnover growth of about -1% during the 3 years 2014–2017, but the future prospects may be positive
- The fastest growing industries are aquaculture, forestry and fishing with an average turnover growth of 19.6% and information and communication with 11% growth over the period 2015–2018
- Gross value added including public services reached 73 billion Euro in 2016, of these 60 billion EUR gross value added was generated in the Norwegian, Finnish and Swedish BIN regions
- Gross value added grew at a significantly higher rate in the BIN area (excl. Russia) at an average of 11% annually over the last 3 years compared to 9% at national level. It is noteworthy that the growth was driven mainly by the Norwegian BIN regions and Lapland in Finland

Figure 2.1 — Turnover, billion EUR, 2018

The turnover in the BIN area in 2018 reached 99 billion Euro including the Russian BIN regions. The regions with the largest turnover are Nordland county with 17.5 billion Euro, followed by North Ostrobothnia (16.1 billion EUR) and Norrbotten (13.2 billion EUR). In Russia, Murmansk Oblast is the largest region with 5.5 billion EUR turnover followed by Arkhangelsk Oblast with 4.8 billion EUR and the Nenets Autonomous Okrug with 2.2 billion EUR. The Nenets Autonomous Okrug hosts a substantial oil and gas industry development both offshore (Prirazlomnoye oilfield) and onshore and expects to increase its economic activity in the coming years. Major industries for Murmansk are mining, manufacturing and fisheries. In Arkhangelsk Oblast a major part of turnover comes from the manufacturing industry with shipbuilding and pulp and paper as core segments.

Source: Odin database and Rosstat. Turnover for the Russian BIN regions is calculated as an average for the period 2014-2017 to deal with fluctuations.

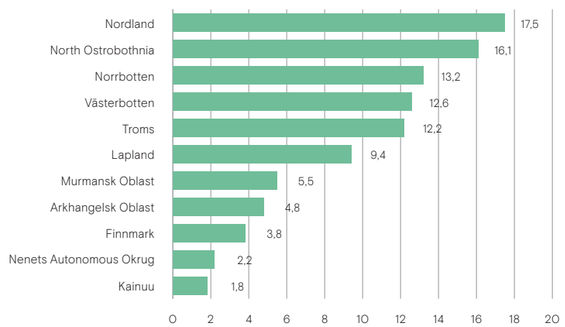


Figure 2.2 — Growth in turnover as index of national currencies, BIN regions (exl.Russia), Index 2009=100, 2009–2018

Of the BIN regions, Troms had the highest growth in turnover (267%) since 2009 driven by growth in fish farming and tourism. North Ostrobothnia's growth of 250% is due to the health and wellbeing cluster, construction and pulp and paper. In Nordland the growth of 237% is driven by fish farming, construction and tourism. Norrbotten, Västerbotten and Kainuu experienced growth at a level below average for the BIN regions at 209%.

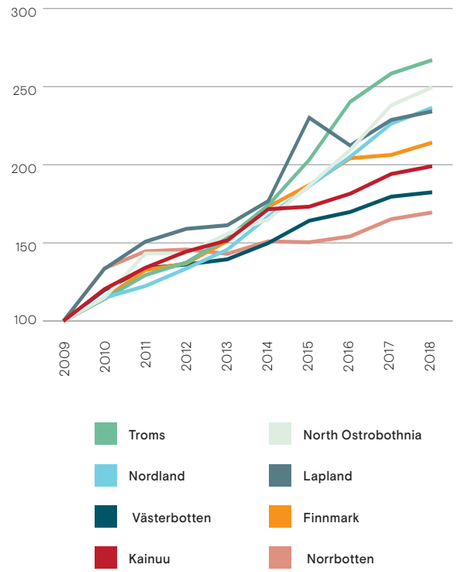


Figure 2.3 — Growth in turnover in BIN regions as index of national currencies in current prices, Index 2009 = 100, 2009-2018

In Figure 2.3 we study the BIN regions separately by country. Both North Norway and North Finland are in the lead in terms of turnover growth with index values of 243 and 240 respectively. North Sweden experienced slower growth with an index value of 175.6 over 10 years. North Norway reached 33 billion EUR turnover by 2018, averaging 9% annual growth over the last 3 years, ahead of North Finland, which reached 27 billion EUR, growing 6.5% annually over the last 3 years and North Sweden, which reached 25.6 billion growing at 4% annually over the last 3 years. The Russian BIN regions (here Murmansk Oblast, Arkhangelsk Oblast and the Nenets Autonomous Okrug taken together) demonstrated a controversial, unstable growth profile, largely dependent on world prices for natural resources, the international political climate, the devaluation of the national currency and state purchase orders for the manufacturing industry. A steep decline in turnover from 2013 to 2016 was followed by growth mostly driven by the manufacturing and shipbuilding industry in Arkhangelsk Oblast. Turnover in the Russian BIN regions reached 12 Billion Euro in 2017 with negative annual turnover growth of about -1% during the 3 years 2014-2017, but future prospects may be positive. Trends from 2017 onwards indicate marginally reduced growth rates across all BIN regions. Similar trends were found at the national level. To deal with devaluation of the Russian Rubel, the index for the Russian regions is calculated here for amounts of current prices converted into Euro.

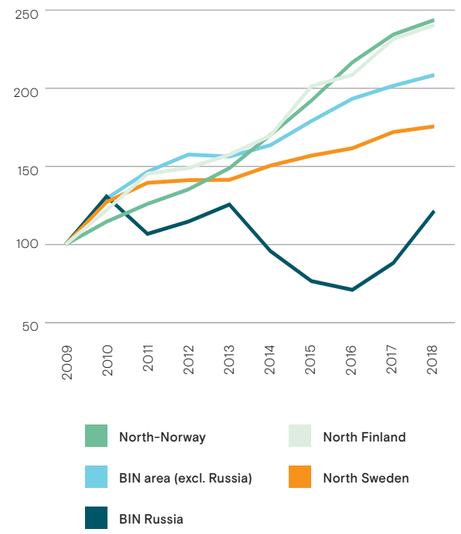
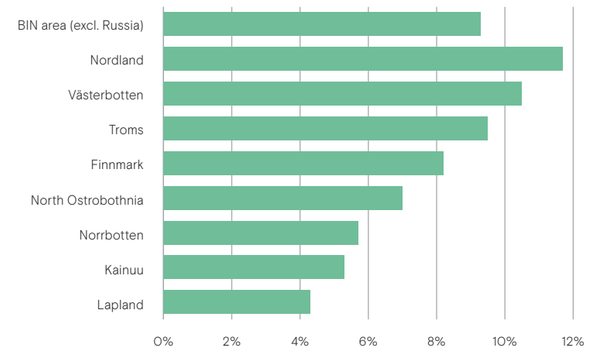


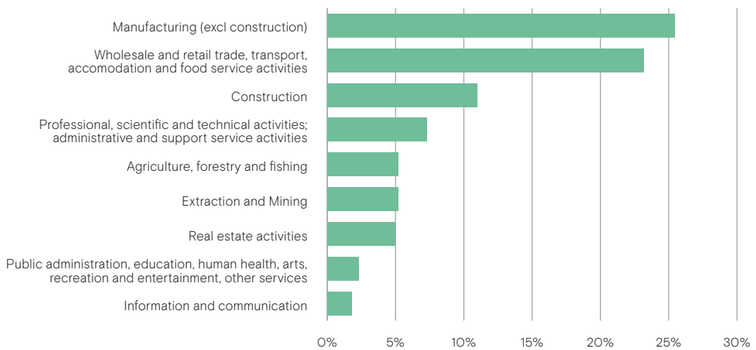
Figure 2.4 — Operating profit margin (operating profit/loss as % of turnover), %, 2018

In Figure 2.4 we measure operating profit margins of businesses in the BIN area excluding the Russian BIN regions. Operating profit margin is a profitability or performance ratio used to calculate the percentage of profit a company produces from its operations prior to subtracting taxes and interest charges. It is calculated by dividing the operating profit by total turnover, expressed as a percentage. The margin is also known as the EBIT (Earnings Before Interest and Tax) Margin. We can observe that three regions exceed the BIN average operating profit margin of 9.3%. Nordland region has the most profitable businesses with an operating profit margin of 11.5%, followed by Västerbotten with 10.5% and Troms with 9.5%. Below average comes Finnmark with 8.2%, North Ostrobothnia with 7%, Norrbotten with 5.7%, Kainuu with 5.3% and Lapland with 4.3%. Among the regions with the largest absolute turnover, Nordland demonstrates the highest operating profit margin. A rather large difference can be observed between Norrbotten and Västerbotten at 4.8% in favor of Västerbotten. Operating profit margin depends on the industry structure with information and telecommunications having the highest operating profit margins (11%) and food and accommodation having the lowest (2.5%)[1]. The rather low operating profit margin in Lapland is driven by the big share of the food and accommodation industry. By and large, high profitability in many BIN regions indicates opportunities attractive to investors - contrary to the skepticism often heard in capital markets about investments in Northern areas.



[1] Multiples are highest for the information sector (11.1x) and the mining, quarrying, and oil and gas extraction sector (8.6x). The lowest multiples are in the accommodation and food services (2.5x) and the other service sectors (3.0x). The median across all industry sectors is 3.0x. Source: BVR Business Valuation Resources.

Figure 2.5 — Turnover per industry (excl. BIN Russia), billion EUR, 2018



The top three BIN industries measured by turnover are manufacturing with 25.5 billion EUR, followed by wholesale and retail, trade, food and tourism with 23.2 billion EUR and construction with 11 billion Euro. Businesses in the Northern areas are dominated by activities directly derived from the extraction, refining, energy transforming industries and from the harvesting of natural resources, account for 54.3% of all turnover in the BIN area, whereas trade, retail, culture and tourism contribute 29.5% of the turnover and services towards businesses and people create 16.2%. Large production output and more visitors increase logistic activity. The growing business activities will require improved logistics with investments required for roads, harbors, railways and airports.

Figure 2.6 — Annual average turnover growth per industry in the BIN area (excl. Russia), %, 2015–2018

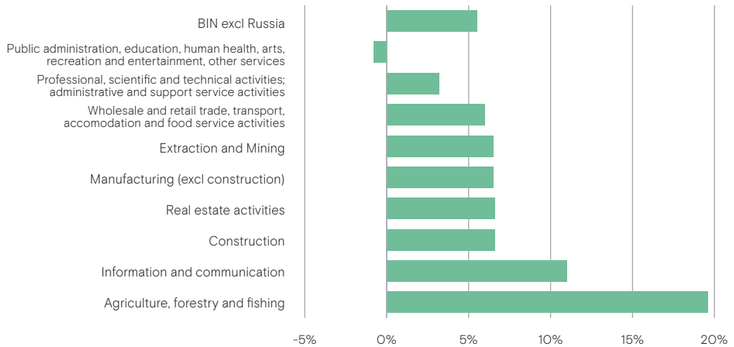


Figure 2.6 shows annual average turnover growth per industry. Agriculture, forestry and fishing high growth of 19.6% is fueled by fish farming and fisheries, which achieved outstanding growth levels driven by growth in demand and high market prices. Information and communication and construction followed with 11% and 6.6% turnover growth rates . Advanced services for businesses (professional, scientific and technical activities) lagged behind, likewise private education and health services. The measurements indicate stronger business cycles across more industries than in previous editions of Business Index North, indicating increased competitiveness among export companies, also in natural resource extraction.

Figure 2.7 — Production industries in the BIN area (excl.Russia), Index 2009=100, 2009–2018

In total, production industries accounted for 54% of all turnover in the BIN area (excl. Russia). Two industries show substantial growth above the BIN 10-year index average of 208. These are agriculture, forestry and fishing driven by North Norwegian fish-farming and increased catch value and construction. Fish-farming more than tripled turnover in 10 years, while construction more than doubled. After a weak period between 2009 and 2015, extraction and mining again show progress at the same level as the manufacturing industries.

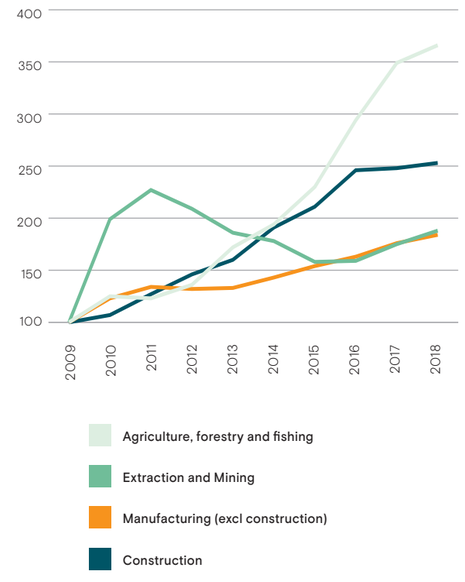


Figure 2.8 — People oriented industries in the BIN area (excl. Russia), Index 2009=100, 2009–2018

People-oriented industries accounted for 29.5% of all turnover in the BIN area in 2018 while trade, transport, accommodation and food services grew at close to the BIN average, doubling over the last 10 years. Increased market for private health care showed rapid growth until 2014. Since 2015, growth has leveled off, mostly due to more public services being available and to the introduction of new methods and technologies, especially in health care for the elderly.

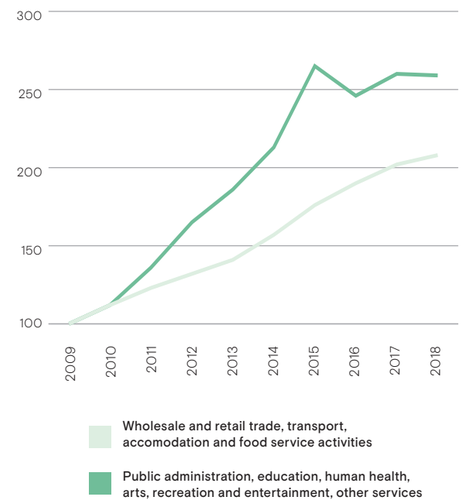


Figure 2.9 — Professional services in the BIN area (excl. Russia), Index 2009=100, 2009–2018

Figure 2.9 illustrates trends in turnover in professional services. One industry grew slightly above the BIN area average in the 10-year period. Although a small industry in terms of turnover (1.8 billion EUR), the information and communication turnover index grew to a value of 215, just above the BIN average of 208. Both real estate services and professional services grew below the BIN area average. While these industries have shown strong growth in capital areas in the BIN countries, the same situation is not observed in the northern areas. This creates a need for greater import of services, since northern companies require professional services at the same rate as in other parts of BIN countries. This pattern creates dependency on professional services from the capital areas. Alternatively, this finding suggests business potential for improving the supply of professional services in the north.

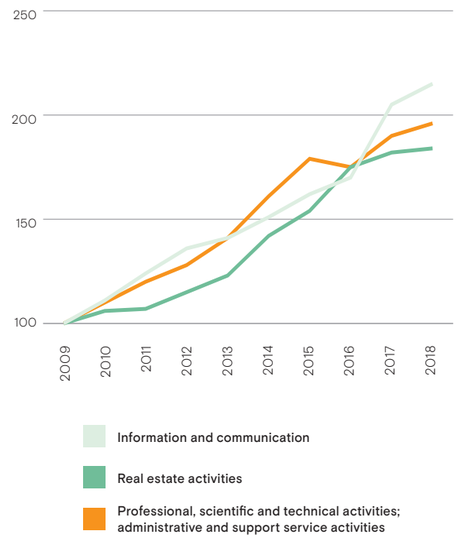


Figure 2.10 — Relative size and operating profit margins of BIN area industries (excl. Russia), %, 2018

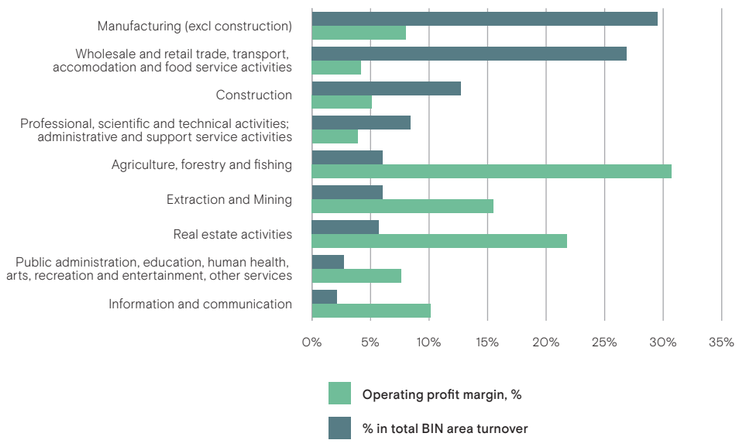


Figure 2.10 shows relative size and operating profit margins of industries in the BIN area. Out of all industries agriculture, forestry and fishing had the highest operating profit margin of 30.7% driven by fish-farming in North Norway[2]. Sustained demand and a rise in salmon prices contributed to the high operating profit margin. Operating profit margins for real estate services reached 21.8%, extraction and mining 15.5% and information and communications 10.1%. Manufacturing, the largest industry by turnover (30%) showed an operating profit margin of only 8%. Professional services and construction achieved even lower profitability (respectively 4% and 5%).

[2] Operating profit margin of farmed Atlantic salmon amounted to 37.2% in 2016. Source: The Norwegian aquaculture analysis 2017. EY.

Figure 2.11 — Total GVA, billion EUR, 2016

Figure 2.11 shows contribution of the BIN regions in terms of gross value added (GVA). GVA is defined as turnover (or sales) less the cost of bought in material and services (excluding employee costs) at a company level. At an aggregate regional level, it is calculated as the difference between the total value of goods and services produced in a particular region and the cost of raw materials and other inputs, which are used up in production. The BIN area's gross value added including the public sector amounted to 73.4 billion EUR in 2016. North Ostrobothnia achieved the largest value creation in absolute EUR, followed by Nordland and Norrbotten. The size of turnover in regions is mirrored in GVA, except for North Ostrobothnia, which had a higher GVA, while Nordland outperformed in turnover and speed of growth. GVA in Arkhangelsk and Murmansk Oblast was almost the same as in Lapland, even with a much larger population. This can pose challenges for the Russian regions if they rely excessively on imported goods, given the impaired purchasing power caused by low Rubel value.

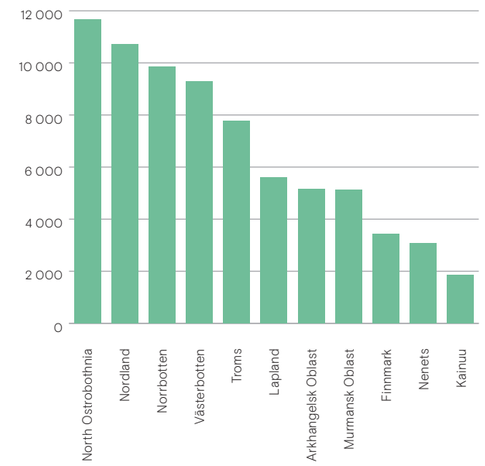
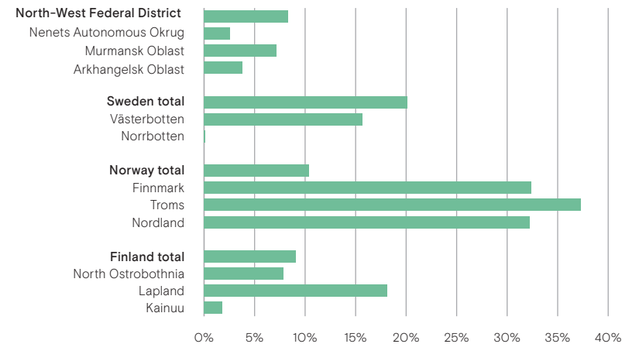


Figure 2.12 — Growth in GVA including public sector, %, 2011–2016



In Figure 2.12 we compare growth in gross value added (GVA) including the public sector per BIN region with national growth. Some BIN regions surpassed national growth in the five-year period where Nordland, Troms and Finnmark in Norway grew more than three times the national growth rate and the Lapland region grew at double the rate of national growth in GVA. GVA development across the regions demonstrates the importance of successful new industries and willingness to decentralize public sector service production, also across the Northern areas. Such initiatives cannot be said to be present in the majority of BIN regions (7 out of 11), where GVA growth lags behind national levels. Weaker GVA growth compared to national levels may lead to less interest in public investments and initiatives to stimulate population growth and create new attractive jobs, especially for young people.

Figure 2.13 — Value creation and employment – BIN regions and countries

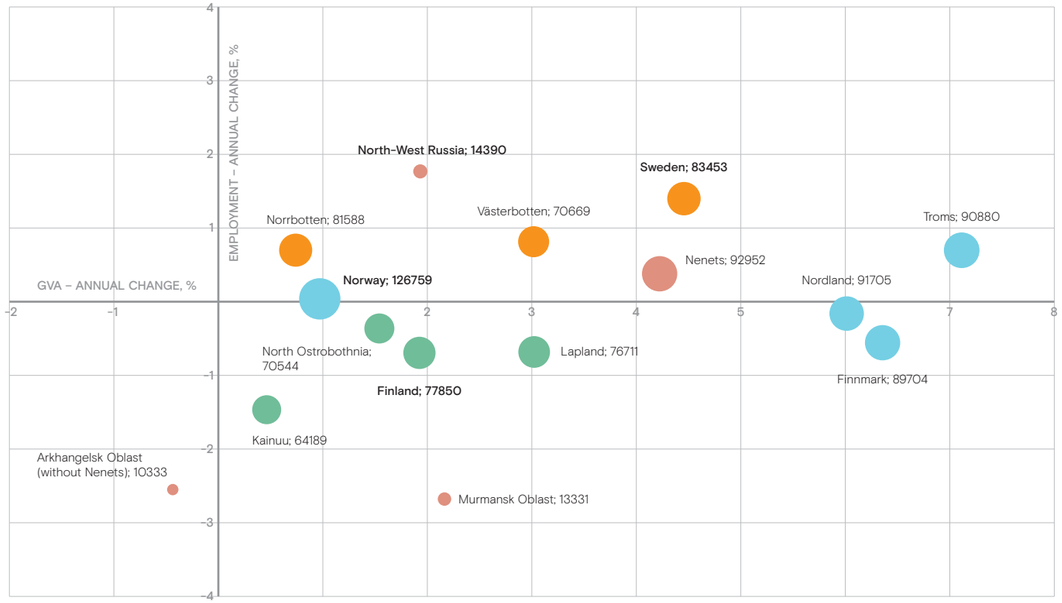


Figure 2.13 presents BIN business development in a socio-economic perspective. "Socio" stands for value for individuals and their groups and is measured through employment. Work, represented by employment, is a value as it provides purpose and security in people's lives. "Economic" represents value for legal entities and is therefore measured In terms of gross value added. Thus growth in employment and GVA are two dimensions of the chart in Figure 11. The BIN regions and their respective countries are placed on the chart according to changes on these two dimensions during the period 2012–2016. The size of the bubbles represents GVA per worker — a monetary representation of socio-economic value creation, in other words it is the relation between GVA and employment.

Troms is the BIN area leader in terms of combined growth in employment and GVA. Although GVA per worker in the Norwegian BIN regions is approximately at the same level, this is much lower than in Norway in general. Norrbotten and Västerbotten are part of the same positive trend, although they have substantial difference in GVA per worker (apparently due to the Norrbotten mining industry). Both Swedish BIN regions have lower GVA per worker than Sweden as a whole. The Nenets oil producing province is also part of the positive trend in socio-economic value creation. Its GVA per worker is much higher than the Russian standard and comparable to that of the Nordic BIN area.

The Finnish BIN regions, together with Nordland, Finnmark and Murmansk Oblast are part of the "efficiency" trend: business is growing with low or negative creation of new workplaces. Murmansk Oblast has the most dramatic reduction in workplaces. Arkhangelsk Oblast is in the most worrying situation in the BIN area - both employment and GVA show negative growth.

The greatest differences can be found in Russia: in terms of GVA per worker and growth rates for GVA and employment among the regions. Average GVA per worker is much lower than in the Nordic BIN areas when measured in Euro. However, the consumer price level is also much lower. In the Nordic countries, all BIN regions have lower GVA per worker than their countries averages. Probable reasons for this are location of headquarters of the largest corporations and higher intensity of knowledge-based and professional service activities in the capital areas and the dependence of the BIN areas on natural resources.

Answers to questions

What are the trends in business activities in the North?

Business activity is vibrant in the BIN region, amounting to 99 billion EUR including the Russian BIN regions. By size Nordland and North Ostrobothnia are the largest contributors to the turnover of the BIN area overall. All BIN regions in Finland, Norway and Sweden showed growth in turnover in the last ten years. Troms and North Ostrobothnia were among the fastest growing regions when measured as turnover index above the value 250. Business activities directly derived from extraction, refining, energy transforming industries and harvesting of natural resources account for 54.3% of all turnover in the BIN area (excl. Russia), whereas trade, retail, culture and tourism account for 29.5% of the turnover and services for businesses and people amount to 16.2%. These high growth rates over time can largely be explained by increased global demand for natural resource-based goods, renewable energy, increased tourism and new high-tech companies building their businesses in the north, providing, for example, data storage, salmon farming in Northern Norway, natural medicine and food ingredients, and health care technology. The growth can partly be explained by new technology and digitalization improving output from traditional industries increasing competitiveness and capacity.

How does the BIN area contribute to value creation?

Each BIN region has lower GVA per worker than its corresponding country on average, except for the oil-producing Nenets Autonomous Region. However, Norrbotten, Västerbotten, Nenets and Troms are cases of positive growth in terms of both workplaces and economic value. In all Finnish BIN regions, Nordland, Finnmark and Murmansk Oblast business is growing with low or negative contribution to new workplaces. The most worrying situation was found in Arkhangelsk Oblast with a negative trend in both GVA and employment.

Implications

- Positive trends and opportunities in business activities in the north should be matched by capital flows
- Awareness of sustainable investment opportunities in the north should be cultivated to attract more investment capital and create modern jobs in the BIN area
- High operating profit margins, especially in the fish-farming industry, indicate attractive investment opportunities. The environmental and health aspects of the industry need to be taken into consideration
- Regions with diversified industry structures have better business growth opportunities
- Regions with dynamic urban centres (e.g. North Ostrobothnia, Västerbotten) built around university cities perform best in producing businesses with high turnover
- Despite low or controversial growth rates, the Russian BIN regions may be potential future development spots for large investments.

Section (04)

Business in the North

Without growing businesses and high-value creation, arctic regions will fail to attract investments and innovation activities. Knowledge about trends, the scope of activity and spatial variation between regions in the BIN area and industries, gives insight into both progressive areas and challenges we need to address for further development.

Chinese tourists in the Arctic;
photo: Valery Vasilevsky

Scope of business grows rapidly in the BIN area. Companies with headquarter in the BIN area generated 90 billion Euro in 2016. Gross Value Added including public services reached 71.4 billion Euro including Russia or 7 percent of national gross value creation. Given the large land areas and spread population, a surprisingly large economy is present in the north with obvious expansion opportunities if more people and capital were mobilized.

When measuring turnover, in total annual turnover information from 78777 Norwegian, Swedish and Finnsih Compaines Where included and more than 15000 Russian companies. Turnover is the sum of sales and other operational income. Companies providing headquarter, holding services, oil and gas companies, banks, and subsidiaries in BIN regions where excluded before comparing and all currencies converted to Euro and current prices per year. Source of Turnover data for Norway, Sweden and Finland is the Odin Database (78777 comapnies in high North areas), supplied from Burea Van Dijk. Source for Russian turnover statistics where Russstat (15000 companies in High North areas). Activity in subsidiaries will from experience, add about 20 to 25 percent additional turnover to BIN regions, but exact allocation data were not available for this BIN issue. Gross value added measures the value for the amount of goods and services produced in an economy (or company)after deducting the cost of inputs and raw materials that have gone into the production of those goods and services When measuring volumes of Gross Value Added and Turnover, current process in Euro were used. To measure development in terms of index, current prices in national currencies were used with adjustments to devaluation of Russian ruble.

Turnover in 2016 at 17,4 billion Euro positions Nordland as the largest region, in front of Northern Ostrobothnia (12,8 billion) in Finland. Third in size is Norrbotten in Sweden with (12,4 billion). In Russia, Murmansk region reach 5,9 billion in turnover in 2016, followed by Arkhangelsk region with 4,1 billion, for both it is significantly less than in the period before 2011. North Norway also outperforms other BIN regions in growth, reaching 232 percent since 2008, trailed by Finland at 169 percent and Sweden at 160 percent. Challenging deflations of the Ruble, causes negative growth after 2014 in a number of industries of the Russian BIN regions. However, we have registered high growth in such industries as Fisheries and Aquaculture in Murmansk region and Mining industry of Arkhangelsk region (without NAO).

The BIN area's growth companies number one are from the sector of Aquaculture surpassing 374 % driven by Norwegian companies. Health and education services follows, with 369 percent growth, driven by larger elderly population demanding private health care services in all the BIN regions except Russia where fewer reach high age. Real estate related businesses grows driven by improved housing prices and high construction activity creates 305 percent growth since 2008 in current prices. Especially in Norway one sees favorable times for this industry.

Findings:

- BIN area's business turnover grew by 87 % from 2008 to 2016 and 18 % from 2012 to 2016. Turnover exceeds 90 billion Euro in 10 BIN regions.
- BIN area business has already developed a significant innovation potential in terms of clusters, brands, successful companies – an issue often overlooked when the region is viewed on the basis of natural resources; many innovative businesses and brands build upon identity with Northern life style and values
- The most successful companies in the BIN area are those with higher growth opportunities, sound value performance, yet a less aggressive approach to innovative competitiveness. They serve as a shining example of companies able to grow despite limited access to financing and human resources compared to companies in the capital areas.
- Most successful businesses are North Norwegian aquaculture firms, Real estate developers in Norway, business activities related to the mining industry in Arkhangelsk Region, and Manufacturing based on electric energy.
- Nordland has the largest economy of the BIN area, sharing high growth with now merged Troms and Finnmark region.
- Gross Value creation in the BIN area reached 71,4 billion Euro, growing 12,2 % between 2011 and 2015.
- Again, Nordland has the largest value creation, while Murmansk and Arkhangelsk (without NAO) regions constitute the highest proportion of value creation in their national territory.
- High growth in value creation can be found in aquaculture, finance and construction.

Figure 1

BIN area turnover distribution per country for companies with headquarter in the BIN area 2016 (Euro) (Holding companies and Banks excluded)

2016

Figure 1 BIN area turnover distribution per country for companies with headquarter in the BIN area, 2016 (Euro) (Holding companies: banks, insurance, Headquarter services, oil and gas and subsidiaries). Top 3 BIN regions are Nordland with 19 percent of turnover in Bin area, followed by Norrbotten and Northern Ostrobotnia both with 14 percent.

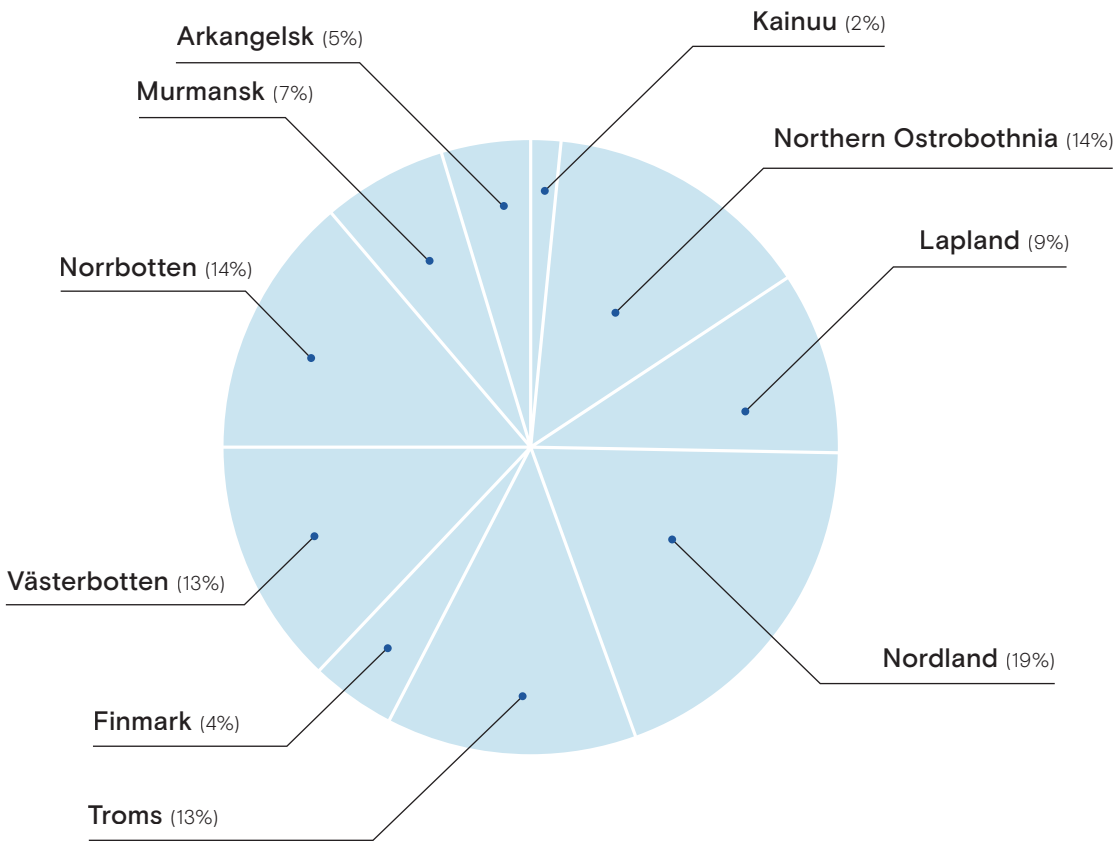


Figure 2

BIN Norway BIN Sweden
BIN Finland BIN Area (e

Growth in Turnover in current prices BIN area excl Russia

Index 2008 =100, 2008–2017

Figure 2 Growth in Turnover as index of current prices in BIN area excl Russia, 2008 =100). Northern Norway continues to outperform others in the BIN area in turnover growth reaching 231 percent since 2008. Strong driving forces from aquaculture, construction and manufacturing based on green electric energy has been persistent for nearly 10 years creating this very strong growth. Second strongest growth is found in Northern Finland, where financial crises hit severly in 2008 and 9, now showing good progress reaching 169 percent since 2008, and stronger than North Sweden reaching 160 percent and significantly better than North Russia with a challenging Rubel situation resulting in negativ growth after 2011. For most BIN regions, we see stronger turnover growth than at respective country level. Values for 2017 are predicted. Source Odin database and Rus Stat.

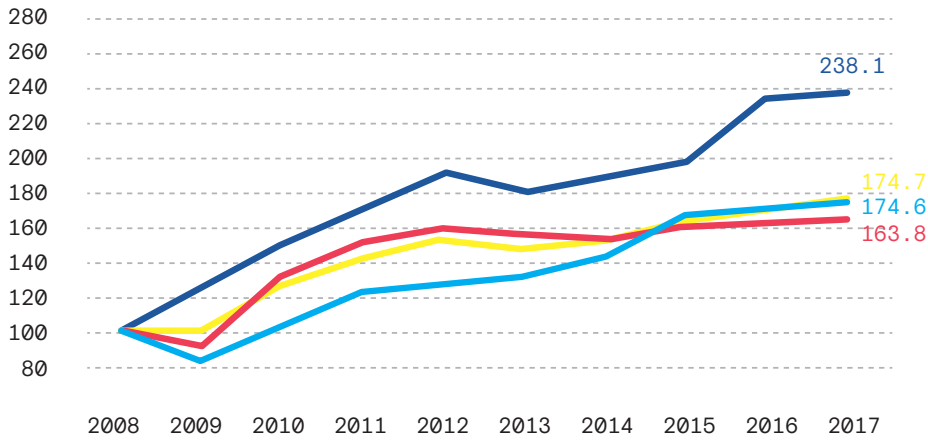


Figure 3

Turnover distribution in the BIN area, percentage of total BIN area per main industy excl. Russia.

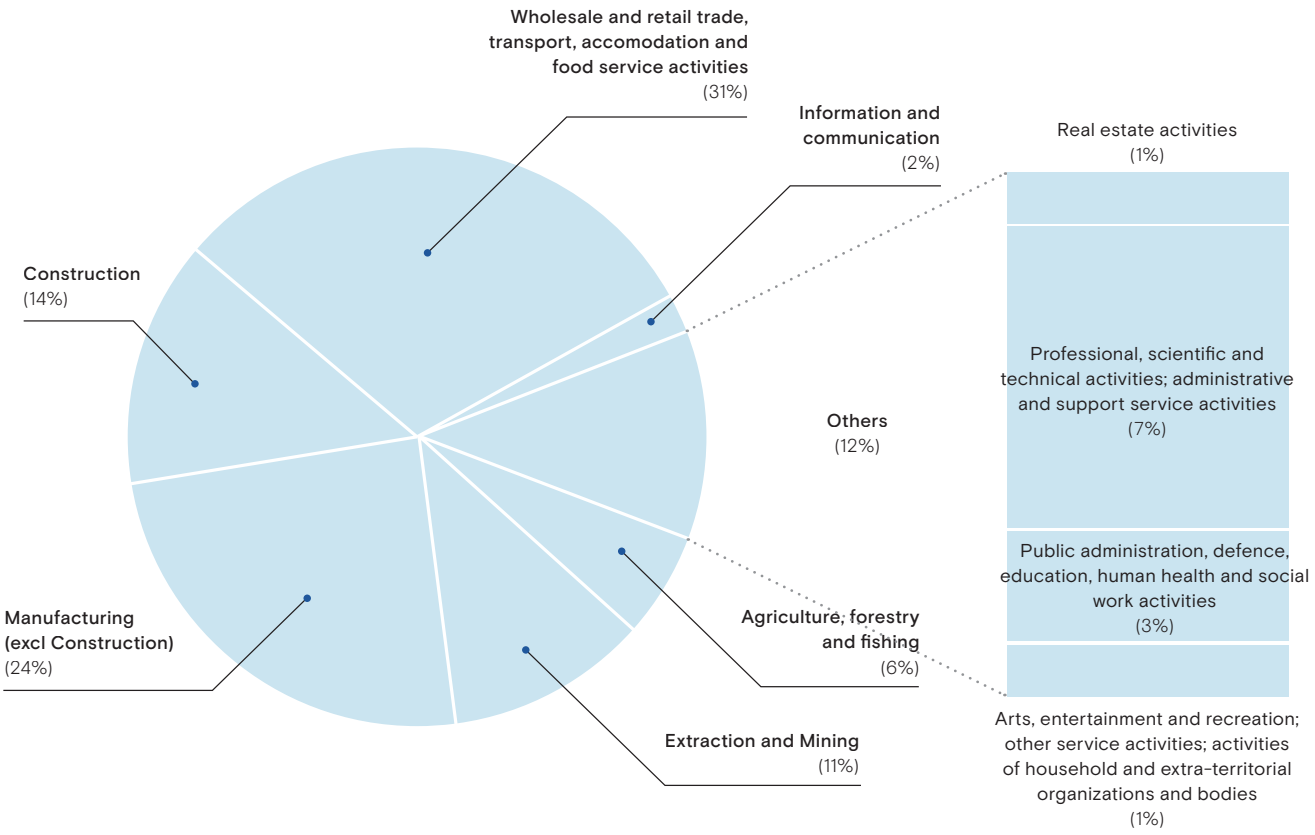


Figure 4

Turnover growth per main industry in BIN area excl. Russia, in current prices

Index 2012 =100, 2012–2016

Figure 4 Turnover growth per main industry BIN area exclusive Russia 2012 to 2016 as index where 2012=100. In current prices. The most vibrant industries can be fund in aquaculture, private healthcare, real estate, constructin and manufacturing (incl metals). Growth is less apparent in important areas as information and communication, professional services and in retail and travel. Challenging world economy for mining and extraction gives 18 percent negative growth from 2012 due to unfavorable market conditions.

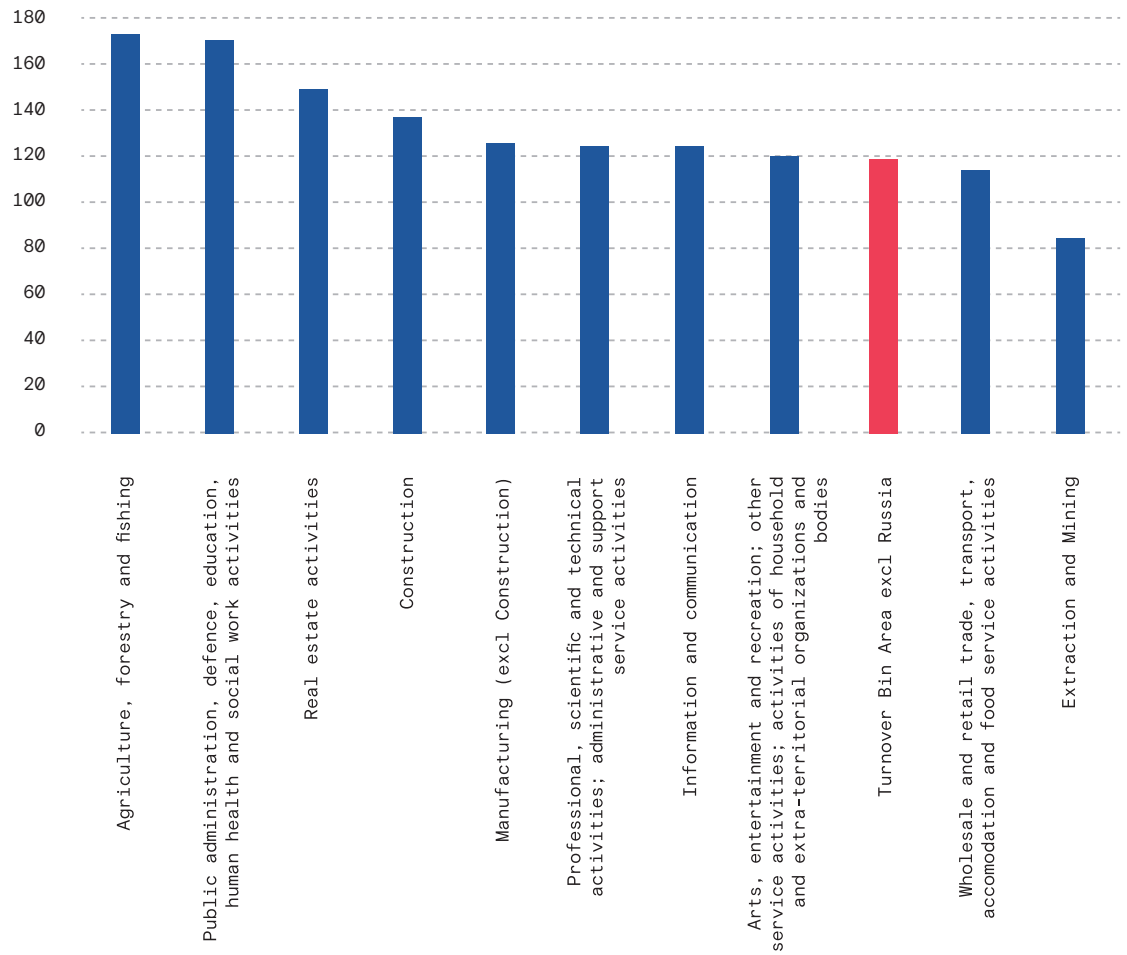


Figure 5.1

Growth in Turnover current prices BIN area for production industries

Index 2008=100

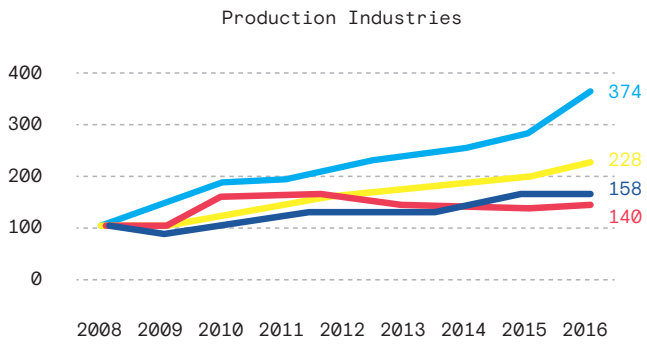


Figure 5.2

Growth in Turnover current prices BIN area for people oriented services

Index 2008=100

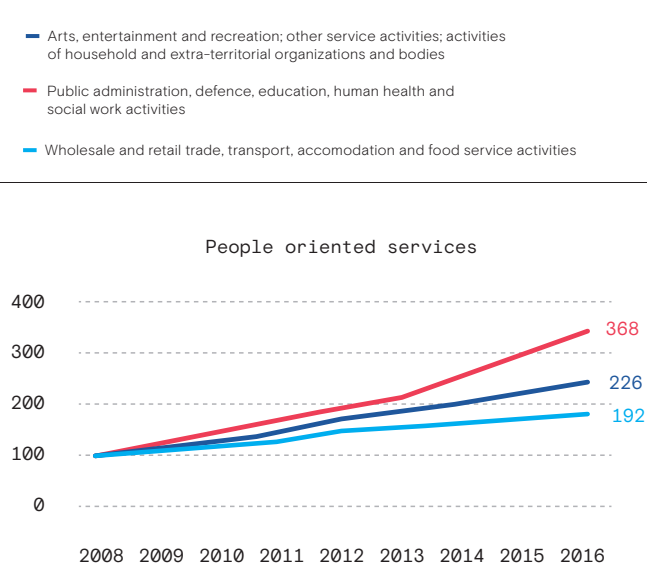


Figure 5.3

Growth in Turnover current prices BIN area for professional services

Index 2008=100

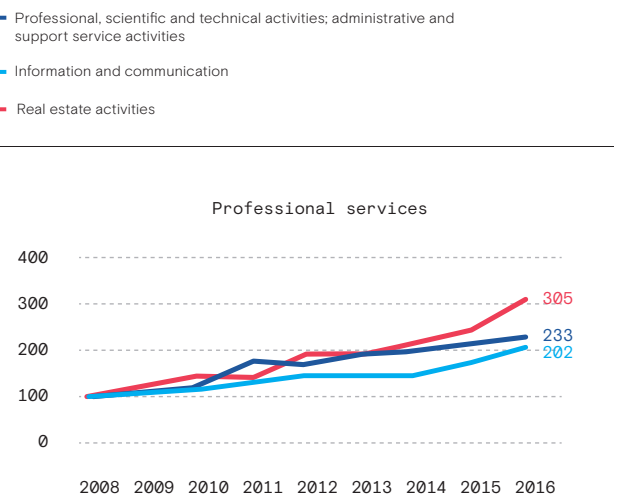


Figure 6

Turnover distribution per industry Murmansk and Arkangelsk (without NAO) Regions together

2015

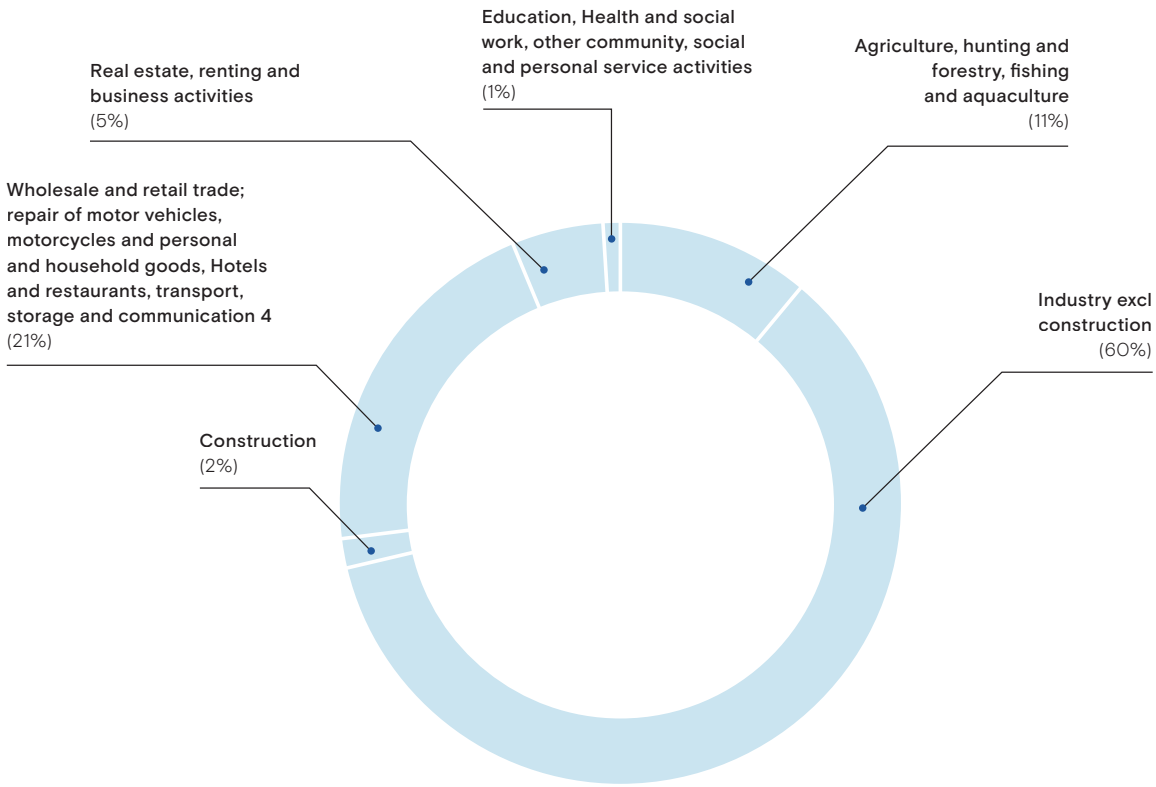
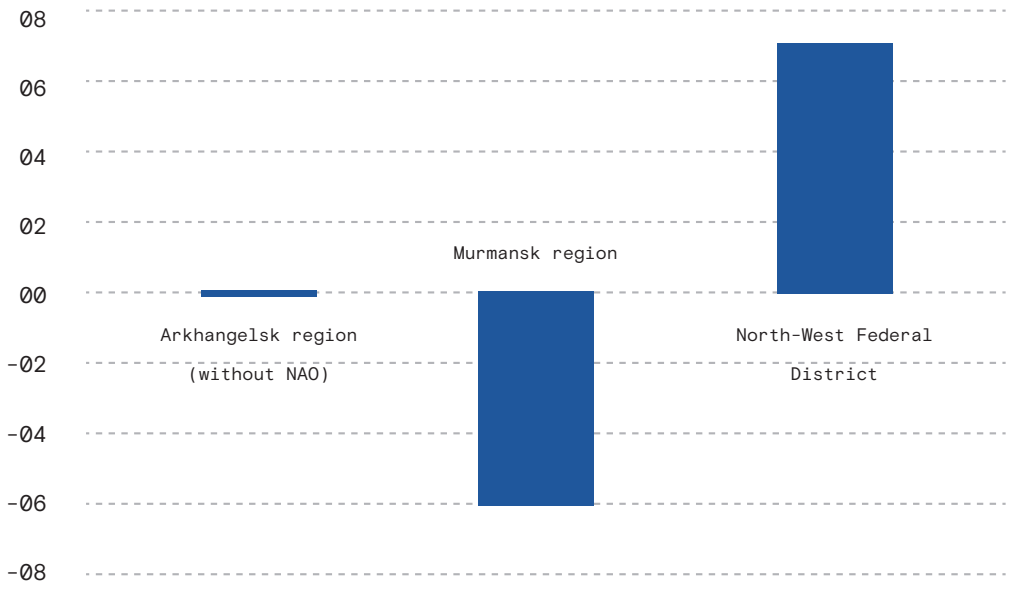


Figure 7

All industries excl Public administration and defence; compulsory social security and financial sector

Turnover growth profile in the Russian BIN regions compared to North-West Russia, all industries

2011–2015



Total growth in companies turnover was close to zero in Arkahnaglesk Region, while Murmansk Region reported negative growth -6,4%, compared to positive overall growth for North-West Russia +7,1% in 2011-2015.

However Russian BIN regions have a diverse turnover growth profile, there are industries with high growth as well.

High Growth in some Murmansk industries (2014-16):
Fisheries and Aquaculture for Murmansk (+20%) perhaps due to new domestic market opportunities for local producers in the time of ban for Norwegian fish import. Mining and quarrying (+37,1): this is traditional industry for the region with growth driver: Extraction of mineral raw materials for chemical production and fertilizer production.

High growth in some Arkhangelsk industries:
Mining and quarrying (+27% in 2014-15)
Real estate renting and business services (+70,4% in 2014-15) with main driver: geo services, geophysics and geochemics for exploration of natural resources. These two has to be seen in combination because production of gem stones has developed rapidly in the Region during the last 5 years.

Turnover for traditional forestry industry for Arkhangelsk has declined with -17,5% in 2014-2015, also in terms of jobs (see chapter Work in the North). In Murmansk agricultural industry continued to strongly decline (- 54% in 2014-2016). Manufacturing industry declined in both regions: -14.4 % and -12,4% in Arkhangelsk (2014-15) and Murmansk (2014-16)
For North-West Russia as a whole turnover growth in 2014-16 was +6,5% , mostly in Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods (+21%), Hotels and restaurants (+14%).

Value creation

There is no automatic connection between high turnover in businesses and growth in value creation in business and societal activities, if they don't perform at sustainable profit. Regions North Ostrobothnia in Finland, Nordland in Norway, and the Swedish regions of Norrbotten and Västerbotten are the largest value creators in the Bin area. However, growth in value creation supersedes national levels only in Norwegian counties, plus Lapland in Finland.

Norrland even experience overall decline in level of value creation between 2011 and 2015. North Ostrobothnia as well as BIN regions in Russia tend to have value creation growth lower than growth in their turnover. Plans for increased value creation in the North should be developed and deployed specifically aiming at increasing levels of value creation especially in regions with few large and dominating companies or industries.

Figure 8

Gross value added at basic prices per BIN region

Figure 8 Gross Value added per region in the Bin area million Euro. The acumulated Gross value added (GVA) is 71,4 billion Euro in 2015 in the BIN Areas. Norway has the largest value creation in the north with 20,8 billion Euro, followed by Sweden with 18,7, Finland with 18,1 and Russia with 13,8 billion Euro. Gross value added is a measure of total output and income in the economy. It provides the value for the amount of goods and services produced in an economy after deducting the cost of inputs and raw materials that have gone into the production of those goods and services. The region of North Ostrobothnia had the highest value for GVA in 2015 with 10.8 billion Euros, followed by Troms with 10,3 billion. The Swedish regions of Norrbotten and Västerbotten follows with respectively 9,6 and 9,1 billion Euros. Troms with 7,2 billion and Lapland 5,7 billion. Finnmark (Norway) and Kainuu (Finland) has the lowest values for GVA with 3,3 billion, and 1,8 billion Euros. Values for the Russian regions are current prices of 2015 in EURO.

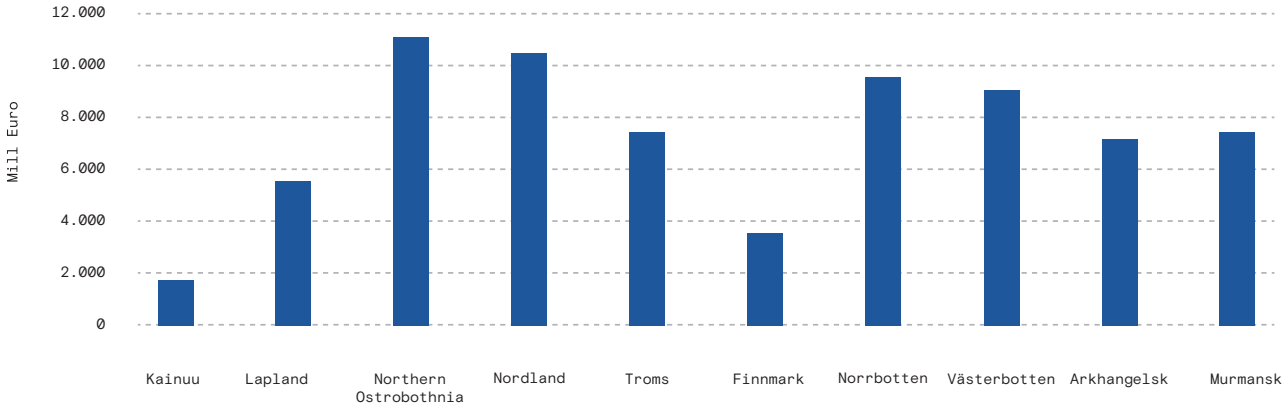


Figure 9

Growth in Gross Value Added BIN regions compared to national growth

2011 - 2015

Figur 9 Growth in Gross value added 2011 to 2015 Bin Area and nation total. The Norwegian BIN regions outperform the Finnish and Swedish when it comes to growth in GVA in the period from 2011 to 2015, all exceeding 20 percent. The region of Troms had the highest growth with 23.4 percent, driven by high government activity, increased salmon prices and activity growth in the fisheries, and high activity in the construction sector. All BIN regions in Norway outperformed the national average of 11.2 percent. The Finnish BIN region of Lappi also had a growth in the period (15.1 percent) that was stronger than the national average for Finland (6.1 percent). In North-West Russia, Murmansk has the highest growth of 5 % followed by Arkangels at 1,5 %. Both below the average og 7 % in NW Russia.

Two regions had a decline in GVA, Norbottens län and Kainuu, with respectively 3.1 and 3.3 percent. Norbottens län has had unchanged activity in most business sectors, but there has been a sharp decline in the GVE for the industry sector, that can be explained by the challenges in framework conditions for the mining sector. The fall in Kainuu came foremost for the industry and construction sector. The Russian BIN regions demonstrated economic growth despite of devaluation of ruble in 2014-15 in the time of Western sanctions, mostly due to the increasing oil and natural gas activity in Siberia. Due to high levels of inflations in NW Russia, GVA deflators differentiated by industry are used to calculte growth of GVA for the Russian regions (current prices of 2015 were converted to prices of 2011).

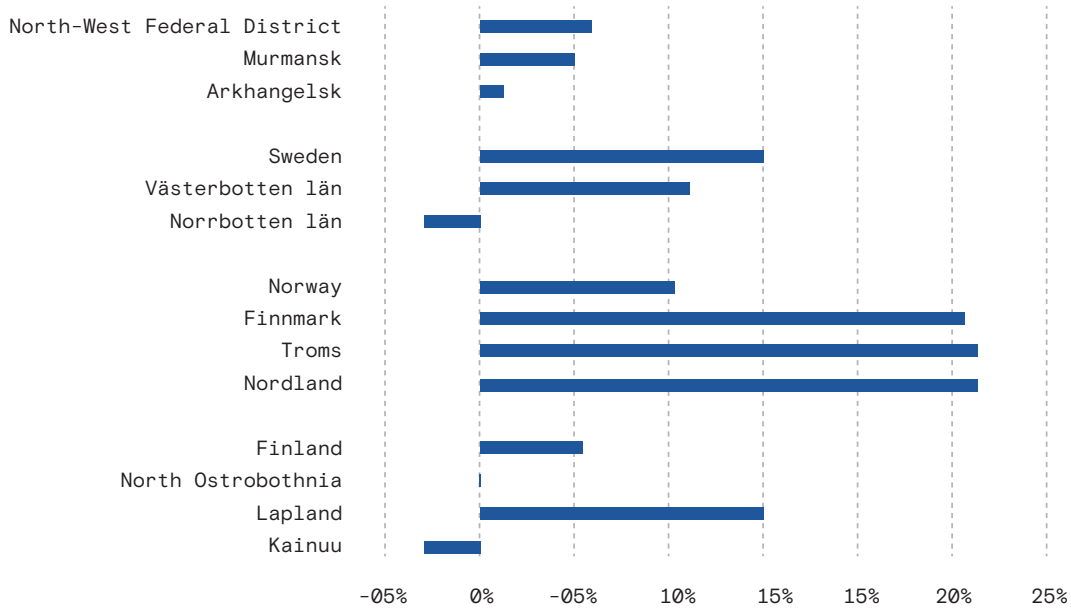


Figure 10

Growth in Gross Value Added

2011-2015

Figure 10 Growth in Gross Value Added shown as Indexs where 2011 is 100. The BIN regions excluding Russia had a growth in GVA of 12.3 percent in the period from 2011 to 2015. The growth in value added for the BIN Area as a whole is slightly weaker than the national average. Weaker growth In Kainuu and Norbotten and Murmansk/Arkangelsk explains this. The yearly growth rate for the BIN regions varied between 2 and 3.6 percent, with an average of 3.1 percent. The growth was strongest in 2014 and 2015. Russian statistics where adjusted for high Ruble devaluation.

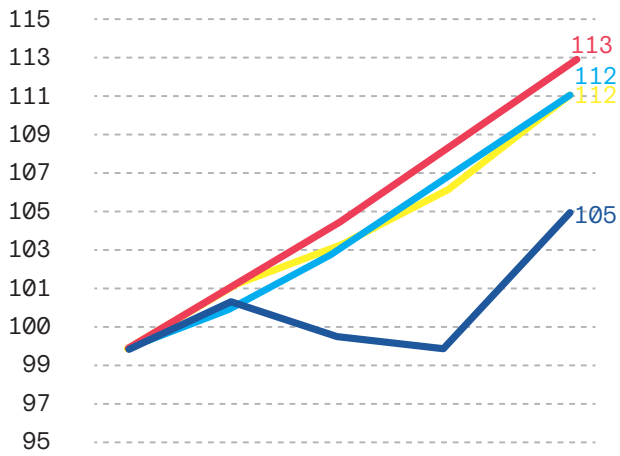


Figure 11

Growth in Gross Value Added in BIN area industries excl Russia

2011 - 2015

Figure 11. Growth in Gross Value Creation per main industry in the Scandinavian BIN area (excluding Russia) compared with the representative country level growth averages. BIN area enjoys large growth in value creation for Agriculture, forestry and fishing (24,4 percent above national average), manufacturing (20,6 persent above national average), and real estate with 5,6 percent volume and increased above national average. The main explanation is higher international prices for aquaculture and fish products plus high activity in electric power transforming manufacturing. Bin areas lag severly behind in growth for Information and communication industries, financial and banking industries and experiences and culture. Companies and services in sectors are often centralized to capitals and major cities. Russian industri level deflation effect was not available, hence omitted from comparison.

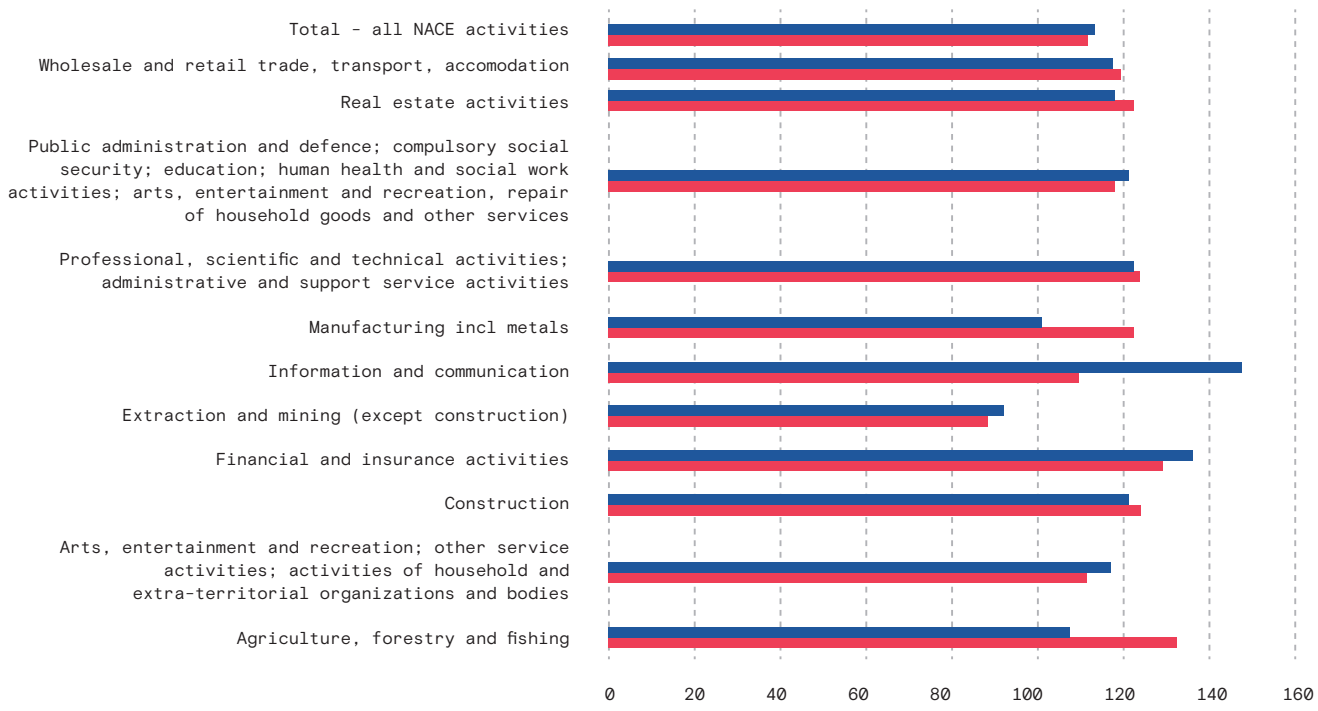


Figure 12

Bin area percentage of the total gross value creation in country

Figure 12 Bin area gross value creation as percent of national value creation. It is the Russian Northerns regions who have the higest proportion of national value creation (Sum of North West Russia) in the Bin area with 11,1 percent contributing with 13,8 billion. Northern Fnland has the second highest impact with 10 percent and 18,1 billion Euro in contribution. Norway then follows with an impact of 6,7 percent but the largest amount of 20,8 billion Euro and Sweden with the least impact with 4,7 percent and 18,8 billion Euro in contribution. Finland stands out with the fact that all industries are common in the high north including finance, professional services and informations services. Also Sweden has less variation in each industries proportion of national activity. Norway excels in aquaculture and fisheries togheter with Russia. Especially financial and information service industries tend to be more sentraliced in Norway and Russia.

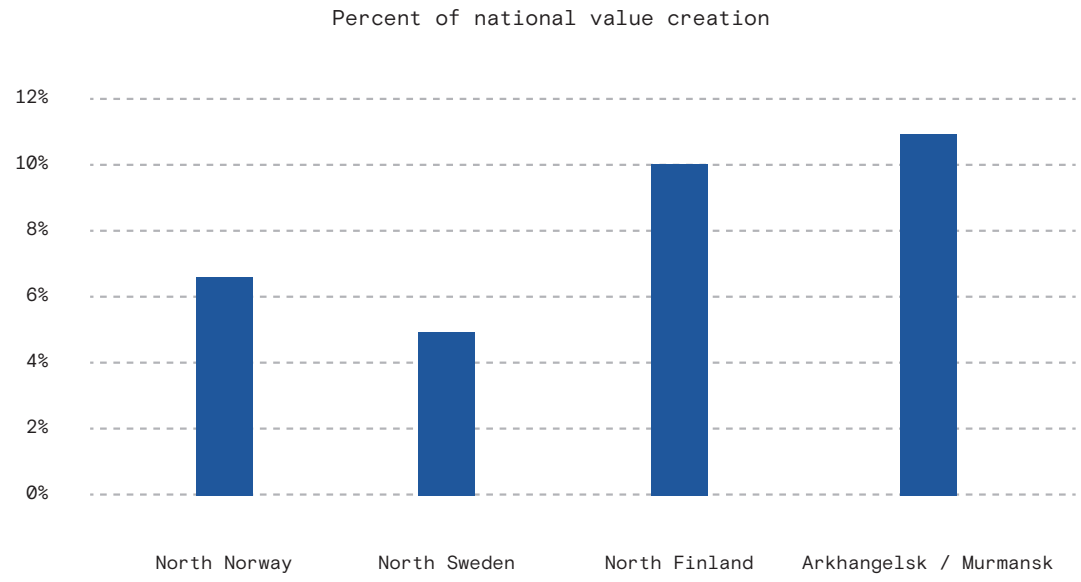
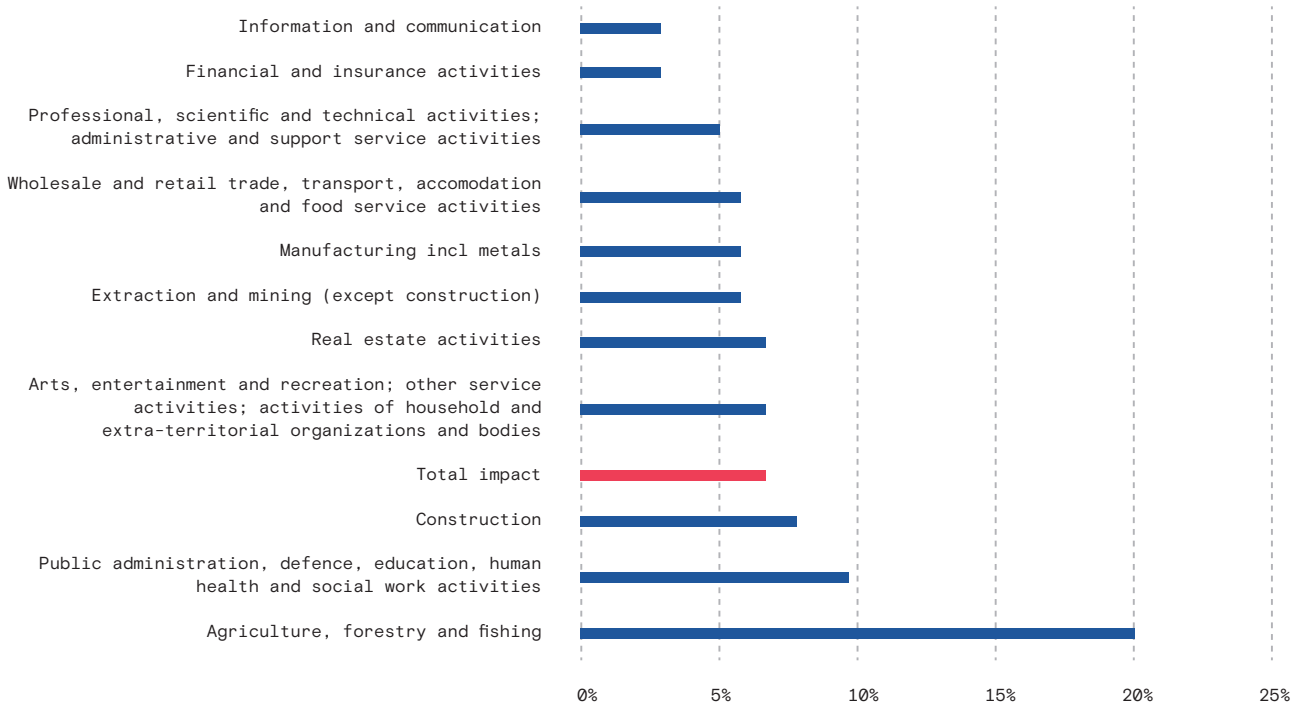


Figure 13

Gross value creation as proportion of national value creation per industry in BIN area including Russia

Figure 13 Bin area gross value creation as proportion of national value creation across industries and total BIN including Russia (North-West Russia is taken as reference). BIN areas constitutes 71,4 billion Euro in value creation and 7 percent of total national value creation (except oil and gas). The highest proportions are found for fishing, forestry and agriculture (incl aquaculture) with 20 percent of national value creation in this industry. Public administration with 9,4 percent, and construction with 8,3 percent are both above the average for all industries. On the other hand, little of national value creation in Information and comunication, financial services and professional services takes place in the high North. Since low density of services can influence growth and innovation in resource based industries negatively, such unbalances should be actively adressed.



Challenges and findings

Recommendations

For Policy

A Turnover growth well above national levels show potency of BIN areas

B There is a substantial challenge creating attractive communities with relevant work. Rapid centralization in financial sectors, advice and law sector, and professional service sector moves important people for local development out of the BIN regions. Measures ensuring the presence of these important professional services in at least cities and close to larger companies in the High North should be investigated

C Given that 6 out of 10 BIN regions experienced less growth in value creation than the national average

D Few new initiatives for increased value creation in a region: through extended value chains, have been tried lately. New thinking is necessary around effective measures making it attractive to create and grow a company in the north. Likewise, measures of higher potency than current ones making it attractive to employ people in the High North should be developed and implemented to harvest the BIN area's potential

E Policy makers face different challenges. Northern Norway needs a broader business structure around growing industries. Sweden needs to gain speed in Norrbotten, Finland, observes recovering Northern Ostrobothnia, but less progress in Kainuu and Lapland, and in Russia, one should race to rebuild loss of activity from declining international trade by refining products for Russian markets to a lager extent

For businesses

A Presence of strong growth histories and many examples of companies growing with headquarters in the High North, illustrates underlying potential and opportunity. Without people and capital, development is hard. Therefore companies should actively create jobs in order to build attractive societies for workers

B Norwegian aquaculture illustrates the power of combining knowledge, local favourable operational conditions (clean waters), and ability to bring the right product to the marketplace. More industries should actively exploit international business opportunities from innovation make at home opening new markets

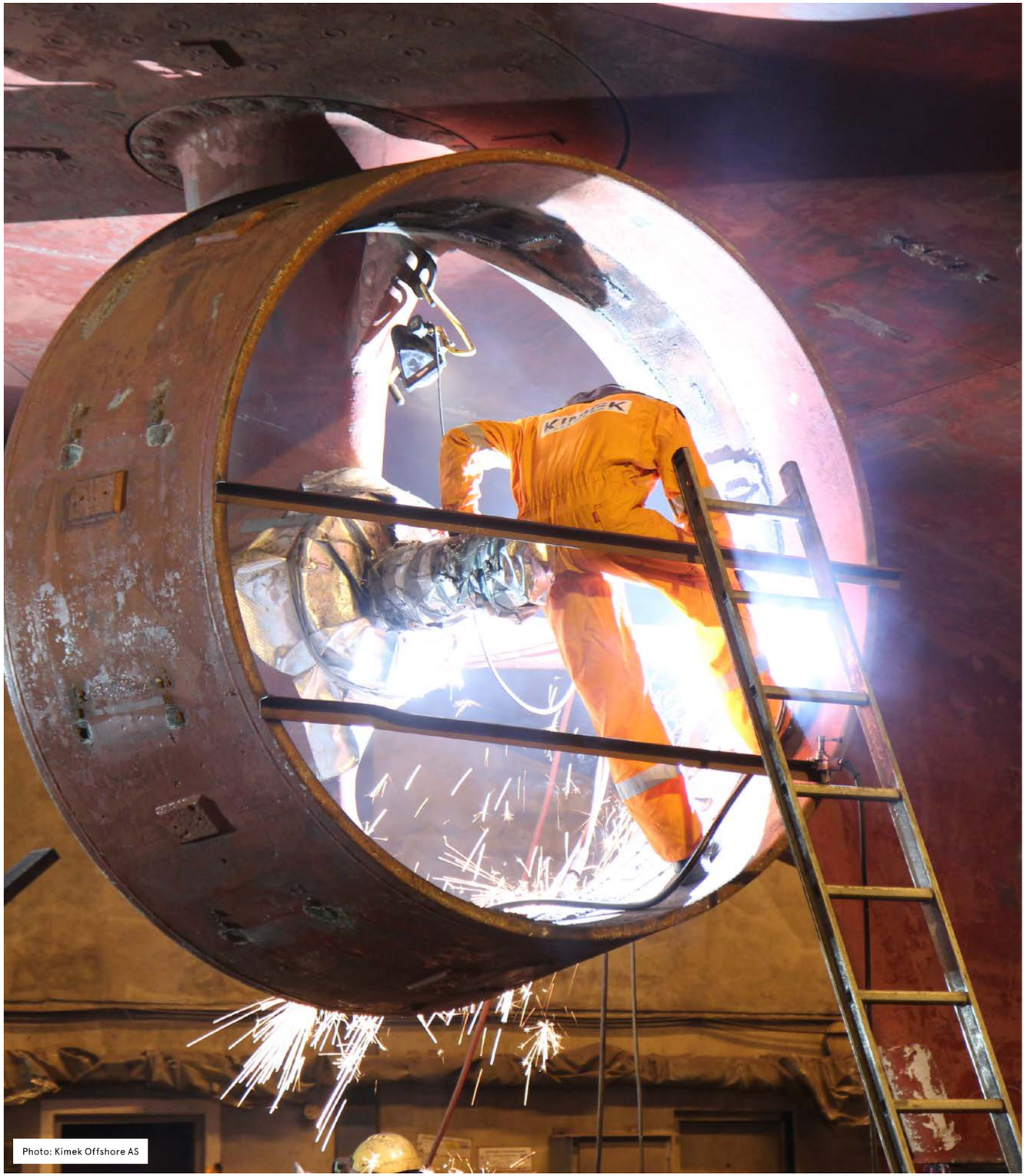


Photo: Kimek Offshore AS

Business in the North

This chapter concerns doing and creating a business in the BIN area. Business creation requires confidence in the market and trust in the growth potential. Institutional settings play a crucial role in new business creation. Finding reliable and comparable information for the BIN area on a company level presented a challenge. Therefore, this chapter only underlines some trends with available and comparable data. Firstly, applying data from World Bank we study the ease of doing business on a county level. The ease of doing business index demonstrates the processes required to set up a business. Secondly, business activity is studied through an Active Enterprise Index (AE Index) that compares counties in the BIN area with the respective country averages. Active enterprises[1] here refer to a limited liability company that had either turnover or employment at any time during the reference period (without data on how many people the company employed). The AE Index accounts for enterprise opening and closures. The AE Index is used to analyzing the evolution of the enterprises' population over time as well as the growth rate of industry sectors. The limitation of this analysis is the lack of comparable data on enterprise openings and closures in the BIN area that would complement the AE Index. To mitigate this limitation, a longer time period 2008-2015 covering eight years is used to account for the effect of volatility of enterprises openings and closures.

The Active Enterprises Index is calculated for limited liability companies. Creation of limited liabilities companies requires more capital and is more complex in terms of management than other forms of business organization, e.g. a sole proprietorship. In 2016, the minimum amount of share capital required for establishing a company equaled EUR 2 500 in Finland, SEK 50 000 (EUR 5 300) in Sweden and NOK 30 000 (EUR 3 400) in Norway. The creation of limited liability companies is used as a proxy for business activity and market confidence in the BIN area. Income tax for limited liabilities companies varied from 20% in Finland to 23% in Sweden and 25% in Norway at the end of 2016. The AE index captures activity in all industries in the BIN area as well as in total for Norway, Finland, and Sweden during 2008-20015. Furthermore, in-depth analysis on selected industries within the BIN counties is conducted. For comparability reasons across countries, the following industries were omitted in this analysis: public administration (human health and social work activities, education, and defense) and agriculture, forestry, and fishing. We also estimate production value of goods and services using regional GDP statistics, excluding public sector and non-profit organizations. This indicator is used to measure private sector value creation in the BIN area.

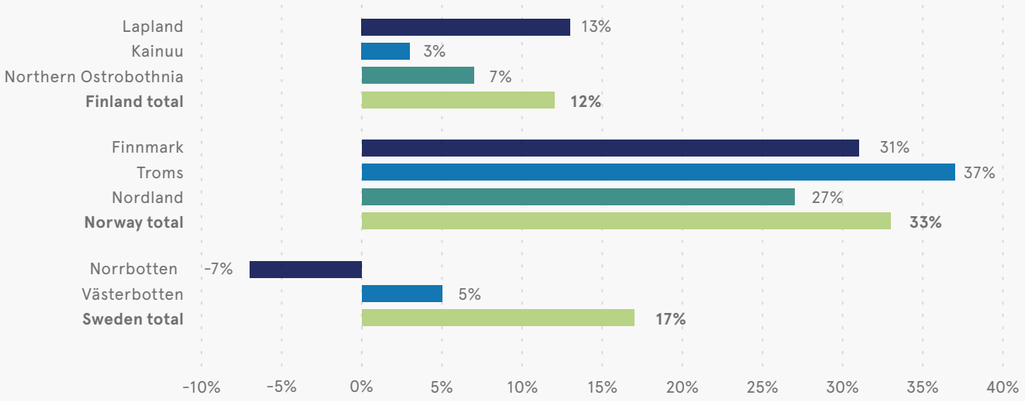
Results suggest that:

- The BIN area is potentially attractive for establishing businesses in the form of limited liability company, because it is easy to do business in Finland, Norway and Sweden, which are ranked in the top of the ease of doing business lists worldwide
- The BIN area accounted for 6% of active enterprises in the form of limited liability out of total for Norway, Sweden and Finland in 2015
- The BIN area's AE index lagged by 6% behind the total for Norway, Sweden, and Finland (33.4%). This lag in growth can be explained by lower population density in the BIN area and the differences in the maturity of start-up ecosystems in the BIN area
- The Northern Ostrobothnia, Troms, and Norbotten counties saw the largest increase in AE index during 2008-2015
- The five industries that experienced the biggest growth in the AE index in the BIN area are financial and insurance activities, arts, entertainment and recreation, administrative and support service activities, professional, scientific and technical activities and construction.
- On average, the BIN area's production value grew by 32 % in the last 10 years, compared to 42 % in the BIN countries as a whole. Norwegian counties saw the largest growth in production value averaging 80% during 2005-2015; Swedish counties' growth was volatile as a result of the crisis negative influence on global mineral and ore prices. Finnish counties experienced stagnation of production value growth as aftermath of the 2008 crisis.

[1] There are cross-country differences in identifying what constitutes an active enterprise. All enterprises included in this analysis are classified as active enterprises by Statistics Finland, Statistics Sweden and Statistics Norway.

Growth in production value expressed as index

2010–2015, index 2005 = 100



5 most growing industries in active enterprises

Index (excluding other services), 2008-2015

Financial and insurance activities	
BIN area	98,3%
Norway, Sweden and Finland total	101,3%

Arts, entertainment and recreation	
BIN area	59,7%
Norway, Sweden and Finland total	68%

Administrative and support service activities	
BIN area	43,2%
Norway, Sweden and Finland total	38,6%

Professional, scentific and technical activities	
BIN area	40,1%
Norway, Sweden and Finland total	49,4%

Construction	
BIN area	39,6%
Norway, Sweden and Finland total	41,8%

Growth in number of active enterprises measued as index compared to countries averages

index 2008 = 100, 2008–2015

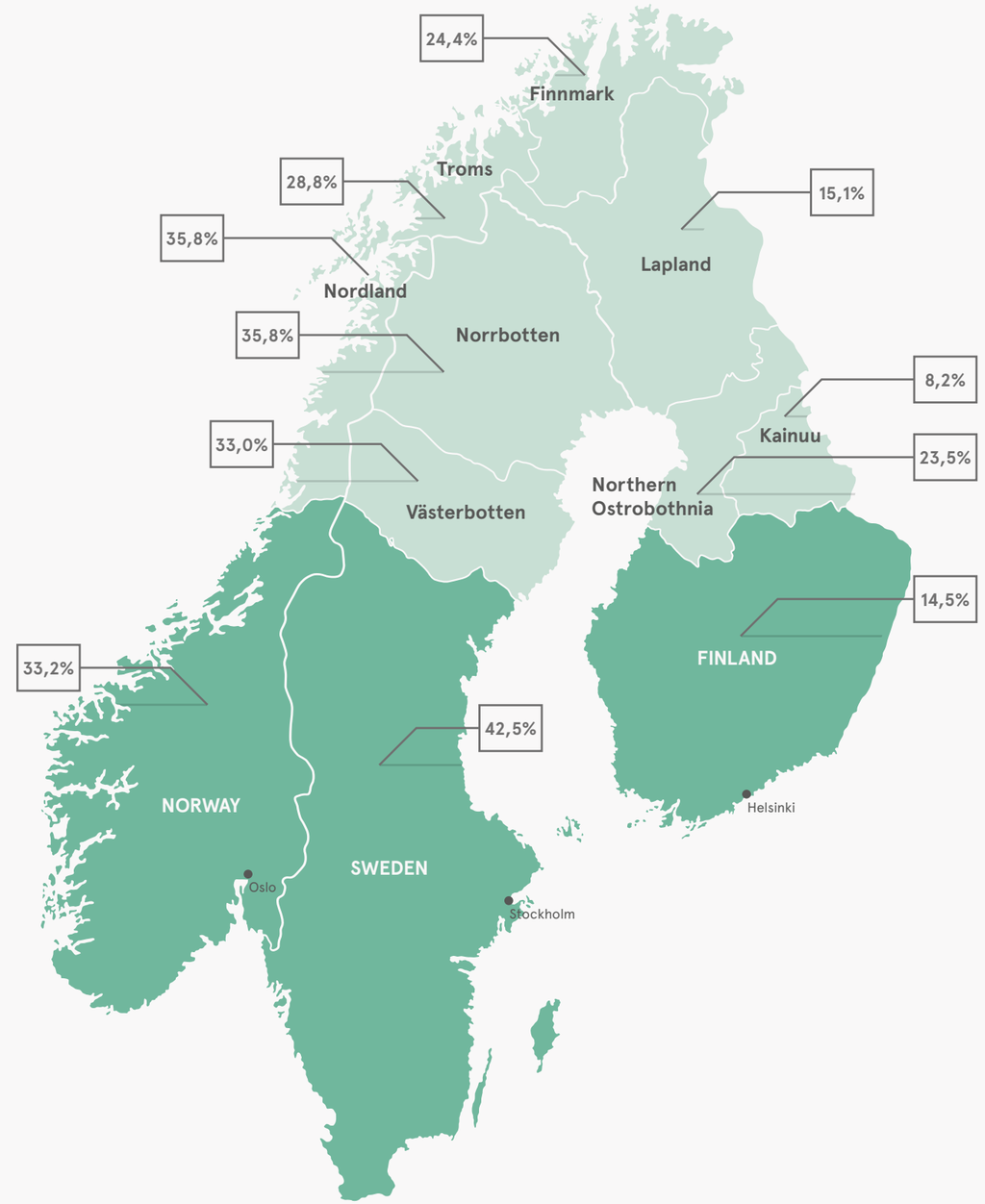


Figure 1 — Ease of doing business in Finland, Norway, and Sweden in 2016. (Source: The World Bank)

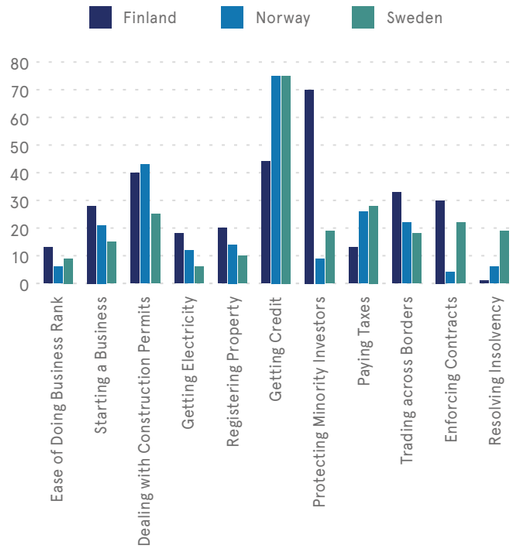


Figure 1 demonstrates the ease of doing business[2] rank and subsequent legal and institutional procedures associated with doing business in Finland, Norway, and Sweden. The data from the World Bank on ease of doing business are comparable across 190 countries in the world. Finland, Norway, and Sweden rank high compared to the rest of the world, but there are substantial cross-country differences. Norway is the 6th country in the world at the ease of doing business rank, while Sweden ranks 9th and Finland 13th and out of 190 countries in the world. Cross-country differences relate for instance to getting credit, in this respect Finland's ranks 45th in the world while both Norway and Sweden are ranked 75th, meaning that it is easier to get credit for business purposes in Finland than in Norway and Sweden. With regard to protecting minority investors, Sweden (19) and Norway (9) rank higher than Finland, which ranks 70th in the world. It appears to be more difficult to enforce contracts in Finland (30) compared to in Sweden (22) and Norway (4). In 2015 BIN area accounted for 6% of active enterprises in the form of limited liability companies out of total for Norway, Sweden and Finland (773 921 enterprises). On the country level in 2015 Finland in total had 160 060 active enterprises, out which 0.8 % were in Kainuu, 2.7 % in Lapland and 5.2% in Northern Ostrobothnia. Sweden had 420 599 active enterprises in 2015, with the share of Västerbotten 2.4 % and Norrbotten 2,1 %. In Norway out of 193 262 active enterprises, Nordland accounted for 4.0 % , Troms for 2.6 % and Finnmark for 1.4 %. The numbers of active enterprises reflect low population density of the BIN area.

Figure 2 — Growth in active enterprises index, 2008–2015, index 2008=100

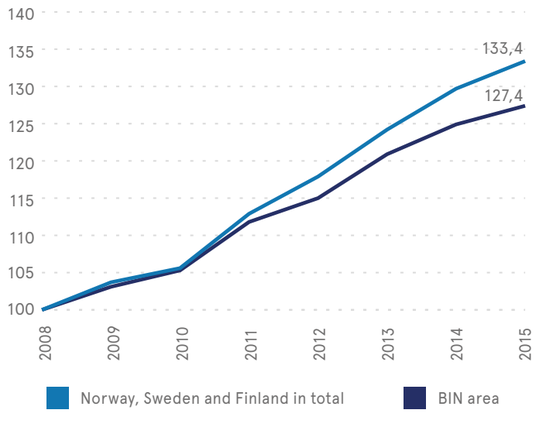


Figure 2 demonstrates trends in the AE index in the BIN area as well as in Norway, Sweden and Finland in total during 2008-2015. The BIN area's AE index (127.4) lagged behind the total for Norway, Sweden and Finland, which saw a growth in active enterprises population of 133.4%. This lag in growth can be explained by the lower population density of the BIN area and the differences in the maturity of start-up ecosystems[3] in the High North compared to the respective countries' capitals, i.e. Helsinki, Oslo and Stockholm, which have high-functioning start-up ecosystems.

[2] Doing Business records all procedures officially required, or commonly done in practice, for an entrepreneur to start up and formally operate an industrial or commercial business, as well as the time and cost to complete these procedures and the paid-in minimum capital requirement. This topic measures the paid-in minimum capital requirement, number of procedures, time and cost for a small- to medium-sized limited liability company to start up and formally operate in economy's largest business city.

[3] Start-up ecosystem is formed by people, start-ups in their various stages and various types of organizations in a location (physical and/or virtual), interacting as a system to create new start-up companies. (Source: Start-up commons)

Figure 3 — Growth in active enterprises index at the BIN county level, 2008–2015, % change

Figure 3 demonstrates the differences on a BIN county level in the AE index. On a country level, Sweden saw the biggest growth (42.5%) in the AE index in the form of limited liability companies, followed by Norway (33.2%), while Finland saw the lowest growth with 14.5% during 2008-2015. All BIN counties lagged behind their respective country averages except Northern Ostrobothnia. Northern Ostrobothnia county saw an increase of 23.5% in the AE index, which is larger than country's total of 14%. This could be attributed to a more developed start-up ecosystem in Northern Ostrobothnia county, compared to other BIN area counties and the rise of newly started businesses as result of Nokia and Microsoft demises.

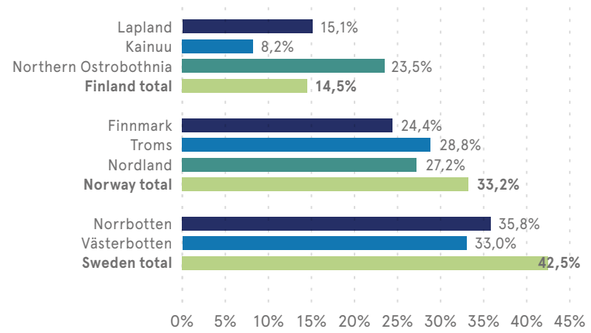
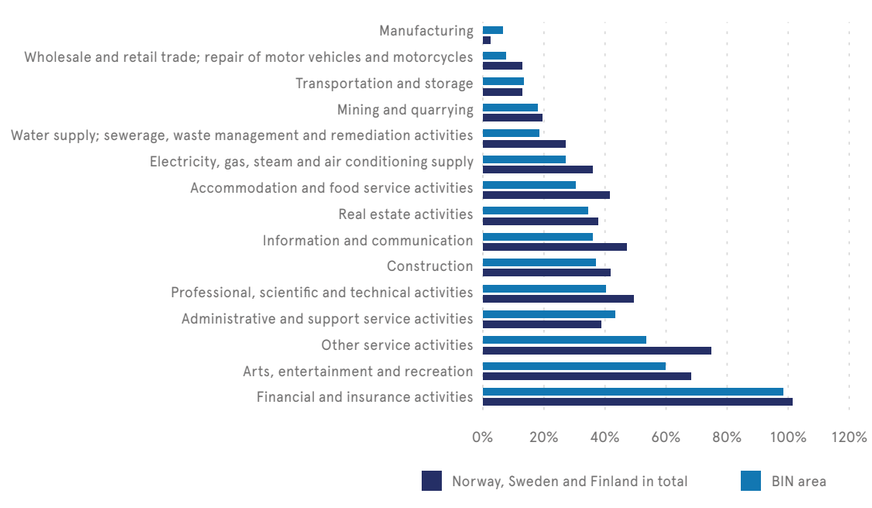


Figure 4 —Active enterprises index in the BIN area by field of business, 2008-2014, change %

Figure 4 provides a breakdown of the AE index by field of business[4] within the BIN area compared of the total for Norway, Sweden, and Finland. The composition of active enterprises during 2008-2015 has not changed much, with five industries making up about 70% of all active businesses: wholesale and retail trade; repair of motor vehicles and motorcycles, professional, scientific and technical activities, construction, real estate activities and manufacturing. Figure 4 is valuable for detecting industries that experienced the most rapid growth in the active enterprises population. Financial and insurance activities experienced the biggest growth in both, in the BIN area with a growth of 98.1% and the total for Norway, Finland, and Sweden with a growth of 101.3%. The BIN area underperformed in all fields of business except manufacturing, with 6% compared to 2.5% in total for Norway, Finland and Sweden. A potential explanation for the growth in financial and insurance active enterprises is the rise of Fintech industry (the evolving intersection of financial services and technology, PwC). In order to understand the phenomenon, a case analysis of the financial and insurance activities industry should be conducted in a future BIN report.



[4] excluding agriculture, forestry and fisheries

Figure 5 — Active enterprises index in at the BIN county level, Construction, 2008-2015, % change

Figure 5 shows the trends in the AE index in the construction industry at a BIN county level. The leaders on the AE index were Troms 40.3%, Nordland 39.4%, Västerbotten 36.3% and Nothern Ostrobothnia 34.1% counties. The rise in the AE index for the construction industry corresponds to the positive trends of population growth in these counties and hence increased demands for housing and other construction services.

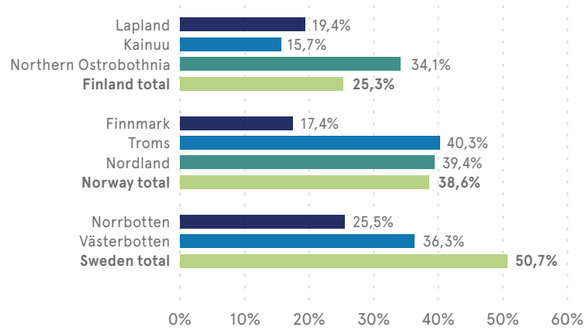


Figure 6 —Active enterprises index at the BIN county level, Real estate, 2008-2015, % change

Figure 6 shows the development of active enterprises in the real estate industry. Five out of eight BIN counties outperformed their respective country averages. The highest growth was observed in Norrbotten with 74.4% increase, followed by Northern Ostrobothnia 27.2%, Finnmark 37.6% and counties. The growth in the real estate active enterprises index both within the BIN area as well as within Norway, Sweden and Finland can be attributed to a low or negative interest rate policy. Following the 2008 financial crisis, a low or negative interest rate policy has resulted in attracting more capital investment and boosting confidence in the real estate market.

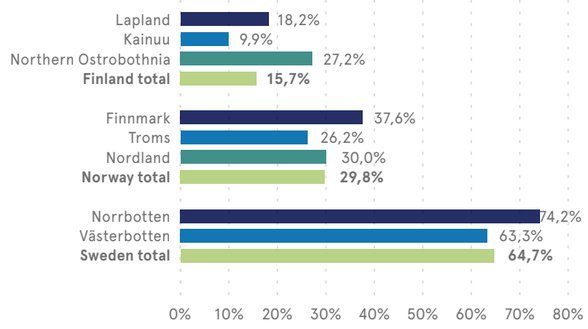


Figure 7 —Active enterprises index at the BIN county level, Accommodation and food, 2008-2015, % change

Figure 7 provides an overview of the AE index in the accommodation and food industry. All countries had an increase in their accommodation and food industry active enterprises index, with Sweden seeing a 55.8% increase, Norway 54.7%, and Finland 10.1%. The Finnish BIN counties Northern Ostrobothnia, Lapland, and Kainuu outperform Finland's national average in the accommodation and food industry. A strong performance can be related to the growth in tourism in Finnish Lapland, and consequential increased demand for accommodation and food services. In Norway, Nordland county saw an increase of 55.5% in its accommodation and food active enterprises index during 2008-2015. This reflects the fact that the accommodation industry index in Nordland grew by 21.5% during 2008-2015. In Sweden, Norrbotten county had an increase of 53.0% in accommodation and food AE index. The growth in AE index in accommodation and food could be explained by the growing trend in tourists' inflow and since 2010, the number of guest nights increased by 20% in Swedish Lapland.

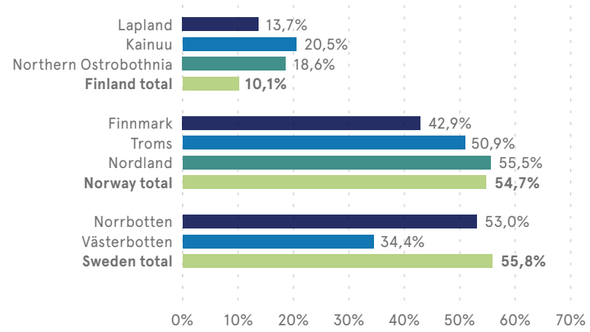


Figure 8 —Active enterprises index at the BIN county level, Arts, entertainment and recreation, 2008-2015, % change

Figure 8 demonstrates the AE index in the arts, entertainment and recreation industry. Troms (79.4%), Västerbotten (76.8%) and Northern Ostrobothnia (73%) counties saw the largest increase in the active enterprises' population during 2008-2015. AE index in arts and entertainment industry reflects growth in tourism and appears to be more pronounced in the growing counties of Troms and Northern Ostrobothnia, compare to Kainuu's (2.4%) and its diminishing population.

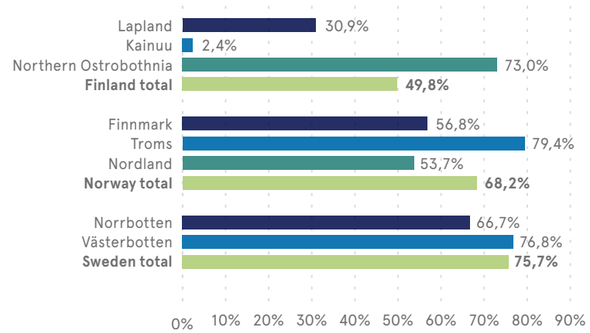


Figure 9 — Active enterprises index in at the BIN county level, Manufacturing, 2008-2015, % change

Figure 9 shows that the BIN counties succeeded outperform in the number of active enterprises in manufacturing compared to the total for Norway, Sweden, and Finland. A growth of 12.1% was observed in Norrbotten and 11.1% in Finnmark, while Kainuu county (-12.9%) experienced a reduction in the number of active enterprises in manufacturing. This phenomenon deserves further attention in order to identify the factors influencing the decision to develop manufacturing in the High North. One possible explanation could be the rise of manufacturing enterprises that use raw materials from the agriculture, forestry and fishery industry.

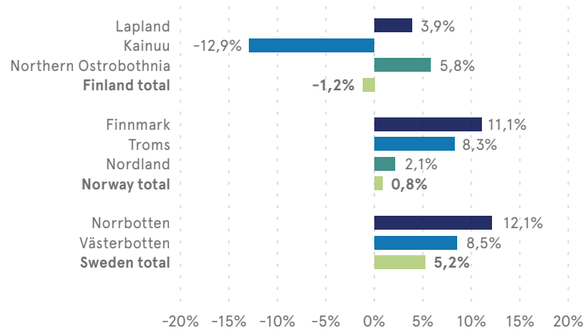
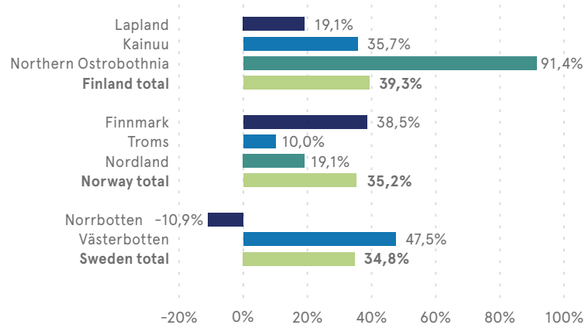


Figure 10 — Active enterprises index in at the BIN county level, Electricity gas, steam and air conditioning supply, 2008-2015, % change

Figure 10 shows the trend in the electricity, gas, steam and air conditioning supply active enterprises index. The leading county in the electricity, gas, steam and air conditioning supply active enterprises index was Northern Ostrobothnia 91.4%, followed by Västerbotten 47.5% and Finnmark 38.5%. The growth above the respective country's average can be attributed to the rise of Cleantech[5] industry in those counties. On the global scale Finland ranks 2nd, Sweden 4th and Norway 14th in the Global Cleantech Innovation Index[6].



[5] Cleantech – or clean technology – refers to products, services and processes that promote the sustainable use of natural resources while reducing the harmful effects of industrial processes on the environment. Cleantech is cross-sectoral technology for the promotion of material and energy efficiency, renewable energy, water and material recycling, and environmental management (TEKES definition).

[6] The Global Cleantech Innovation Index 2014, where 40 countries were evaluated on 15 indicators related to the creation, commercialisation and growth of cleantech start-ups.

Figure 11 — Active enterprises index at the BIN county level, Water and sewage, 2008-2015, % change

Figure 11 shows the AE Index in the water and sewage industry. According to Cleantech Group, the way businesses and individuals think about water and waste is rapidly changing. New business models are emerging that reward conservation, reuse and recycling instead of consumption. The Swedish BIN counties Norrbotten and Västerbotten experienced the largest growth in the active enterprises' population with increases 55.6% and 70.8% respectively. This is much higher than Sweden's average of 37.3%. The growth in Norway occurred in Troms (30.0%) and Nordland (31.8%), while Finnmark lost 18.8% of its active enterprises since 2008. In Finland, only Lapland experienced a small growth of 2.4%, while Northern Ostrobothnia and Kainuu both had a decline in the number of the AE Index in the water and sewage industry. The AE index in water and sewage can be used as an indirect measurement of Cleantech enterprises' growth rate in water and sewage industry.

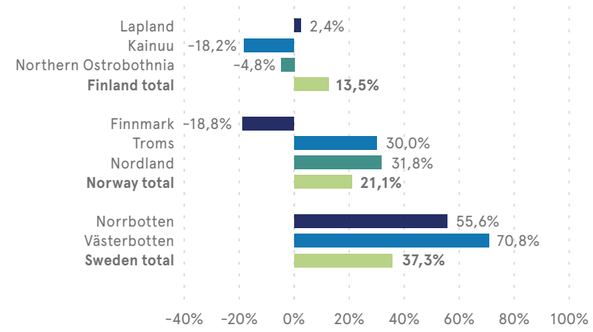
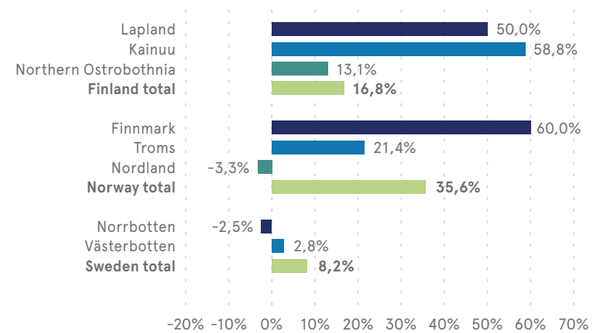


Figure 12 — Active enterprises index at the BIN county level, Mining and quarrying, 2008-2015, % change

Figure 12 illustrates the change in the AE Index in mining and quarrying during 2008-2015. The Finnish counties Lapland and Kainuu experienced a growth of 50.0% and 58.8% respectively, while the overall AE Index in Finland rose by 16.8%. In Norway, Finnmark saw a growth of 60%, followed by Troms (21.4%), Nordland experienced a decline of (-3.3%). For comparison, the AE index shows that the total growth in Norway was 35.6%. The growth pattern in Sweden was the slowest, with the total for Sweden reaching 8.2%, with Västerbotten's growth of 2.8% and a decline in Norrbotten (-2.5%). The growth in the AE Index in the Finnish counties Lapland and Kainuu can be attributed to the growing number of exploration projects[7] in search for precious metals as well as base metals (nickel and copper). In Norway, permissions have recently been granted to proceed with development of a copper-noble metal mine at the Nussir and Ulveryggen deposits in the northern Norway. Nine deposits in Norway meet the specifications for deposits considered to be large or potentially large[8]. Low growth in the AE index for the Swedish counties may be due to dominant position large players have and high entry barriers for new businesses. Statistics on employment for the time period 2008-2014 reflect that the mining and quarrying industry experienced the largest job losses. Jobs losses in the mining and quarrying industry 2008-2014 combined with the growth in the AE Index for 2008-2015 may mean that the companies had not started employing people yet during the exploration phase. Moreover, missing employment statistic for the year 2015 may have had an impact on the results.



[7] Geological survey of Finland (Statistics on active metal ore mines and current projects)

[8] Mineral Resources in the Arctic (2017). Geological survey of Norway, p.47.

Figure 13 — Active enterprises index at the BIN county level, Financial and insurance activities, 2008-2015, % change

Figure 13 demonstrates the change in the AE index for financial and insurance activities. This industry had the highest growth in the number of active enterprises since 2008. However, the growth in not uniform on a BIN county level. The highest growth in the AE index in financial and insurance activities is observed in Norrbotten (116%) and Västerbotten (109.8%), much higher than Sweden's total of 95.6%. The total for Norway has grown by a record-high 194.8%, followed by Finnmark (160.0%), Troms (140.7%) and Nordland (138.0%). In Finland, the growth in the AE Index for financial and insurance activities has been moderate, compare Finland's total of 12.3% to Northern Ostrobothnia's (28.1%) and Lapland's (18.4%), and with a decline in Kainuu (-21.4%). This industry deserves a more thorough study in order to understand what created an increase in the index. A potential explanation could be the uptake of digitalization in financial and insurance activities and openings of Fintech enterprises.

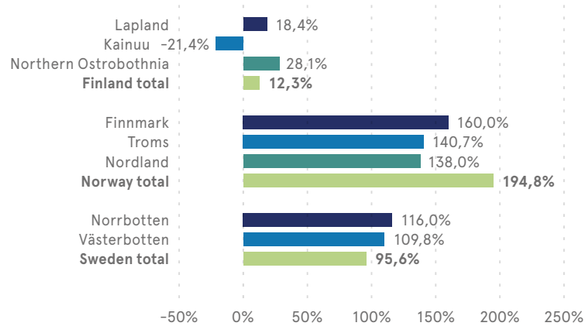
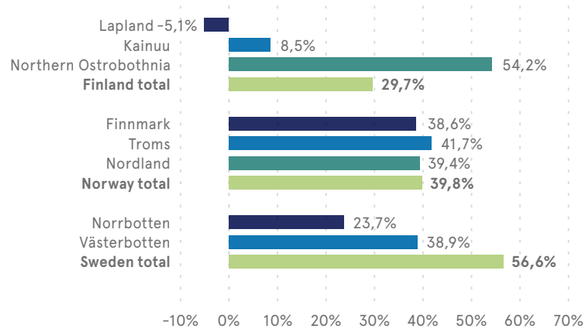


Figure 14 — Active enterprises index at the BIN county level, Information and communication, 2008-2015, % change

Figure 14 demonstrates the change in the AE index for information and communication. Comparing growth on a country level, Sweden led with its 56.6% increase in the AE index for the information and communication industry, followed by Norway (39.8%) and Finland (29.7%) during 2008-2015. The Norwegian counties Finnmark, Troms and Nordland all followed the country's pattern, with nearly 40% increase in the AE index for the information and communication industry. The Swedish counties Västerbotten (38.9%) and Norrbotten (23.7%) fell behind the country's total of 56.6%. In Finland, the growth in active enterprises in the information and communication sector was concentrated in the county of Northern Ostrobothnia, which has served as a hub to global product development units in ICT[9].



[9] Business Oulu

Figure 15 — Active enterprises index at the BIN county level, Professional, scientific and technical activities, 2008-2015, % change

Figure 15 shows the trend in the AE index for professional, scientific and technical activities. The rise in the number of enterprises in professional, scientific and technical activities is illustrative for measuring how many of high-skilled workers with tertiary degrees (human capital) are contributing to business creation in the BIN area. In Finland, the counties Northern Ostrobothnia (33.3%) and Kainuu (30.4%) outperformed Finland's total of 21.9%. At the same time, Lapland saw an increase of 15.2% in the AE index for professional, scientific and technical activities. In Norwegian BIN counties, the rise varied from 27.1% in Nordland to 37.5% in Finnmark, while the total for Norway's the AE index in professional, scientific and technical activities grew by 45.1%. In the Swedish BIN counties Västerbotten (55.1%) and Norrbotten (49.4%), growth lagged behind the country's total of 61.3%. Growth in the BIN area (excluding Kainuu and Northern Ostrobothnia) below Nordic countries' average in professional, scientific and technical activities can be attributed to the still-developing start-up ecosystems in the BIN area and the ability to attract capital, when compared to the more metropolitan areas of Finland, Norway and Sweden.

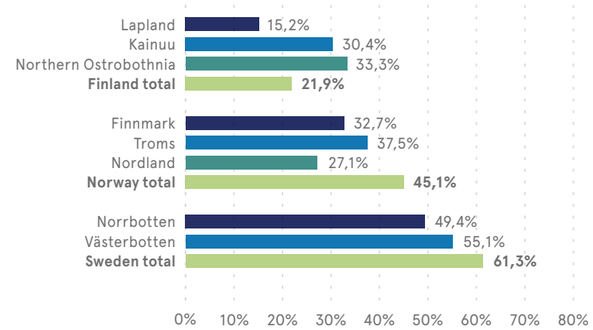


Figure 16 — Active enterprises index at the BIN county level, Wholesale and retail trade, repair of vehicles and motorcycles, 2008-2015, % change

Figure 16 illustrates patterns in the AE index for the wholesale and retail trade, repair of vehicles and motorcycles. On a country level, Sweden (17.9%) saw the biggest growth in its the AE index, followed by Norway (8%) and Finland (6%). In Finland, Northern Ostrobothnia and Lapland counties both saw a growth in their AE index of 11.8% and 9.7% respectively, while Kainuu experienced a decrease of 3%. In Norway, a decline was observed in Finnmark (-3.5) and Troms (-2.5%), and a slight increase in Nordland (0.1%). The Swedish counties Västerbotten and Norrbotten experienced growth of 12.2% and 16.6% respectively. The interpretation of these results can be twofold. Counties experiences declines may have oligopolistic markets dominated by few strong players, which creates barriers for the entry of new enterprises. The decline could be also attributed to the increase in online shopping, whereby the local active enterprises population suffers as result of competition with online shops.

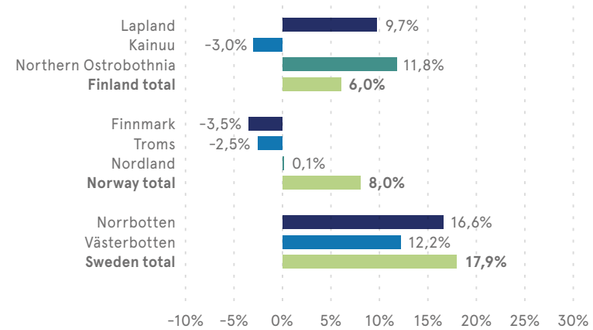
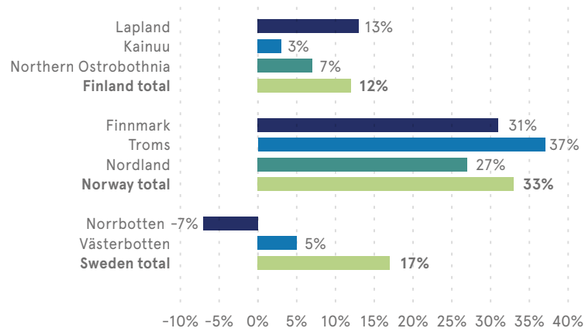


Figure 17 — Growth in production value expressed as index (index 2005=100) for the period 2010–2015

Figure 17 demonstrates growth in production value as % during 2010–2015 at the BIN county level. Production value of goods and services is calculated using GDP statistics, excluding public sector and non-profit organizations. This indicator can be used to measure the growth in private sector value creation. This indicator does not measure directly growth in production value of active enterprises (limited liability companies), it only provides indicative and approximated estimation of private sector value creation in the BIN area. Production value exceeded 103 billion euro in the BIN area in 2015. This accounts for 8 % of mainland production value for goods and services in the BIN countries. Lapland experienced stronger growth than Finland's average. In Norway, Troms (37%) had the largest growth in production value, followed by Finnmark (31%) . Nordland's production value (27%) grew slower than Norway's country average of 33%. In Sweden, BIN counties of Västerbotten (5%) and Norrbotten (-7%) did not achieve the growth at national level (17%). Negative growth in Norbotten is attributed to mining industry challenges. Strong growth in production value in Troms is due to high government activity, increased tourism, and aquaculture activity, while Finnmark benefited from higher oil and gas activity and aquaculture.

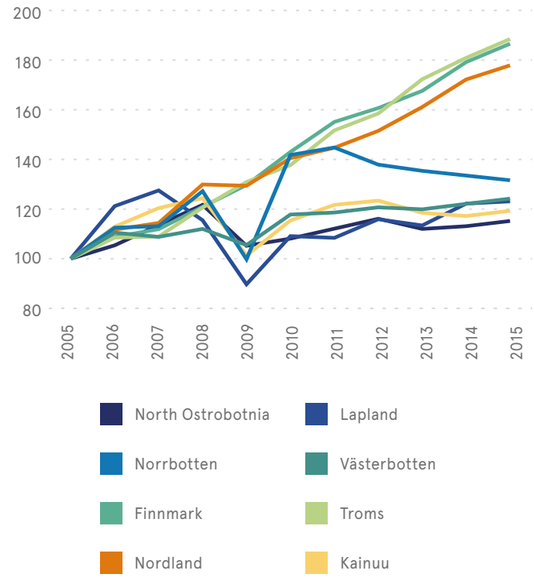


Production value exceeds 103 billion euro in the BIN area. This is 8 % of mainland production value for goods and services in BIN countries. Lapland experience stronger growht than Finnlands average. In Norway, Only Nordland grows slover than country average in Norway. In Sweden None og the regions achiece growth at national level. Norbotten, due to mining industry challenges, ecperience reduced product value. Strong Growth in Troms is due to high government activity, increased turism, and aquaculture activity, while Finnmark benefits from higher oil and gas activity and aquaculture.

[10] Application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures and systems developed to solve a health problem and improve quality of lives (WHO definition)

Figure 18 — Growth in production value expressed as index (index 2005=100) for the period 2005-2015

Figure 18 presents growth in production value expressed as index (index 2005=100) for the period 2005-2015. Counties of Lapland and Norrbotten have by far experienced the most volatile production value fluctuations in the 10 years between 2005 and 2015. These counties are heavily influenced by the financial crisis negative influence on global mineral and ore prices. Northern Ostrobothnia struggled to grow production value in the aftermath of the 2008 crisis, resulting in the lowest 10-year growth in the BIN area. Weak growth in the Swedish and Finnish BIN counties, contrast powerful mainland production value growth in all BIN Norwegian counties. A mix of increased exports of fish from farming and wild catch, increased metal and chemical product export, and multiple large oil and gas cite developments fuel the strongest growth in Norwegian counties out of the BIN area. On average, the BIN area's production value grew by 32 % in the last 10 years, compared to 42 % in the BIN countries as a whole.



Counties of Lapland and Norrbotten have by fare experienced the most volatile production value fluctuations in the 10 years between 2005 and 2015. These regions are heavily influenced by financial crisis negative influence on global mineral and ore prices. North Ostrobotnia struggels to grow production value in ther aftermath of the 2009 crisis, resulting in the lowest 10 year groth in the BIN area. Weak growth in sweden and FInnland, contrasts powerfull mainland production value growth in all North Norwegian counties. A mix of increased exports from fish from farming and wild catch, increased metal and cemical product export, and multiple large oil and gas cite developments, fuel the strongest growth found in the Bin area. On average, BIN areas production value grow 32 % in the last 10 years, compared to 42 % in the BIN countries as a whole.

Implications

Statistics from the AE index provides a useful tool for stakeholders interested in the BIN area. It allows mapping areas of economic activity and profile counties based on the goods and services provided by its active enterprises organized as limited liability companies. Growth in the active enterprises population can serve as an indicator of future job creation in and increased inflows from taxes to the BIN area. Moreover, through analyzing the active enterprises population, policymakers can evaluate the vitality of each individual county and if needed target support to business creation. The limiting factor of this study was finding comparable and reliable information on business openings and closures, therefore only an aggregated AE index was used instead.

For policy makers recommendations include:

- Joining efforts for creating unified detailed statistics at a county level in the BIN area. Statistics created by National Bureaus should be easily accessible and comparable. Adding data levels on the people employed and turnover of active enterprises would create a very meaningful set of data for future analysis
- Mapping the areas of expertise in the BIN area including the developing fields of Healthtech[10], Cleantech and Fintech and facilitation of each cluster cooperation
- Evaluation of service economy impacts on traditionally public services (e.g. health care, education) in the BIN area
- Learning from BIN counties that are more successful in growing active enterprises population and from those that have grown their production value during 2005-2015

For business:

- The Active Enterprises Index may aid in important decision-making by highlighting areas of growth and decline in the active enterprises population and in production value on a county level in the BIN area
- Enterprises in the BIN area with similar expertise fields (e.g. Cleantech) could join forces to enter international markets through facilitated cooperation platforms in the BIN area
- Ripening the advance of digitalization by enhancing the visibility of the BIN area. Use the brand of High North to attract capital investment. The brand implies abundance of natural of resources, highly educated people and a destination to establish business ranked as easy to do business in on a world scale.

Highlights of Cross-Border Cooperation in the North

"A prerequisite for achieving successful cross-border business cooperation is having knowledge about each other – knowledge about actors, regulations, political conditions and decision-makers in the different countries."

Arne O. Holm, Norwegian journalist and newspaper editor

This chapter is motivated by our strong belief that cross-border cooperation is key to a successful development of business and society in the northern regions. In this regard, we highlight some important examples of cross-border cooperation within the Barents Euro-Arctic region. The examples come from various sectors in the BIN counties: business, international institutions, media, and the university sector. The list of examples is far from complete. Our aim is not to map all the existing cases of cooperation, but rather to highlight and analyze some of them. Based on the analysis we have produced several learning points relevant for cross-border cooperation in the Barents Euro-Arctic and the northern regions. If you know about other interesting projects, whether ongoing or to be started, please let us know and we will consider them for further studies.

Our data material comes from the publicly available sources as well as from written communication with the experts involved in the cases presented. We asked the experts the same question: "How do you see cross-border business cooperation in the Euro-Arctic Region in 10 years and where is the main potential?" The ideas and visions shared with us by the experts laid a solid foundation for discussing the opportunities for cross-border cooperation. Our key observations are as follows:

- Successful cross-border cooperation in the Euro-Arctic requires a new mindset. We should drop the mental boundaries associated with borders between countries and fields of knowledge; there is a need to secure flows of knowledge, information, goods, workforce, and students.
- Existing transport infrastructure and resource flow in the north of the Nordic countries has already developed along a north-south dimension. This represents a challenge for developing a west-east cooperation mindset.
- The potential lays in cross-border cooperation in the SME sector and in creation of new industries in the Euro-Arctic; for instance, industries utilizing steel or local suppliers to large infrastructure projects.
- International joint ventures may be a way forward in developing vast northern resources and territories.
- Equal partnerships between universities and industry is a key principle for the successful development of business in the Arctic.
- Long-term commitment of international cooperation institutions signalizes how the overall economy of the Arctic region is going to develop – local companies have to think how they identify with this.

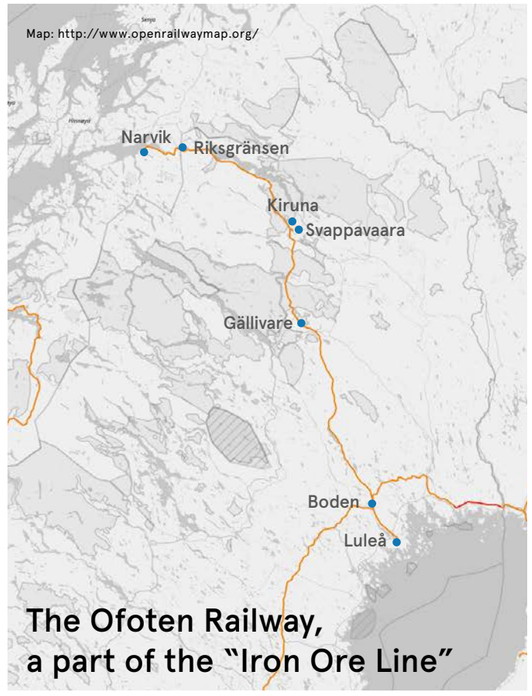
In the remainder of the chapter, we present selected cooperation cases and our learning points. The chapter ends with concluding remarks about approaches to successful cooperation in the North.

Cooperation Cases from Business

The Ofoten Railway[1]

The Ofoten Railway is a 43 km long railway line between the Norwegian port of Narvik and the Swedish border, where it connects with the Swedish railway network. The Ofoten Railway is the most trafficked stretch of railway in Norway. The bulk of the traffic consists of ore from mines in Kiruna, Sweden. Every day, 10–12 ore haulage trains travel in each direction on the line for the Swedish mine company LKAB. The Ofoten Railway is an important freight corridor for the Nordics, a part of the "Iron Ore Line" – a nearly 500 km long railway between the ports of Narvik in Norway and Luleå in Sweden. The railway is also important for freight transport between Southern and Northern Norway, with 90% of Northern Norway's grocery supply routed through Narvik by train. The capacity of the Ofoten Railway is limited, and plans for expansion to double-track are being explored.

According to a transport development expert we were in touch with, "the Nordic Euro-Arctic countries are located in a north-south direction, as is the majority of the transport infrastructure… Developing East-West transport infrastructure is a key to international business cooperation in the BEAR". Obviously, the Ofoten Railway serves as a good example of a crucial East-West corridor. However, further extension of the traffic infrastructure eastwards appears to be vital. As mentioned by our expert, "improving and integrating the Ofoten Railway to the east-west railway connections east of Sweden, represents a main potential for improved regional business development and development of new international transit solutions. By connecting this railway to ocean going corridors, based on new and environmental viable propulsion systems, a sustainable transport corridor for the future can be developed".



The Ofoten Railway, a part of the "Iron Ore Line"

Ore train on the Ofoten line
Photo: LKAB

[1] http://www.banenor.no/Jernbanen/Banene/Ofotbanen/

The Kimek Companies[2]

Kimek has a strategic location in Kirkenes, on the doorstep of the Arctic region, Russia and the Barents Sea. The company has a network of partners in Russia and is one of the largest northernmost mechanical environments. Kimek was established in 1986 with the Russian fleet in the Barents Sea as its main market, and also provides service for the mining industry and the Norwegian-Russian trade cooperation. Kimek has local owners who also own an offshore company (Kimek Offshore AS) and an engineering company in Murmansk (Kimek Engineering/Sevgiprorybflot). Kimek Offshore AS is a service company for the Arctic oil and gas industry, with firm positions in both Norway and Russia since its establishment in 2000. Kimek Engineering performs design and engineering services on both sides of the border and has its main office in Murmansk.

One of the company directors told us: *"if one looks at the Arctic as one region and does not consider national borders, then knowledge and links between studies and businesses will be the focus area with the greatest potential […] we are world champions when it comes to Arctic expertise, meaning that we (the local companies in the north) can operate in harsh climate conditions, tackle challenges associated with underdeveloped infrastructure and digital vulnerability […] this is how we live and work here".* It looks like Kimek has a strong identity in being a "cross-border company" due to its proximity and commitment to integration with Russia. At the same time, it is an "Arctic company" with people used to living and working in harsh conditions.

Kimek Offshore's Russian employees involved in service at Skarv FPSO, Kværner Stord, 2011

Photo: Kimek Offshore

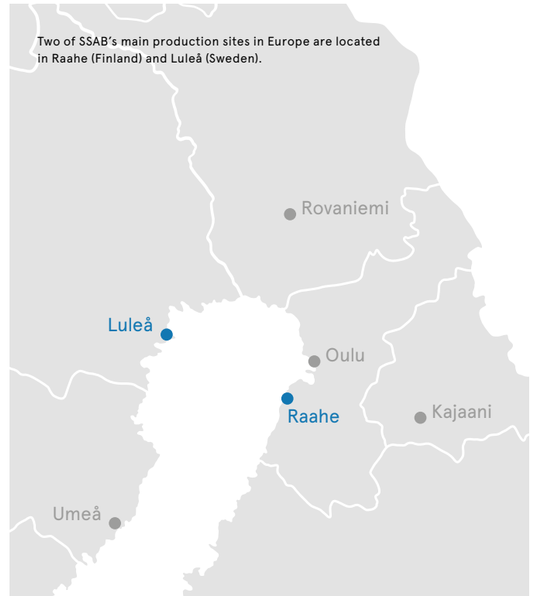
[2] http://www.kimek.com/

SSAB[3]

As a steel company, SSAB is a leading producer in the global market for advanced high-strength steels and quenched & tempered steels, strip, plate and tubular products, as well as construction solutions. SSAB's production plants in Sweden, Finland and the US have an annual steel production capacity of 8.8 million tons. The company also has capacity to process and finish various steel products in China, Brazil and many other countries. Two out of SSAB's three main production sites in Europe are located in the north (Raahe in Finland and Luleå in Sweden). The Raahe site (in the Northern Ostrobothnia county) employs 2,800 professionals who are involved in the manufacturing of steel, plate and strip products. The site also houses the second largest blast furnace in the Nordic countries. The site in Luleå (Norrbotten) involves 1,200 employees. Major shareholders of SSAB is the Swedish Industrivärden and The Government of Finland through the investment company Solidium.

A company expert working in North Finland shared some ideas with us regarding the potential for economic development in the Nordic North. According to him, a next step could be developing local industries that utilize steel, since high-quality iron ore and steel industry are already in place. There are already companies producing lifting equipment, equipment and parts for the car industry, pipes and building materials. This idea of proactive regional industry development is different from the more conventional view of regional business as an attribute to large projects, be it extracting industries or transport infrastructure investments.

At present, however, most of the extracted steel and steel products from the north are subject to exports. At the same time, as we know from the experience in Northern Norway (consider for example the Snowhite LNG plant), when the project is already there, it is too late for most of the local companies to step in as equipment and service suppliers. Investments in the local industry should be made years before that.



Two of SSAB's main production sites in Europe are located in Raahe (Finland) and Luleå (Sweden).

SSAB's Raahe site in Northern Finland

Photo: SSAB

[3] www.ssab.com

Fennovoima[4]

Fennovoima was founded in 2007 by a group of Finnish electricity consumers: industrial companies and energy utilities in need of safe, stable-priced and reliable low carbon electricity generation, aiming to build a nuclear power plant Hanhikivi 1. The Fennovoima and RAOS Project, a subsidiary of Rusatom Energy International (a part of the Russian State Nuclear Energy Corporation Rusatom), has a plant supply contract for the Hanhikivi 1 nuclear power plant. According to a schedule agreed with Rosatom, the Hanhikivi 1 plant will start producing electricity in 2024.

The plant site in the coastal municipality of Pyhäjoki is located in Northern Ostrobothnia on the shore of the Baltic Sea. Fennovoima is meant to strengthen domestic power generation within the EU in the long run (today Finland imports almost 20% of its electricity from neighboring countries). Fennovoima also constitutes a significant investment in low-carbon electricity production in the EU. In May 2014, the local council of Pyhäjoki voted in favor of the project. According to a poll in December 2015, 68% of the residents of Pyhäjoki were in favor of the project.

Although the project got government approval in Finland, the Finnish-Russian nuclear energy cooperation has been criticized by environmental organizations, opposition politicians in Finland, a part of the local population, and some academics. We leave this debate to political, energy security and other experts in the field. As a business-oriented report, we would like to make two points. Firstly, we recommend the Hanhikivi project already now as a potential market for equipment and services for local companies in the Euro-Arctic to consider. As an interviewed expert from Fennovoima mentioned to us, *the construction project already opens a uniquely large market for diverse companies for e.g. design, construction and industrial service companies. The project will use a high number of sub-supplier companies. The procurement process is international and expected to raise interest in industrial companies in Northern Sweden, for example. The value of the entire project is 6,5-7 billion euros.* Secondly, it looks like special-purpose companies organized through international joint ventures like Fennovoima could serve as a model for developing resources and territories of the North (consider also the special-purpose company SDAG of the Shtokman project in Russia).

Winter construction works
Photo: Fennovoima

[4] http://www.fennovoima.fi/en

Learning points from the business cases:
There is a cooperation potential in the developing of East-West transport corridors in the Barents Euro-Arctic. The relative lack of such corridors today is a challenge for economic development of the area. It might be difficult to develop "a west-east cooperation mindset", as the transport infrastructure in the north of the Nordic countries has already developed along a north-south dimension.

Furthermore, there is a potential in developing new industries in the north. Industries utilizing steel deserve a particular attention.

International joint ventures and special-purpose companies may serve as a tool for developing northern resources and territories. Regional companies should be aware of upcoming large infrastructure projects in the North if they are interested in contributing as suppliers.

The Arctic environment puts pressure on people and businesses operating there, making some of them more proactive and less concerned with mental borders between countries, cultures or fields of knowledge. Lack of such mental borders is a specific feature of some companies committed to cross-border work and to constantly developing solutions to overcome practical challenges associated with borders.

Cases of International Institutions Supporting Cooperation

The Arctic Economic Council[5]

The Arctic Economic Council (AEC) is an independent organization that facilitates Arctic business-to-business activities and responsible economic development through sharing of best practices, technological solutions, standards, and other information. The AEC was created by the Arctic Council during the Canadian Chairmanship in 2014. It aims at providing advice and a business perspective to the work of the Arctic Council. The AEC Legacy Members represent a wide range of businesses operating in the Arctic— from mining and shipping companies to reindeer herding and Aboriginal economic development corporations. Representing the people and businesses of the Arctic, it is essential for the AEC that the work is carried out in an inclusive and sustainable manner.

The core of the work of the Arctic Economic Council takes place within five overarching themes: establishing strong market connections between Arctic states, promoting stable and predictable regulatory frameworks, encouraging public-private partnerships for infrastructure investments, facilitating knowledge and data exchange between industry and academia, and focusing on traditional indigenous knowledge, stewardship and focus on small businesses. These are all also relevant for those operating in the Euro-Arctic Region. Overall, these are important aspects in the Councils' vision of making the Arctic a favorable place to do business.

As we learned from the representative from the AEC, *the circumpolar business community has identified selected business areas in which the AEC will focus its work. They also reflect the AEC view on current Arctic business opportunities. These include infrastructure and related matters (maritime transportation, communications and IT, and aviation); energy, including oil, gas and renewable sources; mining; tourism; fishing, and human resources investments and capacity building. These selected business areas are also reflected in the AEC Working Groups. The current four Working Groups focus on Maritime Transportation, Telecommunications and Broadband, Responsible Resource Development, and Arctic Stewardship.*

Arctic Programme of the Nordic Council of Ministers[6]

The Nordic Council of Ministers' Arctic Cooperation Programme 2015-2017 was adopted by the Nordic Council in 2014. The overall objective of the programme is "sustainable development" and it has four priority themes: 1) The people of the Arctic, 2) Sustainable economic development, 3) Environment, nature and climate, 4) Education and skills enhancement. The programme provides funding for projects, studies and initiatives in line with the programme objectives. Since 2014, the ministers for Nordic co-operation have earmarked DKK 2 million annually from the programme budget for political initiatives designed to generate Nordic synergies in work in the Arctic. The Nordic Council of Ministers, founded in 1971, is the official body for inter-governmental co-operation in the Nordic Region. The overall responsibility for co-operation lies with the respective prime ministers, but in practice it is delegated to the ministers for Nordic co-operation.

As we learned from the NCM experts, at present the cross-border cooperation development is observed within small-scale businesses in the Euro-Arctic regions, especially within trade, building and construction supplies, service provision and tourism; in particular, the construction industry in Northern Norway obtains its expertise from other Nordic countries. The experts also meant that this trend in small-scale businesses and entrepreneurship would continue to rise within the next ten years in fields such as service supply, engineering, IT and tourism. Thinking cross-border business cooperation will be a more natural part of business in the Euro-Arctic regions for the future. As for the large-scale industry, the main potential is based on the overall objective of cross border cooperation in the petroleum industry, where all the Euro-Arctic countries are engaged in developing infrastructure and extraction of resources.

Learning points from the cases of international institutions:
The long-term commitment of international institutions like the AEC and the NCM plays an enabling role for the development of businesses, as it gives us signals on how and what sectors of the overall economy of the region are going to develop. SMEs in the Euro-Arctic region have already begun to recognize the importance of cross-border cooperation.

[5] www.arcticeconomiccouncil.com
[6] http://www.norden.org/en

Cases from the Media

The Independent Barents Observer[7]
The Independent Barents Observer is a journalist-owned online newspaper covering the Barents Region and the Arctic. With a devotion for cross-border cooperation, dialogue and mutual understanding, the Independent Barents Observer provides daily news reports from and about Scandinavia, Russia and the Circumpolar Arctic to global audiences interested in Arctic issues. The Independent Barents Observer follows the key trends and developments in climate change, energy and industry, shipping, politics, civil society, national security and indigenous people's issues. The Independent Barents Observer publishes in English and Russian. By providing impartial information and opinions across the borders of the Arctic and the Barents Region, the newspaper serves local societies, supports regional development and promotes international cooperation.

High North News[8]
High North News (HNN) is an independent newspaper published by the High North Center at the Nord University. The news service issues daily news, editorials and analysis from and about the High North and the Arctic. High North News covers issues that are borderless by nature, with a focus on policy, business and industry, and culture in the High North, written with respect and indeed love for the people of the enormous, circumpolar North. From the outset, the newspaper has aspired to achieve a broad geographical scope. With correspondents in seven different countries, High North News is a bilingual news service, in English and Norwegian, and reaches an increasing number of international readers and stakeholders in the North. Recently, the newspaper entered into a formal cooperative agreement with three other newspapers that cover the Arctic: the Alaska Dispatch, the Arctic Deeply and the Arctic Journal, as well as becoming a partner for the Arctic news portal www.arcticnow.com. The HHN's commitment to journalism and analyses from the High North will serve as a tool for anyone who wishes to do business in this geographical region. HHN is currently undertaking an initiative that will make the source available in Russian and Chinese too.

According to the HHN's Editor-in-Chief, *a prerequisite for achieving successful cross-border business cooperation is having knowledge about each other – knowledge about actors, regulations, political conditions and decision makers in the different countries. In this regard, the HHN's goal is to contribute to mutual understanding and mutual knowledge within a region marked by both diversity and strong converging interests within a number of fields. On one hand, a notable common ground for the region is its role as an international supplier of raw materials. On the other hand, there is also impressive knowhow within digital technology and logistics. Where these two fields intersect, there is a largely untapped future market.*

Learning points from the media cases:
Awareness of business opportunities, mutual understanding and knowledge about each other, exchange of impartial information and opinions across borders appears to be an important pre-requisite for economic development in the Arctic and the Barents Region. It is important to secure media sources' contribution to these issues that are widely used by people living in the North.

Cases From the University Sector

The University of the Arctic[9]
The University of the Arctic (UArctic) is a cooperative network of universities, colleges, research institutes and other organizations concerned with education and research in and about the North. UArctic builds and strengthens collective resources and collaborative infrastructure that enables member institutions to better serve their constituents and their regions. Through cooperation in education, research and outreach, UArctic works to enhance human capacity in the North, promote viable communities and sustainable economies, and to forge global partnerships.

International Projects: Arctic Bridge, ARPOL, EduGov
The core activities of these projects are related to planning and implementation of joint short-term courses for international PhD and master students. The Arctic Bridge project aims at strengthened Norwegian-Russian knowledge cooperation in the field of Management in Extractive Industries in the High North. The ARPOL aims at strengthening the Norwegian-Russian institutional partnership in order to increase knowledge about relevant Arctic politics and business, and the connection between them. The EduGov's aim is to extend the existing scientific cooperation between Norway and Russia by developing research and practical competences related to local government budgeting reforms. The projects are administered by the High North Center at Nord University Business School[10] and partner universities in Russia, with financial support from the Norwegian Centre for International Cooperation in Education (SIU).

An expert working with these projects told us: *"the ongoing cooperation between universities and companies of the Euro-Arctic region lays a solid foundation for the next ten years. The willingness to involve universities in knowledge production for business development and university-business partnerships make me believe that this potential will be realized and will assist in establishing new links between academics, researchers, practitioners, and industry representatives. It will be equal partners' cooperation, where universities and companies together with policymakers will shape the regional development and offer support for cross-border cooperation.*

Learning points from the university cases:
The Arctic moves toward formation of a common space for exchange of knowledge, research and higher education activities; equal partnerships between universities and the industry is a key to successful development of business in the Arctic.

Concluding Thoughts
The BIN project will continue to work to describe and analyze interesting and on-going cooperation cases within the northern regions. In doing so we will point at cross-border industrial cooperation and related institutions, which we see might have significant influence on sustainable value creation within the Arctic region in the future, also seen from the national perspectives. Based on the findings presented above, we argue that enabling conditions for successful development of the Barents Euro-Arctic can be achieved through

- strengthening the transportation infrastructure between the northern parts of Norway, Sweden and Finland (roads, railways, flight routes, etc.) with further extension to Russia;
- strengthening the cooperation between universities in the northern region, taking into account geographical proximity to challenges in businesses, societies and nature; and
- the national states together with the regional authorities should cooperate even closer to stimulate new industrial cooperation and growth in the on-going and well-established sustainable business cooperation.

Knowledge and continual communication between the political and business societies, both on the national and at the regional level, are crucial in order to succeed in future cooperation. The BIN project and other reports about the Arctic can contribute to this process by providing insightful information and analytics for decision makers.

[7] http://thebarentsobserver.com/en
[8] http://www.highnorthnews.com/
[9] http://www.uarctic.org/
[10] https://www.nord.no/en/