1 The knowledge gap on scalers

This chapter summarises findings from various strands of academic and policy literature on scalers and highlights important knowledge gaps that may limit effective policy design. As the recovery from the COVID-19 crisis opens a window for scalers to transform new market opportunities into jobs and economic value, an open question remains on how the different responses to the current crisis will affect future scaling-up dynamics.

In Brief

Fast-growing small- and medium-sized enterprises (SMEs) – "scalers" – play a crucial role in job creation and economic growth but little is known about them

A small number of "scalers" create the majority of new jobs. Evidence from Scandinavian and other OECD countries, such as the United Kingdom (UK), shows that only about 5% of high-growth non-micro SMEs contribute more than half of new jobs created in the economy by those firms. Newly created and slow-growing firms contribute the remainder of new jobs. The majority of SMEs, however, do not grow at all over the course of a year. Understanding what makes some firms scale up and how this process can be supported can therefore make an outsized contribution to overall job creation.

What makes a scaler is less well understood than general determinants of firm growth. Research has shown that firm growth depends on a variety of factors, some of them are internal to the firm, e.g. disruptive innovation. Others are external to the firm, e.g. market regulation. Much less is known about scaling up, defined here as rapid growth in employment or turnover within a short period of time. One area where research sheds light is the role of the entrepreneur in scaling up. The ambition to grow and the motivation to be an entrepreneur play an important role but remain hard to assess for policy and research purposes alike. A second known factor is that the growth potential of a firm is uncertain even for the entrepreneur or management themselves until the firm enters a market or introduces a product or service. For young firms in particular, this implies a bifurcation of trajectories: some will (rapidly) grow as the firm finds its niche while others will turn out to be less viable than anticipated and cease operating.

The currently available evidence on scalers raises more questions than it provides answers for policy making (Figure 1.1). There is a limited number of findings on which available evidence is unanimous. Beyond the "average" scaler – i.e. a mature firm operating in less knowledge-intensive services that experiences fast growth only once in its lifetime – there are a variety of other models, e.g. the stereotype of young start-ups in high-technology (high-tech) manufacturing or information and communication technology (ICT) that grow repeatedly over time exists as well. However, as there are fewer young firms than mature firms, the counterintuitive result is that there are fewer young scalers than mature ones but the likelihood of a young firm scaling up is higher than it is for a mature firm. There is also some variation in the incidence of scaling up across countries, which points to a potentially important role for national policies; however, there is little evidence available on "what works".

A lack of substantiated knowledge limits effective policy design and responses. Policies require data and tools to identify and understand the needs of different types of SMEs and entrepreneurs. Available statistics and country-specific studies provide only limited information about scalers. Policy makers may look for scalers in the wrong place and support them with the wrong tools, based on assumptions on their characteristics – e.g. that they are young, high-tech firms operating in the manufacturing sector – that do not correspond to reality.

The COVID-19 pandemic and associated policy response are unprecedented, alleviating concerns about future scalers. Firm entry and exit dynamics in 2020 differ from those of previous recessions. Entry rates of new firms increased or declined only slightly, while bankruptcies in many OECD countries were fewer than in pre-crisis times. The rapid introduction of public financial support played a key role as the contrast with the prior global financial crisis shows. Following the 2007-08 crisis, the number of firms that were in a high-growth phase between 2008 and 2011 dropped by up to 65% compared with the number of scalers in the preceding 3-year period (2005-08) in the 7 OECD countries

with available data. Even in 2013, the number of firms that had scaled over the 2010-13 period was still below pre-crisis levels in most countries. This is partially attributable to the exit of high-potential but credit-constrained businesses and to fewer new businesses entering the market.

The crisis opened opportunities for scaling up that can be leveraged during recovery. The enhanced uptake of digital tools by firms and households opens new markets and creates room for new products and services, as well as cost-saving measures. The diffusion of e-commerce has improved access to viable markets without the need for large investments in marketing and distribution. Demand for online services and goods during the crisis opened up opportunities for existing firms and new entrepreneurs. Cheaper access to shared information technology (IT) resources in the "cloud" and the potential of continued homeworking promise productivity gains or cost savings (e.g. as less office space is required). There are clear opportunities for scaling up created by the crisis but whether they will materialise and translate into jobs and economic growth will also depend on how extraordinary support is wound down and how SMEs will be supported during the recovery. Lack of skills or adequate digital infrastructure may represent binding constraints that are more difficult to tackle than access to financial resources.

The crisis makes it urgent to address the divide between SMEs that can benefit from digitalisation and those that lag behind. The health crisis exposed a divide across SMEs in their ability to use digital technologies such as remote working, online sales and remote communications with suppliers and customers. Such a divide exists also for other digital technologies – such as the Internet of Things, cloud computing and data analytics – that are revolutionising firms' potential capacity for simulation, prototyping, decision making and automation. These digital technologies are creating unprecedented opportunities for SMEs (OECD, 2021[1]). However, a significant share of SMEs lag in the adoption of digital tools and employing IT specialists that could help implement the digital transition. Cross-firm divides were already growing before the crisis (OECD, 2021[2]). For example, 28% of firms in France with 20-49 employees used cloud storage services in 2018, compared to 70% of firms with 250 to 499 employees (Nevoux et al., 2019[3]). It is still unclear whether the divide has widened or narrowed during the crisis but the new digital impetus has certainly further weakened the position of SMEs lagging behind.

Figure 1.1. What is known about scalers?

Scalers are important because they drive aggregate growth

A small share of high-growth firms plays an outsized role in job creation. SMEs are a very large and diverse group of firms. They account for more than 99% of all firms in the business sector and for over half of all employment and value-added in most OECD economies (Box 1.1). They also play an important role for growth with remarkably consistent facts that are evident across OECD countries: i) most SMEs have stable employment over time; and ii) among the small share of companies that grow, a few grow very fast and they account for most new jobs in the economy.[1] These firms are known as "high-growth firms" or "scalers". There is a range of similar definitions for these concepts. The most common definition of scalers includes companies that grow in employment or turnover at an average rate of 10% or 20% per year over a 3-year period (Box 1.2). In the following of the chapter, "scalers" are firms that meet the 10% yearly growth requirement, while firms that grow at 20% or more per annum over a triennium are defined as high-growth firms or high-growth scalers. However, the next chapters of the report provide new evidence that points to scaling up being more than "just" a period of rapid growth. Rather, it is the expression of a transformative process that a firm undergoes, which includes aspects such as changes in the managerial structure or a firm's engagement in new activities, e.g. research or export.

Previous research found that around 5% of high-growth firms account for at least 50% of all "net jobs" (i.e. the difference between the jobs created by expanding business and the jobs destroyed by contracting businesses). For example, in the UK, high-growth firms (about 6% of the total number of firms based on the 20% growth threshold) generated 54% of net jobs between 2005 and 2008 within the group of firms with 10 and more employees (NESTA, 2009[4]). Nordic countries and Canada have similar shares of net jobs generated by high-growth firms (Box 1.3). Between 2003 and 2006, Finland's 5% share of high-growth firms generated 89% of the total number of net jobs (Deschryvere, 2008[5]). Canada had 1.24% of high-growth firms in all firms (including micro firms with less than 10 employees) between 2009 and 2013, which accounted for 63% of total net employment growth (Rivard, 2020[6]). Analyses for emerging or developing countries also reach similar findings (Grover Goswami, Medvedev and Olafsen, 2019[7]). The concentration of growth in few firms is similarly high if it is measured in turnover (or sales) rather than in employment (Box 1.4).

The economic literature provides only a partial explanation of why growth is strongly concentrated in a few firms. An area that attracted attention is the motivations and objectives of the entrepreneurs. In contrast with well-known examples of dynamic and ambitious entrepreneurs, representative survey data show that most business owners report having no desire to grow big and no desire to innovate along observable dimensions. For example, for over 50% of new businesses founded in the US, the owners reported that non-pecuniary benefits such as "wanting flexibility over schedule" or "to be your own boss" were the primary reason why they started their business (Hurst and Pugsley, 2012[8]). Recent results from a survey in the 27 countries of the European Union (EU) are broadly aligned: 51% of companies do not plan to grow over the following 3 years and only 6% of them plan to grow more than 20% per year (EC/Kantar, 2020[9]).

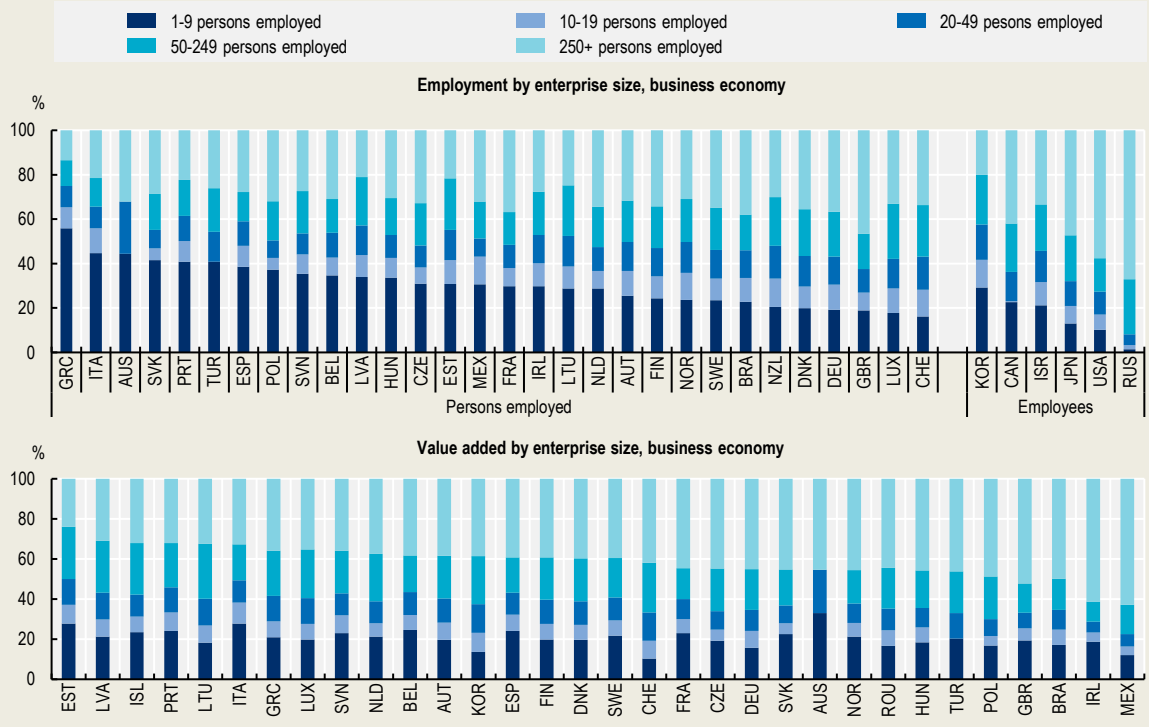
Uncertainty about future growth matters for scaling up. Differences in ambitions and motivations are only a part of the story: even growth-oriented firms led by ambitious entrepreneurs show a wide difference in growth between the top and bottom performers. Another reason is the uncertainty that entrants face about their profitability and the learning and selection that follows (Jovanovic, 1982[10]). Uncertainty implies that firms enter small, as entrepreneurs are unsure whether their business idea will prove successful in the market. Those that learn that they are highly productive grow rapidly, as they need to reach the minimum efficient scale. Conversely, those that learn that they are an unsuccessful contract and potentially exit. Across OECD countries, only 3% of new firms entering the market with less than 10 employees have more than 10 employees after 5 years (Calvino, Criscuolo and Menon, 2018[11]).

Box 1.1. SMEs represent a diverse group of firms across OECD countries

SMEs represent almost the entire population of firms in most of the OECD countries, which implies a large heterogeneity under one label. Statistics can help identify some factors of heterogeneity across countries and sectors. One of these is the large variation in the shares of SMEs of different size classes across OECD countries (Figure 1.2, upper chart). SMEs are on average around twice as big in Germany, Japan, New Zealand and the United States (US) as in the majority of the other European countries; these differences still hold when the country sectoral composition is taken into account. Cross-country differences in the share of value-added accounted for by SMEs of different sizes are even more sizeable, with micro SMEs with less than 10 employees accounting for 27% of value-added by all firms in e.g. Estonia and Italy, compared to 8% in the US and 15% in Germany (Figure 1.2, lower chart). Even within Europe, there are important differences: for example, the share of employment in the size class 0-9 employees is twice as large in Italy and Portugal than in Denmark or Germany (OECD, 2019[12]). Across sectors and within countries, SME employment is heavily concentrated in construction and specific service sectors, notably accommodation and food, real estate and advertising, and in a few manufacturing sectors like textiles and apparel, wood, paper and printing, and furniture manufacturing (Figure 1.3).

Figure 1.2. The relative weight of SMEs of different sizes varies across OECD countries

Share in total employment and value added by size class



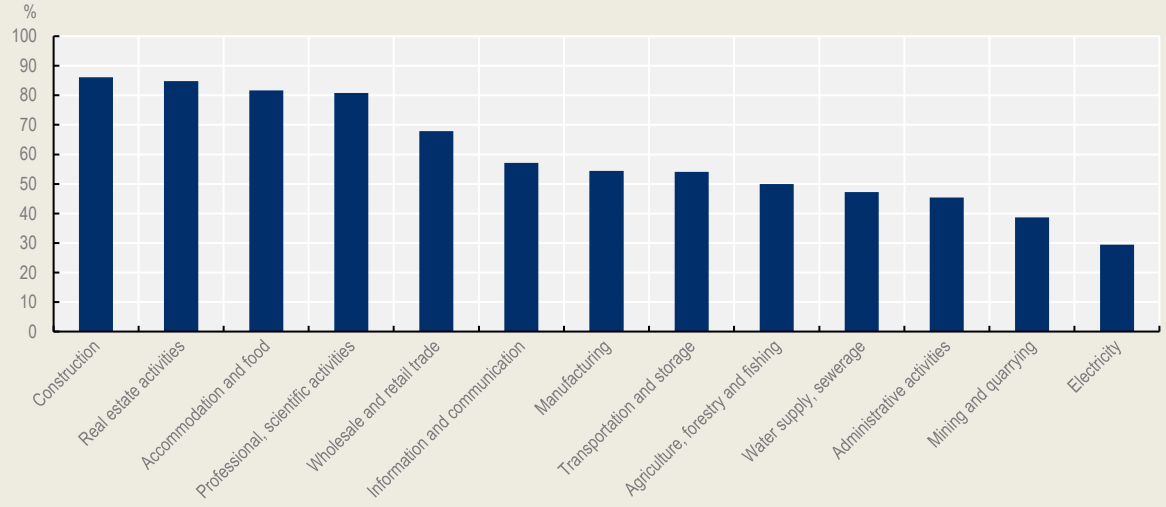
Note: Size classes are based on the number of persons employed. Data cover business economy excluding financial intermediation. Data refer to value-added at factor costs in European countries and value-added at basic prices for other countries, except the Russian Federation and the US, for which data refer to turnover.

Source: OECD (2018[13]), *Entrepreneurship at a Glance 2018 - Highlights*, https://www.oecd.org/sdd/business-stats/EAG-2018-Highlights.pdf.

Within countries and sectors, large productivity differences exist between SMEs of different sizes, with productivity typically growing with the size of the firm, especially in the manufacturing sector. Age is another important dimension of heterogeneity, with younger SMEs being more likely to grow but also to exit the market (Criscuolo, Gal and Menon, 2014[14]).

Figure 1.3. Share of SME employment differs across sectors

The average share of employment in SMEs by sector across 31 OECD countries, 2018



Note: The data by sector are weighted averages for 31 OECD countries. The unit of measurement used is enterprises and in case of lack thereof establishments. SMEs are defined as companies with less than 250 employees.
Source: OECD.stats (2021[15]), *Structural and Demographic Business Statistics (SDBS)*, OECD, Paris.

Source (box): OECD (2019[12]), *OECD SME and Entrepreneurship Outlook 2019*, https://dx.doi.org/10.1787/34907e9c-en; Criscuolo, C., P. Gal and C. Menon (2014[14]), "The Dynamics of Employment Growth: New Evidence from 18 Countries", https://dx.doi.org/10.1787/5jz417hj6hg6-en.

What is known about scalers?

Available evidence on scalers points to a few established findings. The OECD has been collecting country and sector statistics on scalers and high-growth firms for more than a decade. High-growth firms have also been the subject of several country-specific studies.[2] The comparison of available indicators across countries and the review of academic research allow defining a set of "established facts" that appear to hold consistently in different contexts.

The share of scalers differs across countries and over the business cycle. In the 15 OECD countries for which harmonised data are available, scalers account for 7% to 14% of all firms with 10 employees or more in 2017. Individual countries such as Denmark and the Netherlands show more within-country variation across sectors than Korea and Spain for example (in Figure 1.4, Panel A, the size of the box is proportional to the within-country variation). There is also large variation within countries with the business cycle. For example, between 2011 and 2018, the share of scalers ranges from 6% to 11% in Italy, from 9% to 16% in the Netherlands, and from 7% to 16% in Spain.[3] Cross-country empirical analyses also document a substantial variation across countries in firms' growth dispersion. Countries with faster

productivity growth show a larger share of both fast-growing and fast-contracting firms. Countries with slower productivity growth have a higher share of zero-growth firms (Bravo-Biosca, 2010[16]). National policies and framework conditions, such as the functioning of the financial system and employment regulations, explain part of the differences in the distribution of employment growth across countries (Bravo-Biosca, Criscuolo and Menon, 2016[17]).

Box 1.2. Identifying scalers: The Eurostat-OECD definition of high-growth enterprises

The definition of scaling up adopted in this report is based on previous work on high-growth firms. The *Eurostat-OECD Manual on Business Demography Statistics* recommended the following definition of high-growth enterprises: "All enterprises with average annualised growth greater than 20% per annum, over a three-year period, and with ten or more employees at the beginning of the observation period. Growth is thus measured by the number of employees and by turnover" (2007, p. 61[18]). The definition has been widely adopted in the economic and business literature; one of its advantages, therefore, is its comparability.

The 20% threshold was set considering previous research from individual countries (Ahmad, 2008[19]). Further work by Eurostat focused on medium-growth firms, which include firms growing at an annualised growth rate of at least 10% for 3 consecutive years. The manual proposes a cut-off for firm size at the beginning of the high-growth period of 10 employees for both the turnover and employment measures of high-growth.[4] It does not define a minimum turnover cut-off to maintain consistency across countries.

High growth is calculated as follows:

$$\sqrt[3]{\frac{var_{t+3}}{var_t}} - 1 > 0.2$$

where var_t refers to employment or turnover at the beginning of the period and the subscript $t+3$ denotes values at the end of the three-year period. The 20% average yearly growth is equivalent to 72.8% growth if the growth is calculated between the starting period and end period. The 10% annual growth rate results in 33.1% growth over 3 years. In the report, "scalers" are firms that meet the 10% threshold, while firms that meet the 20% threshold are defined as "high-growth firms" or "high-growth scalers".

Source: OECD/Eurostat (2007[18]), *OECD-Eurostat Manual on Business Demography Statistics*, https://www.oecd.org/sdd/39974460.pdf (accessed on 5 August 2019); Ahmad, N. (2008[19]), "A proposed framework for business demography statistics", http://dx.doi.org/10.1007/978-0-387-72288-7_7.

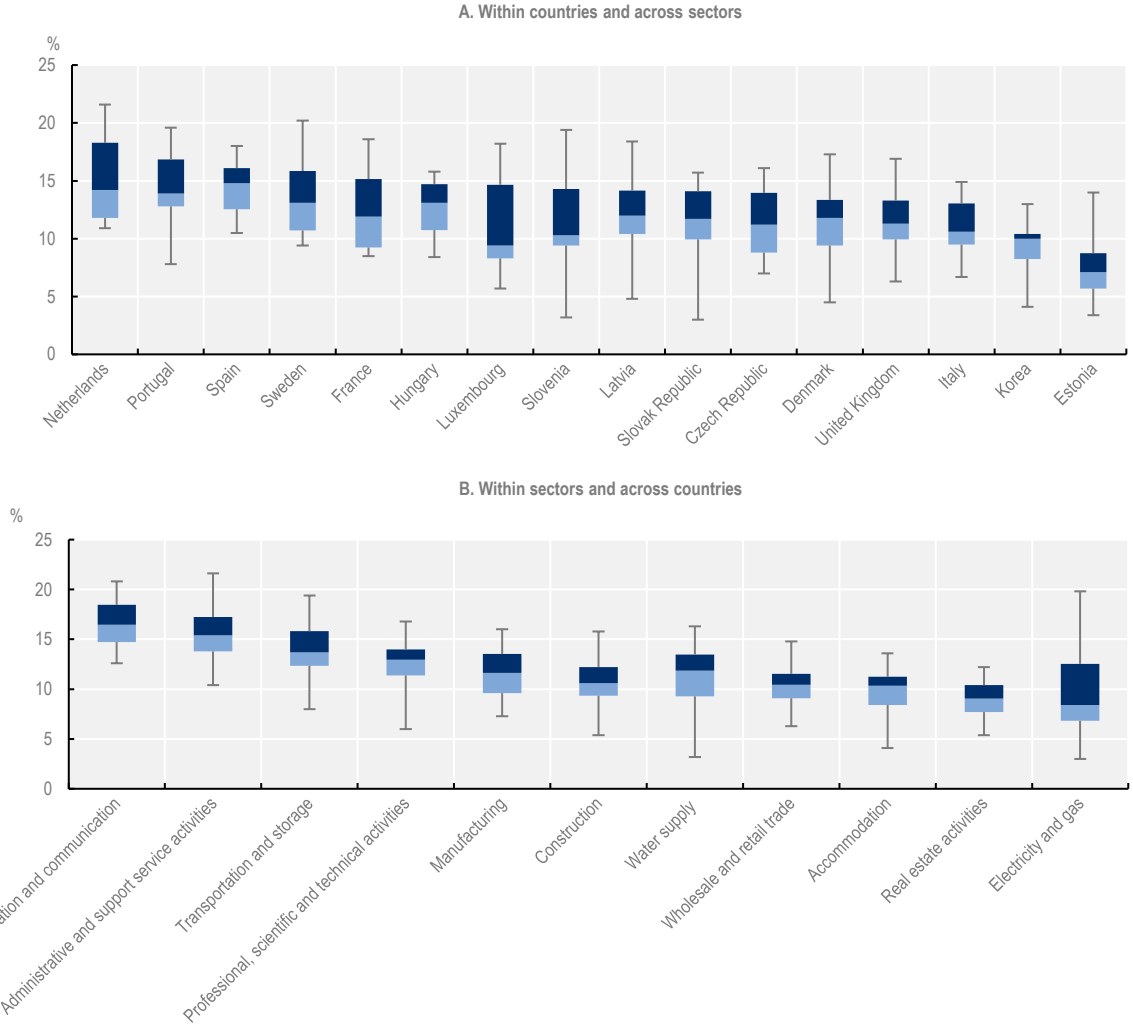
The share of scalers is higher in the service sector than in manufacturing. Across OECD countries, the incidence of scalers is higher in knowledge-intensive services, notably in information and communications, and financial and insurance activities. Instead, high-growth firms are not more common in technology-intensive manufacturing sectors, which means that the typical scaler is not a high-tech firm (Coad et al., 2014[20]). Such sectoral pattern tends to replicate across all countries in the sample, as there are small differences across countries in the ranking of sectors by the share of scalers (Figure 1.4, Panel B).

For many firms, high-growth spurts are isolated episodes in their lifetime. Research for Portugal, Sweden and the UK shows that repeated high-growth phases are rare.[5] However, scalers may scale up again later during their lifetime. Evidence from a cohort of young scalers born in 1998 in the UK shows

that, on average, they scale twice over a 15-year period (Anyadike-Danes and Hart, 2019[21]). This finding highlights the importance of mapping the transformation process that scalers undertake before, during and after the high-growth period, to isolate the activities and dynamic factors that are associated with high-growth (e.g. exporting or innovation). The analysis of the different transformation processes that prepare and accompany scaling is the subject of the analysis presented in Chapter 4 of the report. The fact that high growth comes from a wide group of firms during an exceptional phase of their lifetime rather than by a small group of exceptional firms that is constantly growing fast is overlooked in the policy debate, as available statistics and most studies do not track scalers over time.

Figure 1.4. The share of scalers differs considerably across both countries and sectors

Share of employment scalers in all non-micro SMEs in 2017



Note: Scalers are firms that grow in employment at an average rate of 10% or more a year over a 3-year period (see Box 1.2). Panel A displays the variation in shares of high-growth firms across sectors within each of the 16 countries. Panel B displays the variation in shares of high-growth firms across countries within each of the 11 sectors (NACE 2.1, 1-digit). The boxes represent the values of high-growth shares from first to third quantiles. The line inside the box represents the median value. The whiskers mark the minimum and maximum values.
Source: OECD.stats (2021[15]), *Structural and Demographic Business Statistics (SDBS)*, OECD, Paris.

Young firms are more likely to scale but most scalers are mature businesses. Most studies agree that young firms have more chance of growing faster than mature or old firms. The empirical evidence of the disproportionate contribution to employment growth of young, small firms is extensive and covers both OECD (Criscuolo, Gal and Menon, 2014[22]; Haltiwanger et al., 2017[23]) and emerging countries (Grover Goswami, Medvedev and Olafsen, 2019[7]). However, assuming that young age coincides with high growth is misleading. Start-ups are characterised by higher variability in growth performance and a lower survival rate ("up-or-out dynamics"), so the larger share of high-growth firms is counterbalanced by a larger number of shrinking or exiting businesses. Evidence from OECD countries shows that over the first five years of activity, most start-ups either stay small or exit the market (Calvino, Criscuolo and Menon, 2018[11]).

Innovative start-ups backed by venture capital (VC) investments and "unicorns" play an important role in aggregate growth but they account for a tiny share of all scalers. VC financing is key for economic growth in OECD countries. For example, recent evidence for the US shows that the absence of VC funding would lower aggregate growth by 28% (Akcigit et al., 2019[24]) and employment generated by VC-backed firms represents around 10% of employment in the late 1990s and early 2000s (Puri and Zarutskie, 2012[25]). However, only a tiny share of firms are VC-backed. For instance, in the US, where VC markets are relatively well developed, only 0.31% of new start-ups are backed by VC (Gornall and Strebulaev, 2021[26]). In most OECD countries VC is below 0.05% of gross domestic product (GDP) (OECD, 2018[13]). The so-called "unicorns", i.e. companies backed by VC that reach a capitalisation of more than USD 1 billion, are only a few hundred globally. This implies that the large majority of scalers – even the younger ones – are not relying on VC to support growth.

Box 1.3. Scalers in the Nordics

A 2019 study on high-growth scalers in the Nordic countries (Denmark, Finland, Iceland, Norway, Sweden) provides evidence to improve the ecosystem for scale-ups across the region. Nordic Innovation – an institution that promotes cross-border trade and innovation between Nordic countries – analysed the characteristics of scalers in those countries for the period 2013-16. The analysis defines high-growth scalers as firms that grow at 20% or more per annum over 3 consecutive years in both employment and turnover, and have an annual turnover of at least EUR 2 million and at least 10 full-time equivalent employees at the beginning of the 3-year growth period.

The findings point to the disproportionate role of scalers in job creation. The analysis focuses on scalers in knowledge-intensive sectors, where most scalers are active, manufacturing and firms in construction and other services. Key findings are that scalers account for a disproportionally large share of employment (5.2%) compared to their number (0.19% of all enterprises, including micro businesses) and created nearly 200 000 jobs between 2013 and 2016. The majority of scalers are turnover scalers (51%), followed by turnover and employment scalers (30%) and employment scalers (19%). Turnover scalers increase their value-added productivity, becoming the most productive among the three types of scalers at the end of the observation period.

Nordic Innovation also provides an evaluation of the Nordic Scalers support scheme. The scheme included 33 companies, selected on the basis of being a scaler (according to the definition above) and through interviews with individual companies, to determine the "disruptiveness" of the business idea as well as motivations, ambitions and fit for the programme. The purpose of the Nordic Scalers programme is to help the best Nordic companies in the scale-up phase to prepare and accelerate their next stages of growth through access to competence building. The main findings of the evaluation are the following:

- Programmes for scalers should be aligned with national and regional economic strategies.
- They should react to changes in firms' needs in a timely manner.

- They should provide a mix of financial and non-financial assistance.
- They should foster peer-to-peer support.
- They should have fixed and appropriate selection criteria for programme participation.
- They should customise support for individual firms.

Nordic Innovation proposes a list of policy areas in support of scaling up. At the national level, policies should focus on increasing the talent pool, improving access to growth capital and enhancing access to international business partners. At the regional level, policy makers can strengthen the scale-up environment by enhancing access to the network of scale-up expertise and private and public innovation partners. Additionally, regions should follow similar paths as the national policy by building strong channels for talent recruitment and acquiring venture capital. Finally, regional support should ensure affordable access to laboratories, test and production facilities.

Source: Nordic Innovation (2019[27]) *Mini Evaluation of the Nordic Scalers Programme*, https://www.diva-portal.org/smash/get/diva2:1372693/FULLTEXT01.pdf (accessed on 10 March 2021); Nordic Council (2019[28]), *Scale-ups in the Nordics*.

Scalers are not necessarily small. The higher propensity of small firms to grow fast found in older studies (Birch, 1987[29]) is explained by the fact that younger firms grow faster and are typically very small. A recent paper using firm-level data for the US on the universe of businesses shows that once firm age is also considered, there is no systematic relationship between firm size and relative growth (Haltiwanger, Jarmin and Miranda, 2011[30]). However, other studies on Italian and Portuguese firms instead show that small firms still tend to grow faster, even when age is taken into account (Lotti and Santarelli, 2001[31]; Neumark, Wall and Zhang, 2011[32]; Geurts and Van Biesebroeck, 2016[33]).

Scalers tend to be more productive than similar firms just before the high-growth period. Studies on French and Italian firms show that labour productivity, profitability and investment intensity is higher in firms that will scale up in the next period in either employment or turnover (Moschella, Tamagni and Yu, 2019[34]; Coad, 2010[35]). Another study on Italian firms also shows that businesses that start with higher productivity also tend to turn into high-growth firms in their lifetime (Arrighetti and Lasagni, 2013[36]). Similarly, evidence from the UK shows that firms with higher productivity growth are likely to become turnover high-growth firms (Du and Temouri, 2015[37]).

The review of available evidence on scalers highlights several open questions which are addressed in this report. The next chapters of the report complement the established facts discussed above with new evidence from five pilot countries (Finland, Italy, Portugal, the Slovak Republic, Spain), building upon the analysis of firm-level data sources. A non-exhaustive summary of some of the new findings, compared to what is known from previous research, is reported in Table 1.1. The new evidence fills in important knowledge gaps. For instance, the disproportionate contribution of scalers to job and value creation is confirmed across the five pilot countries, with new evidence on the leading role of mature scalers. The analysis of growth trajectories of scalers in the 3 years after scaling show that around 60% of them are able to maintain or consolidate the new scale. However, differences exist between scalers of different age and across sectors. The analysis of the transformation that scalers undertake shows that scaling is much more than growth. The transformation deeply affects the way scalers operate along several dimensions, including innovation and digitalisation, workforce composition, integration in global markets, access to finance and productivity. For many firms, scaling is a forward-looking strategy as in several dimensions the transformation begins before scaling.

Table 1.1. What we know and what we learn about scalers

What is known	What we learn
The share of scalers differs across countries and sectors.	Scalers contribute more than half of job and value creation across all pilot countries.
The typical scaler is not a high-tech firm.	Most jobs created by scalers come from mature scalers operating in less knowledge-intensive services.
For many scalers, high growth is an isolated episode in their lifetime.	Scaling is sustainable. Three years after scaling, the majority of scalers maintain the new size or continue to grow at a slower pace.
Scalers appear to be "one-hit wonders" as it is hard to predict which firms will grow fast.	Many scalers start transforming before growing, e.g. by investing more in innovation or by accessing global markets.

Box 1.4. Employment and turnover measures for high growth

In economic research and business demographics statistics, high growth and scaling up are defined using either employment or turnover to measure firm growth. Each approach has its own advantages and limitations. Both metrics are used in this report and differences in findings are discussed when informative.

Employment-based metrics are more common, as employee headcount is available in almost every administrative dataset on enterprises. Change in employment is the most straightforward way of signalling a firm's success and policy makers prioritise employment outcomes, with (good) jobs directly related to income and welfare. However, some methodological issues may still limit the extent to which data can be compared across countries, especially if employment is measured in headcount rather than in hours worked or full-time equivalent units. For example, differences in the share of part-time workers across countries may lead to a different number of employed workers for the same number of full-time equivalent units. The inclusion of temporary workers in the headcount may also differ across national sources.

Focusing solely on employment growth excludes a large share of firms that reach another scale of economic activity without exceptional employment growth. Turnover scale-up is often generated via improvements in firm productivity, which increase the efficiency of resources used. Such a "scale without mass" business model is generated via process innovation or specific technology adoption that permits firms to scale their business with only minimal or no employment growth.

Turnover is more in line with dimensions businesses use to measure their own success. Total turnover (i.e. sales) is one of the targets that firms set for themselves and leadership outcomes are often evaluated considering turnover performance. Profit-maximising firms actively seek to increase turnover (Mert, 2018[38]), along with other measures such as stock returns, yet rarely target to increase employment.

Some firms may grow in employment abroad and in turnover domestically. This is a second possible reason for a "scale without mass" growth model, especially in high-income countries in which some firms – including SMEs – outsource abroad the most labour-intensive phases of the production process. For example, a survey of Danish and Swedish SMEs in the early 2000s' show that around 25% of them are offshoring (Waehrens, Slepniov and Johansen, 2015[39]).

Turnover is more volatile and more sensitive to the economic cycle. Large fluctuations – both negative and positive – in turnover are more frequent than in employment. Labour adjustments are more costly compared to other inputs and the lower cyclicality of employment makes employment a less erratic measure of firm growth. As a result, there are more firms that scale in turnover than in

employment. Employment expansions may also expect persistent and fast growth in turnover. The economic theory first suggested that firms prepare for future growth by hiring the right workforce (Penrose, 1959[40]) and empirical research has shown that employment growth leads to future increases in sales (Coad, 2010[35]).

Source: Krasniqi, B. and S. Desai (2016[41]), "Institutional drivers of high-growth firms: Country-level evidence from 26 transition economies", http://dx.doi.org/10.1007/s11187-016-9736-7; Mert, M. (2018[38]), "What does a firm maximize? A simple explanation with regard to economic growth", https://doi.org/10.1177/1847979018815296; Waehrens, B., D. Slepniov and J. Johansen (2015[39]), "Offshoring practices of Danish and Swedish SMEs: Effects on operations configuration", http://dx.doi.org/10.1080/09537287.2014.971519; Coad, A. (2010[35]), "Exploring the processes of firm growth: Evidence from a vector auto-regression", http://dx.doi.org/10.1093/icc/dtq018; Penrose, E. (1959[40]), *The Theory of the Growth of the Firm*, https://books.google.fr/books/about/The_Theory_of_the_Growth_of_the_Firm (accessed on 1 August 2019).

More evidence on scalers' characteristics and the transformation process they undertake is needed

Understanding how policies can effectively support scalers requires more dedicated work. Given their important role in creating jobs, how to support high-growth firms is a central theme in the entrepreneurship policy debate. The question is particularly important for the recovery from the COVID-19 crisis, given the large degree of structural change that it will entail and the role that scalers can play to transform new growth opportunities into jobs, economic value and resilience (OECD, 2021[2]). However, there is little available evidence to help policy makers allocate scarce resources toward their most effective use. Broadly, three types of analysis are required:

- **The first type is general studies that provide useful knowledge on the characteristics of scalers, their heterogeneity and the barriers that they face in scaling.** To be effective, SME policies need to take into account the diversity of the SME population, as discussed in Box 1.1. Scaling-up policies are no exception. Currently, there is a limited understanding of the specific characteristics of scalers, with the results that scale-up policies often lack their own identity and are blended with innovation, entrepreneurship and equity finance policies (Flachenecker et al., 2020[42]; Mason and Brown, 2011[43]). Policy makers may look for scalers in the wrong place and support them with the wrong tools, based on assumptions on their characteristics – e.g. that they are young, high-technology firms operating in the manufacturing sector and that they are often equity-backed – that do not correspond to reality (Mason and Brown, 2011[43]). Many scaling-up policies are also based on the assumption that the supported company will continue to grow. Policy studies need to help understand which firms should be supported and how. There are at least three different policy questions that should be addressed: i) how much do scalers contribute to aggregate growth across OECD countries and are there differences among types of scalers?; ii) how sustainable is the new scale in the long term?; iii) how do scalers differ from non-scalers?
- **The second type of analysis should assess how national and regional policies support or hamper the growth of scalers.** Scalers may react differently to specific policy regulations and business framework conditions than the general population of SMEs. A set of comparable metrics on scalers across countries, combined with a comprehensive database of harmonised policy indicators, would enable a stream of cross-country studies aimed at understanding how the policy and business environment can be reformed to enhance scalers' role in the economy. The policy indicators could cover policy initiatives and institutions in areas such as access to finance, innovation policies for SMEs, digitalisation and data governance by SMEs and size-contingent regulations (i.e. regulations that kick in when firms reach a given size threshold) (OECD, forthcoming[44]).

- **The third type is properly designed programme evaluations that compare the performance of supported firms against a suitable control group of comparable but unsupported firms.** These studies help select those programmes that are reaching the expected outcome. Unfortunately, these studies are very rare, if not absent, in the context of scaling-up policies (Bosma and Stam, 2012[45]). Compared to other areas of economic policy such as active labour market policies or development, in which rigorous programme evaluation is now an essential component of the policy design cycle, there is a dearth of studies on policies that support SMEs (Bravo-Biosca, 2016[46]). Even evaluations of small programmes can produce important policy findings, as the example of the evaluation of the Nordic Scalers programme shows, as described in Box 1.3.

The policy interest in scalers is motivated by their disproportionate role in net job creation but it is unclear whether all scalers are contributing equally. Country-specific studies provide some information on the matter but systematic evidence covering a large number of OECD countries is still missing. For instance, there are no internationally comparable statistics available on the contribution to net job creation by scalers of different sizes or sectors.

Very little is known on whether scalers are systematically different from non-scalers. While some information is available on the structural characteristics of scalers, such as size and age, the dynamic transformation process that scalers undertake may be more important for policy. Likely, an SME that increases its size by more than one-third in three years has to face several new challenges. For example, about 5% to 14% of high-growth firms engage in some innovative activity while they scale up (Vértesy, Sorbo and Damioli, 2017[47]). SMEs may also start exporting and change the composition of their workforce to support their high-growth phase and adapt to the new scale. Deep organisational changes and new human resources practices might be required. Except for country-level studies that consider selected factors – such as access to the global market or external finance – in isolation, there is no available empirical evidence on the transformation process of scalers as they experience a high-growth period.

The mapping of the different transformation patterns of scalers may point to several areas in which policy support may be highly effective. Chapter 4 of the report discusses how the transformation that scalers undertake may follow different models, depending on the factors that trigger scaling. For some firms, scaling is the result of a forward-looking growth strategy grounded on innovation and productivity improvements that involves a deep transformation of the inner structure of the firm. For other firms, the scaling transformation may be driven by an external increase in demand or it may entail the replication of existing business processes that leaves the core structure of the firm unaltered. The timing and nature of the transformation provide useful indications on which scaling models prevail. Chapter 4 thus presents new evidence on the transformation process that distinguishes SMEs that scale up from comparable firms that do not scale. The analysis focuses on dynamic factors that may change as firms age and grow, such as innovation, integration in global markets, digitalisation and workforce characteristics.

Do scalers differ in their growth trajectories after their initial growth phase? Evidence on whether scalers maintain or consolidate the new scale, or rather reverse to their initial size, is important to understand which types of scalers will lead toward a sustained and resilient recovery. For policy makers, additional evidence on the heterogeneous growth patterns of scalers could be valuable for at least two reasons. First, the evidence can be useful to tackle possible market or policy failures that make it difficult for specific types of scalers to maintain or consolidate the new scale. Second, support policies may become more effective if they target the subset of scalers that are intrinsically more likely to maintain and consolidate their scale.

Size-contingent regulations that increase the regulatory burden on firms when they reach a given size may also represent an obstacle to growth. Evidence from France shows that firms are much more likely to stay at the 49-employee level and not grow because of additional regulations that are enforced on firms with at least 50 employees (Garicano, Lelarge and Reenen, 2016[48]). Evidence from Italy on

additional firing restrictions that used to apply to firms with over 15 employees shows that the probability of firm growth is reduced by around 2 percentage points near the threshold (Schivardi and Torrini, 2008[49]). Although this evidence does not directly relate to the incidence of scaling up, it provides a cautionary note on the unintended consequences that size-contingent regulations may have on potential scalers.

Box 1.5. Public policies should take stock of SME diversity

The fact that SMEs are a very diverse group of firms and belong to a diversity of business ecosystems calls for a fundamental rethinking of entrepreneurship and SME policy (OECD, 2019[12]). Policies that do not fully acknowledge SME heterogeneity, in particular regarding growth, are likely to miss their targets (Shane, 2009[50]; Schoar, 2010[51]). The economic and business literature has proposed many different classifications of SMEs, based, for example, on the personal traits and objectives of the entrepreneurs leading them or on their growth trajectories (Raes, forthcoming[52]). A seminal stylised framework identifies two different groups of entrepreneurs: those who become entrepreneurs to provide subsistence income (subsistence entrepreneurs) and those who aim to create large businesses which will provide jobs and income for others (transformative entrepreneurs). These individuals respond differently to policy changes and economic cycles. Evidence suggests that only a negligible fraction of entrepreneurs transition from one type to the other. Thus, policies supporting one type of entrepreneur (or their companies) may have a different impact on the other group of entrepreneurs (Schoar, 2010[51]).

Public policies should be endowed with the tools to identify and understand the needs of different types of SMEs and entrepreneurs. This does not mean that policies should only "pick winners" and focus only on "transformative" businesses. Non-transformative entrepreneurs and their companies are also important for the economy: the figures reported above imply that most of the stock of employment in our economies is accounted for by this broad category of SMEs. While these companies may not create new jobs or introduce new services or products, they contribute to a variety of different needs and provide the bulk of goods and services that consumers and other businesses buy or use daily. However, the type of policy support these companies may need, as well as the objectives of such policy interventions, may be diametrically different from those of policies targeting high-growth firms and scalers. Therefore, policy makers should take account of the diversity of SMEs (and entrepreneurs) in policy making, including through the development and use of policy-relevant SME and entrepreneurship typologies and the collection of granular data to inform decisions (OECD, 2021[53]).

Source: OECD (2019[12]), *OECD SME and Entrepreneurship Outlook 2019*, https://dx.doi.org/10.1787/34907e9c-en; Shane, S. (2009[50]), "Why encouraging more people to become entrepreneurs is bad public policy", http://dx.doi.org/10.1007/s11187-009-9215-5; Raes, S. (forthcoming[52]), *Understanding SME Heterogeneity: Towards policy relevant typologies for SMEs and entrepreneurship*, OECD Publishing, Paris; Schoar, A. (2010[51]), "The divide between subsistence and transformational entrepreneurship", http://dx.doi.org/10.1086/605853; OECD (2021[53]), "SME and entrepreneurship policy frameworks across OECD countries: An OECD Strategy for SMEs and Entrepreneurship", OECD SME and Entrepreneurship Papers, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/9f6c41ce-en

Support for scalers is hindered by the difficulty to predict which SMEs will become high-growth firms. The diffusion of "big data" and the recent improvement of machine learning have spurred interest in analyses aimed at identifying firms that are likely to grow fast in the future (Coad and Srhoj, 2019[54]; McKenzie and Sansone, 2019[55]). Providing targeted support to scalers based on this information may appear like a promising policy option. However, until now, there has been limited success in identifying firm or entrepreneur characteristics that predict subsequent growth, as the components that appear to matter are very hard to measure. The measurable components of growth and performance are overshadowed by the random or unmeasurable component (McKelvie and Wiklund, 2010[56]). A recent study on SMEs in the UK shows that firm observable characteristics such as productivity, size, age or investment levels showed no correlation with future productivity growth, defined as growth in turnover or

value-added per employee (Jibril, Stanfield and Roper, 2020[57]). Instead, qualitative indicators on good leadership are a much stronger predictor of productivity gains over time. However, this information is harder to collect, as it requires detailed interviews.

Scaling out of the crisis

Scalers can play an important role in the COVID-19 recovery period

The COVID-19 crisis speeds up the transformation of the business sector but may also leave some permanent scars. The pandemic has induced permanent changes in OECD economies and accelerated existing trends such as digitalisation (OECD, 2021[1]). While some businesses and sectors will face structurally weaker demand and more adverse market conditions, many new opportunities and markets will arise. The enhanced uptake of digital tools by firms and households opens new markets and creates room for new products and services, as well as cost-saving measures. The diffusion of e-commerce has improved access to viable markets without the need for large investments in marketing and distribution. Demand for online services and goods during the crisis opened up opportunities for existing firms and new entrepreneurs. Cheaper access to shared IT resources in the "cloud" and the potential of continued homeworking promise productivity gains or cost savings (e.g. as less office space is required). As a result, the business sector that will emerge from the recovery will be fundamentally different from the one that entered the crisis (G30, 2020[58]).

Crises trigger a process of "creative destruction" but can also permanently "scar" the economy. The worst-performing firms, typically those with the lowest productivity, are more likely to struggle during a downturn and go bankrupt. Labour and capital employed by these firms could then become available for firms that have the potential to scale and for new entrants. However, crises can also "scar" the economy and slow down productivity growth, e.g. by limiting the availability of external finance and forcing high-potential businesses to close down (Hallward-Driemeier and Rijkers, 2013[59]). The 2008 global financial crisis did induce a sharp increase in the bankruptcy rate, both in Europe and the US. However, in contrast to previous recessions, there is no clear evidence that this translated into the entry of new firms or the expansion of the most productive ones, i.e. there is no evidence that destruction was followed by "creativity".[6]

With the right policy mix in place, scalers can play a key role in transforming new opportunities into jobs, economic value and resilience, contributing to a fast and sustainable recovery. Scalers contribute with the majority of new jobs and economic value, and the recovery crisis will not be an exception. Rather, innovative and risk-taking scalers may face more growth opportunities than in normal times, if properly supported. Therefore, jointly with a broad spectrum of support measures for viable businesses that risk failing because of the crisis, the right recovery policy mix should include support for firms with high growth potential (Lambert and Van Reenen, 2021[60]). Beyond the creation of jobs and economic value, the scaling of highly productive businesses is also key to increasing productivity. Indeed, more than half of productivity growth in industrialised countries is due to the expansion of the most productive firms, as they absorb capital and labour from less productive firms (allocative efficiency), rather than to the growth in productivity of the average firm (Disney, Haskel and Heden, 2003[61]; Baldwin and Gu, 2006[62]). As the COVID-19 crisis highlighted, a sole view on economic performance might fall short in ensuring sustainable growth. Resilience and the ability of firms to adapt to important transitions, such as the transition towards net-zero greenhouse gas emissions should be considerations as well.

Governments need to ensure that business transformations and the reallocation of financial resources can happen smoothly. Reforming and streamlining insolvency procedures can accelerate the flow of financial resources from closing businesses to new ventures or by helping SMEs keep their assets by better identifying viable from non-viable businesses (OECD, 2021[2]). Governments should also support

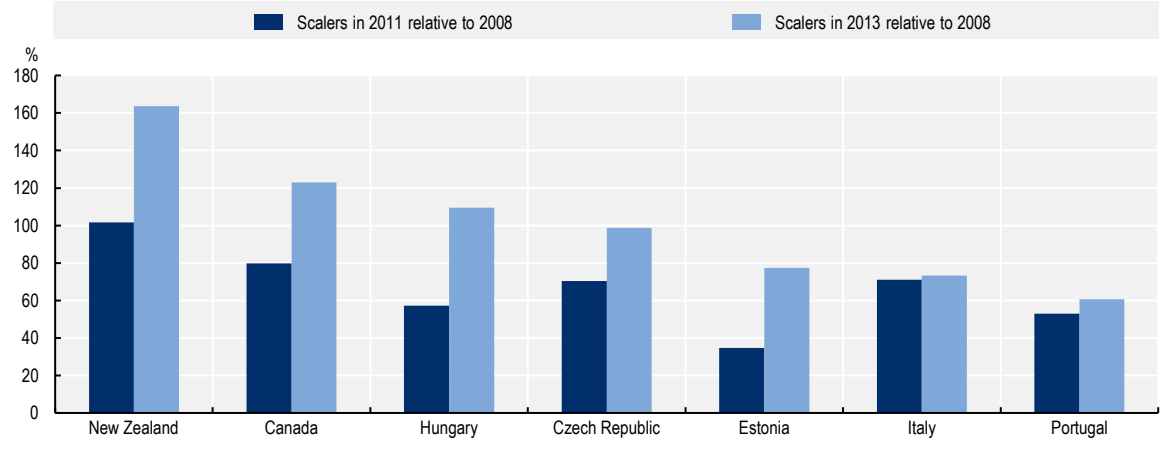
retraining and assist the transition of workers who need to change jobs. In the EU, scalers are also expected to play an important role in the "twin transitions", i.e. the synergic process of greening and digitalisation of the economy (Box 1.6).

Entry and exit dynamics differ from those of previous recessions

The recession following the 2007-08 crisis had a strong negative impact on scalers. Aggregate data for the last recession show that the number of high-growth scalers in the 7 OECD countries for which data are available dropped by up to 65% in 2011 compared to 2008 (Figure 1.5). In four out of seven countries, the recovery in the crisis' aftermath was only partial, as the number of high-growth scalers in the year 2013 was still lower than in 2008.[7] Empirical evidence for the US also shows that the number of high-growth scalers contracted significantly in the aftermath of the 2008 financial crisis (Decker et al., 2016[63]). Similarly, an analysis of firm-level data from the Community Innovation Survey (CIS) for European countries in the period 2006-14 shows that the recession reduced the share of turnover scalers sharply. Furthermore, the crisis reduced the likelihood to scale more for large firms than small firms, as measured by turnover volume. Therefore, the share of turnover growth by scalers contracted even more than the share of scalers in all firms (Benedetti Fasil et al., 2021[64]). There are at least two reasons why the 2007-08 crisis had such a large impact on scalers. First, the crisis resulted in a severe tightening of credit conditions for SMEs, with high-potential but high-risk businesses being the most vulnerable. Second, in several markets, unsustainable growth predated (and caused) the crisis itself, e.g. because of expansionary policies in some countries that injected a large amount of "easy" money in the private sector or loose regulation in the financial sector. Such unstainable growth explains the high number of existing scalers when the crisis suddenly kicked in, with the collapse of the financial services firm Lehman Brothers. Therefore, the number of scalers not only reduced sharply in the aftermath of the crisis but also started from an inflated benchmark level.

Figure 1.5. The number of high-growth scalers decreased in the aftermath of the 2007-08 global financial crisis

Number of high-growth scalers by country in 2011 and 2013, relative to the number of high-growth scalers in 2008

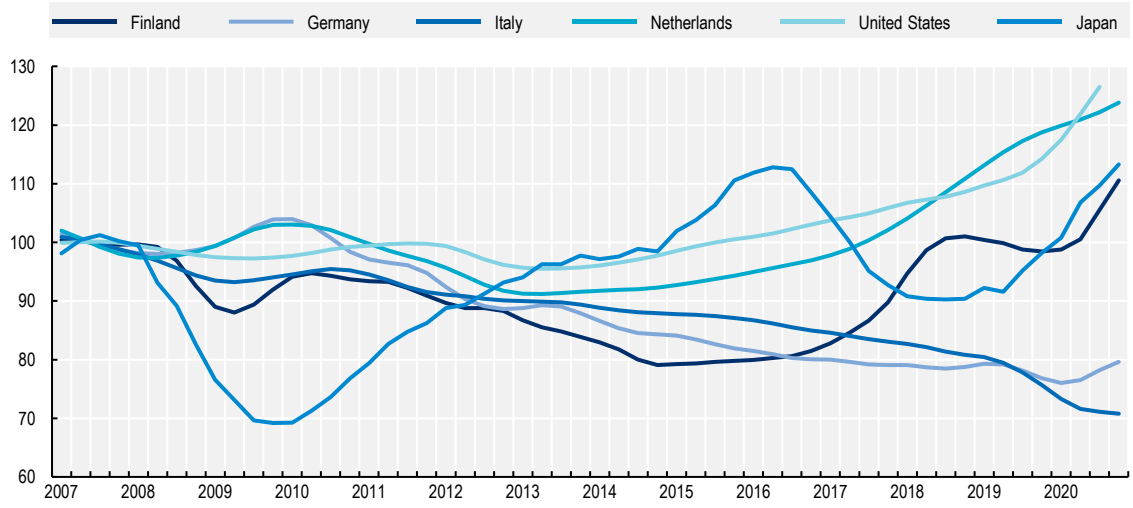


Note: High-growth scalers are defined as those firms that completed 3 years of employment growth at an average yearly rate of 20% or more; see Box 1.2 for further details on the definition of scalers.
Source: OECD.stats (2021[15]), *Structural and Demographic Business Statistics (SDBS)*, OECD, Paris.

Preliminary evidence for OECD countries shows that entry rates differ widely across countries during the COVID-19 crisis. Some of the new entrants today are tomorrow's scalers. The rate of new business formation is an important indicator to understand what will happen to scalers in the aftermath of the COVID-19 crisis. Some dynamism in creating new businesses would be an indicator that a process of creative destruction could be in motion. In some countries, like Australia, Canada, Norway, the UK and the US, the entry rate in 2020 was higher than in 2019, despite an initial decrease in the second quarter of the year (coincidental with the first lockdowns in OECD countries). In the US in particular, the number of new business formations was the highest since records exist.[8] Conversely, in Italy, Portugal and Spain, the entry rate was substantially lower in 2020 than in previous years. Other large countries in continental Europe show an intermediate pattern, with entry rates in 2020 that are similar to those of previous years or even higher by the end of 2020, as it is the case, for example, in Finland or Germany (OECD (2021[65]), Figure 1.6). This is substantially different from what happened in previous recessions, during which the entry rates dropped substantially.[9]

Figure 1.6. Firm entries increased in the second half of 2020, following a dip in the second quarter

Number of entries of new enterprise in Finland, Germany, Italy, Japan, the Netherlands and the US, quarterly series, 2007-20, 2007=100



Note: For the purpose of presentation of quarterly series, seasonal adjustment is applied using TramoSeats algorithm with five regressors: log/level, trading days, Easter, outlier detection and automatic model identification. Series are log-transformed and decomposed into a trend component. The index is calculated based on 2007 (2007 = average of 2007 quarters) in order to present movements between the base year and a given quarter.
Source: OECD.stats (2021[66]), *Timely Indicators of Entrepreneurship*, OECD, Paris.

Some sectors thrived despite the crisis but "brick and mortar" activities suffered throughout 2020. In the US, out of the 19 major industry sectors, new business applications grew by more than 10% in 13 of them in the first 10 months of 2020. Wholesale trade and other services (a general category that includes personal care services and laundry services) were among the sectors that grew. Conversely, other traditional "brick and mortar" activities show a drop. For example, business applications in the real estate sector and the oil and gas extraction industry fell by 11% and 24% respectively (O'Donnell, Newman and Fikri, 2021[67]). Data from four other OECD countries for which entry statistics for 2020 are available (Belgium, Finland, Netherlands, Portugal) show that, in the first part of the year, the worst-hit sectors were transportation and storage, hotel and restaurants, and arts and entertainment, with a rather similar pattern across countries. Conversely, industries that rely less on face-to-face contacts and make more use of digital skills, such as information and communication and professional services, have been partially

sheltered from the crisis. However, countries differ in the speed of recovery in the worst-hit sectors. For example, transportation and storage show a robust rebound in entry rates in France in the second part of 2020, while in Portugal further reduced (OECD, 2021[65]).

The surge in entrepreneurship observed in some countries may point to self-employment being a "survival" option for many workers. For instance, evidence from the UK suggests that some "solo" self-employed – i.e. sole traders or company owner-managers without employees – opt for this alternative form of work because they cannot find suitable opportunities in traditional employment. They are more likely than employees to want to work more hours than they currently are working and to have recently been unemployed or inactive (Giupponi and Xu, 2020[68]). In the US, the number of new business applications was higher in 2020 than the year before for both likely non-employer businesses and likely employer businesses but the increase was stronger for the former. Furthermore, the number of new likely employer businesses is a forward-looking indicator, as it takes time for an application to turn into a new business and the pace at which high-propensity applications are translating into true active firms is slower in 2020 than after the 2008 financial crisis (O'Donnell, Newman and Fikri, 2021[67]). A recent report by the Kaufmann Foundation shows that, in the US, the "opportunity" share of new entrepreneurs – i.e. the percentage of the total number of new entrepreneurs who were not unemployed and not looking for a job as they started a new business – was the lowest in 2020 since at least records exist (1995) (Fairlie and Desai, 2021[69]).

Support measures kept viable businesses afloat, preserving assets for some potential scalers, but may have also delayed the exit of unproductive firms, which limits the resources available to new or growing firms. The emergency policy packages put in place by national governments have been effective in keeping afloat viable but credit-constrained businesses, which would have defaulted in absence of the measures (OECD, 2020[70]). Across advanced economies, bankruptcies have fallen – rather than increased – during the COVID-19 recession, unlike during past recessions; this decline also reflects moratoria on bankruptcy filings implemented in some countries (IMF, 2021[71]; OECD, 2020[70]). For instance, in Germany and Italy, the quarterly average enterprise bankruptcy rate in 2020 was 18% and 35% lower than in the previous 2 years respectively (Figure 1.7). Extraordinary furlough schemes to cover wages of temporarily redundant employees were also launched in many OECD countries, which limited the outflow of workers from firms that were struggling through the crisis. While this is overall good news for the economy and the affected workers, at least in the short term, it might also indicate that the high number of new business formation observed in the same period is not entirely driven by the opportunity to hire workers from contracting businesses or to replace firms that exit the market. It also raises concerns that chronically unproductive businesses may delay their exit from the market longer than it would be socially desirable, as their workforce and capital could be put to better use in more productive firms. However, preliminary evidence from Australia, New Zealand and the UK suggests this may not be the case, as the flow of workers from low to high productivity firms continued during the crisis (Andrews, Charlton and More, 2021[72]; Andrews, Hambur and Bahar, 2021[73]).

The risk of a lost generation of scalers

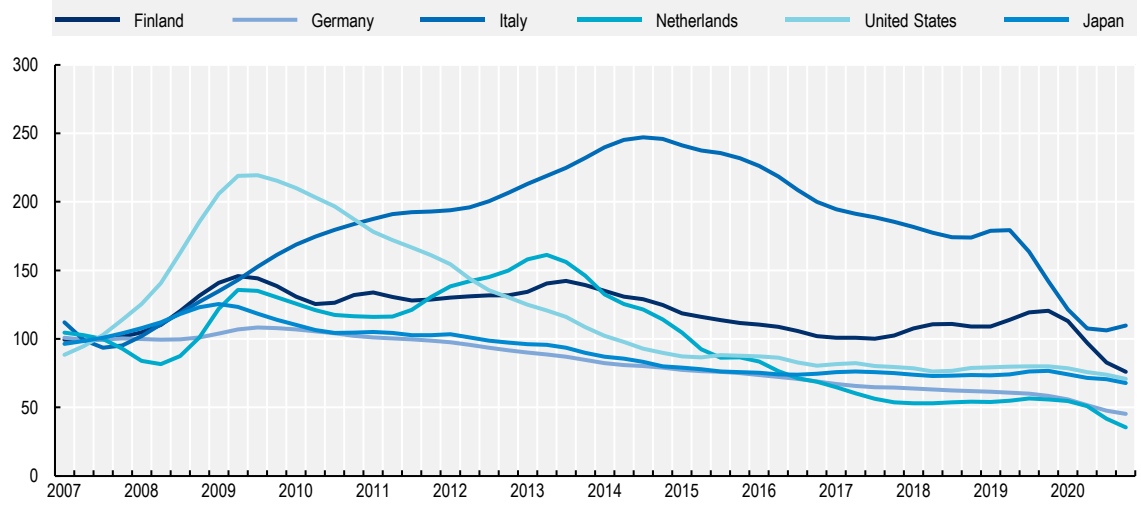
A lost generation of new scalers would have long-term implications for the economy. Some of the new firms that are founded today are tomorrow's scalers. Crises may negatively affect the entry of future scalers along three different margins. The first margin is the number of start-ups if the crisis leads to a lower number of entries of high-potential new businesses. The second margin is the growth potential of these new companies, as firms born during past recessions not only start smaller but also tend to stay smaller in future years, even when the aggregate economy recovers. The reason for the smaller firm size might be the fact that it is more difficult to start a scalable business during a crisis because, for example, supply chains are distorted, credit conditions are poor and customer demand is more difficult to acquire. The third margin is the survival rate: start-ups and young firms have a lower survival rate generally and it tends to decrease during recessions (Sedláček and Sterk, 2017[74]).

The sectors that have been more negatively affected by the crisis have a higher incidence of scalers. A recent report by the European Commission (EC) Joint Research Centre (JRC), focusing on European scalers in the COVID-19 crisis context, shows that, in the EU, the share of high-growth scalers in the sectors that contracted the most during 2020 is higher than the average share of high-growth scalers in the business economy as a whole (Box 1.6). This highlights the risk that the pandemic is creating a business environment that is less conducive to scaling, with long-lasting negative repercussions on the recovery. Therefore, the policy response should not only focus on the immediate survival of viable firms but also on deploying longer-term measures geared to reduce barriers for potential scalers.

Prompt action by governments was and is important to avoid a lost generation of scalers. The rapid introduction of public financial support during the COVID-19 pandemic played a key role to ensure viable businesses remained in the market, implementing lessons learned from the last global financial crisis. Beyond the immediate response, many countries already use investment packages supporting recovery to help firms with growth potential. Several OECD countries, including France, Germany and the UK, have already taken action in this direction, e.g. through the creation of dedicated funds to support equity investments in innovative entrepreneurship (OECD, 2020[75]). Credit constraints can be another major barrier for firms with high-growth potential, which are perceived as riskier by investors. Generally, OECD countries have many different policy instruments in place to help overcome this barrier, such as credit guarantee schemes (Cusmano, 2018[76]; OECD, 2020[77]). Recovery might require governments to absorb more risk but also to improve the targeting of support to make the best use of limited resources. Measures to alleviate credit constraints are particularly important for young firms that struggle to provide adequate collateral and do not have a lending track record. They would be crucial to avoid bankruptcies of promising young firms born just before the crisis, once the current waivers are lifted.

Figure 1.7. Firms went bankrupt at a lower rate in 2020 than during the previous crisis

The number of bankruptcies in Finland, Germany, Italy, Japan, Netherlands and the US, quarterly series, 2007-20, 2007=100



Note: Data for bankruptcies in Japan and the US consider only incorporated businesses (natural persons and sole proprietorships are excluded). The bankruptcy in the remaining countries is reported for all enterprises. For the purpose of presentation of quarterly series, seasonal adjustment is applied using the TramoSeats algorithm with five regressors: log/level, trading days, Easter, outlier detection and automatic model identification. Series are log-transformed and decomposed into a trend component. The index is calculated based on 2007 (2007 = average of 2007 quarters) in order to present movements between the base year and a given quarter.
Source: OECD.stats (2021[66]), *Timely Indicators of Entrepreneurship*, OECD, Paris.

A new wave of digitally enabled entrepreneurship may be on the rise

The crisis makes it urgent to address the divide between SMEs that can benefit from digitalisation and those that lag behind. The health crisis exposed a divide across SMEs in their ability to use digital technologies such as remote working, online sales and remote communications with suppliers and customers. Such a divide exists also for other digital technologies – such as the Internet of Things, cloud computing and data analytics – that are revolutionising firms' potential capacity for simulation, prototyping, decision making and automation. These digital technologies are creating unprecedented opportunities for SMEs (OECD, 2021[1]). However, a significant share of SMEs lag in the adoption of digital tools and employing IT specialists that could help implement the digital transition. Cross-firm divides were already growing before the crisis (OECD, 2021[2]). For example, 28% of firms in France with 20-49 employees used cloud storage services in 2018, compared to 70% of firms with 250 to 499 employees (Nevoux et al., 2019[3]). It is still unclear whether the divide has widened or narrowed during the crisis but the new digital impetus has certainly further weakened the position of SMEs lagging behind.

New digitally-enabled entrepreneurship can be the silver lining of the crisis. The steep acceleration in the digital transition induced by the COVID-19 crisis may have reduced barriers to starting a business or opting for self-employment. Similarly, it may be easier for new and small businesses to access a viable market without large investments in marketing and distribution, thanks to the diffusion of e-commerce. This may have induced many "latent" entrepreneurs to eventually start their businesses during the crisis. It would also explain part of the surge in new business formations observed in some countries.

Box 1.6. European scalers in the COVID-19 crisis context

A recent report by the EC's JRC analyses the possible impact of the COVID-19 crisis on European scalers, highlighting the role of scalers in delivering on the "twin transitions", i.e. the greening and the digitalisation of the European economy.

COVID-19's uneven effect across sectors and types of firms

The COVID-19 crisis has uneven effects across the business economy. The most affected sectors – such as advertising and market research, transportation and storage, travel agency services and employment activities – have traditionally higher shares of scalers than the EU average for the business economy as a whole. This highlights the risk that the pandemic is creating a business environment that is less conducive to scaling, with long-lasting negative repercussions on the recovery.

Scalers and the twin transitions

The greening of the economy is a leading policy priority for the recovery phase in the EU and scalers can play an important role to reach this objective. The productivity advantages associated with digitalisation can be a strategic complementary asset to the greening objective. The synergies between greening and digitalisation are referred to as the "twin transitions". European policies can support scalers in this process by aligning economic with environmental objectives. The empirical analysis indeed shows that publicly supported environmental innovations increase the likelihood for enterprises to become employment scalers. The report also finds that scalers and firms that plan to grow show a considerably larger adoption rate of digital technologies than other enterprises. However, there are large differences across EU countries and the shares of growth-oriented firms adopting advanced digital technologies are lower in the EU than in the UK and the US.

Policy measures

Across the EU, swift policy action has provided liquidity and employment support that is crucial to withstand the negative economic effects of the COVID-19 pandemic crisis. A concern is that policies focus on the immediate survival of viable firms miss opportunities for deploying longer-term measures geared to improve the business environment for scalers. Examples for such policies range from providing the right framework conditions that will help SMEs to grow to addressing country-specific bottlenecks, such as improving access to finance or increasing the skill levels of the workforce. In this regard, and as an example on the European level, the Recovery and Resiliency Facility (RRF) provides an important reform and investment impetus to foster the digital and ecological transition in Europe.

Source: Benedetti Fasil, C. et al. (2021[64]), *High Growth Enterprises in the COVID-19 Crisis Context*, https://publications.jrc.ec.europa.eu/repository/handle/JRC124469 (accessed on 17 June 2021).

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Notes

[1] See, for example, Criscuolo, Gal and Menon (2014[22]), Haltiwanger et al. (2017[23]), NESTA (2009[4]) and Schreyer (2000[87]). While these statistics typically include firms of all sizes, the evidence shows that large firms are as likely to grow fast as SMEs, which implies that almost the entire population of scalers are SMEs. E.g., between 2013 and 2016, 92% of high-growth firms in Nordic countries were SMEs with 10 to 99 employees (Nordic Council, 2019[28]).

[2] See Coad et al. (2014[20]) for a critical review of available evidence.

[3] See OECD.stats (2021[15]).

[4] The 10-employee threshold may introduce a "mean-reversion" bias. As employment levels tend to converge toward the average value in the long period, random positive and negative fluctuations tend to alternate over time – i.e. a firm is statistically more likely to contract after growing. Thus, by imposing a size constraint at the beginning of the period, there is the possibility that the sample is slightly biased toward contracting firms. A possible solution to both limitations could be to use a size threshold that is calculated on average over the three years, rather than at the beginning of the period (Davis, Haltiwanger and Schuh, 1996[82]; Hallak and Harasztosi, 2019[84]).

[5] See, for example, Parker, Storey and van Witteloostuijn (2010[85]), Daunfeldt, Elert and Johansson (2014[81]) and Rodrigues, Tavares and de Barros (Rodrigues, Tavares and de Barros, 2021[86]).

[6] See, for example, Foster, Grim and Haltiwanger (2015[83]); Carreira and Teixeira (2016[80]); France Stratégie (2021[78]).

[7] The number of scalers is an indicator that is quite inertial over time, as scalers are defined based on a three-year growth period (e.g. scalers in 2013 are companies that experienced a high-growth period in the 2010-13 triennium; see Box 1.2 for further details on the definition of scaling-up firms). Therefore, the number of scalers in 2013 is directly affected by market conditions in year 2010.

[8] Statistics on new business formation are available from at www.census.gov/econ/bfs. The Business Formation Statistics (BFS) are an experimental data product of the U.S. Census Bureau developed in research collaboration with economists affiliated with Board of Governors of the Federal Reserve System, Federal Reserve Bank of Atlanta, University of Maryland, and University of Notre Dame.

[9] In the United States, for instance, the number of start-ups in 2009 was 30 percent below its pre-crisis level in 2006 (Sedláček and Sterk, 2017[74]). Among European countries, the overall enterprise entry rate in 2009 varied from 45% below the 2007 levels in Spain, 7% lower in Italy, about unchanged in Germany (Figure 1.6).