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Scale-ups in the Nordics – similarities and differences

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Abstract

The business statistics departments in the Nordic statistical offices have established harmonized databases in each NSI holding information at firm level. The databases are used for carrying out distributed micro data linking for analytical purposes by means of centrally developed syntax, run locally by each NSI. This approach allows for the design of harmonized, tailor-made statistical output across the Nordic countries for cross border analysis, without micro data leaving the NSIs.

The content of the database has gradually been enlarged due to new requests from policy makers or researchers. The flexible set-up has made it possible for the Nordic NSIs in a cost efficient way to address new emerging topics and consequently influence the development of business statistics internationally in terms of both organisation of harmonised data and cross national analysis and new statistical evidence supporting prioritised user needs.

In recent years, enterprise policy has focused on high growing enterprises and their potential job and value added creation but statistical evidence has not been available. In co-operation with Nordic Innovation, the Nordic NSIs developed definitions and methods to measure the fastest growing enterprises, the so-called scale-ups based on data available in the database. This work has set international standards for measuring high growth at firm level and is now the basis for a new OECD project on SMEs scaling up.

Keywords: Micro Data Linking, harmonized databases, scale-up enterprises, international comparisons

1. Introduction

Logically, National Statistical Institutes (NSIs) have a focus on measuring the development of the domestic society and economy. But in order to better understand the domestic development and put it into perspective, it is often of importance to have the possibility of comparing the development in question with other similar economies. For this purpose, the availability of internationally harmonised data, e.g. through European legislation, is of key importance. However, often policymakers or researchers needs harmonised data on new emerging topics where no internationally comparable data are available. In order to address these needs, the business statistics departments of the Nordic NSIs have established harmonised databases holding a range of annual data at enterprise level, allowing for tailor-made statistics and cross boarder comparisons of emerging topics.

The databases established and kept in each NSI have proven to be a very flexible tool as the databases have been the source for several projects addressing different topics – from measuring Global value Chains in the Nordics to measuring productivity or high growth enterprises, the so-called scale-ups. As illustration of the potential of the databases, this paper uses the latest project as a case. The project was an analysis of the scale-up enterprises in the Nordics for Nordic Innovation.

2. About the study

High growth enterprises are important contributors to employment and wealth creation in the Nordic countries. Especially, established medium-sized enterprises that innovate and scale-up are a driving force behind sustainable economic growth. Not only by the scale-ups themselves, but also often by ensuring the coordination, upgrading and participation in (global) supply chains of smaller enterprises[1]. Increasingly, governments focus on enabling conditions for the scaling up of enterprises as a lever to boost productivity growth and competitiveness as well as to create high quality jobs in knowledge based economies. This attention on growth enterprises such as scale-ups has created a need for further statistical evidence about the actual contribution in terms

[1] OECD (2018): Enabling SMEs to scale-up

of numbers and economic performance of fast growing enterprises, such as scale-ups, see Box 1 for definition of scale-ups.

Box 1: Definition of scale-up enterprises

Enterprises with 10 or more full time equivalent number of employees (hereafter employment FTE) and an annual turnover of 2 or more million EUR in the start year of observation.

Enterprises with average annualised growth in the number of employees (FTE) and/or in turnover in current prices greater than 20% over a three-year period. Due to the user needs expressed by Nordic Innovation the analysis operates with three types of scale-up enterprises:

Scale-ups by employment (FTE) growth only

Scale-ups by turnover and employment (FTE) growth

Scale-ups by turnover growth only

Nordic Innovation has commissioned the Nordic statistical institutes to produce statistics on scale-ups supplementing the existing official business statistics applying a slightly different definition than used in official statistics, see Box 2. This publication is the third publication describing scale-ups in the Nordic countries.[2]

Box 2: Comparison with Eurostat definition of scale-up enterprises

The definition applied in this analysis is stricter than the official definition of high growth enterprises used by Eurostat and the European statistical offices as the annual growth rate is set to 20 per cent instead of 10 per cent and also adding an annual turnover threshold of 2 million EUR in the start year of the growth period, see Methodological annex. Furthermore, the enterprises shall employ 10 or more full time equivalent number of employees (hereafter employment (FTE)) in the start year of observation. This definition has been chosen in order to focus on the fastest growing established enterprises, the so-called scale-ups. But at the same time less strict compared to the official definition as scale-ups not only by employment but also by turnover growth only is included in the definition. The reason for including scale-ups by turnover growth is, these enterprises have proven their business model by achieving considerable revenue over a period and therefore potentially to a larger extent contributing to sustainable economic growth.

The growth measured can be caused by organic growth as applied by Eurostat by also by growth due to mergers and acquisitions.

3. Micro data linking and Nordic databases

The foundation of the project is national register databases established in each of the Nordic statistical offices containing a number of harmonised statistical variables and enterprise populations covering Structural Business Statistics, International Trade in

[2] Nordic Innovation et al. (2017) Scale-ups in the Nordics – statistical portrait 2008-2016, Nordic Innovation et al (2019): Scale-ups in the Nordics 2017 and Nordic Innovation et al: Scale-ups in the Nordics 2020

Goods Statistics and Foreign Affiliates Statistics (FATS). The databases cover all active enterprises in the non-financial business economy (NACE Rev.2 sections B to N, excl. K) for the period 2008 to 2020, the latter being the most recent year available across the Nordic countries when it comes to annual business statistics, see also Nielsen et al (2019) for a description of the database and the distributed micro data approach used.

Core to micro data linking (MDL) is the unique enterprise ID, operating as key for identifying the same enterprises across statistical registers, e.g. Structural Business Statistics and Foreign owned enterprises (Inward Foreign Affiliates Statistics), and matching the data from the different registers. Furthermore, the ID number is used for tracking the development of individual enterprises over a period of time in order to monitor the growth rate. Thus, established register databases tailored to cross national micro-data linking purposed and unique enterprise ID allows for longitudinal micro-level analysis of Nordic scale-up enterprises.

To the extent possible, the project tailored MDL databases use input data for the reference period 2008-2020 from the Structural Business Statistics, International Trade in Goods Statistics, Foreign Affiliate Statistics (Inward Foreign Affiliates Statistics) and the Statistical Business Register for each of the Nordic countries.

For the above sources, annual micro- level datasets are created. For the purpose of producing output smoothly yearly dataset are stored for each reference years and register included in the MDL database. These are stored locally at each NSI and identifiable data will not be exchanged.

The analysis of Nordic scale-up enterprises is based on variables contained in the MDL database outlined above. First, base datasets for each year 2008-2020 are created. Following this, each base dataset are joined to corresponding data for the following years using enterprise ID as key. This ensures that the correct information is linked at a micro level. Lastly, the dataset are merged in to one master dataset that holds all

country specific information needed to create additional derived variables to be used in the analysis. The approach ensures a safe and easy handling of data and variables.

Following the establishing of the master dataset, the next step is to create the variables not already included in data. This is done for all years at once due to a consistent and rational structure of the data across years. At completion, this dataset is ready to create the output needed to analyse the structure and development of scale-up enterprises across the Nordic countries.

The last issue is the programming of tabulations showing the agreed output for analytical purposes.

One of the major benefits of the applied design and coherent MDL databases at the Nordic NSI is the possibility of applying centrally scripted SAS syntax locally at each NSI. This ensures a similar approach to the tailoring of panel data for each country and a consistent output. This methodology has been tested in previous project and, for instance, circumvents issues of different data sources being applied and errors regarding different styles of scripting statistical programs.

4. Results

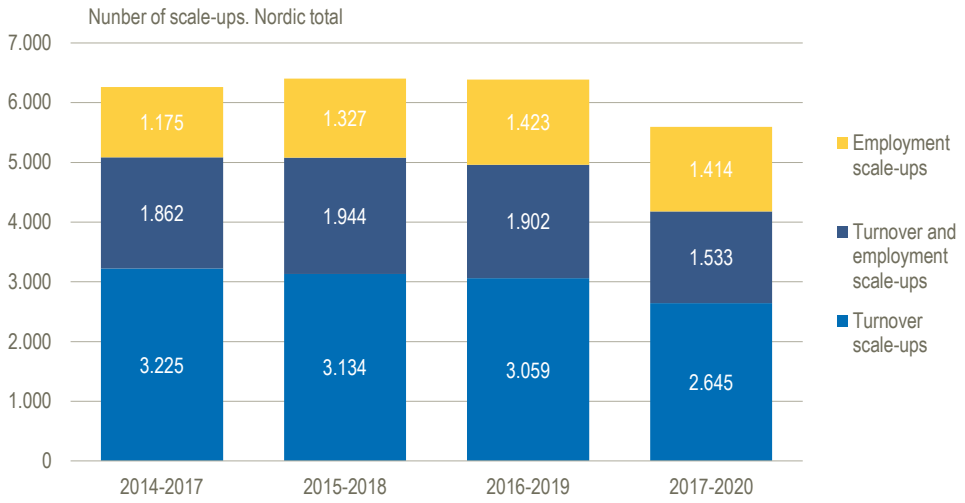
In the latest growth period covering the years 2017-2020, a total of nearly 5,600 scale-ups were created in the non-financial business economy in the Nordics, see Figure 1.1. This is nearly 800 scale-ups less than in the previous growth period 2016-2019 – or a decline of 12.4 per cent. It is the smallest number of scale-ups in the Nordics measured since the statistics started covering the growth period 2014-2017. The decline in the number of scale-ups is most likely caused by the COVID-19 pandemic starting in early 2020. The peak was 6,405 scale-ups in the period 2015-2018.

Box 3: Activity coverage

The scale-ups analysed are scale-ups within the non-financial business economy. The non-financial business economy includes the sectors industry, construction, distributive trades and services (NACE Rev.2 sections B to J and L to N and Division 95).

Figure 1.1

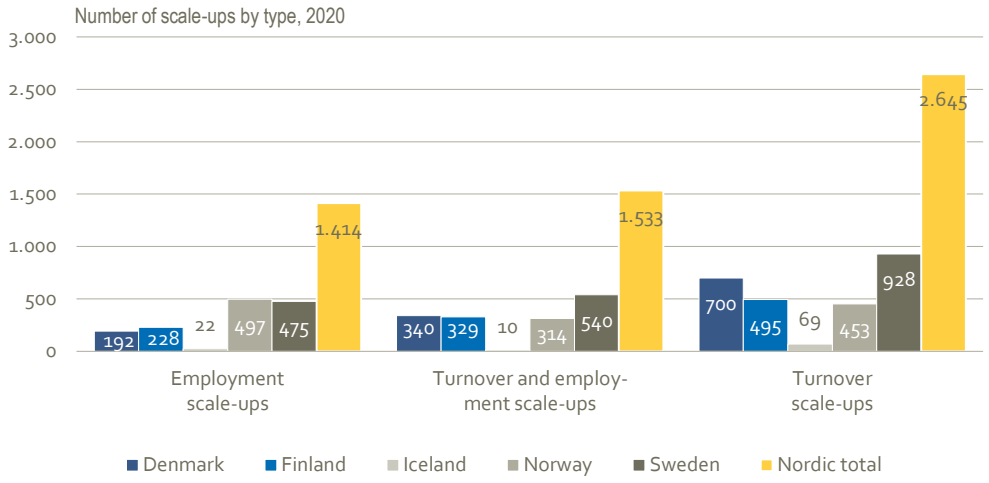
Number of scale-ups in the non-financial business economy in the Nordics by type of scale-up. Growth periods 2014-2017, 2015-2018, 2016-2019 and 2017-2020. Nordic total



The scale-ups can be divided into three different types depending on the type of growth. Turnover scale-ups were with 2,645 the largest group – or 47 per cent of all scale-ups in 20171-2020 in the Nordics, followed by Turnover and employment scale-ups (1,533) and finally Employment scale-ups (1,414). Thus, it is overall more likely for an enterprise to become a Turnover scale-up than a scale-up that also encompasses high employment growth. Worth highlighting in this context is the fact that the main decrease compared to the previous period can be found in the two groups of scale-ups being based on turnover growth while Employment scale-ups are stable in numbers between the two periods 2017-2020 and 2016-2019. This is probablypartly caused by the partial lock down of the economies hampering turnover growth specially in spring 2020 and partly the support schemes especially supporting the employment put in place in the Nordic countries during the Covid-19 crisis, compensating enterprises for parts of their wage costs and thus allowing enterprises to keep their employees during lockdown.

Figure 1.2

Number of scale-ups in the non-financial business economy in the Nordics by type of scale-up. Growth period 2017-2020



Sweden has the most scale-ups (1,943). Denmark, Finland and Norway are in the same range, having between 1,230 and 1,270 scale-ups and Iceland (101 scale-ups) has the fewest, see Figure 1.2 and Data annex Table 1.1. This of course reflects the overall differences in size of the Nordic economies.

Table 1

Scale-ups in the non-financial business economy in the Nordics by type of scale-ups. Growth period 2017-2020. Nordic total

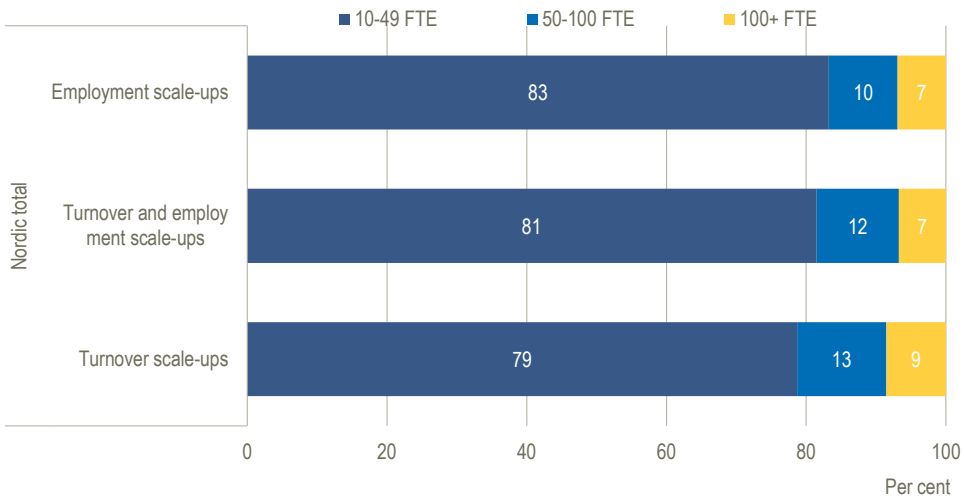
		Employees (FTE)		Turnover	
	Enterprises	Start year	End year	Start year	End year
		Employees		Million Euro	
Nordic total					
Employment scale-ups	1.414	57.624	124.559	33.542	37.025
Turnover and employment scale-ups	1.533	64.454	168.318	17.887	51.828
Turnover scale-ups	2.645	136.891	163.223	60.112	145.358
Total	5.592	258.969	456.100	111.540	234.211

The nearly 5,600 scale-ups in the Nordics created a total turnover of 234.2 billion EUR in 2020 or a growth of nearly 110 per cent in the growth period 2017-2020. Not surprisingly, Turnover scale-ups accounted for the largest share of total turnover, 62 per cent or 145.4 billion EUR in 2020. This equals 55 million EUR per Turnover scale-up while the Employment scale-ups only created an average turnover of 26.2 million EUR per scale-up.

The scale-ups in the Nordics employed more than 456.000 full-time equivalent no. of employees (FTE) in 2020 – or a growth of nearly 200.000 employees (FTE) in the three year growth period. The Employment scale-ups showed the highest growth with nearly 67.000 FTE or a growth rate of 116 per cent. The Employment scale-ups employed on average 88 employees per scale-up in 2020.

Figure 1.3

Scale-ups broken down by type of scale up and size class (in terms of number of full time equivalent no. of employees (FTE), 2017-2020. Nordic total

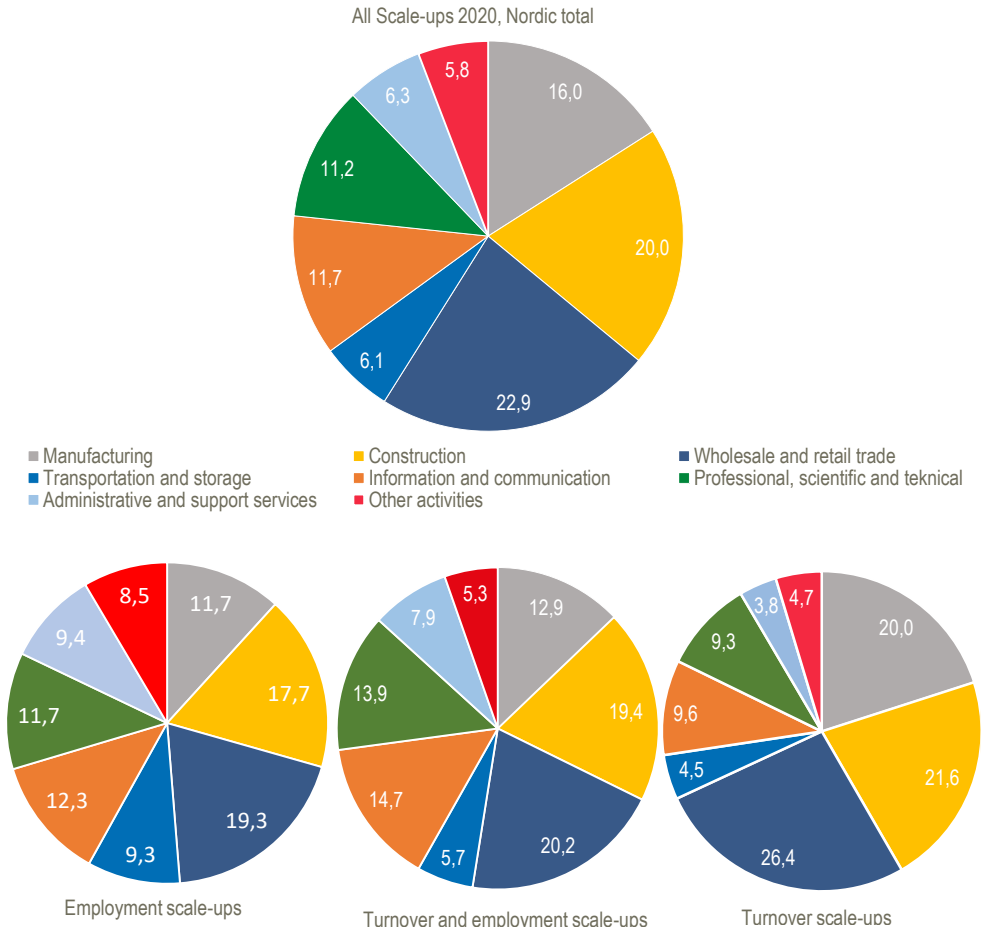


All three types of scale-ups are dominated by the small scale-ups having between 10-49 full time equivalent number of employees (FTE), as this size class constitute around 80 per cent of all scale-ups in the Nordics, see Figure 1.3. The largest scale-ups with 100 or more FTEs employed constitute 7-9 per cent of the scale-ups in the different

types of scale-ups, especially the Turnover scale-ups tends to be larger than the other types of scale-ups as 21 per cent of the Turnover scale-ups has 50 or more FTE employed.

Figure 1.4

Number of scale-ups in the non-financial business economy in the Nordics by activity and type of scale-up. Growth period 2017-2020. Nordic total

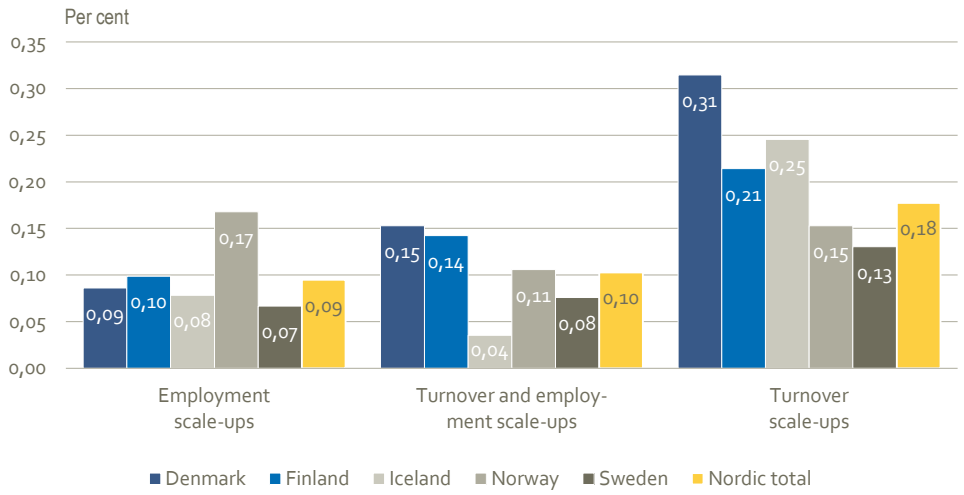


Nearly 23 per cent of all scale-ups in the Nordics was in Wholesale and retail trade, followed by 20 per cent in Construction and 16 per cent in Manufacturing, see Figure 1.4. This pattern with Wholesale and retail trade being the largest group followed by Construction can be found for all three types of scale-ups; especially for the Turnover scale-ups where Wholesale and retail trade constitutes more than one fourth of the scale-ups. For Turnover and employment scale-ups and Employment scale-ups Information and communication came third in place. Having noted these overall similarities, a certain difference in the activities between the pure turnover and employment

scale-ups should be noted. More than half of the employment only scale-ups are active within service activities; while two thirds of the turnover only scale-ups are operating in a goods related field of activity as manufacturing, construction or trade.

Figure 1.5

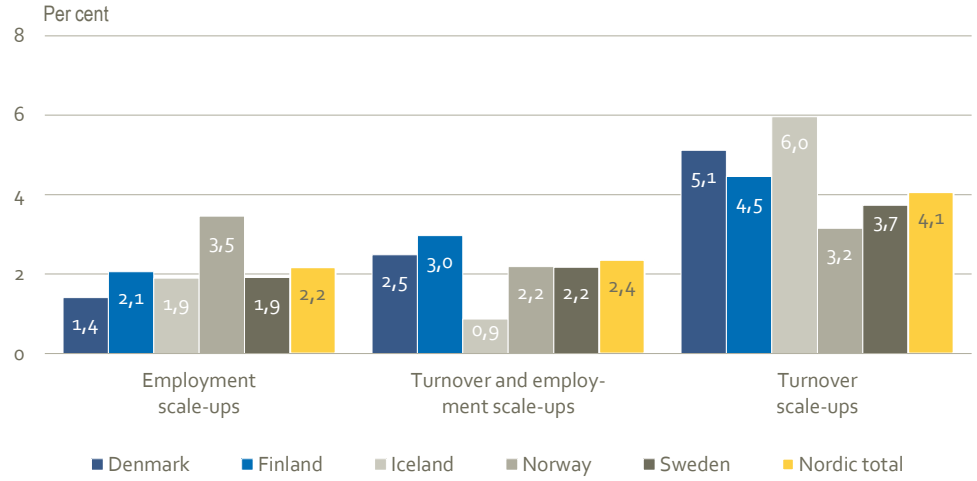
Scale-ups as share of all enterprises in the non-financial business economy by type of scale-up, start year of the growth period 2017-2020



The 5,600 scale-ups constitute 0.37 per cent of all enterprises in the non-financial business economy in the Nordic countries. Denmark tops the list with 0.55 per cent of all enterprises being scale-ups, followed by Norway with 0.43 per cent. Especially the share of turnover scale-ups in Denmark is significantly above the Nordic average and this is also the case for the employment scale-ups in Norway, see Figure 1.5.

Figure 1.6

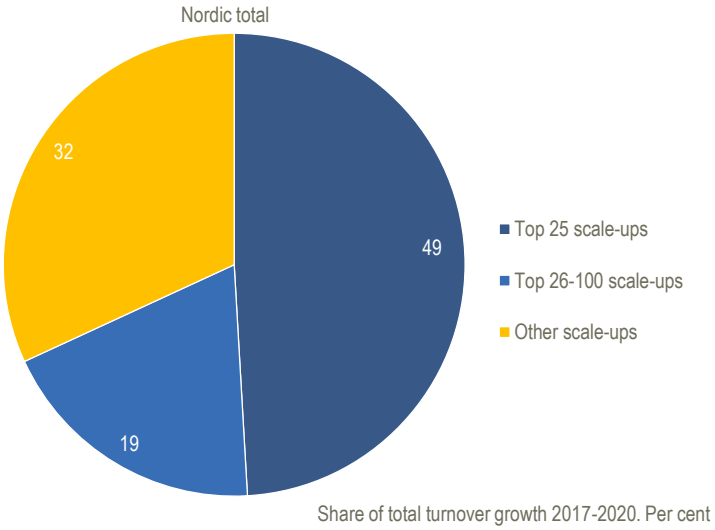
Scale-ups as share of total stock of enterprises with 10 or more employees (FTE) and an annual turnover of 2 million EUR or more in the non-financial business economy by type of scale-up, start year of the growth period 2017-2020



If scale-ups are measured against the total population of enterprises having the same conditions for becoming a scale-up (10 FTE and 2M EUR in turnover in the start year of the growth period 2017-2020), the share increases substantially compared to that of the entire population of enterprises within the non-financial business economy. Now 8.7 per cent of the population of potential scale-ups are actually scale-ups, see Figure 1.6. Finland is at the top with 9.6 per cent, followed by Denmark (9.0 per cent). Especially the turnover scale-ups in Iceland (6.0 per cent) and Denmark (5.1 per cent) constitute relative high shares and again the Employment scale-ups in Norway constitute a high share of all enterprises with scale-up preconditions (3.5 per cent).

Figure 1.7

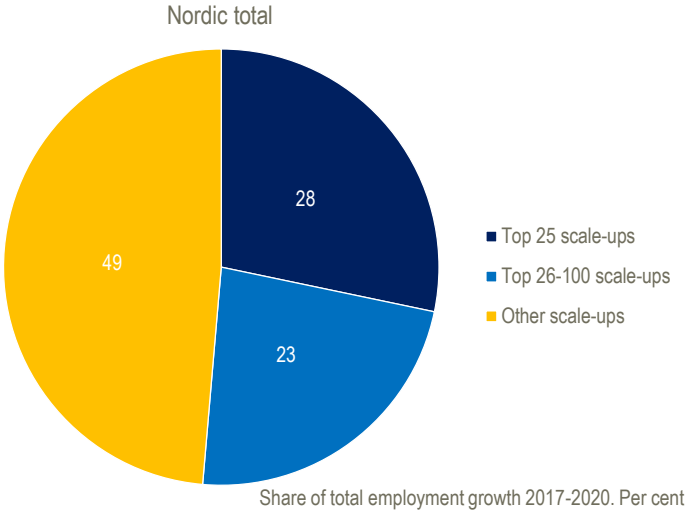
Total turnover growth in the period 2017-2020 broken down by absolute growth level of scale-ups within the non-financial business sector. Nordic total



The 5,600 scale-ups in the Nordics generated a total turnover of 234.2 billion EUR in 2020 which is an increase of 122.7 billion EUR compared to the turnover in the start year of the growth period 2017. Nearly half of this increase was created by the 25 scale-ups with the largest growth in turnover in absolute figures in each Nordic country (125 enterprises in total or 2 per cent of the entire scale-ups population in the Nordics), see Figure 1.7. This share is more or less the same across countries – except for Sweden where the Top 25 scale-ups only accounted for 41 per cent. The Top 25 scale-ups in Denmark represented the largest concentration of turnover growth (54 per cent).

Figure 1.8

Total employment growth in the period 2017 – 2020 broken down by absolute growth level of scale-ups in the non-financial business sector. Nordic total



The employment creation by the scale-ups in the Nordics was not as concentrated as the turnover creation as the Top 25 scale-ups with the highest absolute growth in each of the Nordic countries accounted for 28 per cent of the total employment – of the 456.000 full-time equivalent no. of employees (FTE) in 5,600 scale-ups in the growth period 2017-2020, see Figure 1.8. Again, the Swedish scale-ups showed the least concentration (24 per cent) and Finland the highest (33 per cent).

5. Discussion

We would like to raise the question if it would be of value for the Nordic statistical Institutes to start producing comparable statistics addressing new emerging topics as experimental statistics based on the data availability of the harmonised database? This would give an extra dimension to the national data.

Could such an activity be supported by establishing a Nordic network dealing Micro Data Linking – not only to identify topics to be covered by MDL, but also to discuss methodological issues?

Furthermore, we would raise the question if the database should be extended to hold short term data as well?

Another question we want to raise is if such a distributed micro data approach can be seen as an alternative to the requests from Eurostat for NSIs to send micro data to Eurostat or giving direct access to the micro data?

Finally, we raise the question if such databases would be useful to introduce to other statistical domains as social statistics?

6. Data annex

Annex Table 1. Scale-ups in the non-financial business economy by type of scale-ups. Growth period 2017-2020

		Employees		Turnover	
	Enterprises	Start year	End year	Start year	End year
		Employees		Million Euro	
Danmark					
Employment scale-ups	192	7.799	16.660	3.756	4.343
Turnover and employment scale-ups	340	14.266	33.935	4.390	11.661
Turnover scale-ups	700	34.107	41.653	17.294	43.989
Total					
Finland					
Employment scale-ups	228	8.844	19.753	9.509	10.234
Turnover and employment scale-ups	329	16.874	43.845	3.352	9.277
Turnover scale-ups	495	27.944	33.492	12.422	24.380
Total	1.052	53.662	97.090	25.283	43.892
Iceland					
Employment scale-ups	22	546	1.203	228	265
Turnover and employment scale-ups	10	243	667	50	142
Turnover scale-ups	69	3.093	3.317	787	1.543
Total	101	3.882	5.187	1.064	1.950
Norway					
Employment scale-ups	497	20.711	44.097	10.027	10.738
Turnover and employment scale-ups	314	11.839	31.437	3.709	11.002
Turnover scale-ups	453	27.099	30.909	11.152	33.796
Total	1.264	59.649	106.443	24.889	55.535
Sweden					
Employment scale-ups	475	19.724	42.846	10.021	11.445
Turnover and employment scale-ups	540	21.232	58.434	6.387	19.747
Turnover scale-ups	928	44.648	53.852	18.457	41.649
Total	1.943	85.604	155.132	34.865	72.841

Annex table 2 Number of scale-ups by type, activity and country in the Nordics. Growth period 2017-2020

	Denmark	Finland	Iceland	Norway	Sweden	Nordic total
Employment scale-ups						
Manufacturing exporters	8	13	4	20	28	73
Wholesale exporters	13	6		8	16	43
Knowledge-intensive services	47	48	1	105	114	315
Manufacturing non-exporter	6	19	3	35	30	93
Wholesale non-exporter	26	20	2	53	40	141
Other activities	92	122	12	276	247	749
Total	192	228	22	497	475	1.414
Turnover and employment scale-ups						
Manufacturing exporters	26	20	0	15	39	100
Wholesale exporters	20	4	1	4	15	44
Knowledge-intensive services	88	96	1	93	144	422
Manufacturing non-exporter	18	29	3	20	27	97
Wholesale non-exporter	29	16	1	26	46	118
Other activities	159	164	4	156	269	752
Total	340	329	10	314	540	1.533
Turnover scale-ups						
Manufacturing exporters	113	42	7	45	81	288
Wholesale exporters	65	13	1	13	71	163
Knowledge-intensive services	133	72	8	57	200	470
Manufacturing non-exporter	51	54	11	63	63	242
Wholesale non-exporter	84	55	6	67	146	358
Other activities	254	259	36	208	367	1.124
Total	700	495	69	453	928	2.645

7. References

Nielsen et al (2019): Establishing Harmonised Business Statistics Databases in the Nordic NSIs – challenges and achievements. Paper presented at the NSM2019.

Nordic Innovation et al. (2017) Scale-ups in the Nordics – statistical portrait 2008-2016,

Nordic Innovation et al (2019): Scale-ups in the Nordics 2017

Nordic Innovation et al: Scale-ups in the Nordics 2020

8. Appendix: List of references