Oslo Business Region

Report

Startups and Scaleups in the Oslo Region

MENON ECONOMICS

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Preface

On behalf of Oslo Business Region, Menon Economics has mapped and analyzed the contribution of startups and scaleups in the Oslo region. This paper seeks to create an overview of startups and scaleups in the Oslo region, and to quantify their contribution to employment and value creation. The work has been conducted by Per Fredrik F. Johnsen as project leader and Maja Olderskog Albertsen as project member. Gjermund Grimsby is the responsible partner, including quality assurance.

Menon analyzes economic issues and provides advice to companies, organizations and authorities. We combine economic and commercial expertise in fields such as industrial organization and competitive economy, strategy, finance, organizational design and social profitability. We use research-based methods in our analyses and work closely with leading academics within our field of work.

We thank Oslo Business Region for an exciting project. The authors are responsible for all content in this report.

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February 2021

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Content

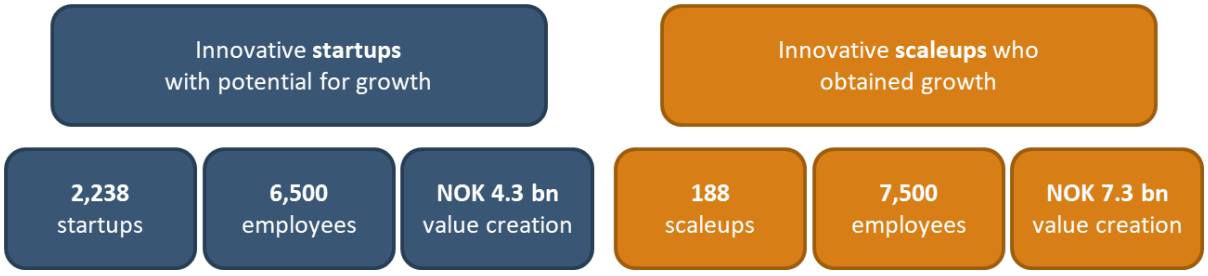
Summary

The Oslo region is a hub for entrepreneurship in Norway, and the ecosystem has changed dramatically over the last few years. It is widely known that the region has fostered several prominent startups, yet there is a lack of available systematic information, in terms of numbers and figures, about the startup and scaleup community in the Oslo region and how it has developed over the past decade. This report aims to fill this gap: Describing startups and scaleups in the Oslo region in numbers, and how this has changed over the last decade.

The analysis is based on data for Norwegian enterprises with register data from Menon's historical database of accounting information for Norwegian companies, combined with other sources used to identify innovative companies who either have a potential for growth or have experienced growth. Every year 25,000-30,000 companies are established in Norway, of which one third in the Oslo region. Less than half of established companies survive one year, and less than one third survive five years. This report aims to find the innovative companies with growth ambitions.

According to our definitions there are more than 2,200 startups and nearly 200 scaleups in the Oslo region. Among startups, about 10 percent satisfies a stricter definition of growth ambition. Most are located within the City of Oslo, especially scaleups are concentrated there. Startups and scaleups in the Oslo region created values for NOK 11.5 billion in 2019, the latest year for which data are available. This corresponds to 1.5% of total value creation in the Oslo region. Since 2010, the value created by startups and scaleups has increased by more than 40 percent. New companies are important for employment in the region. Companies defined as scaleups employ 7,500 people, having created 5,700 new jobs over the last decade. As much as 6,500 people are engaged in startup activities, all representing new companies and jobs created over the last five years. The Oslo region has seen a net job growth in private companies of 123,000 the last 10 years, of which 10 percent in the startups and scaleups of 2019.

Figure 1: An overview of startups and scaleups in the Oslo region in 2019



The two largest industries – both in terms of startups and scale ups – are computer programming & consultancy and professional services. These industries have also seen the largest growth in the number of scaleups during the period, almost doubling in ten years. The tech scene in the region has clearly evolved as software companies in the region are scaling up.

International comparisons still indicate that Oslo is lagging behind the neighboring capitals in terms of the number of startups, but Oslo's attractiveness as a startup destination is increasing as the startup ecosystem matures. Over time, the number of scaleups in Oslo has been increasing and closing in on Copenhagen and Stockholm which traditionally have been well known as European hubs for entrepreneurship.

1 Introduction

Oslo is a hub for entrepreneurship in Norway, and the ecosystem has changed dramatically over the last few years. This report presents an overview of the number of startups and scaleups in the Oslo region, and how this has changed over the last decade.

Almost two out of three new jobs in the private sector are created by newly established companies.[1] Among these, a small share of growth companies stands for the majority of job creation. Innovative and ambitious entrepreneurs who dare to make use of new solutions are the founders of the economy of tomorrow. Innovation is fostered more efficiently in new companies than in older and larger companies. These new companies which spring out of knowledge-intensive industries and hubs play an instrumental part in coming up with solutions for today's challenges.

The Oslo region is home to more than 1.3 million people, which amounts to approximately a quarter of the Norwegian population. The region plays an important role in Norway's economy for business development and as a knowledge hub for several disciplines. Life sciences and ICT are areas where Oslo stands out, with close relations between institutions like the University of Oslo and clusters like Norway Health Tech. The establishment of the Norwegian Hydrogen Cluster and Solar Energy Cluster are positioning Oslo as an emerging hub for renewable energy sources. In 2019, Oslo was the European Green Capital of the year, ranking no. 1 in eco innovation and sustainable employment in its application.

Over the past few years, the Oslo startup ecosystem has changed dramatically. Numerous incubators, venture capital firms and business clusters have emerged, with the likes of StartupLab (incubator), the Life Science Cluster and Alliance Venture, to name a few actors. Today there are more than 50 professional startup communities in Oslo.

On international rankings, Oslo's attractiveness is increasing, and the city now ranks 18th in attractiveness on Startup Heatmap Europe. Visiting universities, cafés and urban areas of Oslo you can sense the dawning of a vibrant culture for growth companies and startups. Examples of recent successful ventures are SaaS company Spacemaker, established in 2016 and sold in 2020 for NOK 2.2 billion, online grocery retailer Kolonial.no, valued at NOK 4.5 billion, and reMarkable, a global exporter of digital paper tablets after only five years in business. Yet, there is a lack of available systematic information – in terms of numbers and figures – about the Oslo-region startup and scaleup community, and how it has developed over the past decade. This report aims to fill this gap.

The report is organized as follows. Chapter 2 briefly introduces our definitions and method, before presenting the identified population of startups and scaleups in the Oslo region. Chapter 3 presents the contribution of startups and scaleups to growth in value creation[2] and employment over time. Data sources and method are presented in more detail in the appendix.

[1] Reve (2017). Final report from MIT REAP South West Norway.

[2] Companies which pay salaries to employees, taxes to the government and profits to owners generate values for society. The value created in the companies is captured by measuring value creation, calculated as EBITDA and labor costs. This measure can be used to measure a company's societal return, e.g., as a share of GDP.

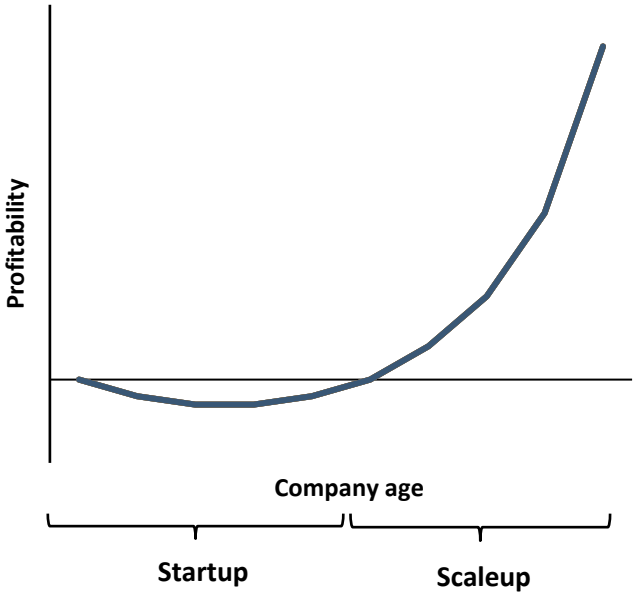
2 Startups and scaleups in the Oslo region

According to our definitions, there are more than 2,200 startups and nearly 200 scaleups in the Oslo region. Most are located within the City of Oslo, especially scaleups are concentrated there. When compared to the other Nordic capitals, Oslo has fewer startups and scaleups, but Oslo is narrowing the gap as the startup ecosystem matures. Tech companies and providers of professional services are the dominating industries.

There exist numerous definitions on startups and scaleups, and every definition is chosen based upon the relevance of the specific analysis. We apply a definition which enables us to identify relevant companies in the Oslo region in terms of potential for growth and innovation. These are the companies we believe to be the foundation of the future economy of both the region and Norway as a whole.[3]

Figure 2 captures the fundamental difference between a startup and a scaleup. Startups with growth potential require both capital and human capital to develop their products and services. This investment lays the foundation for future growth, but usually the startup will run a deficit. Over time, successful startups will reap the returns of investment as revenues and profitability increase as the company is scaling up. Due to the conceptual difference between the stages of the two types of companies, they are treated separately here.

Figure 2: The development in profitability of j-curve companies



2.1 Startups with growth potential

2.1.1 Startups in the Oslo region

Every year 25,000-30,000 companies are established in Norway, of which one third in the Oslo region. Less than half of established companies survive one year, and less than one third survive five years.[4] The cost of establishing a company is relatively low and most companies do not have a potential for substantial growth. Yet, among these companies are also the future medium- and large sized businesses and motors for growth and innovation.

[3] Our definitions are largely based on characteristics that are identifiable using accounting variables and company information provided by the Register of Company Accounts, in addition to other public sources. This way, our definitions are operational, enabling us to count the number of companies that sort under the alternative definitions.
[4] Statistics Norway, Table 06682: https://www.ssb.no/en/statbank/table/06682

Identifying companies with potential for growth is a difficult exercise. Newly established companies lack a track record, and there is no register that gives information about the entrepreneurs and their ambitions. We want to capture both knowledge-intensive, capital-intensive and innovative startups. Some startups in industries which traditionally are not knowledge-intensive may still have substantial potential for growth due to innovations in the production of goods or services. Due to the heterogeneity of startups within different industries, we apply several criteria to identify startups with growth potential. The box below summarizes the definition of startups in this study.[5]

Box 1: Operational startup definition

Definition of startups with growth potential

Startups are from 2-5 years of age since the first year of economic activity[6] and fulfil one of the following criteria:

a) Startups that sort under NACE-codes (5-digit) where the share of employees with more than a bachelor's degree exceeds 33 percent (knowledge intensive)
b) Companies with R&D tax credits (SkatteFUNN) at least once during the first 5 years (innovative)
c) Operational loss that amounts to twice the accumulated revenues over the first 2-5 years, and registered wage costs (j-curve)
d) Startups that have increased their share capital with a minimum of NOK 100,000 (capital intensive)

According to these criteria, the Oslo region is home to more than 2,200 startup companies. Most of the identified startups are knowledge-intensive (criterion a) accounting for 98.6 percent, and 6 percent have qualified for SkatteFUNN (criterion b), which is a tax credit for companies investing in R&D. About five percent of the startups are in the j-curve (criterion c), while two percent have raised additional capital (criterion d).

The map below shows how the startups are located across the different municipalities of the Oslo region. More than 60 percent of the startups within the region are located in the City of Oslo, 1,374 startups in total. However, in each of the three municipalities Bærum, Asker and Lillestrøm the number of startups is in three figures. Together, these four municipalities account for 84 percent of startups in the region.

[5] Subsidiary companies are excluded as spin-outs from existing companies are not regarded as startups.
[6] The first year of economic activity is defined as the first year of registered revenues or wage costs.

Figure 3: The distribution of startups in the Oslo region in 2019

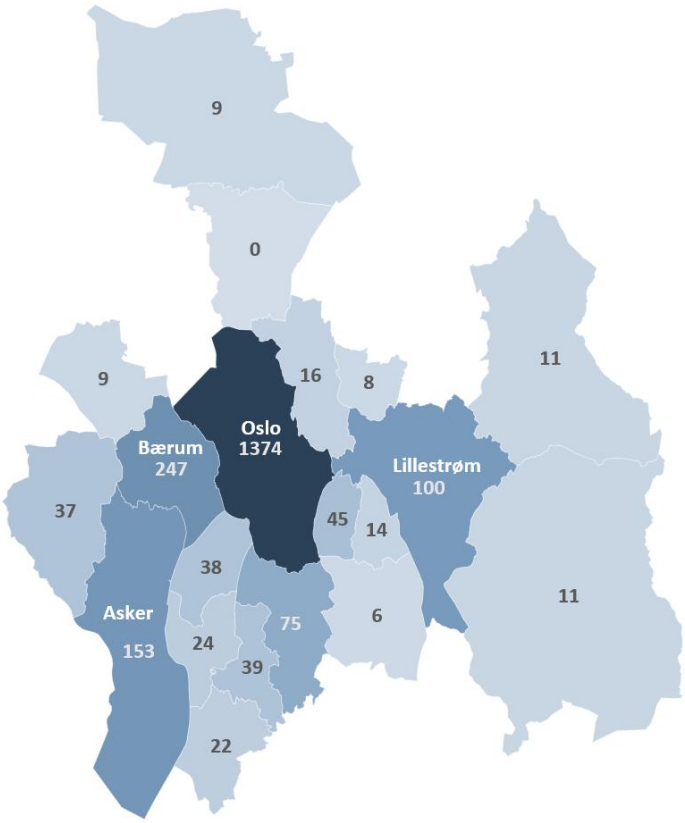
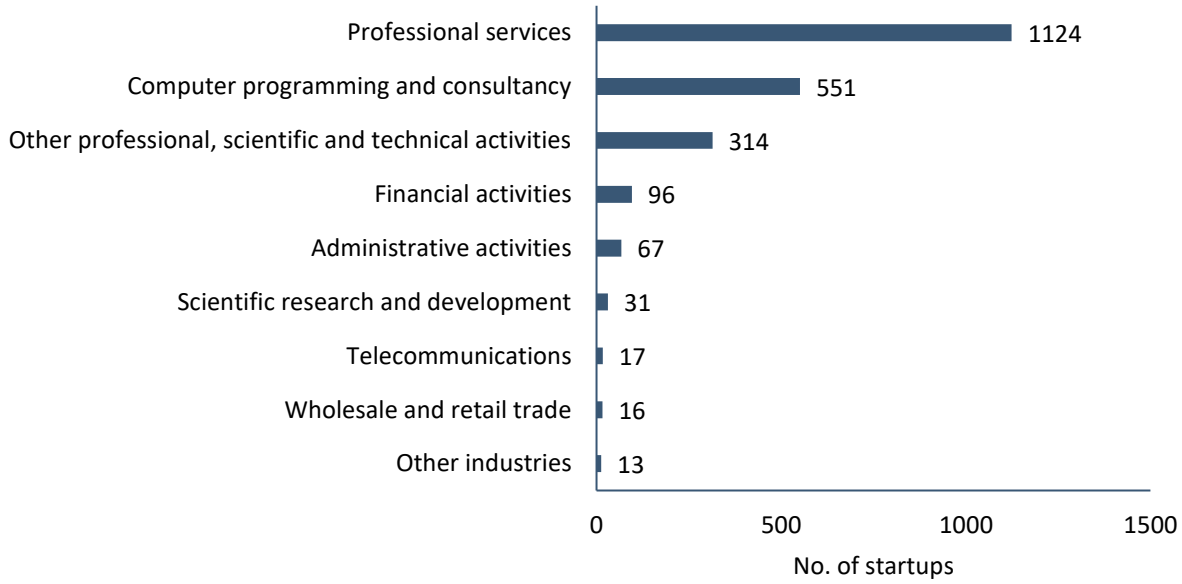


Figure 4 below shows the distribution of startups across industries.

Figure 4: Startups by industry in 2019. Source: Menon Economics



The figure shows that professional services[7] is the most dominant industry for startups in the Oslo region. About half of all startups are within this industry. Consulting and business advisory services are the largest group within professional services, followed by engineering and architectural services. Other large subgroups of professional services are accounting, auditing and legal services. Professional services comprise startups such as diagnostics company Bio-Me and subsea-technology company Nautilus Subsea.

Furthermore, more than 25 percent of startups in the Oslo region are within computer programming & consultancy. Consulting & software services accounts for most companies in the industry. The region has fostered several notable startups within the industry, like reMarkable, No Isolation and Eyr Medical. Eyr Medical provides a platform for medical consultations over your phone, a service which attracted a lot of users when the global pandemic hit in 2020. Computer programming & consultancy also include several companies within data management and web portals. This is an industry with an increasing demand, and many startups see potential in this market. 28 of the startups have received government support for projects related to renewable energy[8]. Most of these startups are found in professional services and computer programming & consultancy.

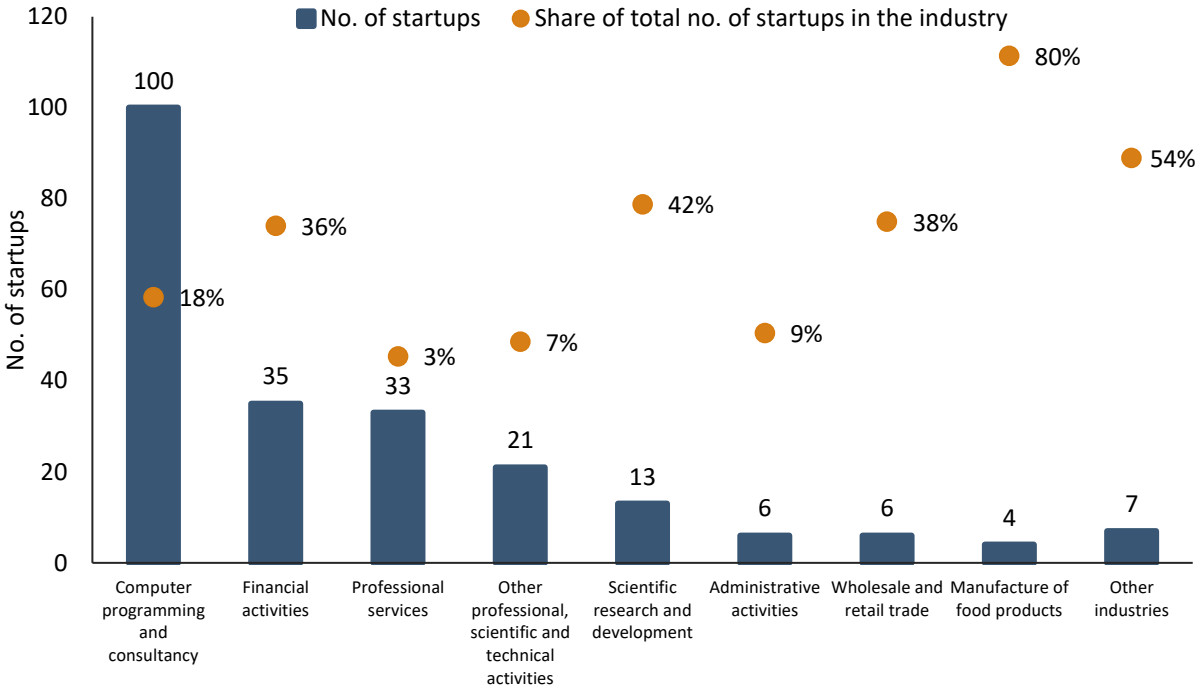
The region hosts 96 financial services startups. There are several payment service providers and crowdfunding platforms. Other examples are professional investors and other management services. Within scientific research and development there are several biotechnology companies. Notable ones are Zelluna Immunotherapy and Odi Medical, which both have collaborations with Oslo University Hospital in addition to international institutions. Other industries include different sorts of manufacturing, transportation, electricity supply and other service activities, all industries with few startups in the region.

In Figure 5 below, we only apply criterion b (innovative), c (j-curve) and d (capital-intensive). By dropping the criterion for knowledge-intensive startups we exclude the by far broadest indicator, and the criterion which is least precise in capturing growth ambitions. Using the three above-mentioned criteria, we identify 228 startups with growth potential. These startups are capital-intensive and/or have R&D activities, precise indicators of startups with growth ambitions, and potential.

[7] Professional services comprise of professional, scientific and technical activity. These activities often require a high degree of education and training and make specialized knowledge and skills available to clients who may be other business users or private individuals.

[8] Renewable energy projects cover projects related to efficient energy systems, offshore wind, hydroelectric power, solar power, maritime fuel systems and industrial carbon capture and storage.

Figure 5: Startups by industry when only applying criterion b (innovative), c (j-curve) and d (capital intensive). Source: Menon Economics



Computer programming & consultancy is the industry with the most startups according to this alternative approach with 100, covering 18 percent of the total number of startups within the industry. Financial activities and professional services follow with 35 and 33, respectively. In financial activities, we still capture 36 percent of the total number of startups. While in professional services, only 3 percent of the total number of startups are identified by this method, showing how the broad knowledge-intensive criterion capture a lot of professional services not captured by other criteria. On the opposite end, you have scientific research and development and financial activities which are captured efficiently by the three remaining criteria.

2.1.2 Startups in the Nordic capitals

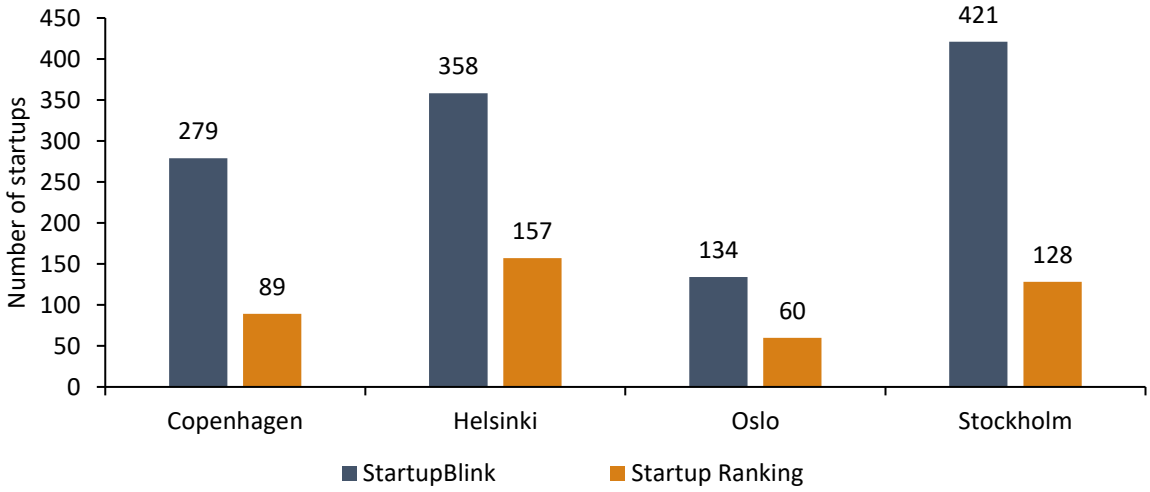
There are different definitions for startups in different countries, all depending on what one would like to highlight and data availability. For example, the analysis above shows that the number of startups in the Oslo region is between 200 and 2,200, depending on how strict criteria one applies. Our methodology, which is based upon accounting data, is not applicable to all countries due to lack of comparable datasets. Thus, it is difficult to replicate our methodology directly for comparison with the startup scene in other city regions. There are, however, international and regional rankings and databases covering startups across countries.

Several companies track the global startup ecosystem. One of them are the global startup ecosystem map, StartupBlink. They define a startup as "any new business that applies an innovative solution". The innovation can be either technological or a unique business model.[9] Startup Ranking also provides a global overview of startups, by mapping and raking startups. According to their definition a company is a startup if less than 10 years have passed since its foundation, the company has not been acquired or gone through an IPO and is heavily supported

[9] StartupBlink has a global database of startups, gathering information from several data partners like CrunchBase and Coworker.

by technology. The figure below compares the number of startups in the Nordic capitals in 2020, according to these two rankings.

Figure 6: Number of startups in 2020. Source: StartupBlink and Startup Ranking



StartupBlink's statistics clearly indicate that Oslo is lagging behind the neighboring capitals in terms of the number of startups. Stockholm is the Nordic city with the most startups according to StartupBlink, whereas Helsinki has the most according to Startup Ranking. Regardless of method, Copenhagen ranks third and Oslo fourth amongst the Nordic capitals. The Startup Ecosystem Ranking ranks Oslo 105th globally. Oslo is climbing on the list, having risen 14 spots since 2019 and narrowing the gap to other Nordic capitals.

The advantage of using such a comparison is that the same definition is applied across countries. Still, our analysis of the Oslo region shows that the definition applied by StartupBlink, identifying only 60 startups in Oslo, clearly does not capture the whole picture with respect to startups in the Oslo region. However, the finding that Oslo has lower startup activity compared to its neighboring Nordic capitals seems correct. This impression is supported by statistics of venture capital investments in the Nordic countries, which show lower investment activity in Norway compared to the other countries in the region. Fewer startups and a less developed startup ecosystem in Oslo may be reflected in investment statistics.

When one compares these methods with each other, the number of startups identified is dependent on how a startup is defined. Additionally, the above-mentioned methods are likely to be biased towards cities that draw international attention to their startup scene. Finding out if a company is indeed heavily supported by technology requires a lot of information-gathering if one is attempting to look past industrial classifications. Thus, one should be careful not to put too much emphasis on the exact level of startups in such international comparisons.

2.2 Innovative scaleups

2.2.1 Scaleups in the Oslo region

As startups grow and mature, they move into the next phase, the scale-up phase. These fast-growing companies are important contributors in creating both jobs and prosperity. Scaleups contribute by creating knowledge-intensive jobs and innovative goods and services. With Norway being a small economy, the potential for growth is for many companies related to access to export markets. This also holds true for Norwegian scaleups.

In contrast to startups, scaleups have a track record to show. Track records allow us to identify scaleups based on accounting data. According to OECD, a scaleup business is a company which has seen an annualized growth of at least 20 percent over three years with 10 or more employees at the start of the period.[10] To identify innovative scaleups with further potential for growth in innovative, export-oriented or knowledge-intensive industries, we impose additional criteria for having realized growth. To identify these companies, we require the company to be either capital-, R&D- or knowledge-intensive. The operationalization of these indicators is summarized in the box below.

Box 2: Operational scaleup definition

Definition of innovative scaleups

A scaleup has seen an annualized growth of at least 20 percent over three years with 10 or more employees at the start of the period, and fulfils either one of the following three criteria:

a) Knowledge-intensive companies: All scaleups that sort under NACE-codes (5-digit) where the share of employees with more than a bachelor's degree exceeds 33 percent (knowledge-intensive)
b) Companies that have been awarded R&D tax credits (SkatteFUNN) at least once (innovative)
c) Companies that have increased their share capital with a minimum of NOK 1 million or figure in the portfolios of seed and venture funds (both state-supported and pure private early-stage investment funds) (capital-intensive)

According to our definition there are 188 scaleups in the Oslo region in 2019. 92 percent of scaleups are identified by the knowledge intensive (criterion a), and 54 percent qualified for SkaffeFUNN (criterion b). 17 percent of scaleups raised additional capital or figure in the portfolio of seed and venture funds (criterion c).

Compared with the startup population, the scaleup population is more concentrated in the City of Oslo. 145 scaleups can be found in Oslo. As shown in Figure 7 below, most startups outside of Oslo are located in either Bærum or Lillestrøm municipality.

[10] We measure growth both in terms of revenues and the number of employees. A company can be defined as a scaleup by either growth in revenues, employment, or both.

Figure 7: The distribution of scaleups in the Oslo region in 2019

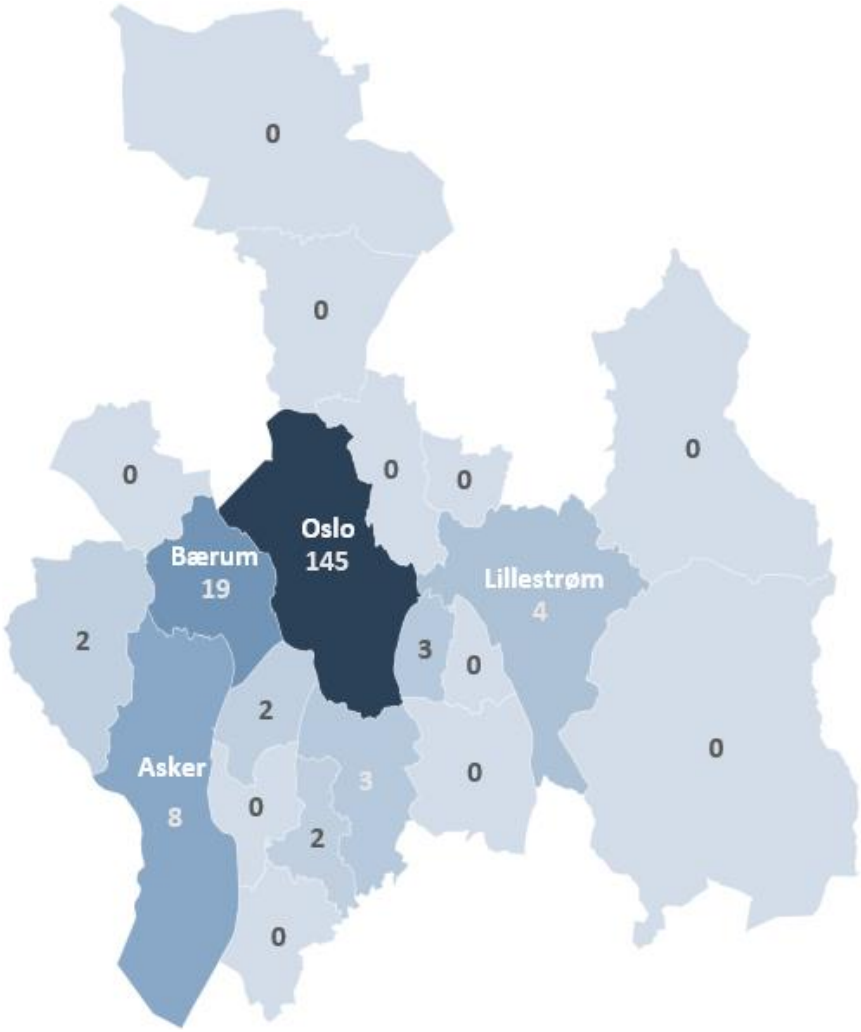
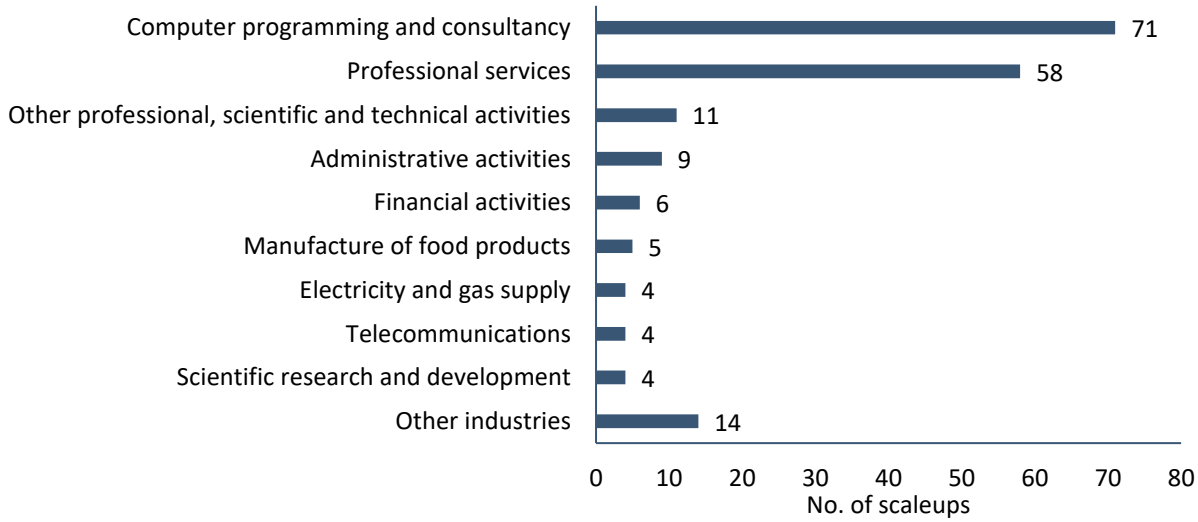


Figure 8 shows how scaleups in the Oslo region are distributed across industries.

Figure 8: Scaleups by industry in 2019. Source: Menon Economics



Scaleups in the Oslo region are centered around ICT. Computer programming & consultancy and professional services are the industries where we find most scaleups, with 71 and 58, respectively. Computer programming & consultancy covers scaleups like Kahoot!, a global educational platform with more than USD 325 million in financing from Norwegian and international investors, and SaaS company CSAM Health, which was listed on Euronext Growth in October 2020. CSAM Health provides eHealth solutions in the Nordics. Another prominent software scaleup is Gelato, which is scaling its print on demand solution globally. Other notable software companies are House of Control and global ERP software company Xledger Labs.

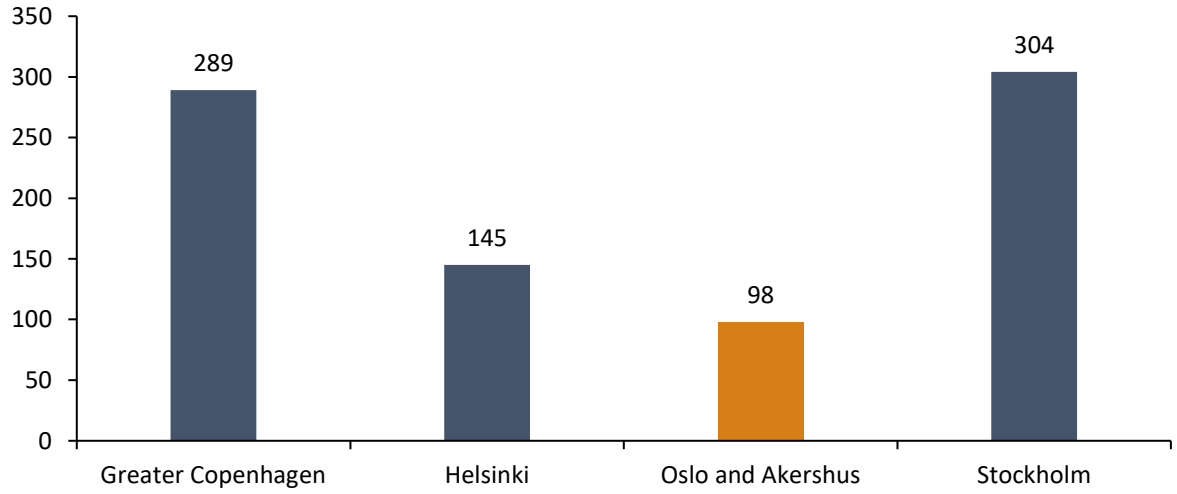
Scaleups within professional services cover a broad specter of value chains. There are companies like Clean Marine, which supplies emission cleaning products for maritime vessels, and Stingray Marine Solutions, which supplies solutions to remove lice from farmed salmon. On the other hand, there are companies within architecture and communications, as well as diagnostics company Genetic Analysis. Within scientific research and development, we find AI-video conference company Huddly and Keep-it Technologies, which produces shelf-life indicators for food.

Five scaleups have received government support for projects related to renewable energy, two of which are Keep-it Technologies and IoT company Disruptive Technology Research. Our culture-population identifies 21 scaleups, of which, 10 in the professional services industry and 4 within computer programming & consultancy.

2.2.2 Scaleups across international capitals

The Oslo region is an entrepreneurial hub which is leaping forward. Over time, the number of scaleups in Oslo has been increasing and closing in on Copenhagen and Stockholm which traditionally have been well known as European hubs for entrepreneurship. Nordic Innovation, an organization who works to promote entrepreneurship and innovation in Nordic businesses, uses statistical data to identify scaleups in the Nordics.[11] It uses a similar definition of scaleups like the one employed in this report.[12] The comparison of the respective capital regions is shown in the figure below.

Figure 9: Number of scaleups in Nordic capital regions in 2017. Source: Nordic Innovation

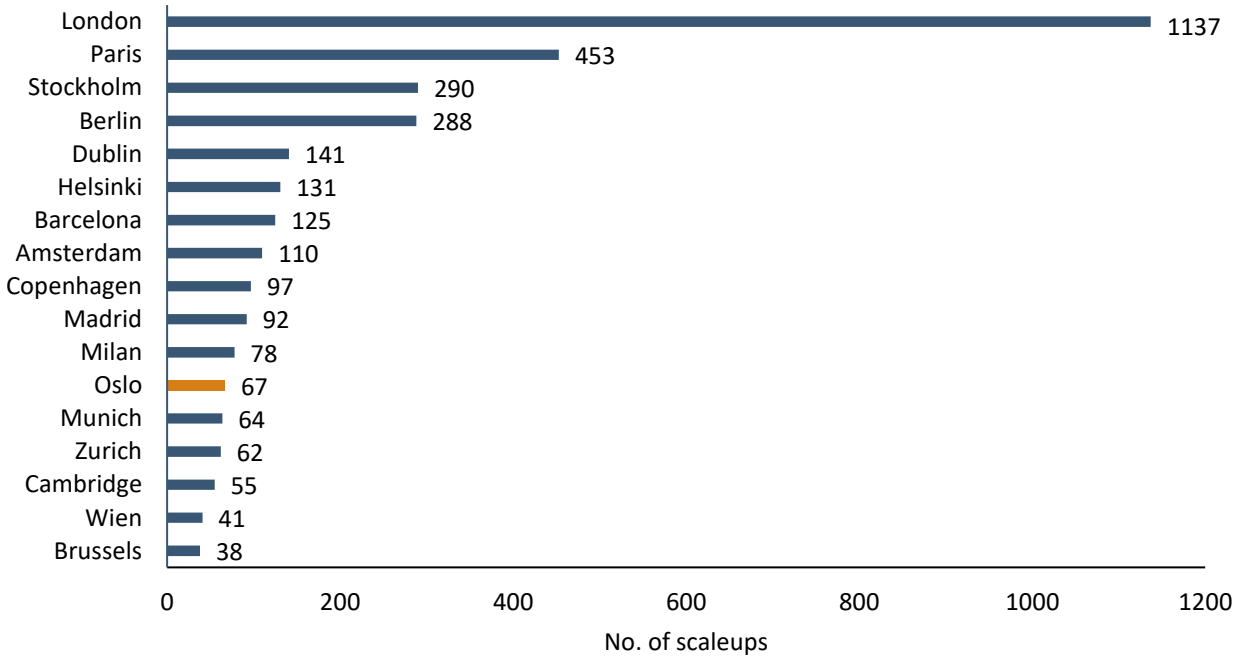


[11] Nordic Innovation (2019). Scale-ups in the Nordics 2017
[12] The main differences are that we look at the number of employees rather than FTEs. In addition, we use a broader set of industries and indicators.

According to Nordic Innovation, Oslo and Akershus were home to 98 scaleups in 2017. This is about one third of the level in both the Copenhagen and Stockholm regions. Compared to Oslo, Helsinki is home to about 50 percent more scaleups. When controlling for differences in population size in the capital regions, the gap between Oslo and the other capitals is reduced, but Oslo still has the lowest number of scaleups per capita. Nordic Innovation identifies 98 scaleups in Oslo in 2017, while this paper identifies 160 scaleups in the same year, over 50 percent more than Nordic Innovation. Nordic Innovation uses full-time equivalents for employment, whereas we use the number of employees. We allow a broader range of industry codes (NACE Rev. 2) compared to Nordic Innovation, and we apply additional criteria to capture companies outside of traditional knowledge-intensive industries. An example for this is Kolonial.no, which according to Nordic Innovation's method would be left out of the scaleup population.

Innovation advisory firm Mind the Bridge (2019)[13] uses a completely different approach to identifying scaleups. It requires a scaleup to have raised more than USD 1 million since inception and completed at least one funding event since 2010. This definition relies on data that are not publicly available and will heavily depend on how well-developed the ecosystem for early-stage financing is in the region. The figure below presents Mind the Bridge's top list of European cities in terms of the number of scaleups.

Figure 10: Number of scaleups in Europe 2018. Source: Mind the Bridge



As in the statistics of Nordic Innovation, Oslo has fewer scaleups compared to other Nordic capitals in Mind the Bridge's statistics. However, the number of scaleups in Oslo is higher than in major central European cities like Munich, Zurich and Vienna.

[13] Mind the Bridge (2019): StartupCity Hubs in Europe.

3 Startups' and scaleups' contribution to growth

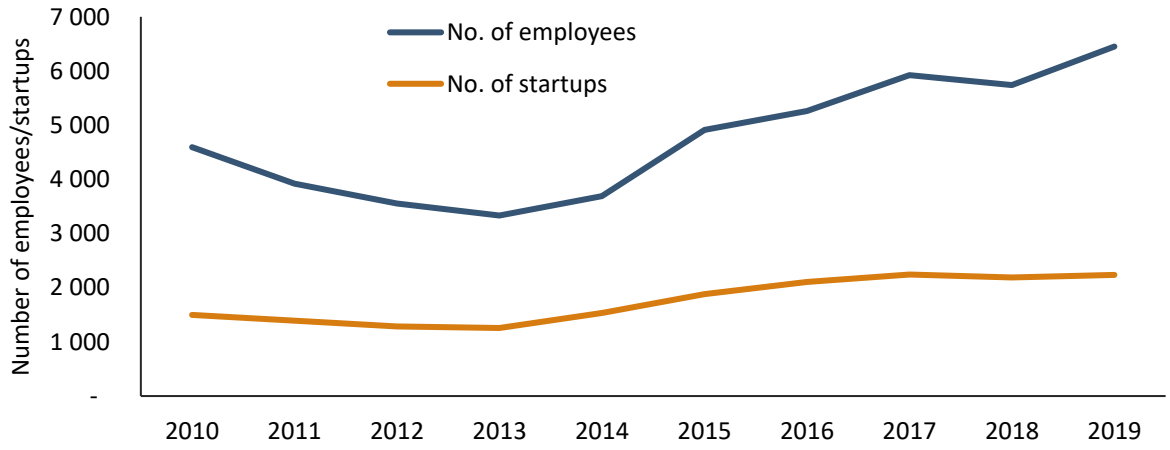
Startups and scaleups in the Oslo region created values for NOK 11.5 billion in 2019. Since 2010, the value created in startups and scaleups has increased by more than 40 percent. New companies are important for employment in the region. Companies defined as scaleups employed 7,500 persons in 2019, having created 5,700 jobs in these scaleups over the last decade. Startups established in the period 2014-2017 employed 6,500 persons in 2019, all representing new jobs created over the last five years. The Oslo region has seen a net job growth in private companies of 123,000 over the last 10 years, of which 10 percent in the startups and scaleups of 2019.

Startups and scaleups contribute to employment and growth by investing in people and in innovative ideas. Most companies fail within a year of inception, but the ones with a great idea that successfully commercialize can make a large contribution to growth in the economy. Some of the startups of today are tomorrows scaleups, and further down the road may turn into established large businesses. Over the last decade, the ecosystem in the Oslo region has matured, which is reflected in an increase in both the number of startups and scaleups. The innovation ecosystem is gaining recognition in Europe, with Oslo climbing 19 places to 18th place in European Startup Initiative's Startup Europe Heatmap for its perceived attractiveness as a startup destination, especially recognized for technology.[14]

3.1 Startups

Over the last decade, the number of startups in the Oslo region has grown by almost 50 percent, from 1,500 in 2010 to more than 2,200 in 2019. During this period, there have been several events that may have affected the number of startups, in addition to the growing ecosystem. Figure 11 shows the evolution in the number of startups and their employment over the last decade.

Figure 11: Development in startups (2010-2019).[15] Source: Menon Economics



[14] Clark, G., Moonen, T., & Couturier, J. (2020). Oslo: State of the city. The Business of Cities Group.
[15] The governmental reporting method on the number of employees changed in 2015, which led to a significant one-time increase in number of employees. As a result, numbers before and after 2015 are not directly comparable. We adjust the number of employees after 2015, but this does not fully compensate for the increase.

The graph above shows that the number of startups and the number of employees starts to increase from 2014. The cost of establishing a private company in Norway fell in 2012, affecting the number of startups from 2014 onwards. Moreover, in 2014 Norway's oil and gas industry suffered a heavy blow when the oil price plummeted from over USD 100 per barrel to USD 50 in six months and decreased further to around USD 30 per barrel in 2016. Norway's oil and gas industry was forced to downsize its workforce. During this period, close to 50,000 jobs were terminated, sending thousands of highly educated people into unemployment. Simultaneously, the number of employees in startups increases, which also points to a paradigm shift in the startup culture in the Oslo region. Startups in the Oslo region employed 6,500 persons in 2019. These startups were established in the period from 2014-2017, all representing new jobs created from 2014 to 2019. There are several possible explanations for the increase in the number of startups and in their employment, while the maturing of the startup ecosystem of Oslo is a vital part of the explanation.

In Figure 12 below, we only apply startup criterion b (innovative), c (j-curve) and d (capital-intensive). In 2010 this alternative definition identified 217 startups, before falling to 149 in 2012. Since 2012 the number of startups has grown by more than 50 percent to 228 in 2019. Most startups are captured by SkatteFUNN, but the increase is due to growth in the number of startups identified by all three criteria.

Figure 12: Development in Startups when only applying criterion b (innovative), c (j-curve) and d (capital intensive) (2010-2019). Source: Menon Economics

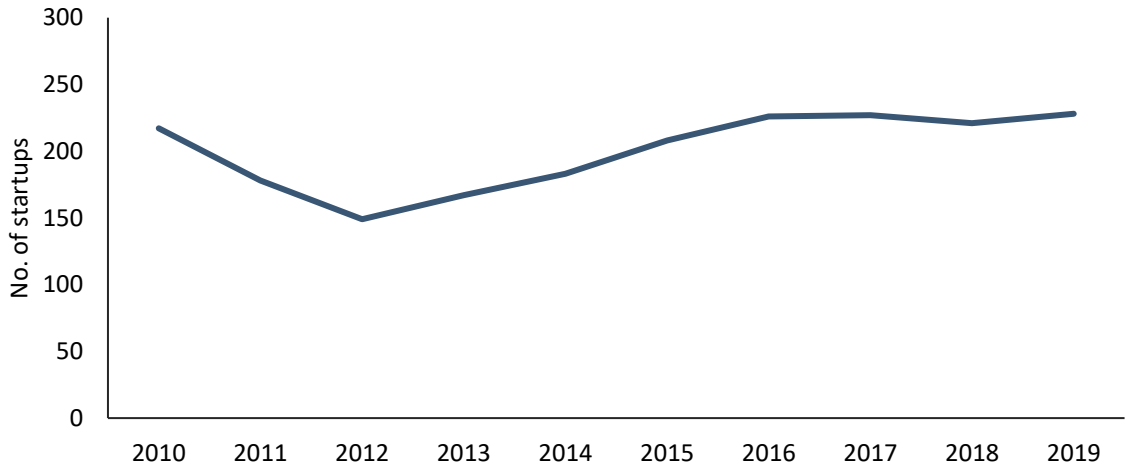
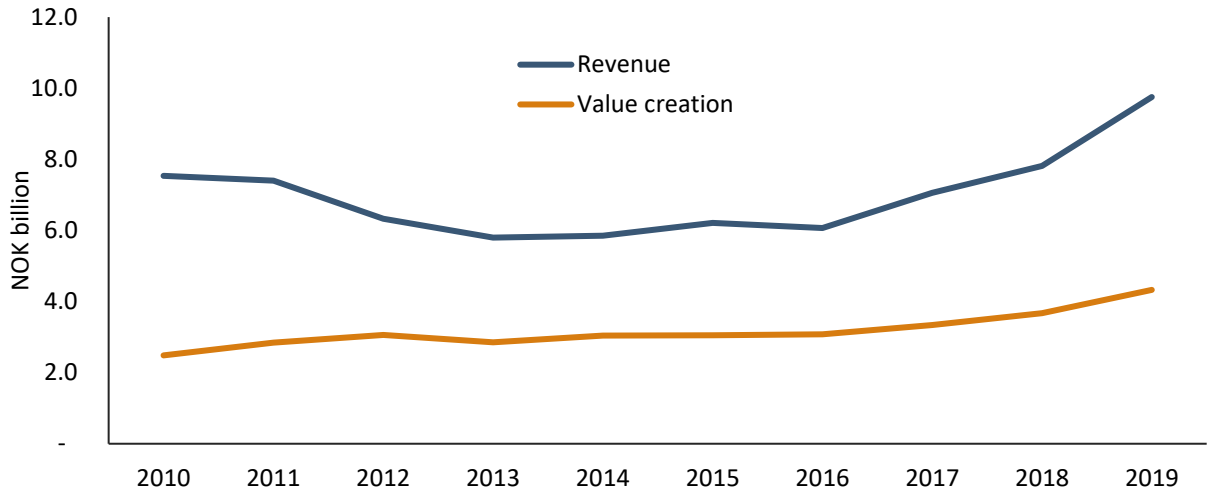


Figure 13 shows how revenues and value creation in startups has evolved since 2010.

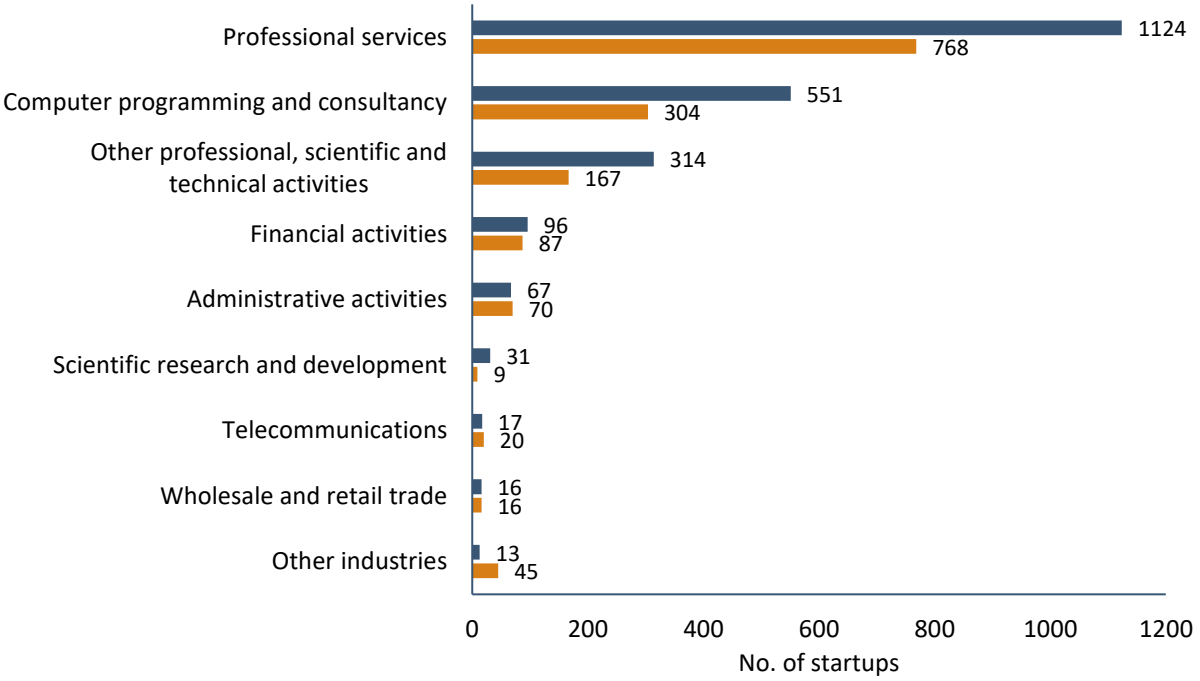
Figure 13: Development in revenues and value creation in startups (2010-2019). Source: Menon Economics



Revenues of the startups fell between 2010-2013, before stabilizing. Since 2016, revenues of the startup population have grown by more than 50 percent. Value creation in the startups has increased from NOK 2.5 billion to 4.3 billion over the decade, with most of the increase occurring between 2010-2012 and 2016-2019. The aggregated value creation of startups in the Oslo region has increased by 41 percent from 2016 to 2019. Over the same period, the number of startups has been stable, meaning that each startup on average creates more value.

Figure 14 below shows how the distribution of startups across industries has changed over the decade.

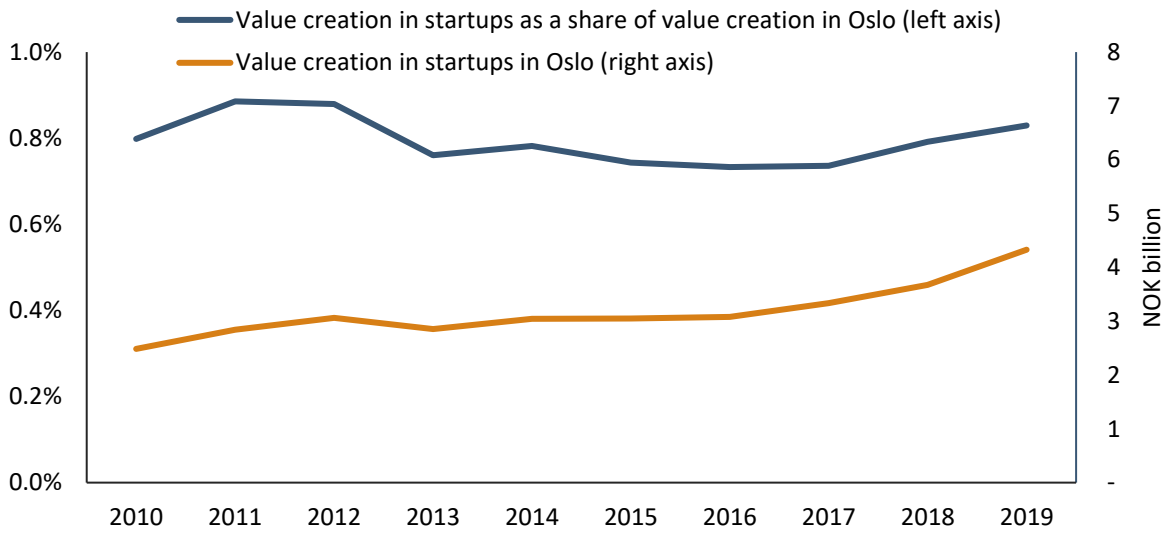
Figure 14: Startups in the Oslo region by industry (2010 and 2019). Source: Menon Economics



Examining the industry distribution of the identified startups we find that professional services and computer programming & consultancy dominated in 2010, as in 2019. The growth rate in computer programming &

consultancy is almost twice the growth rate of professional services. The number of startups within scientific research and development has increased by more than 200 percent, from 9 in 2010 to 31 in 2019. The growth in startups can almost exclusively be traced to professional services, computer programming & consultancy and other scientific and technical services. The concentration in these knowledge-intensive industries has increased.

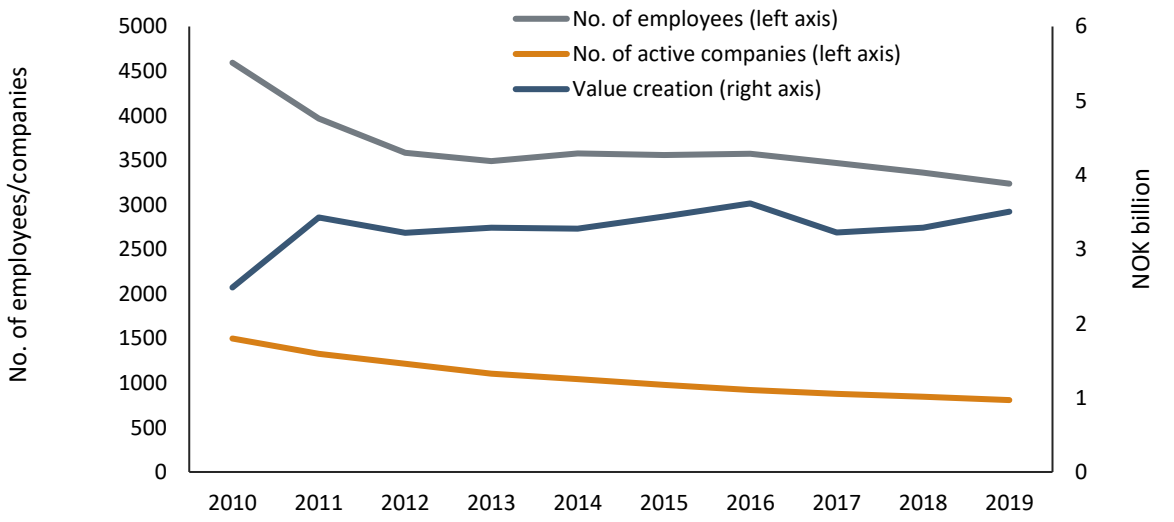
Figure 15: Value creation in startups in Oslo relative to all businesses in Oslo. Source: Menon Economics



The share of Oslo's value creation which takes place in startups has been relatively stable between 2010 and 2019, in the interval of 0.7-1.0 percent, while the level of value creation is increasing. In other words, the growth in value creation in the startups has been similar to businesses in Oslo as a whole.

In order to gauge the value added by a vibrant startup community in Oslo, we examine the startup "class of 2010". The charts below show the development of startups that are still active from this "class" in each year following 2010. While the number of active companies is decreasing, the aggregated productivity is increasing rapidly, and the number of employees per company is increasing as well.

Figure 16: Number of active companies and distribution of employees (2010-2019). Source: Menon Economics



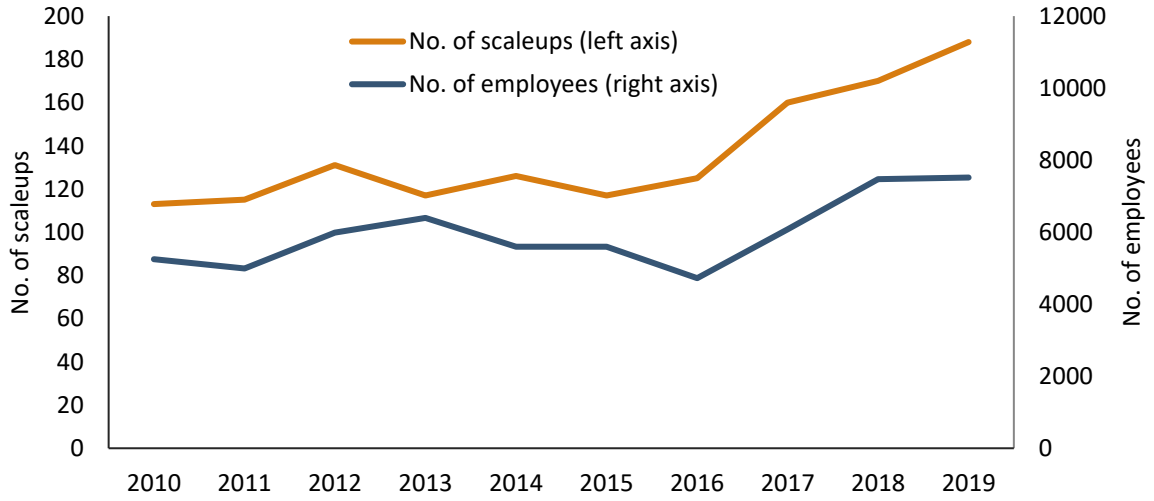
The number of active companies decreases by almost 50 percent over ten years and the number of employees by 30 percent, indicating that the companies that survive experience moderate growth in terms of employees. Over the same period, value creation in the remaining companies increases by 41 percent compared to the whole cohort in 2010. Value creation is growing at an aggregate level, while employment drops as fewer companies are active, indicating that productivity is increasing. The average productivity, measured as value creation per employee, has doubled over the decade.

3.2 Scaleups

Scaleups are more mature and have a commercialized product or service. Scaling up often involves expanding internationally and accessing talent and capital. Norwegian scaleups highlight access to highly skilled labor for competitive wages as one advantage of scaling up from Norway.[16] When asked about barriers for further expansion, the scaleups point out access to qualified labor.

In 2019 there were 188 scaleups in the Oslo region, an increase of 66 percent since 2010. The growth was a result of a sharp increase from 2015 onwards. Scaleups in the region had 7,500 employees in 2019, an increase of 42 percent since 2010. The development from 2010-2019 is shown below in Figure 17.

Figure 17: Number of scaleups in the Oslo region and their employees (2010-2019). Source: Menon Economics



The number of scaleups was stable over the period of 2010-2016, before increasing sharply since 2016. Employment in scaleups was at its lowest in 2016, before increasing with almost 3,000 persons from 2016 to 2019. The increase in the number of scaleups seems related to the maturing ecosystem in the Oslo region, including an increasing focus on the post-oil economy and the release of many highly educated people in the field of engineering and technology.

Figure 18 below shows the revenue and value creation in scaleups in the Oslo region over time. The scaleups had a combined revenue of NOK 20.1 billion in 2019, growing by 31 percent over the decade. The contribution in terms of value creation was NOK 7.3 billion in 2019, an increase of 25 percent since 2010. The revenues and value creation of the population of scaleups fluctuate considerably over time as companies grow and some enter the

[16] Menon (2018): Vekstvilkår for norske scale-ups [Growth conditions for Norwegian scaleups]

population while others exit. Yet, the underlying trend is that both revenues and value creation are increasing over time as the number of scaleups has grown.

Figure 18: The revenue and value creation of scaleups in the Oslo region (2010-2019). Source: Menon Economics

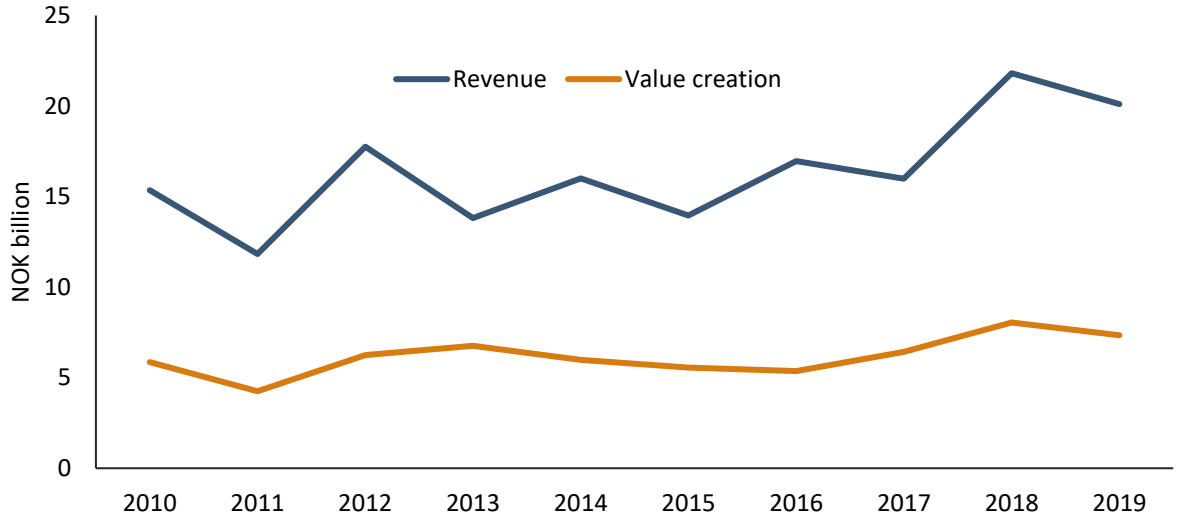
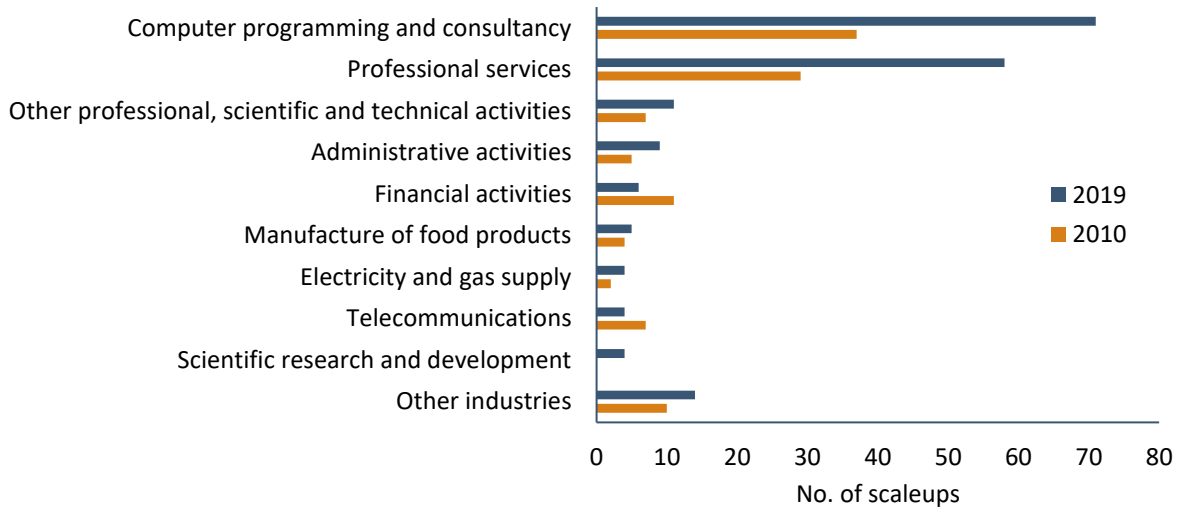


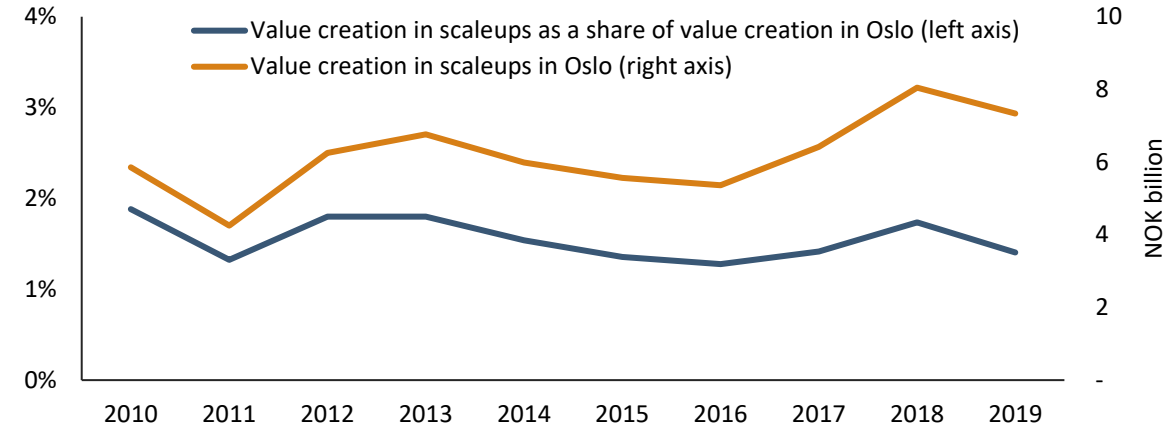
Figure 19 below shows the industry distribution of Oslo scaleups in 2010 and 2019. The two largest industries – by far – are computer programming & consultancy and professional services. These industries have also seen the largest growth in the number of scaleups during the period, almost doubling in ten years. The tech scene in the region has clearly evolved as software companies in the region are scaling up. Examples of this are Squarehead Technology which produces acoustic technology for military use and SaaS company Recheckit. The number of scaleups in telecommunications and financial activities is almost halved, while the other industries have all seen an increase.

Figure 19: Scaleups in the Oslo region by industry in 2010 and 2019. Source: Menon Economics



The chart below shows the development of value creation in scaleups in the City of Oslo and their share of total value creation in Oslo.

Figure 20: Value creation in scale-ups and their share of total value creation in Oslo. Source: Menon Economics

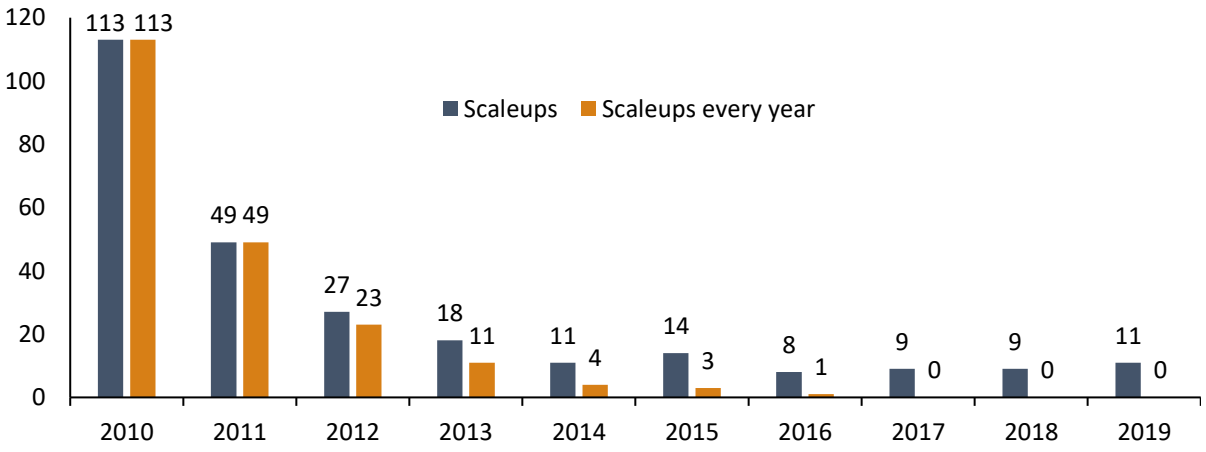


Value creation in the scaleups in Oslo has fluctuated considerably, and over the period from 2010-2019 it has increased by 25 percent. When looking at scaleups' share of value creation in Oslo, the underlying growth has been comparable to the general development of value creation in Oslo. Scaleups have steadily made up around 1.5 percent of the total value creation in Oslo over the ten-year period.

3.2.1 The persistency in scaling up

Most companies only manage to achieve high growth for a couple of years, but there are a few growth winners that manage to do this over longer periods of time. In Figure 21 below, we have examined how many of the scaleups of 2010 fulfill the growth criteria for a scaleup over the next decade. By 2014, only about 10-15 of the 2010-companies are still growing at a high rate. By 2019, 11 of the 113 companies still have the status of a scaleup. These companies have experienced high growth over time. During the period, several companies which were scaleups in 2010 experienced a slowdown in growth before revitalizing the growth and making a comeback in the population. No company was a scaleup every year in the period. After 10 years, 70 companies remain active, meaning that around 40 of these companies have either been acquired or have ceased activity in the past 10 years.

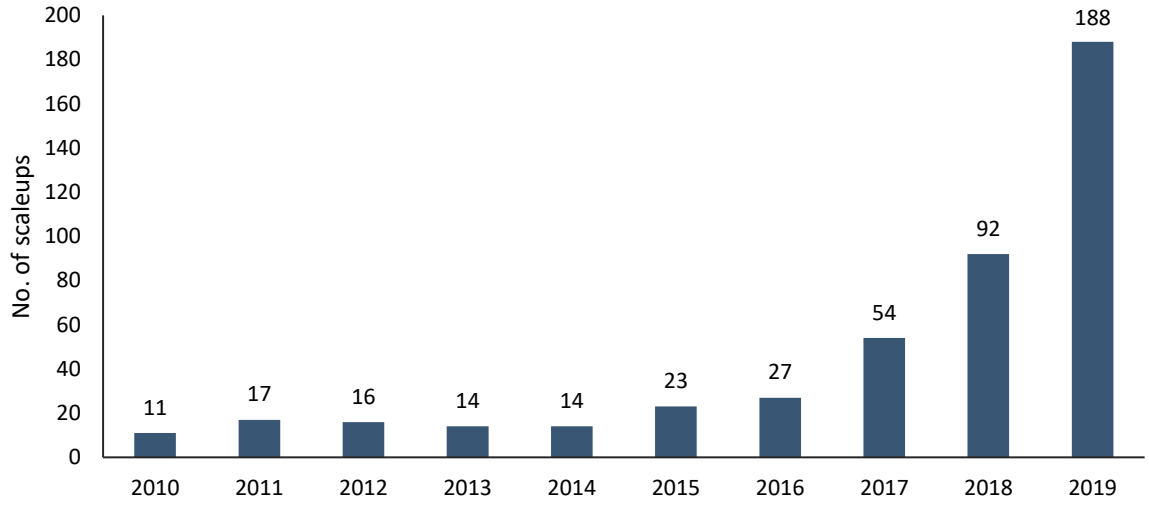
Figure 21: The number of scaleups of 2010 which retain their status as scaleup over the period 2010-2019. Source: Menon Economics



Of the 113 scaleups in 2010, 11 companies were defined as scaleups in 2019. Among the companies that were scaleups in both 2010 and 2019, none were scaleups for the entire period of ten years. Help Forsikring was the only scaleup of 2010 which managed to grow at a sufficient pace until 2016. Four of the companies qualified as scaleups for more than four consecutive years. These companies managed to achieve a high level of growth over a longer period. Two other companies that managed to grow at a high rate over a longer period time were software company Easy Park and IT-consultancy ITverket, both in the computer programming & consultancy industry.

We examine the companies that are categorized as scaleups in 2019, and their development since 2010. In 2019, 188 companies were defined as scaleups. Among these, 122 were active in 2010 and 11 of these were already defined as scaleups in 2010. Examples of companies who succeeded being scaleups both in 2010 and 2019 were architecture office, A-Lab, and recruitment platform Talentech[17]. Few of the 2019-scaleups were defined as scaleups before 2017, from which point the number of scaleups increases drastically. Out of the 2019-scaleups, 54 were categorized as scaleups in 2017, increasing to 92 by 2018. More than half of the scaleups identified in 2019 were identified as scaleups for the first time in 2019.

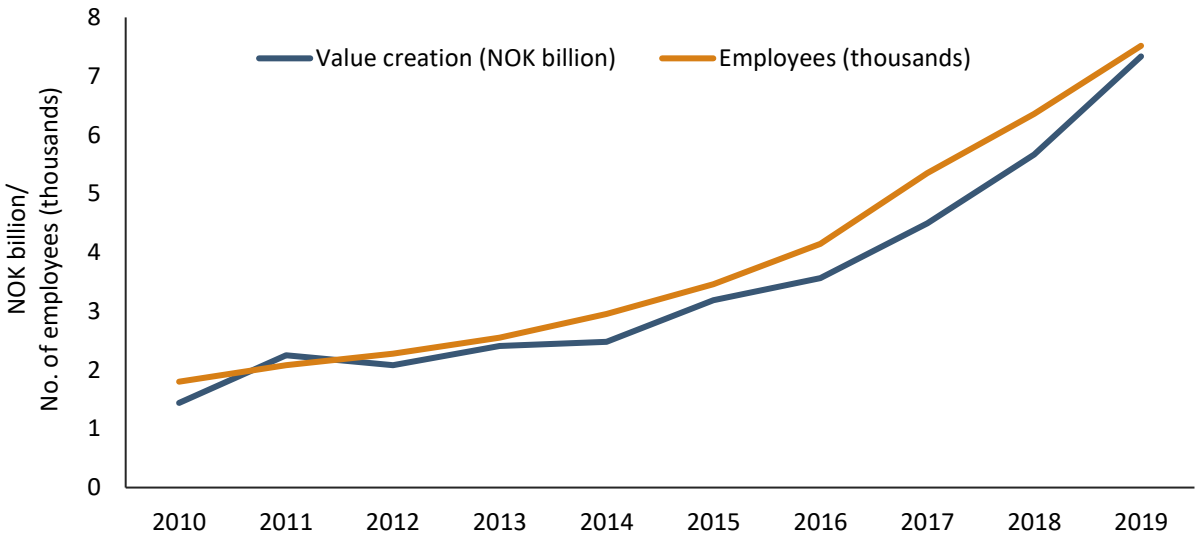
Figure 22: The number of 2019-scaleups which also were defined as scaleups in the period of 2010-2019. Source: Menon Economics



In the figure below, we look at the revenues and value creation of the scaleups of 2019. The value creation of these companies was NOK 1.4 billion in 2010, increasing to 7.3 billion in 2019, a more than fourfold increase over ten years in these 188 companies. This illustrates the contribution of these scaleups that grow fast. Out of the 188 companies in 2019, as many as 122 were active already in 2010.

[17] *Previously known as Webcruiter.*

Figure 23: Revenue and value creation of 2019-scaleups (2010-2019). Source: Menon Economics



The growth in value creation is accelerating over the past ten years, especially from 2016 onwards. In aggregate, the scaleups of 2019 experienced a 105 percent increase in value creation from 2016-2019. The employment amongst the companies defined as scaleups in 2019 shows a pattern similar to value creation. In 2010 the companies employed 1,800 persons, increasing to 7,500 in 2019. These scaleups created 5,700 jobs over the course of a decade.

Attachments

Startups and scaleups by criterion

Table 1: The number of identified startups with growth potential in 2019. Source: Menon Economics

Criteria	Number of companies	Share of startups
Knowledge intensive industry	2207	98.6%
J-curve	99	4.6%
SkatteFUNN	143	6.4%
Share issuance	46	2.1%
Total	**2238**	**100%**

Table 2: The number of identified startups with growth potential in 2019. Source: Menon Economics

Criteria	Number of companies	Share of scaleups
Knowledge intensive industry	173	92.0%
Share issuance	32	17.0%
SkatteFUNN	102	54.3%
Total	**188**	**100.0%**

Data sources and method

Our definitions are largely based on characteristics that are identifiable using accounting variables and company information provided by the Register of Company Accounts, in addition to other public sources. This way, our definitions are operational, enabling us to count the number of companies that sort under the alternative definitions. Menon's proprietary database on accounting data for Norwegian companies consists of annual accounting- and activity information from Norwegian companies from Brønnøysundregistrene from 1992 until 2019. The data is supplied by Dun&Bradstreet. We use unconsolidated accounting data, meaning that every company is considered an independent unit, even if it is a subsidiary in a business group.

Knowledge-intensive industries

Table 3: Knowledge-intensive Industries, definer by the share of employees with higher education exceeds 33 percent. Source: SSB[18]

NACE Rev. 2 Division	Name
6	Mining and quarrying
9	Mining and quarrying
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
26	Manufacture of computer, electronic and optical products
35	Electricity, gas, steam and air conditioning supply
51	Transportation and storage

[18] Berg, L. P. (2016). Kunnskapsintensive næringer i Norge.

58	Publishing, audiovisual and broadcasting activities
59	Publishing, audiovisual and broadcasting activities
60	Publishing, audiovisual and broadcasting activities
61	Telecommunications
62	Computer programming, consultancy and related activities; information service activities
63	Computer programming, consultancy and related activities; information service activities
64	Financial and insurance activities
65	Financial and insurance activities
66	Financial and insurance activities
68	Real estate activities
69	Legal and accounting activities; activities of head offices; management consultancy activities; architecture and engineering activities; technical testing and analysis
70	Legal and accounting activities; activities of head offices; management consultancy activities; architecture and engineering activities; technical testing and analysis
71	Legal and accounting activities; activities of head offices; management consultancy activities; architecture and engineering activities; technical testing and analysis
72	Scientific research and development
73	Advertising and market research; other professional, scientific and technical activities; veterinary activities
74	Advertising and market research; other professional, scientific and technical activities; veterinary activities
75	Advertising and market research; other professional, scientific and technical activities; veterinary activities
78	Administrative and support service activities
82	Administrative and support service activities
84	Public administration and defence; compulsory social security
85	Education
86	Human health activities
87	Social work activities
88	Social work activities
90	Arts, entertainment and recreation
91	Arts, entertainment and recreation
93	Arts, entertainment and recreation
94	Other service activities
99	Activities of extra-territorial organizations and bodies

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