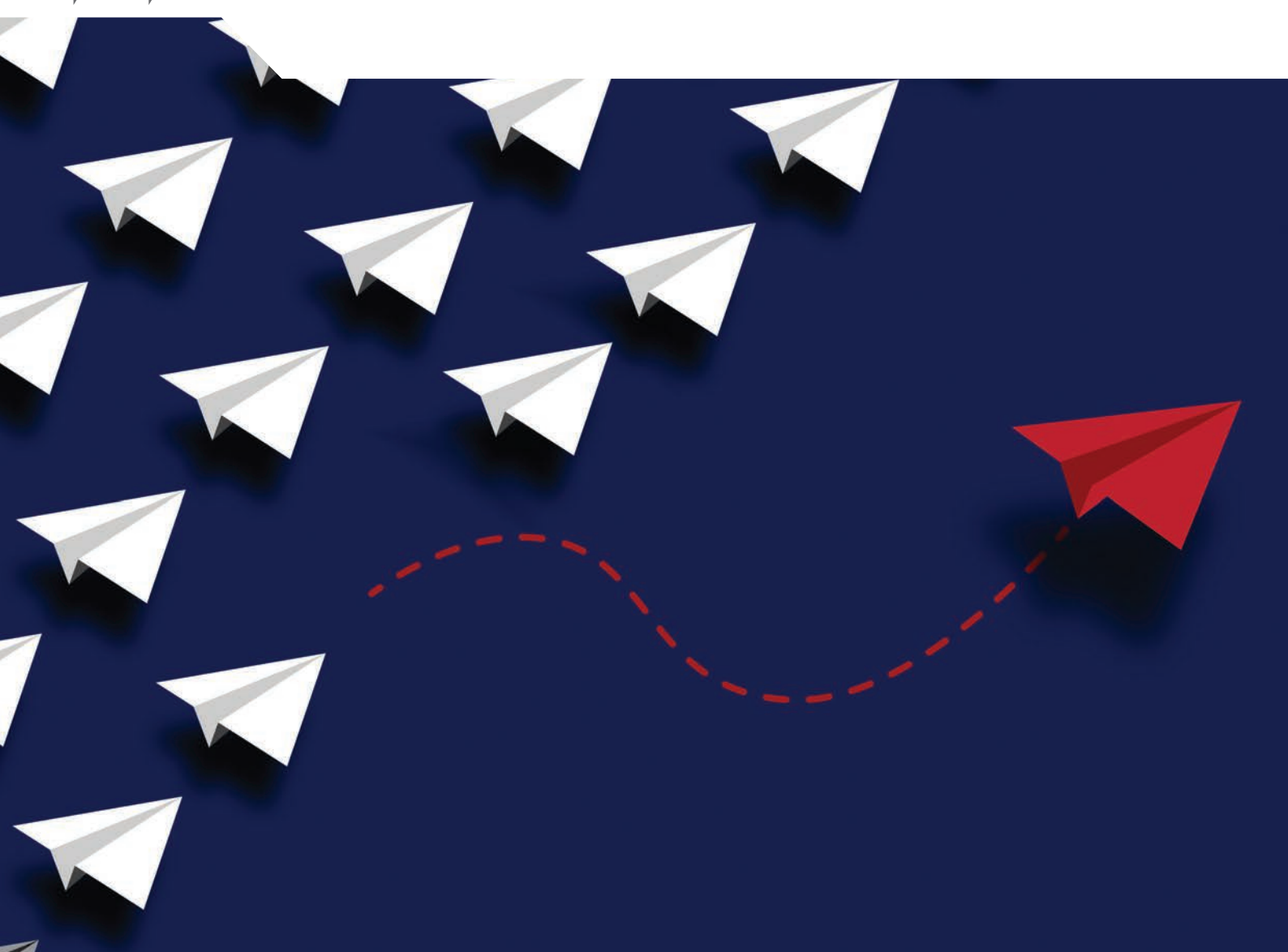


OECD Studies on SMEs and Entrepreneurship

# Financing Growth and Turning Data into Business

HELPING SMES SCALE UP





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# Foreword

Firms that scale up are central drivers of employment and income growth across OECD economies and have been the subject of significant policy focus in recent decades. However, despite this, a full understanding of the factors of success and indeed the role of policy remains somewhat elusive, in large part reflecting limited or mixed evidence. In some countries the approach is to identify, and provide support to potential winners, (typically in a given, e.g. hi-tech, activity) whilst in others, the focus is on ensuring the right universal framework conditions.

*“Financing growth and turning data into business. Helping SMEs scale up”* considers the variety of existent scale up policy approaches across OECD economies. In particular, the report discusses a number of dimensions that are central to effective scale-up policy design and, on that basis, proposes a set of conceptual key elements to identify relevant policy measures. In addition, the report takes a deep-dive into two specific determinants of success for scaling up, i.e. access to scale up finance and SME data governance, drawing on findings from the first report in this series, *Understanding Firm Growth: Helping SMEs scale up*, released in November 2021. At this stage, the work is not normative in terms of identifying effective scale up policies, but rather provides a stocktake of measures implemented by countries in the above areas. It recognises the need for more evidence to inform policy design, and stresses the importance of addressing the cross-cutting nature of policies that can support SME growth.

Chapter 1 discusses the broader context of the scale up policy space by recalling a number of definitions and theoretical notions around SME size, growth and performance. On that basis, it proposes to organise the monitoring of national policies mixes and institutional arrangements in place to promote scaling up across the OECD by focusing on a set of SME growth drivers, grouped under three overarching pillars i.e. innovation, investment and network expansion.

Chapter 2 focuses on financing SME growth, with a particular emphasis on diversified solutions going beyond equity capital. Drawing on a review of 709 policies and 210 institutions across the OECD, it reveals a possibly high fragmentation of the scale up finance policy mix, and, in turn, potential challenges for scalers to navigate and decrypt the various offers, as well as for policy makers in designing optimal policies.

Chapter 3 focuses on improving SME data governance, from access to protection to use, and provides insights on how governments intend to upgrade, or are upgrading, SME data practices to create a supportive data environment. A comparison of 487 policies across 209 institutions in the OECD area reveals a strong policy focus on developing an internal data culture and new data-related skills. However, despite the particular challenges faced by small businesses, SME policy considerations are rarely central in national policy mixes.

This report was developed by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), as part of the Programme of Work and Budget of the OECD Committee on SMEs and Entrepreneurship (CSMEE). Chapter 3 contributes to the OECD Horizontal Project on Data Governance for Growth and Well-being, and notably to its module on *Data Shaping Firms and Markets*. The final report [CFE/SME(2022)13/ANN1/REV1, CFE/SME(2022)13/ANN2/REV1, and CFE/SME(2022)13/ANN3/REV1] was approved by written procedure by the CSMEE on 26 September 2022.

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The project was co-ordinated by Sandrine Kergroach and Alexander C. Lembcke, Heads of Unit in CFE, under the supervision of Rudiger Ahrend, Head of Division, Economic Analysis, Data and Statistics, and Céline Kauffmann, Head of Division, Entrepreneurship, SMEs and Tourism. Nadim Ahmad, Deputy Director (CFE) provided valuable guidance for finalising the report.

Chapter 1 on “*Rethinking SME scale up and growth policies*” was prepared by Sandrine Kergroach, with input from Lora Pissareva and Juan Felipe Rodrigo. Thanks to Jonathan Potter (CFE) for his valuable feedback.

Chapter 2 on “*Financing growth*” was designed by Sandrine Kergroach and prepared by Bruno De Menna, with inputs from Oualid Mokhtar, Lora Pissareva and Juan Felipe Rodrigo. Nour El-Ashmawi supported the policy mapping and provided research assistance. Comments for this chapter were provided by Lucia Cusmano, Maria Camila Jimenez Suarez, Miriam Koreen, Marija Kuzmanovic and Marco Marchese (CFE).

Chapter 3 on “*Turning data into business*” was designed, prepared and coordinated by Lora Pissareva, with inputs from Juan Felipe Rodrigo and Oualid Mokhtar. Yusuf Ashmawi and Corentin Beudaert-Ugolini supported the policy mapping and provided research assistance. Marco Bianchini, Lucia Cusmano and Insung Kwon (CFE) provided feedback, as well as colleagues from the OECD Directorate for Science, Technology and Innovation (STI): Angela Attrey, Gallia Daor, Christian Reimsbach-Kounatze and Jeremy West.

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The policy information collected as part of this project will feed into the OECD Data Lake on SMEs and Entrepreneurship, a unique knowledge infrastructure to support future policy analysis. To this end, an online dashboard, produced as part of the analytical work, allows for visualising key findings and a first set of experimental indicators based on the country policy mappings. Thanks to Julien Héritier for the design and development of a data management system and the dashboard, as well as to Courtenay Wheeler (CFE) and Samuel Pinto-Ribeiro (OECD Statistics and Data Directorate – SDD) for sharing experience and advice on data visualisation. The publication process was managed by CFE. François Iglesias designed the cover and Pilar Philip served as coordinator. Heather Mortimer-Charoy provided project and secretariat assistance.

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# Executive Summary

**Firms that scale up have long raised policy attention for their strong potential in terms of job creation, innovation, competitiveness, and economic performance.** However, and despite an abundant academic literature, the conditions of SME growth or scale up remain overall poorly understood.

**The potential of improved scale up policies is significant.** For instance, while scalers represent only 13-15% of SMEs in Finland, Italy, Portugal, the Slovak Republic and Spain, they contributed 47% to 69% of all new jobs generated by non-micro SMEs between 2015 and 2017. In addition, most scalers maintain their new scale over time, and many succeed to grow again shortly after.

**Scalers are also much more diverse than commonly thought.** The typical scaler is neither a knowledge-intensive nor a high-tech firm, nor a start-up. In fact, most of them are mature firms operating in low-tech sectors. In addition, they adopt a variety of trajectories in transition to, during and after, scaling up.

**This diversity in scale up profiles and trajectories demands a rethinking of scale up policies.** Although the evidence is mixed, a (too) narrow focus on specific sectors, such as knowledge-intensive firms or start-ups, is likely to be suboptimal.

**Effective policy design requires a better understanding of scalers' transformation process and related scale up drivers.** The identification of potential scalers and their subsequent transformation process (including the probability of sustaining new scale) is difficult to anticipate, as it reflects a number of factors, including not just broader economic framework conditions, quality of entrepreneurial ecosystems and the health of the economy, but also specific innovation, investment, and network expansion strategies of the firm. These drivers are mobilised in different ways and at different times by scalers, making it difficult to pick winners, thus reinforcing the importance of transversality and coherence in policy design.

**The present work aims to understand how OECD countries can better support SME scale up.** It highlights a large diversity in the mix of policy objectives, instruments, and governance arrangements across countries, with a view to informing the design of multidimensional scale up policies. In addition, the report takes a deep-dive into two specific dimensions identified as relevant for scalers' transformation process: strengthening SME access to scale up finance and improving SME data governance.

**Scale up finance policies are defined here as public interventions to unleash finance for SME growth-related activities,** i.e. those related to innovation, investment, or network expansion. Microdata analysis has revealed that scalers increase financial buffers before scaling up. In a context, where SME difficulties in accessing finance represent a well-documented barrier to their development, diversifying sources is likely to be key, as scalers' financing needs vary depending on their profile and trajectory.

**Policies in support of SME data governance are defined here as public interventions that can help SMEs turn data into value and grow.** Microdata analysis has revealed that scalers are more digitalised, hence more data-driven or likely to use data to scale up their business. In a context, where intangible assets and data have come to make up a significant part of a firm's value, improved data governance is emerging as a strategic issue for an increasing number of SMEs.

**Based on an international mapping of 419 institutions across the OECD, the analysis shows that SME and entrepreneurship policy is not among the core mandates of many implementing institutions.** More specifically, the work identifies 210 government institutions involved in promoting growth finance for SMEs, and 209 institutions involved in improving SME data governance, of which only 50 are common to the two fields, and 54% and 26% of them respectively have SMEs in their core mandate. This calls for sound coordination across the board and for a further mainstreaming of SME growth considerations in both policy areas to better address the specific challenges faced by small firms.

**The policy mapping then identifies 709 policies for strengthening SME access to scale up finance, and 487 policies for improving SME data governance, which reveal a number of differences across the two areas.**

**In the policy mix for SME growth finance, generic measures are the exception: 72.6% of all measures (18.7 per country on average) across OECD countries are targeted,** in most cases at SMEs (38.6%), but also at certain sectors, technologies or places (15.2%). Efforts to target high-potential firms (“winners”), and frequently decentralised arrangements for implementation, result in a multiplication of public support schemes and eligibility criteria, where (potential) scalers may struggle in identifying the most appropriate solution for their needs. Complementary outreach efforts, e.g. through one-stop-shops, could help SMEs in particular, to navigate this potentially more fragmented policy space.

**By contrast, the SME data governance area (12.8 on average per country) is an emerging policy field,** where efforts tend to focus on shaping the data policy system, resulting in more high-level (and less numerous) measures, such as strategies and action plans. As a result, only 29% of data policy measures are SME-targeted, with some data elements often weaved into broader SME digitalisation initiatives.

**Scale up finance policy is more often oriented towards disruptive innovation and equity capital, with lesser emphasis on investment in skills or intangible assets.** In addition, the finance market plays a secondary role in national policy efforts, which rather remain focused on reducing the need and cost of external financing for SMEs through government support. **Likewise, 64% of data governance measures seek to create a data culture and build relevant skills within SMEs, with fewer initiatives for building an SME-friendly data infrastructure.** The current focus in both domains may therefore lead to blind spots in policy design, calling for better evidence to assess what works.

**More evidence is needed to fully assess and inform effective scale up policy design,** including on the efficiency of public intervention (e.g. through impact evaluation). Greater insights on actions taken by subnational governments could also provide an important complementary perspective, not least given their role in fostering local ecosystems.

**More evidence is also needed on other (firm-led) drivers of SME scale up.** Beyond financing and data governance aspects, further evidence is needed across a broader set of relevant policy domains, including e.g. SME network capacities (i.e. through supply chains, cooperation or digital platforms), especially in light of recent disruptions in international markets. Evidence on investments in skills is also needed, not least with respect to emerging challenges and opportunities around the twin transition.

**A rethinking of scale up policy will ultimately require broader measures and notions of scaling up, going beyond traditional economic performance indicators.** The current focus on firms that scale up through turnover or employment may not fully capture the social and/or environmental benefits generated by a larger set of firms. As governments prioritise sustainable growth, appropriate consideration needs to be given to the broader socio-economic gains that may be achieved if scale-ups can help tackle climate change and other societal challenges.

# **1** Rethinking SME scale up and growth policies

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This chapter introduces the concept of scale up policy. It first aims to disentangle the notion of SME scale up and high growth, and to identify the drivers of SME scaling up based on relevant literature. Building on lessons learned from the microdata work of the project about the profiles and pathways of scalers, it then discusses policy implications, presents rationale for policy intervention in support of scale-ups, and proposes an analytical framework for better understanding country approaches and policy mixes to unleashing SME potential to scale up. This analytical framework supports a series of thematic reports on scale up policies.

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## In Brief

**SMEs and start-ups that scale up have attracted increasing policy attention for their exceptional performance and contribution to job creation, innovation, growth and competitiveness.** Public policies accordingly have tried to focus on those firms with the highest growth potential, often by targeting firms in narrow (tech-related) sectors, and engaging large budgetary support. Yet, the conditions for SME scale up remain poorly understood. There is still a lack of evidence on which firms could effectively become scalers, and there is no clear and comprehensive overview of what policy measures and framework conditions work in promoting scale-ups.

***Unleashing SME Potential to Scale Up*, a project jointly initiated by the European Commission and the OECD**, intends to address existing knowledge gaps through empirical work on scalers' profiles and trajectories, and analyses of country policy approaches in promoting SME scaling up through an extensive mapping of relevant policy initiatives and institutions in specific fields across the 38 OECD countries.

**Firm growth is commonly measured by sales and employment. Firms grow through a range of strategies**, including innovation, investment, market expansion or differentiation, as well as competition, cooperation or collusion.

Policies for scaling up often seek to increase **the capacity of a firm to operate, in a sustained manner, at a higher level of performance, which eventually expresses itself in high growth.** Scale-ups or high growth firms (HGFs) are defined according to Eurostat-OECD recommendations as enterprises with at least ten employees at the beginning of a three-year period that saw average annual growth of over 10%. Future analysis will also adopt a complementary 20% threshold.

The microdata work, based on five pilot countries (Finland, Italy, Portugal, Slovak Republic and Spain) and literature provide evidence on the characteristics and transformation pathways of scalers, and helps draw a number of policy implications.

1. **Scale up is not limited to high-tech start-ups.** The typical scaler is neither a knowledge- nor tech-intensive firm. The majority are mature SMEs (six years old and over) operating in low-tech services. In addition, scalers can be found in all places and across all sectors.
  - **A narrow policy focus on high-tech start-ups is likely to exclude many actual and potential scale-ups, and support may not always be appropriate for those receiving it.**
2. **Scaling up often involves an inner transformation of the firm.** In this context, scalers typically engage in different development trajectories by mobilising and combining – in different ways – three main growth drivers, i.e. i) **innovation** (including research and development, digital adoption, or business development), ii) **investment** (including in physical capital, skills or intangible assets), and iii) **network expansion** (e.g. in domestic or international markets, through cooperation and strategic partnerships, or by using digital platforms). Scaling up drivers are highly interconnected and mutually reinforcing.
  - **The diversity in SME growth profiles and trajectories requires scale-up policies that are equally diverse.** Public intervention can take place at the intersection of a large number of policy domains, i.e. innovation, business R&D, SME digitalisation, entrepreneurship, skills, IPRs, trade, taxation, investment promotion, procurement, competition or cluster policies etc. Examples range from cutting red tape; new

regulations on labour markets; promoting the diffusion of tech, non-tech or digital innovation; improving entrepreneurship education; easing access to finance, foreign markets, public procurement or knowledge infrastructure; as well as addressing distortions in competition from excessive market power of large firms etc.

- **An ecosystem to nurture scalers and a whole-of-government approach are needed.** Scale-up policies are cross-cutting by nature, implying that it would not be sufficient for policy to target one single channel of intervention. A holistic approach is therefore needed to stimulate scale-ups, which can range from targeted support (e.g. for finance, skills, and leadership) to developing favourable entrepreneurial ecosystems. They also require policy coordination at and across different levels of government (local, regional, national, and even supra-national).
3. **It is difficult to predict which firms are going to grow and target them before their transformation.** The decision to innovate, invest, scale up or down depends on a number of market conditions, firm strategy and business owner ambitions, and is also determined by a local, cultural, and industry context that can influence the scaling up process and the willingness of firms to transform.
    - **It is hazardous for policy to seek to pick future winners, and engage large amounts of public resources on these assumptions.** There is a danger of little effectiveness and efficiency of policies if they are poorly targeted, especially since there is limited evidence on which targeted approaches can have the most impacts on generating scale-ups.
  4. **Scalers can maintain new scale over time, and even grow again,** which means that most scalers that have undergone this transformation have gained capacity on a permanent basis.
    - **Scale up policies are likely to pay off, although much remains unexplained, and more evidence is needed.**

The project interprets scale-up policy as the range of public policy interventions that seek to promote SME scale up through improved conditions and incentives for innovation, growth, investment and network expansion. The scope of the work is intentionally broad, so as to capture the “ecosystem of policies” which shape the conditions and incentives of SME scaling up. The policy mix concept is central to the mapping exercise, which seeks to capture the set of policy rationales, governance arrangements and policy instruments that are mobilised, as well as the interactions that can take place between these elements. This work provides the foundations of a series of future policy reports on SME scaling up.

## Introduction

**The COVID-19 pandemic has had a significant impact on economies and societies, but with uneven repercussions across firms, and the more recent war in Ukraine has introduced further and significant uncertainty.** High supply constraints, which are expected to worsen, are feeding inflationary pressures. These developments go hand in hand with more structural challenges, already underway before and then speeded by the pandemic, and mainly related to tightening labour markets and new signs of skills shortages, reflecting, among other things, a shift in the required skills mix due to changing consumption patterns, labour force withdrawals, early retirement, or decline in worker migration (OECD, 2021<sup>[1]</sup>).

In this context, and as governments aim to build resilience and speed the transition towards more sustainable and inclusive growth, **fast-growing small and medium-sized enterprises (SMEs) and start-ups are called to play a key role**<sup>1</sup>. High-growth firms (HGFs), also called scalers or scale-ups, have been attracting increasing policy attention for their exceptional performance and disproportionate contribution to value and job creation, as well as to the competitiveness of national and sub-national economies. They also play a significant role in innovation creation and diffusion, helping to generate broader economic and social spillovers, with their development and retention in domestic markets increasingly becoming a strategic policy issue.

**Only a very small percentage of firms in OECD countries experience high growth.** Between 2016 and 2018, for example, only 7% to 17% of firms with at least 10 employees experienced average annual growth over a three-year period of 10% or more (scale ups) in OECD countries<sup>2</sup>. Despite their small number, however, scale-ups account for half or more of gross job creation by SMEs in the OECD (OECD, 2021<sup>[2]</sup>).

**Public policies accordingly have tried to focus on those firms with the highest growth potential,** e.g. often by targeting them in very narrow (tech-related) sectors. For example, the 2022 work programme of the European Innovation Council provides funding opportunities worth over EUR 1.7 billion for breakthrough innovators to scale up and create new markets. EU Members States also agreed early this year to launch the pan-European Scale-up Initiative, which will provide EUR 10 billion for late-stage tech companies to leverage private funding (EIC, 2022<sup>[3]</sup>).<sup>3</sup>

**Yet, despite high policy interest and an abundant academic literature, the conditions for, and determinants of, SME growth, and particularly high growth, remain poorly understood.** Difficulties stem mainly from the diversity of growth journeys SMEs take during their business lifecycle, including alternate periods of very high growth followed by stagnation or even decline. Adding to the challenge, is the diversity of framework conditions, eco-systems and determinants that influence those journeys. These include market structure and adjustments (e.g. growing demand, new or emerging product markets), changes in competition conditions (e.g. entry costs), changes in regulatory and fiscal frameworks, increasing network effects (e.g. business linkages, increased user base), innovative approaches (e.g. new production or delivery processes) and agglomeration benefits (e.g. spatial concentration of resources) (Sutton, 1998<sup>[4]</sup>) (Sutton, 1991<sup>[5]</sup>). A critical additional element that is much more difficult to determine is the growth ambitions of the owner(s). As a result, little internationally comparable evidence is currently available that can help better understand the heterogeneity of firms' paths and the complex mix of barriers and enablers that create the conditions for firms to grow (OECD, 2021<sup>[6]</sup>).

**Compounding the often narrow focus on hi-tech scale-ups is the almost non-existent attention paid to SMEs whose primary purpose is to deliver societal gains.** For many SMEs in the social economy, their primary purpose is not economic. Traditional measures of scaling up that look for example at turnover, or indeed (albeit to a lesser extent) job creation, are therefore not always well adapted to the underlying business models of social economy actors. This means that many of these firms may miss out on policy support that can help them scale up in their provision of societal services (often provided for free). Equally, existing measures of scale-ups may not adequately capture firms, whose business models are driven by



other criteria, for example carbon-neutral or organic objectives, meaning, in turn, that analyses of factors that drive observed scale ups may not capture the factors that could help these firms scale up, and deliver on key policy objectives (e.g. inclusive and sustainable growth, where SMEs are playing an increasingly important role. (Koirala, 2019<sup>[7]</sup>) (OECD, 2021<sup>[8]</sup>) (OECD, 2021<sup>[9]</sup>) (OECD, 2023 forthcoming<sup>[10]</sup>).

**This Chapter sets some conceptual bases for understanding scale-up policies** and aims to provide the foundations for a series of policy reports on SME scaling up. It forms part of a multi-year project on *Unleashing SME potential to scale up*, carried out with the support of the European Commission, that intends to better understand the drivers of scaling up and how governments can create the right conditions for potential scalars to succeed. For the purposes of the present work, **“scaling up” encompasses the capacity of a firm to operate, in a sustained manner, at a higher level of performance, that could be defined in different terms, and which may express itself in high growth (being in terms of turnover and/or employment).**

**This Chapter is structured as follows.** The first section reflects on the measures of firm growth and performance, and how the concepts are linked to better understand the notions of high growth and scale up. It is mainly based on an academic literature review. The second section combines findings from academic literature with new evidence from the previous microdata work on scalars’ profiles and trajectories, and proposes on that basis a set of SME growth drivers, grouped under three overarching pillars i.e. innovation, investment and network expansion. The third section extrapolates on the policy implications of this work, and the last section proposes an analytical framework to monitor and benchmark how countries effectively promote SME scaling up. This framework serves as a common basis for mapping the policies and institutions involved in different aspects of scale-up policies across OECD countries, and to understand commonalities and specificities in country approaches. The framework is applied in Chapters 2 and 3 of this report, respectively on SME access to growth finance and SME data governance, and will serve for future policy reports on *Unleashing SME potential to scale up* (Box 1.1).

### Box 1.1. Unleashing SME Potential to Scale Up: a multi-year research project

The OECD project on *Unleashing SME Potential to Scale Up* is carried out with the support of the European Commission. Its pilot phase (2019-21) is articulated across two pillars:

- **A measurement pillar** to better understand the internal drivers and barriers to SME high growth, through empirical work based on business microdata (Box 1.2), and
- **A policy pillar** to analyse national policy mixes and approaches to unleash the potential of scalars through a mapping of relevant initiatives and institutions across the 38 OECD countries (Box 1.6).

Findings of the measurement work have informed the present policy work and were published in a summary report (OECD, 2021<sup>[2]</sup>). Over the pilot phase 2019-21, the policy work has focused on two specific areas identified as relevant on the basis of the measurement results: SME access to ‘scale up’ finance, and SME data governance (access, protection, use) (see Chapters 2 and 3 of this report).

Source: <https://www.oecd.org/cfe/smes/sme-scale-up.htm>.

**Scaling up is often the result of substantial transformations.** Understanding why and how these changes in SMEs capacities and performance occur, and indeed the nature of the changes, and whether they are sustainable, is essential for effective policy design. While at this stage, the work is not normative in terms of identifying effective scale up policies, but rather provides a stocktake of measures implemented by countries in the above two areas, it does recognise the need for more evidence to inform better policies

and stresses the importance of addressing the cross-cutting nature of measures that can support SME growth.

## Firm size, growth and performance: concepts and definitions

Scalability has often been associated with a firm's ability to grow rapidly without being hindered by the constraints imposed by its size (Monteiro, 2019<sup>[11]</sup>). Understanding how SMEs achieve and sustain a new scale of activity and the underlying changes in their performance and capacity is at the core of this project and report.

### **Firm size and size growth**

#### *Turnover and employment*

**The most often used indicators to measure firm size are sales and employment**, although exact definitions and practices may differ across countries (OECD, 2017<sup>[12]</sup>) (Hauser, 2005<sup>[13]</sup>). Turnover is the total value of invoices emitted by an enterprise during the period of observation, corresponding to market sales of products or services supplied to third parties. Turnover includes all taxes and charges (e.g., transport and packaging), to the exclusion of value-added tax invoiced (VAT) and financial or extraordinary income. Subsidies from public authorities are also excluded. Employment refers to the total number of persons employed, i.e., who work for the enterprise including working proprietors or unpaid family workers.

#### *Determinants of firm size*

**A number of market conditions determine the optimal size a firm should achieve to compete, and the opportunities businesses have to scale up or down operations.** The following is adapted from the OECD SME and Entrepreneurship Outlook 2019 (OECD, 2019<sup>[14]</sup>).

**Firms grow to their efficient size as long as they increase economies of scale**, i.e., they can reduce average unit cost of production, which eventually determines the efficient scale of production (Figure 1.1). Firms look for an optimum balance between the transaction costs incurred by contracting out and the transaction costs incurred by internalising operations – hence growing through improved competitiveness (Coase, 1937<sup>[15]</sup>).

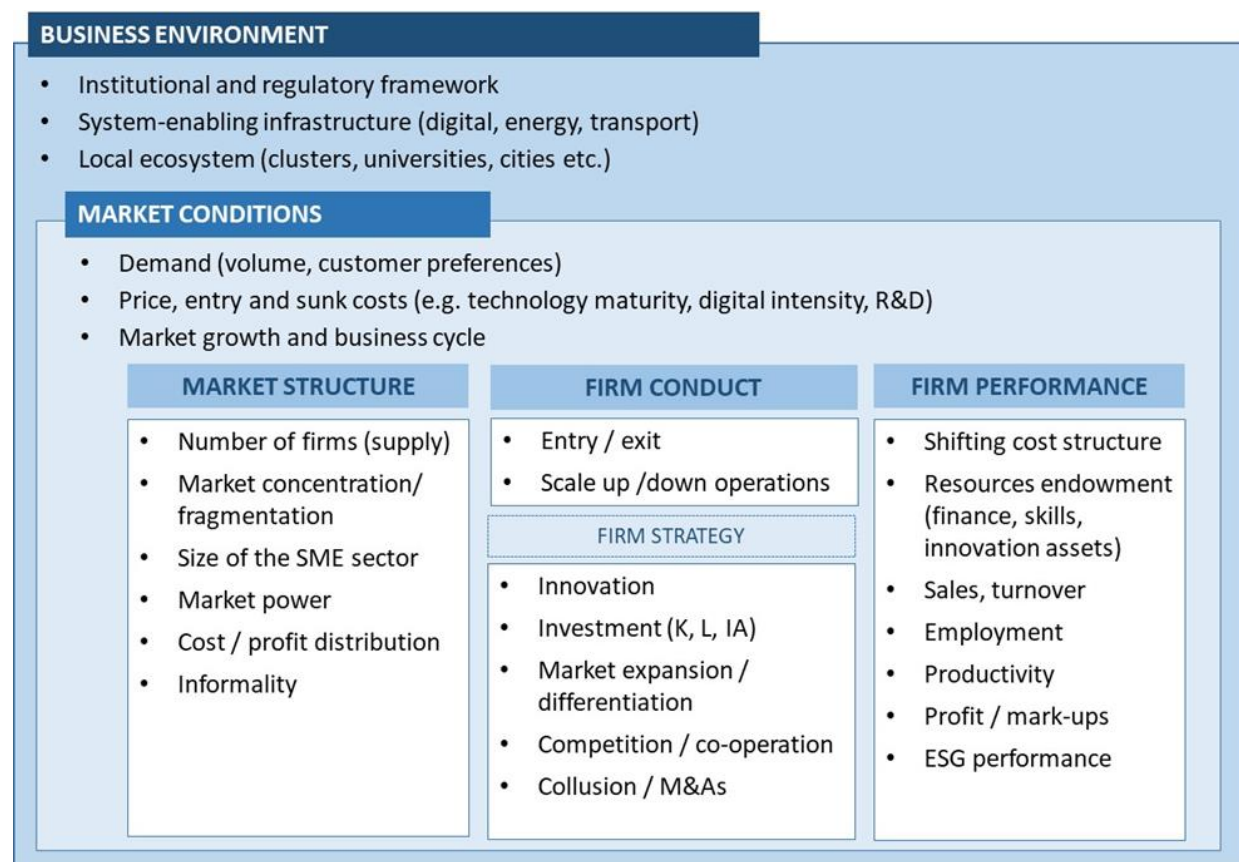
**Firms can also achieve external economies of scale, through market growth or agglomeration.** Demand, or market size, set the total volume of output in the industry, and determine the number of active firms operating within the industry at the optimal scale of production (Panzar, 1989<sup>[16]</sup>). If the market expands, the number of active firms can increase, provided competition conditions support firm entry, or incumbents can grow. Hence, in larger markets, firms tend to be larger. By the same token, the spatial proximity of firms, workers and customers fosters external economies of scale and network effects and helps reduce production costs. These agglomeration economies, together with knowledge spillovers, explain in part the spatial concentration of firms and the increasing attractiveness of urban areas. There are different mechanisms underpinning agglomeration economies. First, when more firms locate in the area, the variety of goods and services increases, and greater specialisation is possible as demand for (specialised) local inputs increases (NB. specialisation is a key driver of SME performance). Second, a larger pool of workers allows SMEs to access a wider spectrum of skills and better fill vacant positions. Third, knowledge spillovers through staff mobility, trade or foreign investments can increase productivity. Combined, this effect can help SMEs reduce costs in accessing resources, infrastructure and markets, and therefore increase their productivity (OECD, 2019<sup>[14]</sup>).

**The sunk costs firms have to incur to enter, or remain competitive in the market, also affect the optimal size they have to reach in order to offset fixed costs.** Sunk costs can be related to the

industry's technological maturity, business sophistication or digital intensity, as well as the level of investments in advertising or research and development (R&D) that is required to remain at the frontier. More generally capital-intensive industries, high wage industries, or R&D-intensive industries have larger firms (Kumar, Rajan and Zingales, 2000<sub>[17]</sub>).

**The broader business environment, whether local, national or international, is also an important determinant of the optimal firm size.** Stringent taxation and regulation can deter formalisation, firm entry, and firm growth. Poor network infrastructure can increase factor and transaction costs, preventing smaller businesses to scale up operations. The business environment can also change market demand: regulation by opening or closing markets (e.g., certification), transport infrastructure by closing the gap with distant markets, or cities through land planning and agglomeration effects. For instance, countries that have better institutional development, as measured by the judicial system, have larger firms (Kumar, Rajan and Zingales, 2000<sub>[17]</sub>). In this sense, the business environment also determines the firm's cost and profit structure, and the firm conduct in reaction (Figure 1.1).

**Figure 1.1. Market structure, firm conduct and performance**



Note: For investment, K refers to physical capital, L to skills and IA to intangible assets.

Source: Elaboration based on (OECD, 2019<sub>[14]</sub>), OECD SME and Entrepreneurship Outlook 2019.

**Firms adapt their size to market conditions through a range of strategies**, including innovation, investment, market expansion or differentiation, competition or cooperation, and collusion. The efficient firm size, and size evolution, therefore, depends on firm conduct, following a number of -separate or combined- strategies:

- *In case of the existence of economies of scale/ scope*: economies of scale/scope are often technology-based. Firm growth is driven by technology adoption and product/process innovation;
- *In case of the existence of market transaction costs*: firms enlarge up to the point that intrafirm governance costs offset the benefits of vertical integration and reduce efficiency, e.g., to respond quickly to the market. Firm growth can be further driven by organisational innovation to reduce bureaucratic costs. But flexible manufacturing technologies and technical standards, or inter-firm cooperation, can provide an alternative to integration as well;
- *In case of imperfect competition and market power*: dominant firms can fix price or coordinate pricing, especially when products are homogeneous. The entry flow of new firms is insufficient for bringing prices down to average costs, and smaller firms are pushed out of business when oligopolists cut prices. Product differentiation –i.e., product and marketing innovation – enables greater freedom of liberty in price-setting and market competition;
- *In case of the existence of network effects*: network effects increase as the firm increases its user base. Beyond a certain threshold of users (critical mass), the revenues cover the production costs and the unit cost decreases. Unlike economies of scale, the production capacity remains unchanged. Network effects can drive firm growth (in terms of revenues, profit or product portfolio) while the firm size (in terms of number of employees or capital investment) remains unchanged. Network effects are reinforced by the interoperability of systems, standardisation and/or co-operation, as well as the use of intellectual property right (IPRs) that are instrumental to the diffusion of the technology (e.g., software, protocols), brand, design etc.;
- *In case of the existence of agglomeration benefits*: the spatial proximity of firms, workers and customers allows a reduction of production costs through both external economies of scale and network effects. Different mechanisms underpin agglomeration economies, including greater specialisation enabled by a concentration of activities, a larger pool of skills available and productivity spill-overs related to staff mobility, trade or foreign investments.

At the same time, the relationship between market conditions and firms is not one-way. **Business strategies can also alter market conditions** and, in particular, market structures that reflect the distribution of market power and firm costs, and thereby, the scope for innovating, profit making and growing (OECD, 2019<sub>[14]</sub>).

**Overall, the optimal firm size is the scale of production a business should reach to achieve optimal performance.** There is no ideal, especially since there may be trade-offs between different criteria of performance, but an equilibrium size distribution emerges that depends on resource endowment, technology, markets and institutions (Hallberg, 2000<sub>[18]</sub>). In addition, the firm size distribution evolves over time with changing production terms (factor endowment and economies of scale), disruptive technology and innovation, and changing cost structure, e.g., transportation costs (that can affect the spatial concentration of production and market size) or transaction costs (that can affect business demographics). **It comes therefore as no surprise that firm growth is strongly related to performance growth, and often captured through different notions of this performance (i.e. sales, productivity).**

### ***Firm performance and performance growth***

**Firm performance is understood through different lenses that are not mutually exclusive and often prove to be interrelated.** High growth, productivity, innovation and exporting have long been considered as indicators of entrepreneurial performance (OECD, 2017<sub>[12]</sub>). Due to size constraints and more narrow scope for economies of scale, SMEs mainly rely on innovation and product differentiation, and network and agglomeration effects for increasing profit and productivity.

Based on a literature review (OECD, 2019<sub>[14]</sub>), Figure 1.2 provides a stylised representation of the different channels through which firms can increase profits and productivity, by increasing turnover (i.e. by

increasing the volume of production or price) or reducing costs (i.e. by achieving internal or external economies of scale or scope, reducing sunk costs or reaping network effects). Figure 1.2 also identifies those channels that are more accessible to SMEs.

### Figure 1.2. Levers of SME profit and productivity growth

What can enable greater productivity and business profit growth? Which growth channels are more specific to SMEs?

Increasing turnover			Decreasing costs		
Channels	Drivers	SME	Channels	Drivers	SME
↗ Production volume	Internationalisation		↗ Economies of scale	Mass production	
	Product differentiation	*		Mergers and acquisitions	
	Mergers and acquisitions		↗ Economies of scope	Product differentiation (horizontal)	*
	Spatial concentration	*		Mergers and acquisitions	
↗ Price	Product differentiation (vertical)	*	↘ Transaction costs	Vertical firm integration	
	Quality	*		Standardisation	*
	Customisation	*		Inter-firm co-operation	*
	Sophistication	*	↘ Sunk costs	Inter-firm co-operation	*
	Specialisation	*		Open data, open innovation	*
Market power			↗ Network effects	Inter-firm co-operation	*
				Intellectual property rights	
				Standardisation	*
			↗ External economies	Agglomeration	*
				Inter-firm co-operation	*

Note: This representation does not account for external shocks that can affect firm's turnover and costs, i.e. due to changes in market demand and supply (e.g. sudden increase in energy and commodities prices in times of war).

Source: Adapted from (OECD, 2019<sub>[14]</sub>), "Market conditions" in OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*.

More recently, pressing environmental and societal considerations, changing consumer preferences and new investors' requirements have prompted business actors to improve their environmental, social and governance (ESG) performance, adopt more responsible business conduct (RBC) and demonstrate greater corporate social responsibility (CSR). As a result, the core notion of firm performance remains market driven, but has become increasingly multifaceted.

#### *Productivity*

**Productivity measures the efficiency of production, i.e., the efficiency of resource use.** It is commonly defined as a ratio between output volume and input volume, whereas exact measures differ depending on the purpose of measurement and the data available (Table 1.1) (OECD, 2001<sub>[19]</sub>). The most frequent one is labour productivity as the current price gross value added per person employed.

Table 1.1. Overview of main productivity measures

Type of output measure	Type of input measure			
	Labour	Capital	Capital and labour	Capital, labour and intermediate inputs (energy, materials, services)
Gross output	Labour productivity (based on gross output)	Capital productivity (based on gross output)	Capital-labour MFP (based on gross output)	KLEMS multifactor productivity
Value added	Labour productivity (based on value added)	Capital productivity (based on value added)	Capital-labour MFP (based on value added)	-
	Single factor productivity measures		Multifactor productivity (MFP) measures	

Source: (OECD, 2001<sup>[19]</sup>), Measuring Productivity. OECD Manual, <https://www.oecd.org/sdd/productivity-stats/2352458.pdf>.

**Productivity gains come from a number of internal- and external-to-the-firm factors.** Internal factors are typically levers on which business owners and managers can act to improve business performance (Marchese et al., 2019<sup>[20]</sup>). The most often reported ones in the literature are physical capital (i.e. investment in plants, machinery, buildings), skills development, digital adoption and ICT investment, business networks, including through participation in clusters and global supply chains, and innovation, including performing research and development (R&D). External factors refer to market, industry and local conditions (e.g., degree of competition, technology development, economies of agglomeration etc.), which shape firm conduct, especially strategic choices of business owners, and influence productivity growth and diffusion.

#### *Profit, mark-ups, market shares and stock markets*

**Productivity gains can translate into price competitiveness if the firm can differentiate price on its market.** For equal quality, price competitiveness is likely to allow firms to gain market share, i.e., a certain proportion of total output, or total sales, or capacity the firm accounts for in its industry or market.

**Productivity gains could also translate into greater cost competitiveness and, all else equal, more profitability.** Profit is the surplus earned above the normal return on capital (OECD, 1993<sup>[21]</sup>). Profits emerge as the excess of total revenue over the opportunity cost of producing the good/service.

**Greater profitability can ease access to external finance**, either by signalling value to investors or lowering risk perception for lenders, **and it can increase self-funding capacity** for reinvestment into production, innovation or market expansion activities, which can then create room for new productivity gains. **Profitability can also increase the market value of the firm**, determined in stock markets that are also often used to assess the long-term profitability of the firm.

**There is however considerable controversy as to whether higher levels of profitability reflect the returns to superior efficiency and skills, or the exercise of market power.** Mark-ups as measured as a ratio between output price and its marginal cost reflect profit and market power. Mark-ups generally increase with firm size, and firms with the highest levels of market power tend to enjoy larger mark-ups (De Loecker and Eeckhout, 2017<sup>[22]</sup>) and (Calligaris, Criscuolo and Marcolin, 2018<sup>[23]</sup>).



## *Innovation*

**By innovating, the firm seeks new opportunities and competitive advantage, and aims to generate more profits**, through increased sales, greater brand awareness, new customer base or higher market shares (i.e., product innovation), or through greater cost efficiency and improved productivity (i.e., business process innovation) (Crépon, Duguet and Mairesse, 1998<sup>[24]</sup>). **The OECD/Eurostat Oslo Manual defines innovation** as: “a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)” (OECD/Eurostat, 2018<sup>[25]</sup>).

**The term ‘innovation’ refers to both an activity and the (successful) outcome of this activity.** It is an extremely broad concept that encompasses a wide range of diverse activities. R&D, for instance, is one of the activities that can generate innovations, or through which useful knowledge for innovation can be acquired or created. The diffusion of new technology is also central to the process of innovation, and the process of innovation diffusion. **In that sense, innovation is at the same time a channel for improving SME performance and a measure of its performance.**

**Innovations derive from an accumulation of knowledge and information that constitutes the firm’s knowledge-based capital** (KBC, also referred to as knowledge-based assets or innovation assets). Innovation requires complementary investments in technology, skills and organisational changes, which in turn require financial, human and knowledge-based capital, and a well-functioning of the markets where those strategic resources could be accessed. Moreover, business ability to invest and take risk, or share knowledge and assets, depends on institutional and regulatory frameworks, quality infrastructure and competition and market conditions (OECD, 2019<sup>[14]</sup>).

**Innovation is therefore a complex and polyform phenomena that remains difficult to measure.** In the absence of a composite or synthetic index, proxies of input, output and performance could be used to approximate a firm’s innovation capacity and performance (OECD, 2010<sup>[26]</sup>). Innovation inputs include R&D and innovation expenditure, adoption rates of new technologies or practices that are considered as productivity-enhancing (digital), acquisition of new machinery and equipment, hiring of highly skilled, investment in intangible assets (e.g., software, data), expansion of networks (use of platforms, establishment of cooperation partnerships, development of supply-chains linkages, etc.). Indicators of innovation output include patenting, licensing revenues, revenues from new product/services etc. Indicators of innovation performance are even rarer, and include gains in market shares, productivity, resource and cost efficiency etc.

## *Export and internationalisation*

**SME internationalisation and integration into global value chains (GVCs) could be direct through trade or indirect through supply chains and market mechanisms** that involve international actors (OECD, 2018<sup>[27]</sup>) (OECD, 2021<sup>[9]</sup>).

**Like innovation, internationalisation is both a channel for improving SME performance and a signal of their higher performance**, the cause being difficult to dissociate from the consequence. SMEs are less often engaged in international activities but those that are show greater performance (Eurostat, 2018<sup>[28]</sup>). International SMEs are more profitable and more innovative than their domestic peers; they also have a larger network (St-Pierre, 2003<sup>[29]</sup>) (Baldegger and Schueffel, 2010<sup>[30]</sup>). **Engaging in international markets can be expensive, a cost that usually only the most productive firms can afford** (Melitz, 2003<sup>[31]</sup>) (Bernard, 2007<sup>[32]</sup>). For instance, trading costs related to learning about and adjusting to the foreign environment, or addressing increased internal organisational complexity, can weigh disproportionately on SME profitability as smaller firms trade smaller volumes. Participation in GVCs can also require complying with quality standards or obtain certifications that further increase the costs SMEs

have to incur upfront and subsequently to adjust to changing conditions. The rise of ESG and RBC requirements may heighten the relative cost of their internationalisation.

**At the same time, integration into GVCs is of particular relevance for SMEs** that can expand markets and networks abroad, specialise and compete within niche segments of GVCs that the fragmentation of production globally made accessible to smaller actors, and proceed to capacity upgrading through the exchanges that take place within the value chains (OECD, 2019<sup>[14]</sup>) (OECD, 2008<sup>[33]</sup>). **Closer global integration has implications for non-exporter SMEs that operate in local markets as well**, through increased competition, which can have disruptive effects on local economies and requires enhancing market knowledge and competitiveness of small businesses.

**Through trade**, SMEs can access cheaper or more sophisticated imported products and services, or technology embodied in imported products (Lopez Gonzalez, 2016<sup>[34]</sup>) (López González and Jouanjean, 2017<sup>[35]</sup>). Firms that use more imports are in fact more productive and better able to face the costs of exporting (Bas and Strauss-Kahn, 2015<sup>[36]</sup>) (Bas and Strauss-Kahn, 2014<sup>[37]</sup>). Imports and access to markets abroad can also be a way to build resilience through greater supplier redundancy and diversification in sourcing and production locations (OECD, 2023 forthcoming<sup>[10]</sup>).

**Additionally, international investments can have positive spillovers on domestic SMEs** (OECD, 2022 forthcoming<sup>[38]</sup>), (Crisuolo and Timmis, 2017<sup>[39]</sup>), (Lejarraga et al., 2016<sup>[40]</sup>) (OECD, 2019<sup>[41]</sup>) (OECD/UNIDO, 2019<sup>[42]</sup>). Technology and knowledge spillovers occur through value chain linkages when SMEs serve as local suppliers/buyers of foreign affiliates, through the strategic partnerships they build with foreign investors, through labour mobility, more often when foreign firms' employees join local SMEs or set up a business locally, or through competition and imitation effects (OECD, 2022 forthcoming<sup>[38]</sup>). The magnitude of productivity and innovation spillovers depend on the qualities of FDI, the absorptive capacity of local SMEs, and some structural factors such as local economic geography and the policy and institutional framework. A greenfield investment, for example, is likely to involve the implementation of a new technology in the host country and a direct transfer of knowledge from the parent firm to the new affiliate (Farole and Winkler, 2014<sup>[43]</sup>).

**There is therefore a variety of approaches and measures in use to assess SME internationalisation performance.** Some focus on export performance, e.g. number of SMEs exporting, export volume and export growth, export profitability and export propensity (i.e. share of exports by SMEs divided by the share of output by SMEs) (Baldegger and Schueffel, 2010<sup>[30]</sup>) (OECD, 2017<sup>[12]</sup>). Transactions can be expressed in absolute value or value-added terms to account for re-exporting and multiple cross-border flows (OECD/WTO, 2011<sup>[44]</sup>). Others focus on SME linkages with foreign multinationals (MNEs) through supply chains (e.g., domestic sourcing of MNEs) and technology cooperation (e.g., licensing from foreign-owned firms) (see (OECD, 2022 forthcoming<sup>[38]</sup>) for a more comprehensive overview).

### *Sustainability and resilience performance*

**SMEs have turned into important drivers of inclusive and green growth** with the potential to lead a transition to an eco-friendly, low-carbon economy and simultaneously, steer broad improvements in societal welfare (Koirala, 2019<sup>[7]</sup>) (OECD, 2021<sup>[8]</sup>). This reframing is taking place within a broader policy debate on how to better conciliate productivity and inclusiveness (OECD, 2018<sup>[45]</sup>) (Stiglitz, Fitoussi and Durand, 2018<sup>[46]</sup>) (OECD, 2019<sup>[14]</sup>), and to decouple economic growth from resource use and environmental degradation.

**SMEs are key actors in building more resilient socio-economic ecosystems and supply chains.** The COVID-19 crisis has revealed the vulnerability of GVCs and placed the issue of sovereignty at the forefront of the economic policy debate (OECD, 2021<sup>[9]</sup>). Resilience arises from supplier diversification and open markets to ensure supply, especially of essential goods. For non-essential goods, it relies on the ability of existing networks of suppliers –most likely SMEs– to bouncing back faster after a shock (OECD, 2021<sup>[47]</sup>). Instead of switching suppliers and partners and incurring more inherent sunk costs, businesses may



entrust relationships within existing networks that have become a key aspect of risk management strategies in supply chains. Promoting responsible business conduct will therefore be critical (OECD, 2021<sup>[47]</sup>). Throughout the COVID-19 crisis, many companies have been looking to collaborate towards solutions to enhance supply chain resilience, e.g., by supporting their suppliers and business partners with accelerated payments (OECD, 2021<sup>[48]</sup>). But other reactions have exacerbated supply chain vulnerabilities, e.g., sudden order cancellations that had cascading effects on factory closures, product shortages and job losses.

**Consequently, SMEs' performance is increasingly associated with sustainable business practices**, from improving resource efficiency, to reducing environmental footprint, to raising ability to comply with ESG requirements and RBC standards (Figure 1.3) (Boffo and Patalano, 2020<sup>[49]</sup>). Environmental factors can include natural resource use, carbon emissions, energy efficiency, pollution and other sustainability initiatives. Social factors can include workforce related issues (health, diversity, training), and broader societal issues such as human rights, data privacy, and community engagement. Governance factors can include corporate ethics, gender and minorities' diversity, or enforcing shareholder rights. A poor environmental record may make a firm vulnerable to legal action or regulatory penalties; poor treatment of workers may lead to high absenteeism, lower productivity, and weak client relations; and weak corporate governance can incentivise unethical behaviours related to pay, accounting and disclosure irregularities, and fraud.

**Figure 1.3. ESG Scoring: key criteria**

Environmental factors	Social factors	Governance factors
Natural resource use	Workforce	Board independence
Carbon emissions	Human rights	Board diversity
Energy efficiency	Diversity	Shareholder rights
Pollution/waste	Supply chain	Management compensation
Environmental opportunities		Corporate ethics

Source: (Boffo and Patalano, 2020<sup>[49]</sup>) based on ESG Rating providers, OECD, selected themes for illustration.

**One of the key ways in which investors and markets assess ESG performance is through ESG ratings**, which they obtain from established ESG raters (Boffo and Patalano, 2020<sup>[49]</sup>). Among the major market data providers such as Bloomberg or Thomson Reuters, there is a wide range of rating practices in terms of the aspects of sustainability assessed, which data to include, how to weigh metrics etc. Even if ESG methodologies are becoming more robust, and there is more back testing of scores against performance, scoring remains in a state of transition. In fact, the metrics used by companies and data providers suffer from a lack of consistency and uneven transparency, and the correlation among the scores different raters assign to the same companies is low. In addition, the ESG scoring environment is still dominated by large capitalised companies, and SMEs are not yet under scrutiny, which has raised concerns about how small businesses could document their ESG/RBC performance and comply with requirements on markets and within supply chains, or access new sources of sustainable finance (OECD, 2021<sup>[9]</sup>) (OECD, 2021<sup>[8]</sup>).

### **High growth and scale up**

**SME growth is measured in different ways** and different studies have used different criteria, i.e.

- The indicator of growth. Growth is most commonly measured in terms of employment (number of employees) or turnover (sales) (Coad et al., 2014<sup>[50]</sup>). Of these, employment-based metrics are

more commonly used as employee headcount is more often available in administrative datasets on enterprises. While both dimensions are likely to evolve in parallel, there is still a possible trade-off, with impacts on firm productivity (see (Monteiro, 2019<sup>[11]</sup>) and (OECD, 2021<sup>[2]</sup>) for discussion);

- The metric of growth, often formulated as absolute versus relative growth, or a combination of both, as the Birch index (Schreyer, 2000<sup>[51]</sup>);
- The period over which growth is measured, which is frequently over three to four years (Coad et al., 2014<sup>[50]</sup>); and
- The process of – organic or internal versus acquired or external – growth (Delmar and Davidsson, 2000<sup>[52]</sup>).

**High growth firms** (HGFs) can be defined either as the percentage of enterprises in a population that experience the highest growth performance, e.g. the top 1%-5%-10% with the highest growth rate in a given period (Monteiro, 2019<sup>[11]</sup>) (Coad et al., 2014<sup>[50]</sup>) (Petersen and Ahmad, 2007<sup>[53]</sup>), or firms that rank first according to a measure that combines relative (percentage) and absolute rates of expansion (Schreyer, 2000<sup>[51]</sup>), or firms growing at or above a certain rate over a certain period. For instance, (Autio, Sapienza and Almeida<sup>[54]</sup>) and (Halabisky, Dreessen and Parsley<sup>[55]</sup>) use sale growth of at least 50% during each of three consecutive financial years.

The **Eurostat-OECD Manual on Business Demography Statistics** recommends defining high-growth enterprises as enterprises with at least ten employees at the beginning of the period, and over 20% growth per annum averaged over a three-year period (OECD/Eurostat, 2008<sup>[56]</sup>) (Ahmad, 2006<sup>[57]</sup>). In the European Union, the Commission implementing regulation (EU) No. 439/2014 sets the definition of high-growth enterprises as follows: “*all enterprises with at least 10 employees in the beginning of their growth and having average annualised growth in number of employees greater than 10% per annum, over a three-year period*”. Both definitions are used in the literature (OECD, 2017<sup>[12]</sup>).

In the microdata work of this project, **high-growth enterprises are defined as firms with at least 10 employees that grow 10% per year on average in employment and/or turnover over 3 years** (Box 1.2), and additional analysis focuses on the higher – 20% per year – growth threshold. Recent trends in digitalisation and globalisation have reinforced the importance to consider (high) growth in both employment and turnover, as firms could reach new scales in turnover terms without growing in employment terms, i.e., scaling up by turnover criteria but not by employment criteria.

### Box 1.2. Understanding Firm Growth – a pilot microdata work

Leveraging firm-level data sources from five OECD pilot countries (Finland, Italy, Portugal, Slovak Republic and Spain), the microdata work on *Unleashing SME potential to scale up* aimed in particular to capture the heterogeneity of scalers, the changes these firms undertake before, during, and after the high-growth phase, and the sustainability of their new scale (OECD, 2021<sup>[2]</sup>).

In the report, “scalers” are identified through employment- or turnover-based (high) growth, which are taken as a signal of a transformative process at play within the firm. High-growth enterprises are defined as firms with at least 10 employees that grow 10% per year on average in employment and/ or turnover over 3 years.

The work assesses the factors that accompany this growth, i.e., the dimensions through which the firm reached new scales or growth milestones, before, during and after its growth phase, thereby taking also into consideration the capacity of a firm to operate in a sustained manner at a larger scale. To identify the features that distinguish scalers from other firms, the analysis compares them with their “peers”, i.e., firms in the same sector, founded around the same time and of similar size before the scaler enters its high-growth phase.

Source: (OECD, 2021<sup>[2]</sup>).

**The sequencing of high growth and performance increase can differ across different segments of the SME populations.** The microdata work of this project has explored the trajectories of HGFs in five pilot countries and the transformations they go through before, during and after a high growth phase (Box 1.2), identifying several factors that enable SMEs to change scale before entering a high growth phase, thus confirming the co-existence of different models and pathways of transformation (OECD, 2021<sup>[2]</sup>).

**Scale ups may not grow in employment and turnover at the same time (at least in the short run) and may not grow in employment at all.** Consequently, focusing solely on employment growth would exclude a large share of firms that reach another scale of economic activity without exceptional employment growth (OECD, 2021<sup>[2]</sup>). Employment and sales growth have in fact been found to be weakly correlated (Wiklund, Patzelt and Shepherd, 2009<sup>[58]</sup>) and can refer to different types of business transformation, the former pointing towards an increase in resource and the latter towards greater market diffusion (product acceptance). The micro data work shows that only about one-third of turnover HGFs are also employment HGFs at the same time (OECD, 2021<sup>[2]</sup>). This could be all the most problematic as the use of different growth indicators influence our understanding of who successful scalers are (Coad et al., 2014<sup>[50]</sup>).

**Increasingly, the use of digital technologies leverages the ability of small firms to grow in turnover without employment growth** as digitalisation affects market structures and the cost competitiveness of SMEs (OECD, 2019<sup>[14]</sup>) (OECD, 2021<sup>[59]</sup>). Different forms of business growth are emerging, with enterprises able to achieve significant scale, market share and high productivity, without needs for more investments or new hiring. For instance, “lean start-ups” are emerging that leverage the Internet to lower fixed costs and outsource many aspects of the business to stay agile and responsive to the market (OECD, 2017<sup>[60]</sup>). SMEs may also grow without employment growth domestically when they outsource the most labour-intensive activities of production abroad, in countries where labour costs are lower (OECD, 2021<sup>[2]</sup>).

**If for a subset of SMEs (probably the majority) changes in capacity lead to scaling up and high growth, in the case of demand-driven HGFs, growth in size comes without a clear link to any business transformation.** The microdata work shows in these latter cases that the SME has no

anticipatory strategy, neither shows intrinsic difference with its peers, but instead enjoys and adapts to a sudden windfall in demand (OECD, 2021<sup>[2]</sup>). Demand-driven scalers might benefit from unexpected market developments leading to a sudden windfall in demand. This can for example be the case of a company producing face masks in the outbreak of a pandemic. To expand production and satisfy increased demand, the firm needs to hire new workers in a short period of time. In such cases, factors driving firm growth might be temporary, which also means that scaling might not be sustainable, and the firm might go back to its initial size.

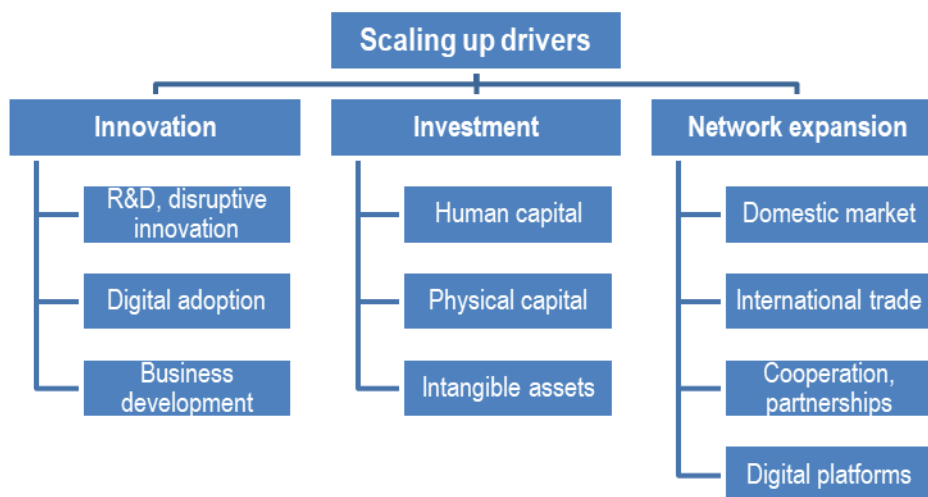
**This raises the question of sustainability in scaling.** High growth is a transitory phase. Once a firm reaches a new scale it is likely to maintain it. In particular, scaling up in turnover may be generated via improvements in firm productivity and resource efficiency, which are often targets that firms set for themselves. Profit-seeking firms intend to increase turnover (size) along with other measures of performance, such as stock returns. Most firms are able to at least consolidate their new scale following their high-growth phase (OECD, 2021<sup>[2]</sup>). About 60% of scale-ups succeed in maintaining their new scale during the three years after their initial high-growth phase and about 20% continue to grow in later stages – albeit with important differences across sectors.

### Scaling up drivers: which levers do scalers use?

**While there is a broad range of factors that could enable and incentivise SMEs and start-ups to scale up<sup>4</sup>,** there is still a lack of certainty – and evidence – on which firms could effectively become a scaler, and in turn which policies are most effective for nurturing them. Building on key findings from a literature review and the microdata work<sup>5</sup> of the project, **three main SME scaling up drivers have been identified for the purpose of the present report** to better understand the characteristics of scalers and the transformation process they go through during a high growth phase. These scale up drivers could be further decomposed into seven sub-drivers (Figure 1.4)

- **Innovation** (including research and development - R&D- and disruptive innovation, digital adoption, or business development),
- **Investment** (including in physical capital, skills or intangible assets), and
- **Network expansion** (e.g. in the domestic market, through internationalisation, or cooperation and strategic partnerships, or through the use of digital platforms)

Figure 1.4. Synthetic overview of SME performance and scaling up drivers



Source: Author's own elaboration.

**SMEs that scale up typically mobilise a combination of these drivers, yet their sequencing might differ**, depending on a complex mix of factors related to scalers' profiles and their overall transformation model. The following sections dig into more detail into the role of each driver and its related sub-dimensions for SME scale up. A last section comments on the multiplier effect of these drivers.

## ***Innovation***

**Scaling is the result of a forward-looking growth strategy grounded on innovation and productivity improvements** (OECD, 2021<sup>[2]</sup>). At the onset of this transformation is an entrepreneurial mindset and an opportunity-oriented behaviour of business owners, managers, teams and/or individuals to grow a business. Likewise, the measurement part of the project has highlighted innovation as a key differentiating factor between scalers and non-scalers (Table 1.2) (OECD, 2021<sup>[2]</sup>).

**Table 1.2. The central role of innovation in scalers' transformation models**

Transformation model	Disruptive or incremental innovation	Corporate strategy	Temporary or persistent change	Demand or supply-driven
Disruptive innovator	Disruptive	Anticipatory	Temporary/Persistent	Supply
Gradual innovator	Incremental	Anticipatory	Persistent	Supply
More-of-the-same scaler	Incremental	Anticipatory	Persistent	Both
Demand-driven scaler	Disruptive	Reactive	Temporary	Demand

Source: (OECD, 2021<sup>[2]</sup>)

In particular, the “**disruptive innovator**” develops new products or processes, either by investing in R&D or other innovation assets, e.g. in digitalisation. This group of scalers is characterised by permanent differences compared to peers that are linked to innovation, such as greater workforce diversity. By contrast, the “**gradual innovator**” grows through productivity gains and additional market shares. Its growth model is very similar to that of the “disruptive innovator”, but the transformation is more incremental following a process that adds strength to strength in the case of the “gradual scaler”, while it is more sudden following a change that revolutionises firm operations in the case of the “disruptive innovator”.

### *R&D and disruptive innovation*

**Scalers are more R&D oriented** (OECD, 2021<sup>[2]</sup>). **R&D can generate new knowledge which could bring to the inventor a major competitive advantage, even leading to radical disruptions in markets and behaviours.** R&D comprises creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge (OECD, 2015<sup>[61]</sup>). The most R&D-intensive sectors include computer and electronics manufacturing, software development and information and communication services, pharmaceuticals or automotive industries (OECD, 2022<sup>[62]</sup>). For instance, research on new materials could transform the computer and electronics industry. Flexible “bendable” electronics could enable new applications such as wearables, e-tattoos or potentially low-cost solutions based on direct 3D printing of electronic circuits. The graphene, an electrically conductive, chemically stable and the world’s strongest material, if used in manufacturing logic circuits, could solve the processing speed limitations of silicon transistors, and enable more efficient rechargeable batteries, and better and faster electronics (EC, 2019<sup>[63]</sup>).

**Radical innovations are considered to transform the status quo, while a disruptive innovation takes root in simple applications in a niche market and then diffuses throughout the market**, eventually

displacing established competitors (Christensen, 1997<sup>[64]</sup>) (OECD/Eurostat, 2018<sup>[25]</sup>). Disruptive innovation typically originates in two market segments that incumbents overlook. The first relates to underserved market spaces where incumbents that typically target the most profitable and demanding customers with ever-improving products and services, pay less attention to less-demanding customers, which opens the door to a disrupter for providing low-end customers with a “good enough” product. The second consists in unlocking new-market footholds, where disrupters create a market where none existed. Put simply, they find a way to turn non-consumers into consumers (Christensen, Raynor and McDonald, 2015<sup>[65]</sup>). Radical and disruptive innovations are likely to be very rare and difficult to identify or measure within the limited observation period recommended for innovation surveys (OECD/Eurostat, 2018<sup>[25]</sup>).

### *Digital adoption*

**Scalers use more dedicated IT resources** (OECD, 2021<sup>[2]</sup>). **Digitalisation offers a range of opportunities for SMEs to improve performance, enhance productivity and compete, on a more even footing, with larger firms.** Possible benefits have been extensively discussed in the 2021 OECD report on “The Digital Transformation of SMEs”, including: increased economies of scale; lower operation and transaction costs; reduced information asymmetries; greater capacity for product differentiation, business intelligence or automation; increased customer and market outreach; network effects, etc. (OECD, 2021<sup>[59]</sup>). For instance, SMEs can increase efficiency in their internal processes, gain knowledge about their clients and partners, and better anticipate fluctuations and risks in their business environment, from the adoption and combination of data intensive technologies, such as the Internet of Things and distributed ledger technologies (data generation and exchange), cloud computing (data storage), and artificial intelligence (AI) (data analytics) (Chapter 3).

### *Business development*

**Other forms of innovation through the adoption of new processes or practices can support business development and scale up**, e.g. in areas like marketing, branding, organisation, or other non-tech areas, which may then translate into increased market share, improved access to new markets, or new products (OECD, 2019<sup>[66]</sup>) (OECD, 2019<sup>[14]</sup>). Given that smaller firms have less capacity to carry out in-house R&D due to size-related and resource constraints, incremental and non-technological innovation is more central to many SME business models. Business innovation surveys confirm that SMEs are more often engaged in organisational or marketing innovation than large firms, also reflecting a sectoral bias towards services where SMEs concentrate, and where innovation is in essence less capital- and technology-intensive.

### **Investments**

**The measurement work illustrates the importance of –all sorts of– investments for scalers.** The “*gradual innovator*” invests in human and physical capital, and in intangible assets in anticipation of scaling. This type of scaler is characterised by persistent differences compared to peers in human capital (e.g. the share of educated workers and IT specialists). **Investments are also particularly central to the model of the “more-of-the-same” scaler** that grows without changing production processes (OECD, 2021<sup>[2]</sup>). This type of scaler is characterised by a higher investment rate and higher debt than peers in anticipation of scaling. This is the economist’s case of “economies of scale”, e.g. a manufacturing firm building a second production line and doubling capacity within the same establishment, or a software company that can increase production without additional costs once the sunk costs of product development are covered. New firms that need to quickly reach a viable scale to survive also fall into this group.

### *Physical capital*

**Investing in physical assets can be essential to scale up business operations, depending on the sector an SME is operating in.** Physical assets include an extremely broad range of assets, with capital-intensive industries requiring especially machinery and industrial equipment, while service firms typically focus more on vehicles and ICT (OECD, 2015<sup>[67]</sup>). It was estimated that between 30-70% of the growth of output per worker (productivity) in OECD countries could be accounted for by capital accumulation in the short term, while all gains in the long term were caused by technological progress, often embodied into physical capital (Aghion and Howitt, 2007<sup>[68]</sup>).

**Incidentally, physical capital, used as collateral, can also facilitate access to external funding for expansion, notably debt finance.** Innovative companies, young firms and start-ups continue to face particular challenges in this area, although collateral requirements have tended to decline significantly in recent years (OECD, 2022<sup>[69]</sup>). **Likewise, monetising physical assets can open access to alternative asset-based finance.** In most cases, physical capital, such as land, inventory, machinery, equipment, and real estate can allow the firm to access working capital under more flexible terms than from conventional lending. That way, asset-based instruments can fill existing SME financing gaps (OECD, 2015<sup>[67]</sup>).

### *Skills and human capital*

**Scalers employ relatively more educated workers** (OECD, 2021<sup>[2]</sup>). **Skilled workers are a key asset for competition in a knowledge-based economy** (Autor, 2013<sup>[70]</sup>) (Grundke et al., 2017<sup>[71]</sup>) and skills development has become critical in a context of a fast and irreversible digital transition and growing globalisation (OECD, 2019<sup>[14]</sup>). Highly skilled employees are more likely to perform complex tasks that can drive firm competitiveness and productivity growth (Acemoglu, 2002<sup>[72]</sup>). Empirical studies converge in fact towards a mutually reinforcing relationship between workforce skills, and innovation and productivity (Marchese et al., 2019<sup>[20]</sup>). Skilled employees are also vital for technology and innovation absorption, as well as breaking into new markets, or for adapting to organisational change during phases of transitions such as growth or exporting for the first time (OECD, 2015<sup>[73]</sup>). Improving the skills of workers can also strengthen SME position in GVCs by enabling specialisation and integration in high value-added activities (e.g. technologically-advanced industries, complex business services (OECD, 2017<sup>[74]</sup>). Incidentally, many business surveys identify access to workforce skills as a key constraint to firm growth (Siepel, Cowling and Coad, 2017<sup>[75]</sup>).

**In addition, scaling up and high growth require leadership and management skills to cope with the disruptive transformation process firms are going through, and that can alter their organisational dynamics** (OECD, 2010<sup>[76]</sup>). SME founders usually have specific expertise, while growth often requires an expanded skillset to address the emerging complexities: from commercial (e.g. marketing and serving of new offers), to project management (e.g. logistics, organisations of events), financial (e.g. capital and cash flow management) and strategic thinking (e.g. building internal leadership, coordinating sets of actions to fulfil new strategic objectives) (OECD, 2019<sup>[66]</sup>). Several studies argue that growth capabilities are largely shaped by leadership and management capability development upstream (Koryak et al., 2015<sup>[77]</sup>).

### *Intangible assets*

**Investment in intangible assets, such as computerised information, innovative property and economic competencies, has grown significantly with the rise of the knowledge- and data-driven economy** (Andrews and Criscuolo, 2013<sup>[78]</sup>) (OECD, 2015<sup>[79]</sup>). As innovation turned more incremental, open and non-technological, new opportunities arose for smaller actors to innovate, and non-physical “intangible” innovation assets have become central to their competitive edge, such as firm-specific skills and know-how, data and brands, copyrights, designs, patents, trademarks and other intellectual property rights (IPRs), algorithms, databases and software, organisational settings and processes, or business

models and networks etc. (see Chapter 3). Accordingly, corporate investment in intangible assets has outstripped investment in traditional tangible assets, such as machinery and physical equipment, accounting for over 70% of firms' value in the United Kingdom and the United States already in early 2010s. For example, it is estimated that data assets only cover nearly 40% of today's intangible investment (Corrado et al., 2022<sup>[80]</sup>).

**Incidentally, promoting IPRs can be instrumental for improving scalers access to growth finance.**

Beyond the benefits of efficient IPR law and enforcement systems for ensuring the appropriation of innovation benefits and incentivising risk taking, IPRs can help SMEs gain additional revenues (e.g. through licensing) and serve as collateral or guarantee for bank lenders and investors (OECD, 2015<sup>[81]</sup>).

### **Network expansion**

**SME capacity of building and expanding networks is determinant for their innovation and growth outlook.** Networks can improve SMEs access to clients or partners, knowledge and talent, data and technology, or finance, and allow them to benefit from innovation spillovers that could help them transform processes and business models and scale up performance (OECD, 2019<sup>[14]</sup>). In fact, SMEs due to their more limited internal capacity tend to be more dependent on external sources of knowledge, and their integration into local, national and global innovation networks could help them capture knowledge spillovers. Strong networks are also a key attribute of successful entrepreneurial ecosystems and critical in stimulating and growing start-ups.

**SME network expansion can take different forms**, e.g., through their supply chains, in domestic and/or international markets, via cooperation and partnerships, or through the use of digital platforms. How they can influence SME capacity and opportunity to scale up can vary depending on the nature of the network.

#### *Domestic market expansion*

**The domestic markets remain the prime space where SMEs do business and most of them start their expansion journey domestically** (OECD, 2019<sup>[14]</sup>) (OECD, 2019<sup>[66]</sup>). SMEs are predominantly local actors embedded in nearby markets and ecosystems, and their business linkages act as channels for knowledge spillovers (OECD, 2018<sup>[82]</sup>). Firms engaged in buyer-supplier relationships can enter in collaborative arrangements for undertaking product innovation, for competition or internationalisation purposes or for workforce training. Collaboration with customers can also be a channel, especially as SMEs tend to enjoy close relationships with end-users and better understanding of near-by market (OECD, 2019<sup>[14]</sup>).

**In particular, public procurement offers considerable opportunities for SMEs to expand business operations, innovate, and boost competitiveness.** In 2019, public procurement amounted to close to 30% of government expenditures in the OECD area and about 13% of GDP (OECD, 2021<sup>[83]</sup>). Through their significant procurement of very diverse goods and services (equipment and supplies, maintenance and repairs, energy, ICT, consulting, etc.) and the commissioning of services provided directly to consumers, national and subnational governments creates scope for engagement with small-scale local specialist providers, while also offering relative stability in demand, security of payment and spill-overs that might accrue through accreditation and recognition of being a supplier to government (e.g. for customer base expansion, or for negotiating other contracts and financing) (OECD, 2019<sup>[14]</sup>).

#### *International trade*

**Scalers increase their global market presence, in some cases exporting** (OECD, 2021<sup>[2]</sup>). **Stronger participation by SMEs in global markets creates opportunities to scale up**, by opening new markets, facilitating access to foreign technology and managerial know-how and creating spill-overs during the interactions along the value chains, broadening and deepening the skillset, and accelerating innovation.



**SMEs integrate into GVCs as direct exporters (trading), upstream suppliers of exporting firms (supplying) or importers of foreign inputs and technologies (sourcing)** (OECD, 2019<sup>[14]</sup>). GVCs, in particular, offer new opportunities for SMEs to specialise within production networks, rather than compete along the entire line of activities, which gives an edge to smaller actors. In turn, value creation within GVC results from the low replicability of products, i.e. firms' capability to innovate and differentiate their output (OECD, 2013<sup>[84]</sup>) (Kaplinsky and Morris, 2002<sup>[85]</sup>).

### *Cooperation and partnerships*

**As SMEs draw on external economies of scale for increasing performance, collaboration, strategic partnerships, or alliances play a key role for scaling up.** Collaborative arrangements are set up for multiple purposes, e.g. for sharing business risks, accessing and pooling resources, managing joint innovation activities, combining forces for commercialisation and marketing, or simply sharing knowledge and information (OECD, 2019<sup>[14]</sup>). For instance, a frequent way for SMEs to access global markets and improve global competitiveness is to establish alliances through business linkages or trade associations.

**SME cooperation partnerships can involve (other) small and large firms, competitors and customers, domestic firms and multinationals, as well as knowledge providers, such as universities.** This plurality reflects the multiplicity of actors engaged in business and knowledge networks, that generate (suppliers), distribute (intermediaries) and use (users) knowledge, serving multiple functions into knowledge networks and turning knowledge transfers into multidirectional and multidimensional flows (Kergroach, 2020<sup>[86]</sup>).

### *Digital platforms*

**An online platform is a digital service that facilitates interactions** between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the internet" (OECD, 2019<sup>[87]</sup>). Online platforms are very heterogeneous in their functionalities, structures and in the services they offer, and SMEs can carry out numerous key business functions by using them, such as marketing, advertising, branding, customer services and external communication (e.g. Google, Facebook), e-commerce and online marketplaces (e.g. Amazon, e-Bay), service delivery (e.g. Deliveroo, Uber, Airbnb), financing and payment (e.g. PayPal), remote working and teleconferencing (e.g. Zoom), or for R&D, design and exploration (e.g. GitHub) (OECD, 2021<sup>[59]</sup>).

**Digital platforms are instrumental in SME network expansion and provide important channels for SME growth.** They enable greater access to new markets, sourcing channels and a multitude of digital networks. They provide scope for efficiencies that can drive economies of scale, leverage network effects, and, in turn, boost competitiveness and productivity (OECD, 2021<sup>[59]</sup>).

**A central feature of online platforms relates to their ability to generate and deliver network effects, which make them particularly attractive for SMEs.** Network effects imply that the usefulness of multi-side platforms is directly correlated to the size of their user-base (OECD, 2019<sup>[87]</sup>), the larger, the more likely to find a match (e.g. with service providers, suppliers, clients) and to reduce transaction costs and information asymmetry. A case in point are online marketplaces, where ancillary services such as review and rating systems, platform insurance on purchases and refunds, as well as guarantees on delivery times and logistic, greatly increase the trust of consumers, making it more likely for an SME to be able to sell to them via the platform than through its own app/website (OECD, 2021<sup>[59]</sup>).

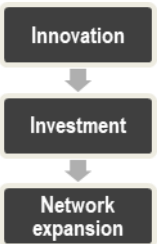
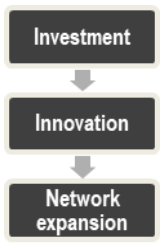
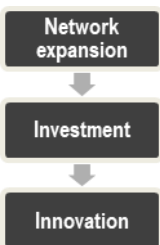
**However, not all digital platforms are likely to drive SME growth to the same extent and the growth of all types of businesses the same way.** The platform economy embeds for instance the gig platforms which matches workers, most often self-employed, to customers (final consumers or businesses) on a per-service or per-task ("gig") basis. These platforms, if they allow SMEs on the demand-side to reduce labour costs through increased employment flexibility and easier connection with specialised workers, appear


more as a substitution solution to traditional self-employment or an income complement for own-account workers (Schwellnus et al., 2019<sup>[88]</sup>), with limited scope for growth on this side of the market. In addition, gig platforms remain few and have mainly grown in a small number of services such as personal transport and services and crafts.

### **Multiplier effects of scaling up drivers**

**Scaling up drivers are in fact highly interconnected and mutually reinforcing, and scalers almost always combine these drivers as they embark on their transformation journey**, even though some drivers may play a more dominant role at certain stages (Table 1.3) (OECD, 2021<sup>[2]</sup>).

**Table 1.3. Scaler profiles, scale up drivers and trajectories**

Transformation model	Measurable dynamic differences from peers			Scaling up drivers at play
	Before scaling up	During scale up (and after)	Permanent differences	
<p><b>Disruptive innovator</b></p> <p>The firm develops technological innovation that translates into a competitive advantage.</p>	<ul style="list-style-type: none"> <li>Higher share of R&amp;D and IT workforce</li> <li>Higher debt</li> </ul>	<ul style="list-style-type: none"> <li>Higher wage premium, productivity and profitability</li> </ul>	<ul style="list-style-type: none"> <li>More workforce diversity</li> <li>Younger workers and management</li> </ul>	<p>Sudden transformation due to <b>new products or services</b> that provide a competitive advantage, incl. e.g.</p> <ul style="list-style-type: none"> <li>Leveraging <b>digital adoption</b> to improve productivity</li> <li>Carrying out <b>R&amp;D</b> to drive innovation</li> <li>Investing in <b>Human capital</b> (wage premium, diversity)</li> </ul> 
<p><b>Gradual innovator</b></p> <p>The firm invests in human capital and new production processes to become more productive than its peers and gain market shares</p>	<ul style="list-style-type: none"> <li>Higher debt</li> </ul>	<ul style="list-style-type: none"> <li>Higher wage premium, productivity and profitability</li> </ul>	<ul style="list-style-type: none"> <li>Higher share of educated workers</li> <li>Higher share of IT specialists</li> </ul>	<p>Gradual transformation, which requires accessing external capital (e.g. equity or bank credit) for <b>investments in physical, human (and intangible) capital</b>, i.e. for</p> <ul style="list-style-type: none"> <li>training the workforce</li> <li>hiring specialised staff</li> <li>developing/protecting intangible assets</li> <li>adopting new management practices</li> <li>etc.</li> </ul> 
<p><b>Demand-driven scaler</b></p> <p>The firm faces an exogenous and temporary increase in demand.</p>		<ul style="list-style-type: none"> <li>Higher debt</li> <li>Higher wage premium</li> <li>More workforce diversity</li> <li>More low-educated and low-skilled workers</li> <li>Higher share of current assets</li> </ul>		<p>Unexpected increase in (local or international demand for a good or a service <b>might be driven by improved access to supply chain partners or business networks</b></p> <p>To expand production and respond to the temporal increase in demand, the <b>firm may need to invest in</b></p> <ul style="list-style-type: none"> <li>Physical capital</li> <li>Hiring more staff (and retaining them)</li> </ul> <p>Can result in further <b>market expansion</b> (domestically or internationally)</p> 

<p><b>More-of-the-same scaler</b></p> <p>The firm scales by producing additional output using the same business model</p>	<ul style="list-style-type: none"> <li>• Lower productivity and profitability</li> <li>• Higher debt</li> </ul>	<ul style="list-style-type: none"> <li>• Profitability and productivity start from a lower level and align with peers after scaling</li> </ul>		<p><b>Need for significant upfront investment</b>, e.g. for new facilities or for building a second production line, as well as hire new staff to match expansion in production.</p>	 <pre> graph TD     A[Innovation] --&gt; B[Investment]     B --&gt; C[Network expansion] </pre>
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Source: Authors' own elaboration, based on (OECD, 2021<sup>[2]</sup>).

### **Innovation, as a start, is a case in point, as it requires investments and accessing networks.**

1. **Innovation remains strongly linked to multiple forms of investment**, as it results from a process of knowledge and capital accumulation, whereby firms create, acquire, and recombine innovation assets which allows them to design and introduce new products, services, or processes (OECD, 2019<sup>[14]</sup>). To do so, firms typically need to invest in a combination of physical capital (e.g. technology, machinery and equipment), skills (e.g. firm-specific skills and know-how, new IT skills), as well as a range of intangible innovation assets (e.g. data and brands, organisational settings and processes, or business models and networks).
2. Digital adoption, for instance, not only implies investments in technical equipment such as hardware or software, but requires complementary investments in organisational changes and skills (e.g. training) to be effective. Moreover, existing evidence strongly suggests that for digital adoption to “pay off”, there is a need for digital skills to be diffused more widely across employees and managers and not be limited to ICT specialists (OECD, 2021<sup>[59]</sup>).

**Likewise, firms almost never innovate in isolation and networks of innovation involving multiple actors are the rule rather than the exception** (DeBresson, 1996<sup>[89]</sup>). SMEs therefore need access to relevant networks to source relevant knowledge, skills or equipment, and smaller firms in particular are more dependent on external knowledge obtained either through partnerships or spillovers (Love and Roper, 2015<sup>[90]</sup>). In this context, open innovation has brought about a paradigm shift whereby business efforts are no longer confined to corporate R&D labs but increasingly emerge through collaborative efforts between business partners that interact, exchange knowledge and information and share standards and infrastructure, thus facilitating access to multiple innovation assets and making the innovation endeavour also more accessible to SMEs (OECD, 2010<sup>[91]</sup>). **New forms of innovation can reduce SME growth investment needs and increase their networking capacity.**

1. **The rise of digital platforms has partially remedied to SME investment needs**, e.g. by enabling new models of knowledge sourcing and providing SMEs with greater access to a larger portfolio of innovation assets at reduced cost. Cloud computing for instance offers new solutions for SMEs to upgrade their IT systems without incurring upfront investment in hardware, and maintenance costs afterwards (OECD, 2021<sup>[59]</sup>).
2. **The commercialisation of IPRs, i.e. formalised results of R&D and innovation, can create additional revenues**, or serve as collateral or guarantee for bank lenders and investors, reducing needs for financial capital.
3. **Aside from accelerating internal innovation, opening innovation has increasingly been seen as a way for expanding the markets for external use of innovation** (Chesbrough, 2003<sup>[92]</sup>), with the phenomenon taking place at a much faster pace than in the past (Gassmann and Enkel, 2004<sup>[93]</sup>).
4. **There is also a considerable body of empirical literature suggesting a positive link between innovation and exporting** (Love and Roper, 2015<sup>[90]</sup>). SMEs which have a track record of innovation are more likely to export, more likely to export successfully and more likely to generate

growth from exporting than non-innovating firms. (Wright et al., 2015<sup>[94]</sup>). Digital adoption in particular has greatly increased SME opportunities for business expansion abroad through a digitally-enabled access to international buyers, value chain partners and previously unreachable geographic markets (OECD, 2018<sup>[82]</sup>).

**SMEs can source all forms of capital through various networks, and expand their networks with their capital stock.**

1. Participation in GVCs create opportunities for SMEs to absorb spill-overs of technology and knowledge, and increase physical, human and intangible capital (OECD, 2008<sup>[33]</sup>) (OECD, 2019<sup>[14]</sup>) (OECD, 2022<sup>[95]</sup>).
2. Participation in GVCs can also provide SMEs with access to a broader range of financing instruments. This can include short-term trade finance instruments that enable deferred payment (e.g. intra-firm or inter-firm financing), as well as more dedicated tools such as letters of credit, advance payment guarantees, performance bonds, and export credit insurance or guarantees. (OECD, 2021<sup>[96]</sup>) (OECD, 2021<sup>[97]</sup>). In addition, medium- and long-term export financing instruments (e.g. buyer credits) are increasingly used as supply chain solutions for financing capital equipment. These instruments typically require longer repayment periods, with greater impact on SME scale up potential, as they enable investment in productive capital and network expansion.
3. The rise of industry, marketplace and crowdsourcing platforms has been instrumental for increasing SME access to strategic resources (finance, skills and innovation assets). Online platforms for instance enable better system interoperability and data sharing (OECD, 2017<sup>[60]</sup>), and they provide access to software, technology or data and databases (e.g. through cloud computing services), ideas and solutions (e.g. through crowdsourcing and collaborative platforms on specialised software solutions), user and client data (e.g. through e-commerce platforms) (OECD, 2019<sup>[14]</sup>) (OECD, 2021<sup>[59]</sup>).
4. In turn, there is particularly strong evidence on the importance of investments in skills and capital in fostering SME exports, as well as access to liquidity and R&D (Wright et al., 2015<sup>[94]</sup>).
5. In addition, investments in intangible assets can help SMEs open up new segments in markets and position more competitively vis-à-vis large enterprises. IPRs can provide an important signal for attracting customers and enticing venture capital investments (Holgersson, 2013<sup>[98]</sup>).
6. IPRs and their enforcement can create a sound competition environment and secure foreign direct investment with potential for building stronger innovation linkages with domestic SMEs, either through value chains or cooperation agreements (OECD forthcoming, 2022<sup>[99]</sup>).

**Scaling up drivers are complementary and mutually reinforcing**, marked by significant overlaps and interdependencies, that suggest the existence of virtuous – or vicious – circles in scaling up dynamics. The intertwining of scaling up drivers inevitably raises complexity for policy makers seeking to promote SME scaling up and presupposes the emergence of a dense nexus of interactions within the scale up policy mix.

## Rethinking SME scale up policies

**As there is no clear understanding on who scalers are and which types of transformations they go through, there is currently no clear and comprehensive overview of what works in promoting scale-ups.** An important strand of government policy focuses on the potential of SMEs to drive future growth, especially as these firms seem also adept at recovering from recessions (Cowling et al., 2014<sup>[100]</sup>).

The following section draws a number of policy implications for such a policy from the scale-up measurement work and literature review undertaken for this project. It offers insights for governments

interested in unleashing the potential of their SMEs to scale up, and calls for a rethinking of how scale-up policies are designed and understood.

### ***1. Scale up policies can pay off***

**The microdata work and literature converge in underlining that scalers have disproportionate impacts on job and value creation.** This is particularly relevant for countries and regions that may want to foster the conditions of SME growth, especially in the context of a post-COVID recovery. While not yet documented extensively, scalers' contribution to sustainability and resilience performance could also provide additional rationales for public intervention, notably to steer the green transition.

The new evidence from the microdata analysis also shows that **scalers can maintain new scale over time, and even grow again.** High growth is sustainable for the majority of them, with up to two thirds of scalers able to maintain their new size, continue to grow (20%) or even scale up again in the following three years after the initial growth phase. Even if growth is not a linear expansion and high-growth phases are episodes (Grover Goswami, Medvedev and Olafsen, 2019<sup>[101]</sup>), most scalers that have undergone this transformation have accumulated knowledge and innovation capital and gained capacity on a permanent basis. Support for scalers may therefore continue to “pay off” beyond the high growth phase, even though some of these firms shrink or even exit the market afterwards.

### ***2. There is a broad scaling up potential, beyond the select club of high-tech start-ups***

**Scalers are not all those we think they are.** The measurement work provides evidence that, beyond the usual suspects, namely the young high-tech start-ups, scalers can be found everywhere, in all sectors, all places, and all firm size classes. In fact, **most of them are mature firms operating in low knowledge-intensity sectors, including services.**

**This means that, by focusing on high-tech start-ups only, scale up policies may miss a long tail of other potential scalers,** and all the opportunities of job creation, productivity gains, and technology and innovation diffusion, including green tech and eco-innovation diffusion, they could bring. This debate is not new. A central point in the scale up policy discussion in past years relates to the population(s) of firms that may receive scale up support in their lifetime and the right balance to achieve between “quantity and quality” (Box 1.3). The question is about whether to place the policy focus on a specific subset of firms (e.g., high-growth ventures or entrepreneurs) with the highest growth potential and whether policy can find the right way(s) to help them succeed. Today the question remains unanswered.

### Box 1.3. Highly selective versus broad-based scale up policies: selected approaches

A strand of academic literature advocates for highly selective criteria in terms of target populations and growth activities, as opposed to large-scale “blanket support” for all start-ups, many of which are unlikely to grow or even survive (Shane, 2009<sub>[102]</sub>). How such considerations of “quality over quantity” have contributed to shaping policy at country-level is documented in earlier studies on the subject.

Autio, Kronlund and Kovalainen (2007<sub>[103]</sub>) published a catalogue of 47 growth-oriented policy measures across nine countries, in which 60% of the initiatives focused exclusively on high-growth SMEs. Despite the fact that the initiatives reviewed covered all growth stages, from pre-seed to maturity, the greatest focus is on start-up and early growth, and much less on the mature end (only 4 initiatives).

Hindle, Yencken and O’Connor (2011<sub>[104]</sub>) argued that the Australian approach of “only” stimulating broad participation in business ownership and supporting technological innovation, knowledge transfer and commercialisation of R&D was ignoring the market trajectory challenges and other finance, human resource and infrastructure support needs that are essential for converting these firms to actual HGFs. Instead, the authors propose a framework for integrating the existing (and missing) policies implemented in a wide variety of policy areas and re-focusing them on the “right target” (the high-growth firm), while recognising that navigating between policies that pick winners and those that deal with market failure remained a delicate balancing act.

Drawing on research in Scotland, Mason and Brown (2013<sub>[105]</sub>) offered some nuance to the debate by suggesting that the heterogeneous nature of HGFs in terms of sector, age, size and origins makes it impractical to target support on particular sectors, technologies or types of firms (e.g. new or R&D intensive). Instead, the authors propose a reorientation of high-growth policy, both in terms of appropriate targeting and forms of tailored support that would benefit a broader cohort of firms. Importantly, they stress that public policy also needs to focus on the retention of HGFs which are acquired by non-local businesses and properly reflect upon the specificities of their entrepreneurial environment when devising appropriate policy interventions.

Source: (Shane, 2009<sub>[102]</sub>) ; (Autio, Kronlund and Kovalainen, 2007<sub>[103]</sub>); (Hindle, Yencken and O’Connor, 2011<sub>[104]</sub>); (Mason and Brown, 2013<sub>[105]</sub>).

**As a result, policy makers may look for scalers in the wrong place, or through a too narrow lens, and support them with the wrong measures**, based on assumptions about their age, technology intensity or sectors of operations that do not reflect reality, or do not sufficiently take into account other segments of the SME population with potential to grow.

### 3. It is hazardous to seek to pick future winners

**The lack of persistence in high growth events makes it difficult to predict which firms are going to grow** (Coad et al., 2014<sub>[50]</sub>) (Hölzl, 2009<sub>[106]</sub>). It is therefore difficult for policy to target HGFs before their transformation. Almost all empirical models of growth typically have low explanatory and predictive power, whichever measures of growth are used (Wright et al., 2015<sub>[94]</sub>). Windfall gains for some firms that would have grown anyway and the targeting of other entrepreneurial ventures with low growth outcomes are likely to be among the results of the policy. This raises questions for policy makers about how to select firms for targeted programmes and what level of resources to devote to them.

**Firms occasionally reach critical trigger points for scale up**, at which they decide to either invest in expansion, or to stay within existing capacity limits (Brown and Mawson, 2013<sub>[107]</sub>). These trigger points are discontinuities in the growth path, e.g., the hiring of the first employee (which corresponds to a doubling

of size), crossing critical size thresholds (e.g., regarding employment protection legislation obligations), setting up a second production plant, launching a second product, taking first steps into export markets etc. Policies may seek to identify and target firms at these trigger points. However, the decision to innovate, invest, scale up or down depends on a number of market conditions, firm strategy and business owner ambitions, that serve to underline the complexity of targeting potential scale-up firms (OECD, 2019<sup>[14]</sup>).

**Evaluation results on the effectiveness and efficiency of targeted policies will be affected by growth or performance indicators used** (Coad et al., 2014<sup>[50]</sup>). If evaluation assesses jobs created as the key measure of policy success, this could disfavour HGFs that grow in turnover and achieve productivity gains (Aiginger, 2006<sup>[108]</sup>) (Aiginger, 2007<sup>[109]</sup>) (Bravo-Biosca, 2010<sup>[110]</sup>). It could also be asked how to consider SMEs that achieves higher resource efficiency, productivity gains and greater profits, with stable turnover. Furthermore, in the context of moving towards a more sustainable growth, appropriate weight is needed to socio-economic benefits that may be achieved if scale-ups help tackle climate change and societal challenges.

**Scaling up is affected by multiple conditions implying that it would not be sufficient for policy to target one single channel of intervention.** The evidence shows that a range of structure, conduct and performance factors affect scaling up. However, much of the existing literature focuses on a single specific scale up channel or a small set of scale up channels for potential policy intervention. Furthermore, there is limited evidence on which targeted policy initiatives have the most impacts on generating scale-ups. There is a large body of evidence that examines the impact of targeted policy initiatives on SME scale up in areas such as innovation and exporting, finance, or leadership and management development (Wright et al., 2015<sup>[94]</sup>). But, despite the considerable academic attention placed upon small businesses and their contribution to the economy over the last decades, our understanding of the drivers of business growth remains partial, and there is currently no clear and comprehensive overview of what works in promoting scale-ups.

**Much remains unexplained, undermining governments' ability to design effective policy support.** Much of government efforts to stimulate SME growth, while common across OECD countries and beyond, have been influenced over time by economic cycles, technological changes and the perceived market failures and barriers these firms might have to face (Box 1.4). More evidence is needed on SME growth drivers and SME policy impacts to guide future policy development.



### Box 1.4. SME growth policies over time

Measures to promote SME growth are common across OECD countries and beyond. However, national approaches have evolved over time, influenced by economic cycles, technological changes and the perceived market failures and barriers these firms might have faced at different points in time.

#### Tackling unemployment amid 1970s-1980s recessions

In the 1980s, the concept of SME policy gained momentum, as governments came to recognise the important role of SMEs in the functioning of market economies. Academics such as (Birch, 1981<sup>[111]</sup>) contributed to redefining the role of SMEs by documenting their major contribution to job creation in the United States (Wapshott and Mallett, 2017<sup>[112]</sup>). In this decade, SME policies were thus mainly developed as a way to **tackle mounting unemployment** that resulted from the closure or decline of operations of large firms amid the 1970s recession (Jurado and Battisti, 2019<sup>[113]</sup>). In Korea, for example, *The Ten-Year Development Plan for SMEs* aimed to **increase the number of SMEs** by supporting them through credit guarantee funds, SME-friendly procurement measures and tax incentives (Abdullah, 2000<sup>[114]</sup>).

#### Advancing liberalisation and globalisation

In the 1990s, accelerated efforts around deregulation came to influence the SME growth policy agenda. In Australia, for example, these developments led to the creation of the 1996 *Small Business Deregulation Taskforce* that focused on **reducing the red tape faced by SMEs** in areas such as tax, labour and access to finance (Mazzarol and Clark, 2016<sup>[115]</sup>). In addition, the definition of legal ground rules for international trade through the creation of the World Trade Organisation, together with a surge in globalisation, gave a particular focus on **improving SME international competitiveness. SME integration into global value chains (GVCs)** was supported not only through measures for greater access to export markets and related advisory and training programmes, but also through initiatives for more investments in skills and technology and innovation (Mazzarol and Clark, 2016<sup>[115]</sup>) (WTO, 2016<sup>[116]</sup>).

#### Digitalisation and innovation

The 2000s marked another shift towards broadening the scope of SME growth policy, with additional policy areas. In response to the fast internet penetration, initiatives to **foster SME uptake of e-commerce** emerged. The *Australian Electronic Business Network (AeB.N)* was created in the early 2000s. At OECD level, the *Bologna Charter on SME Policies* recommended the implementation of policies for **strengthening SME innovation** through different instruments, such as tax incentives for R&D, SME friendly procurement, access to innovation networks and access to skills (OECD, 2000<sup>[117]</sup>).

#### Addressing liquidity shortages after the Great financial crisis

A few years later, when the 2007-08 financial crisis hit SMEs hard, governments introduced greater efforts on **improving SME access to finance**. At the same time, new societal concerns around climate change and responsible business conduct started gaining momentum in financial markets, with new policy efforts to support SMEs in their green transition. Green financing in particular was central in the development of SME scale-up finance policy. BPI France, the French development Bank, offered soft loans without collateral for SMEs that were implementing sustainable green practices (OECD, 2018<sup>[118]</sup>).

#### Building back better after COVID-19

The most recent turn in SME policy has been caused by the COVID-19 pandemic, which favoured the implementation of policies for **accelerating the digital transformation of SMEs**, including their



capacity to operate in data-driven economies. The post pandemic recovery has reinforced policy interest in helping SMEs adopt **more sustainable business practices** as a way for them to take a central role in cutting greenhouse gas emissions and driving forward the so-called “twin transition”.

#### **4. It needs an ecosystem to nurture scalers and a whole-of-government approach to support them**

**There is a high heterogeneity in the population of scale-ups, with very diverse profiles and trajectories.** Some scalers start their journey by innovating and investing, then grow; others start their transformation by investing; and other eventually grow first before scaling up capacity and performance (OECD, 2021<sup>[2]</sup>). An SME that grows fast over a short period of time typically faces several important challenges, including deep organisational changes or the adoption of new business practices. Such transformation patterns that are likely to differ across places, sectors or business models, may point to several areas in which policy support may be effective or where tackling possible market or policy failures could be critical for different types of scalers (OECD, 2021<sup>[2]</sup>).

**The diversity in firms’ growth profiles and trajectories requires scale-up policies that are equally diverse.** Different profiles of scalers have different needs that also may vary across their lifetime and the different stages of their growth transformation. They will therefore face different and changing barriers in their capacity to access strategic resources, such as finance, skills or innovation assets, or to deal with evolving market conditions and business environment (OECD, 2019<sup>[14]</sup>). This diversity opens the scope for policy intervention as governments aim to address the variety of obstacles potential scalers may face. It also largely increases the policy complexity in the field, including the need for policy action to be efficiently coordinated at different spatial levels (local, regional, national, and even supra-national).

**Scale-up policies are cross-cutting by nature and could cover a large set of policy areas.** The generation of scale-ups depends on many inter-linked factors. This suggests that a holistic approach is needed to stimulating scale-ups through government policy. This is indeed the case, with government scale-up policy initiatives covering a wide range of areas from targeted support for scalers (e.g. for finance, innovation, skills, internationalisation, and leadership) to developing favourable entrepreneurial ecosystems. The policy work and the related mapping undertaken in this study and in following work aims to determine more precisely which areas matter for different purposes and in different contexts, and how they could overlap.

1. The 2010 OECD survey on government programmes implemented to promote the fast growth of small firms provided, for instance, evidence that governments were giving strong –but different–emphases to improving the business environment and cutting red tape, promoting innovation, including digital and non-tech innovation, improving entrepreneurship education and promoting internationalisation (Box 1.5) (OECD, 2010<sup>[76]</sup>).
2. There is also solid evidence that burdensome regulation can limit SME scale-up potential (Andrews, Criscuolo and Gal, 2015<sup>[119]</sup>).
3. Existing evidence on SME growth also suggests that policies aiming to improve SMEs’ management skills, their access to infrastructure, to international markets, public procurement, as well as to human capital and skills, helps spur their growth (Klat, Makki and Rizk, 2018<sup>[120]</sup>) (Tewari, Skilling and Kumar, 2014<sup>[121]</sup>).
4. Coad et al. (2022<sup>[122]</sup>) identify a number of areas of HGFs support, with potentially conflicting priorities (Bradley et al., 2021<sup>[123]</sup>) and whose links to HGFs may not be immediately obvious (Acs et al., 2016<sup>[124]</sup>). Those include i) access to finance (with a multiplicity of available options for HGFs financing); ii) innovation (from R&D support, to protection of intellectual property rights –IPRs–, to academic entrepreneurship, to business incubators); iii) skills and capabilities, ranging from

investments in STEM (Science, Technology, Engineering, and Medicine) education, to mentoring and influence on public attitudes; iv) labour market regulation including employment protection, size-contingent regulation and activation policies; together with various other areas relating to immigration, tax, or trade policies etc.

In addition, HGFs have urgent needs, rapid growth is accompanied by higher costs, and scale up policies intervention need to act fast (Coad et al., 2022<sup>[122]</sup>).

### Box 1.5. The 2007-08 OECD survey on policies for fast growth of small firms

In the framework of its 2007-2008 Programme of Work, the OECD Working Party on SMEs and Entrepreneurship (WPSMEE) – now the OECD Committee on SMEs and Entrepreneurship – undertook a study on *High-Growth SMEs, Innovation, Intellectual Assets and Value Creation*. As part of this study, the Secretariat conducted a policy survey on government programmes aiming to promote the fast growth of small firms, and in particular their ability to innovate through the management of their intellectual assets (IA).

Twenty-two members and two observer countries responded to the survey, which was organised across seven main policy areas. The total number of reported programmes amounted to 346, with roughly half of them targeted specifically at SMEs (see Table 1.4).

**Table 1.4. Number of reported programmes: Summary by policy area**

Programmes aimed to	Target		Total
	All firms	SMEs	
Improve access to financing	24	56	80
- By debt finance	8	32	40
- By equity finance	18	29	47
Stimulate enterprise innovation	47	27	74
Foster the growth or high growth of SMEs	36	36	72
Support business R&D in enterprises	38	17	55
Facilitate enterprise collaboration and open innovation	39	16	55
Promote skill development in enterprises	17	34	51
Develop IAs and IPR management capabilities	10	20	30

Note: Programmes could be classified as responding to one or several of the above categories.

The survey responses served as a basis for the preparation of a final report, which provided a synthetic, cross-country view of policy orientations. More specifically, the following key findings emerged:

- Strong focus on **improving the business environment and cutting red tape**, with many of these measures focusing on start-ups, especially to facilitate the establishment of a company;
- Efforts to **promote innovation, especially R&D activities** in many countries, with several setting spending objectives (e.g., as a % of GDP) at national level;
- Policies for the **promotion of innovation increasingly covering non-technological innovation**, including e.g., innovation in the service sector or in terms of organisational issues;
- **Digital information and communications technologies (ICT) as a focus of policy support** in some countries;
- Strong emphasis on **entrepreneurship education**, not only to provide necessary skills and tools to entrepreneurs, but also to create a business-friendly culture in the country;

- **Internationalisation as a core area for policy promotion**, with many countries recognising the challenges and opportunities arising from an increasingly globalised and knowledge-intensive world economy.

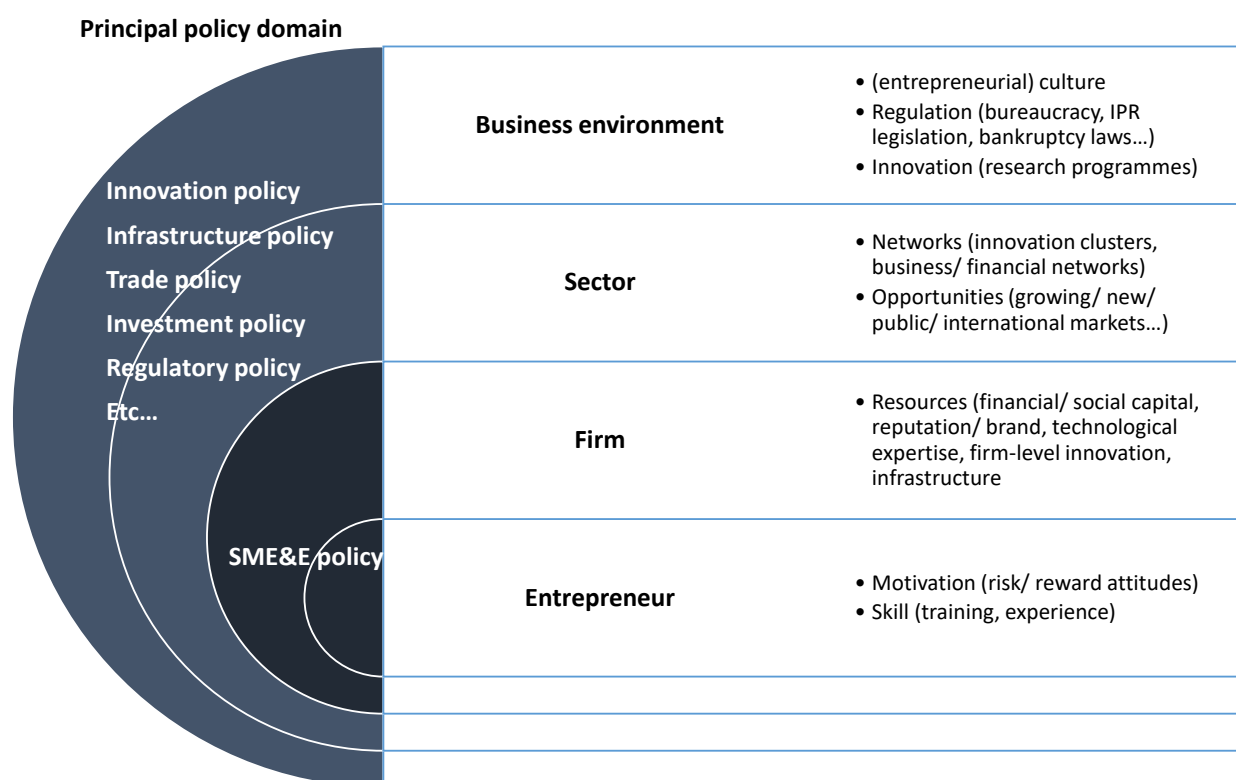
Overall, survey responses pointed to an increased recognition of the strategic importance of enterprise growth and the priority governments were attaching to this issue as part of their policy packages, albeit with different emphases.

Note: Responding member countries to the survey included Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Japan, Korea, Mexico, the Netherlands, New Zealand, the Slovak Republic, Spain, Switzerland, Turkey and United Kingdom; and two (back then) observers, Israel and Romania.

Source: (OECD, 2010<sup>[76]</sup>)

**At the same time, scale up policies are shaped by a local, cultural, and industry context that can influence the business conditions, the scaling up process and the willingness of firms to transform.** This suggests several possible levels of intervention for scale up policy makers, at micro-, meso- and macro levels, with each level carrying its own peculiarities, constraints and norms (Figure 1.5).

**Figure 1.5. Levels of intervention for SME Scale Up policy**



Source: Author's own elaboration, based on (Autio, Kronlund and Kovalainen, 2007<sup>[103]</sup>).

**Consequently, governments are increasingly focusing policy efforts on improving the overall ecosystem for scale-ups.** Evidence suggests that simply creating supportive framework conditions is insufficient for stimulating scale-ups. Similarly, transactional forms of support (e.g., financial assistance) are equally proving to have limited effectiveness, at least post-start-up (Mason and Brown, 2014<sup>[125]</sup>). The

entrepreneurial ecosystem approach seeks to combine measures affecting the business environment and access to resources for start-ups and scale-ups and has been famously advocated for in entrepreneurial movements championed by the Scale Up Institute in the UK, Babson College in the US, and several other institutions aiming to promote a culture of high growth across all actors in the entrepreneurial chain (Isenberg and Onyemah, 2016<sup>[126]</sup>).

**In particular, it is expected that successful entrepreneurial ecosystems trigger a virtuous circle in which ‘success breeds success’** (Quas et al., 2021<sup>[127]</sup>), promoted by entrepreneurial recycling whereby successful cashed out entrepreneurs reinvest their time, money and expertise in supporting new entrepreneurial activity (Mason and Harrison, 2007<sup>[128]</sup>). **Policy intervention in support of scalers needs therefore to account for the diversity of business profiles and trajectories, as well as the complex mix of systems that can affect their business conditions and incentives to grow** (e.g., national versus regional innovation system, research system, entrepreneurship system, trade and global value chains systems etc.). For instance, the EC Start-up and Scale up Initiative brings together a range of actions from diverse policy areas to create a more coherent framework to allow start-ups to grow (EC, 2016<sup>[129]</sup>).

**Scaling up policies cannot be designed in isolation within a policy domain but require a holistic approach in policy making.** The interconnectedness of such policies that tend to cut across ministries, departments, agencies and levels of government also requires gathering more insights on effective whole-of-government approaches and horizontal and vertical coordination mechanisms.

## Framing, scoping and mapping scale up policy

**Compiling findings from the measurement work and a literature review, three main SME scaling up drivers have been identified for the purpose of this project,** that can be further decomposed into seven sub-drivers (Figure 1.4):

- **Innovation** (including research and development - R&D- and disruptive innovation, digital adoption, or business development),
- **Investment** (including in physical capital, skills or intangible assets), and
- **Network expansion** (e.g. in the domestic market, through internationalisation, or cooperation and strategic partnerships, or through the use of digital platforms).

Building on the evidence and conceptual considerations outlined thus far, this project defines **scale-up policy as the range of public policy interventions that seek to promote SME scale up through improved conditions and incentives for innovation, growth investment and network expansion**, understood herein as the three main scaling up drivers. SMEs that scale up typically mobilise a combination of these drivers, yet their sequencing might differ, depending on a complex mix of factors related to scalers’ profiles and their overall transformation model.

The following section proposes a broad approach for scoping scale up policies and an analytical framework for mapping the national policies and institutions in relevant policy areas. The policy mapping supports a better understanding of what countries are doing for promoting SME scaling up. This analytical framework supports a series of thematic reports on scale up policies, including for improving SME access to scale up finance (Chapter 2) and better SME data governance (Chapter 3).

**The scope of the policy work is intentionally broad, so as to capture the “ecosystem of policies” which shape the conditions and incentives of SME scaling up** (Box 1.6). Scale up policy is at the intersection of a large number of policy domains that may act upon the scaling up drivers, i.e. innovation, business R&D, SME digitalisation, entrepreneurship, skills, IPRs, trade, investment promotion, procurement or cluster policies etc.

### Box 1.6. Understanding country approaches to promoting SME scale up: a pilot policy work

As part of the EU-co-funded OECD multi-year project on *Unleashing SME Potential to Scale Up* (Box 1.1), the policy work consists of a cross-country analysis of relevant national institutions and policy initiatives implemented in OECD countries to create the conditions and incentives for SMEs to scale up. More specifically, the policy pillar aims to understand what shape scaling up policies take in countries, as well as to identify and characterise typologies of policy practices at national level, while paying attention to synergies and trade-offs across policy measures by placing a focus on coordination and governance mechanisms. The cross-country analysis also aims to identify possible gaps in public intervention.

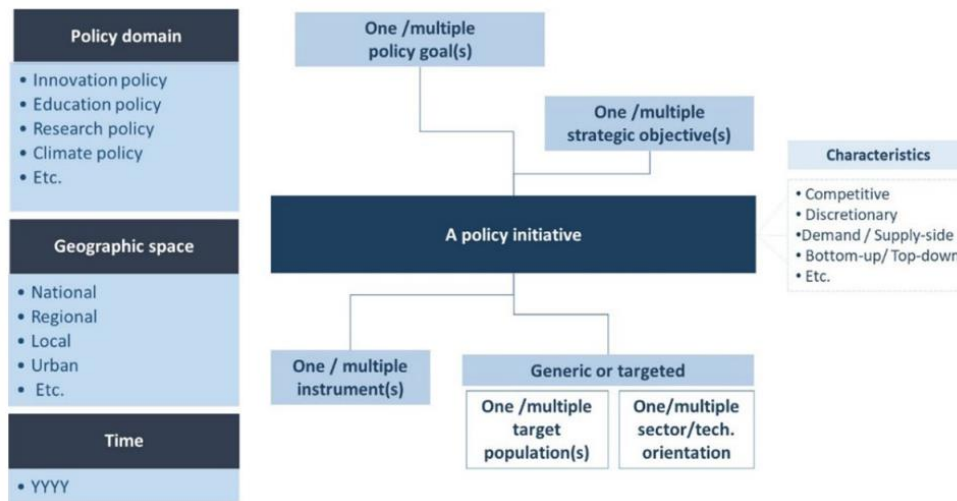
The analysis in this pilot phase builds upon a systematic policy mapping in two areas identified through the measurement work (Box 1.2) as drivers of scaling up, namely SME access to ‘scale-up’ finance (Chapter 2) and SME data governance (Chapter 2). The respective analytical frameworks were developed based on state-of-the-art knowledge in each field, and then refined after several iterations of “test mapping” in a selected number of countries. The analytical scope is intentionally broad, so as to capture the “ecosystem of policies” which shape the conditions of SME scaling up in the two selected domains. The scope of the policy analysis goes therefore beyond venture capital for financing SME growth or beyond the use of big data analytics for improving SME data governance.

Source: <https://www.oecd.org/cfe/smes/sme-scale-up.htm>.

Policy initiatives are selected to the extent that they **explicitly aim to promote SME scaling up drivers (innovation, investment, network expansion) or sub-drivers**. In the context of this exercise, specific attention has been placed on SME-targeted policies, including specific sub-segments of the SME population. An attempt has been made to put these targeted policies in relation to non-targeted policies.

**The policy mix concept is central to the mapping exercise**, as it seeks to capture the set of policy rationales, governance arrangements and policy instruments that are mobilised to promote SME scaling up, as well as the interactions that can take place between these elements. In practical terms, the approach requires (i) identifying the components of the policy mix (relevant policy initiatives in place), their characteristics and relative balance, and (ii) specifying the areas where these components might interact, be it intentionally or unintentionally (Meissner and Kergroach, 2019<sub>[130]</sub>). Interactions may take the form of complementarities, reinforcing the effectiveness of other policies in the mix, trade-offs attenuating the impact of each policy, but can also be neutral and may occur within or across different dimensions such as policy domains, policy objectives, targets, or policy instruments (Rogge and Reichardt, 2016<sub>[131]</sub>) (Borrás and Edquist, 2013<sub>[132]</sub>) (Flanagan, Uyarra and Laranja, 2011<sub>[133]</sub>) (OECD, 2010<sub>[134]</sub>)

Figure 1.6. Characteristics of a policy initiative



Source: (Meissner and Kergroach, 2019<sup>[130]</sup>).

The policy mapping therefore uses the following operational principles (Figure 1.6).

1. **A policy initiative is understood as a public action that aims to achieve one or several policy goal(s)**, either by modifying the behaviours of actors/ stakeholders who are part of (or influence) the national SME and entrepreneurship (SME&E) sector, or by altering the governance of the SME&E policy system as a whole;
2. **A policy initiative presents a number of characteristics along which it could be described.** Each initiative can serve one (or several) policy purpose/goal(s), follows one (or several) strategic objective(s), be aimed at one (or several) target(s) population(s), sector(s), technology(ies), and makes use of one (or several) policy instrument(s).
3. The work focuses on policy initiatives that are implemented over **a set time horizon or on a continued basis** and that do not represent one-off events or emergency measures (e.g. in response to the health crisis), unless they have a transformational objective, such as the recovery packages and structural measures (e.g. related to the digital or skills agenda) put in place to build back better;
4. The **level of policy intervention is national**, however whenever international policy frameworks or regional initiatives are relevant to the topic and/ or a country they may have been taken into account;
5. **Information on public institutions involved and related institutional and governance arrangements**, including budgets earmarked or evaluation mechanisms when available, are also collected as components of the national policy mix, as well policy coordination through joint programming.

The policy mapping builds upon the OECD Framework for Evaluation of SME and Entrepreneurship Policies and Programmes (OECD, 2008<sup>[135]</sup>), the analytical framework of the OECD SME and Entrepreneurship Outlook (OECD, 2019<sup>[14]</sup>), as well as previous OECD work on mapping and monitoring policies for science, technology and innovation (EC/OECD, 2017<sup>[136]</sup>); (OECD, 2016<sup>[137]</sup>); (Meissner and Kergroach, 2019<sup>[130]</sup>) which builds on similar mapping exercises (EC/OECD, 2021<sup>[138]</sup>) (UNESCO, 2018<sup>[139]</sup>) (EC/OECD, 2016<sup>[140]</sup>) (OECD, 2012<sup>[141]</sup>) and serves as a basis from structuring the information collected. The mapping methodology is aligned with a similar mapping conducted under the aegis of the OECD Committee on SMEs and Entrepreneurship and the OECD Investment Committee, to identify policies



aiming to strengthen linkages and spillovers between foreign direct investment and SMEs in EU countries (OECD, 2022<sup>[95]</sup>).

Information is drawn from official sources (e.g., national strategies, action plans, websites of relevant Ministries and agencies, etc.), as well as OECD reports, through desk research. Information is collected at institutional level, which means that relevant institutions in the policy areas under review are identified first, then the relevant policy initiatives they administrate (alone or through joint implementation with other institutions) are identified second. The information collected is structured and encoded, and made available through an online interface for the purposes of easing consultations and enabling re-use. Further details are provided in Box 1.7. The complete templates used to map and report on institutions and policies can be found in Annex 1.A and Annex 1.B.

### Box 1.7. Operational definitions for the policy mapping

**Policy domain.** A policy domain refers to the space (or area) where a variety of policy sub-systems for promoting the performance and business conditions of SMEs interact. Each sub-system is characterised by different sets of norms, actors and institutions, focuses on distinct policy issues (such as employment, productivity, industrial transition, local development, etc.), and administrates specific policies on these issues. A major governance challenge consists in breaking ‘in silos’ thinking and ensuring different policy sub-systems interact positively within a same policy domain (e.g. entrepreneurship policy domain).

**SME&E strategic objectives.** Governments seek to achieve specific and diverse objectives, including for instance strengthening SME capacity to perform R&D and innovate, or to export etc. Strategic objectives typically address particular issues of the SME&E policy domain (e.g. easing business entry and exit), specific actors or groups of actors (e.g. small firms, start-ups, entrepreneurs etc.), or specific processes (e.g. knowledge exchange, innovation diffusion, digital adoption etc.). In some cases, strategic objectives are translated into concrete and measurable targets, usually bound to a specific time horizon (e.g. ensuring 100% SMEs are connected to high-speed broadband by 2020).

**Policy target.** Policies are targeted at specific target groups, e.g., at one (or several) firm populations (e.g., SMEs, start-ups, micro enterprises, etc.) or one (or several) groups of individuals (e.g., venture capitalists, entrepreneurs, women etc.). They can also be targeted at specific economic sectors, technologies or geographic areas. In fact, many policies cumulate such targets in their design and implementation.

**Policy instrument.** Policy instruments are identifiable techniques for public action and the means for accomplishing the objectives they are designed for. By combining policy instruments, policy makers aim to cumulate – or multiply – the positive externalities that each instrument taken separately could bring. A more diverse policy toolbox adds however to the complexity of managing (sometimes negative) interactions and evaluating impact, especially since there is a wide consensus among policy and academic communities that policy instruments are context- and time-specific and should thus be customised to the nature of the problem they intend to address. Toolkits in use include the following typologies of instruments (Kuhlmann and Smits, 2004<sup>[142]</sup>) (OECD, 2008<sup>[135]</sup>) (Vedung, 1998<sup>[143]</sup>):

**Financial support:** Economic and financial instruments (“carrots”), such as grants, subsidies or tax concessions, are pecuniary incentives.

**Regulation:** Regulatory instruments (“sticks”) are legal tools that set ‘the rules of the game’. They include, for example, laws and binding regulations.

**Non-financial support:** Non-financial and “soft” instruments (“sermons”) are voluntary and non-coercive tools, such as information and awareness campaigns, guidelines and diagnostic tools, or

technical norms. This type of instruments transforms the role of governments from a regulator and support provider into a coordinator and facilitator.

**Platforms & networking infrastructure:** “Systemic” or system-enabling instruments such as interfaces, platforms, infrastructures or networking facilities that enable interactions and facilitate knowledge flows and exchange. System-enabling instruments also support public governance through e.g. policy learning, experimentation and debate.

**Policy governance:** Meta instruments, i.e. national strategies or action plans, but also benchmarking, scoreboard, technology foresight, impact assessment or peer reviews etc., which provide strategic intelligence to policy makers. They differ from other instruments for their reflexive function and because they do not aim to change actors’ behaviours, but rather to inform and structure the policy process.

**Policy/ institutional governance.** This refers to the institutional and governance structures and arrangements that underpin policy making, from design, to implementation to evaluation. These governance arrangements are very country-specific. In practice, the design and governance of policies may cut across several governance levels and policy domains that fall under the responsibility of different Ministries and agencies, raising the question of horizontal and vertical policy coordination. This is particularly likely for scale up policies that are diverse and cross-cutting by nature.

Issues of across-the-board coordination are typically of high relevance when SME&E policy is thought as a combination of targeted and mainstreamed initiatives, i.e. :

**Targeted policies** identify explicitly SMEs as beneficiaries, e.g. as recipients of financial or non-financial support, targets of new regulation, or main beneficiaries of networking facilities. Targeted policies can be formulated and administrated by an organisation other than the main Department/ Ministry/ Agency in charge of SME&E policies (e.g. eco-innovation programmes by the Department in charge of environmental affairs promoting eco-innovation in SMEs);

**Mainstreamed policies** aim to influence SME&E performance and business conditions and are designed and delivered by Departments/ Ministries or Agencies that do not have SMEs and entrepreneurship as their prime (or even partial) focus (for instance urban transport policies that aim to improve smart mobility infrastructure and that are likely to improve the SME&E ecosystem). Mainstreamed policies can also intend to shape broader framework conditions, applying equally to all firms or stakeholders – albeit often with a differential impact on SMEs.

Source: Adapted from (Meissner and Kergroach, 2019<sup>[130]</sup>).

## Conclusion

**SMEs and start-ups that grow fast have attracted increasing policy attention for their exceptional performance and contribution to job creation and the competitiveness of countries and regions.**

Public policies accordingly have tried to focus on those firms with the highest growth potential, often by targeting firms in very narrow (tech-related) sectors. However, despite strong policy interest, sometimes coming with large budgetary support, the conditions for SME scale-up remain poorly understood.

**The multi-year project on *Unleashing SME Potential to Scale Up* was launched to better understand the drivers and conditions of SME growth and how governments are effectively promoting SME scaling up in a sustained manner** (OECD, 2022<sup>[144]</sup>). The study focuses on high growth firms (HGFs) as defined as enterprises with at least ten employees at the beginning of the period, and over 10% (or 20%) growth in employment or turnover per annum averaged over a three-year period. The threshold of 10% is retained in this pilot phase of the project, whereas future analysis will aim to apply both.



**Attention is placed in particular on the sustainability of a new scale**, i.e. the capacity of a firm to operate, in a durable manner, at a higher level of performance, which eventually expresses itself in high growth (being in terms of turnover and/or employment).

A measurement pillar builds on business microdata and empirical work to identify the profiles of scalers and their trajectories; a policy pillar builds on policy analysis and international benchmarking of country approaches to promoting SME scaling up through a mapping of relevant initiatives and institutions across the 38 OECD countries. For the pilot phase (2019-21), the measurement work has leveraged the microdata of five countries, i.e. Finland, Italy, Portugal, Slovak Republic and Spain, while the policy work has focused on two policy areas, i.e. SME access to scale up finance and SME data governance. Findings from the measurement are available in (OECD, 2021<sup>[2]</sup>) and have supported the design of the policy work. Findings from the policy work are presented in Chapters 2 and 3 of this report.

**This report provides the foundations of a series of policy reports on promoting SME scaling up.** It sets conceptual bases for understanding scale up policies and draws policy implications, building on academic literature and new evidence from the microdata work (OECD, 2021<sup>[2]</sup>). It also proposes an analytical framework to monitor and benchmark how countries effectively promote SME scaling up. This framework serves as a common basis for mapping the policies and institutions involved in scale up policy across OECD countries, and to understand commonalities and specificities in country approaches across in different areas.

**Firm size, (high) growth and performance appear to be closely related concepts.** Size is commonly measured by sales and employment, which increase when SMEs can achieve economies of scale by internalising operations, or adapt to market conditions through a range of strategies, including innovation, investment, market expansion or differentiation, and competition, cooperation or collusion. There are different criteria of firm performance that are often interrelated, e.g. productivity, profitability, mark-ups or market shares etc., but other measures associated to more sustainable business practices have become increasingly relevant to SME performance as well, e.g. ESG scoring.

**New evidence highlight that scalers are not all those we think they are.** The typical scaler is neither a knowledge- nor tech-intensive firm. The majority of them are mature SMEs (six years old and over) operating in low-tech services. In addition, size appears to be no barrier to high growth, and scalers can be found in all places. This means that there is broad scaling up potential and possible spillovers across different types of firms and contexts, and beyond the segment of high-tech start-ups.

**Scaling up often implies an inner transformation of the firm, grounded on multiple forms of productivity improvements,** improvements that are driven by a combination of innovation, investment and network expansion. Highly interconnected and mutually reinforcing, these scaling up drivers are mobilised in different ways and at different times by different types of scalers. Findings also show that **scalers can maintain new scale over time, and even grow again**, which means that most of them have undergone this transformation and gained capacity on a permanent basis.

**These findings call for rethinking scale up policies and opening the policy toolkit.** If policy makers focus on high-tech start-ups only, they could look for scalers in the wrong place, or through a too narrow lens, and support them with the wrong measures. The diversity in SME growth profiles and trajectories also requires policies that are equally diverse, and a holistic approach in policy making, as targeting one single channel would not be sufficient to stimulating scale-ups. Scale-up policies can therefore cut across multiple policy domains and range from targeted support (e.g. for financing, skills, or access to innovation assets) to developing favourable entrepreneurial ecosystems, to improving the governance of the entire SME growth policy system. They also likely imply a greater need for policy action to be efficiently coordinated at different spatial levels (local, regional, national, and even supra-national). What falls under the umbrella of scale up policy cannot be taken for granted, and may even differ from one country to another. For instance, restricting scale up finance to venture capital might typically limit the scope of public action to high-tech start-ups.

**At the same time, if scale up policy can pay off, it is hazardous for policy to seek to pick future winners and engage large public resources on assumptions of age, technology intensity or sector of operation that may not fully reflect (future) reality.** Complexity arises from the heterogeneity of scalers' profiles and trajectories, and a nexus of market conditions and local, cultural, and industry contexts that can influence the scaling up process, firm strategy, business owner ambitions and the willingness of firms to transform. Complexity also arises from the superposition of policy systems. It is therefore difficult to predict which firms are going to grow, and target them before their transformation.

**Finally, the close relationship between SME high growth/scale up and performance raises a number of broader questions.** Scalers are of great interest for policy makers for the socio-economic benefits they could bring because high growth signals significant (ex ante or ex post) improvements in their individual performance that can compound into improved performance at aggregate level, e.g. more jobs, innovation or productivity.

**The first question relates to the choice and use of different performance indicators for policy making.** If jobs created are the key measure of policy success, HGFs that grow in turnover and achieve productivity gains could be disfavoured, as employment and turnover can possibly be disconnected. It turns then to be essential to look at high growth through both employment and turnover lens when data allows.

**A second question relates to the co-existence of multiple profiles of scalers with different transformation models and trajectories.** It could be asked if, from a policy making point of view, all scalers are equal. Some scalers may bring greater socio-economic benefits as they engage into more structural and disruptive transformations than others that would adapt to sudden windfall in demand or maintain "the more of the same" business model and capacity. More evidence would be needed to understand the respective contribution of different scalers to different policy objectives.

**A third question relates the existence of trade-offs between different forms of performance.** SMEs may not improve all forms of performance, and related capacity, at the same time. For instance, SMEs' performance is increasingly associated with sustainable business practices, e.g. from improving resource efficiency, to reducing environmental footprint, to raising ability to comply with ESG requirements and RBC standards. The greening of SME business operations may require substantial investments that are likely to weigh down on their profits and their capacity to finance (other forms of) innovation. In addition, greener and more sustainable business practices may not translate into employment or turnover growth (at least in the short run). It could be asked how to consider non-scaler SMEs that achieve higher resource efficiency, productivity gains and greater profits, with stable turnover. In those cases, decoupling economic activities with the use of resources, that is a desirable policy outcome, might not be reflected in the notion of scale up and might not be supported through scale up policy. In the context of moving towards a more sustainable growth, mainstreaming environmental and societal considerations upstream in the scale up policy agenda might be essential though, as well as giving appropriate weight to socio-economic benefits that may be achieved if scale-ups help tackle climate change and societal challenges.

**Overall, much remains unexplained, and more evidence is needed.** The project understands scale-up policy as the range of public policy interventions that seek to promote SME scale up through improved conditions and incentives for innovation, growth investment and network expansion. The scope of the work is intentionally broad, so as to capture the "ecosystem of policies" which shape the conditions and incentives of SME scaling up. The policy mix concept is central to the mapping exercise, as it seeks to capture the set of policy rationales, governance arrangements and policy instruments that are mobilised, as well as the interactions that can take place between these elements.

This work provides the foundations of a series of future policy reports on SME scaling up.

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## Notes

<sup>1</sup> Exemplary of these developments is the EC President Ursula von der Leyen’s 2022 State of the European Union address, where she announced a new package of support measures for SMEs, the “SME Relief Package”, aiming to tackle a broad set of issues related to combating late payments, cutting red tape and unblocking new funding for the greening, digitalisation, and upskilling in SMEs (European Commission, 2022<sub>[206]</sub>).

<sup>2</sup> Growing in employment at a rate of 10% per annum averaged over a three-year period. The rate of medium- and high-growth enterprises across 21 OECD economies with available data in 2018. Data extracted from [OECD.stat](https://stats.oecd.org/Index.aspx?DataSetCode=SDBS_BDI_ISIC4), Structural and Demographic Business Statistics (SDBS) Database: SDBS Business Demography Indicators (ISIC REV. 4), [https://stats.oecd.org/Index.aspx?DataSetCode=SDBS\\_BDI\\_ISIC4](https://stats.oecd.org/Index.aspx?DataSetCode=SDBS_BDI_ISIC4).

<sup>3</sup> Examples from other countries include the United Kingdom, who in its 2021 budget announced plans the creation of a new GBP 375 million fund to scale up the most innovative R&D-intensive businesses (UK, 2021<sub>[4]</sub>). In addition, Transatlantic Canada has earmarked CAD 360 million to launch a National Quantum Strategy and grow its quantum-ready companies. An additional CAD 165 million aims to support Canadian innovators, start-ups, and technology-intensive businesses to better use their ideas and intellectual property as the seeds of huge future growth opportunities (Canada, 2021<sub>[5]</sub>).

<sup>4</sup> Participants in the 2018 OECD SME Ministerial Conference on “*Strengthening SMEs and Entrepreneurship for Productivity and Inclusive Growth*” identified a diverse set of enabling conditions and potential barriers, which may vary according to the local and national business environment, institutional and regulatory framework, infrastructure and firms’ access to strategic resources, such as skills, knowledge, data, technology and finance. They also acknowledged the role of growth ambitions (or lack thereof) of the entrepreneur as an important determinant for SME scale up (OECD, 2018<sub>[148]</sub>).

<sup>5</sup> A more detailed summary of the project’s microdata work can be found in Annex 1.C, based on (OECD, 2021<sub>[2]</sub>).

## Annex 1.A. Template for mapping institutions

COUNTRY	Country name	Drop-down menu (single choice)
INST1	Institution name	Open-ended text
INST2	Institution in brief	Open-ended text
GOV1	Parent institution	Yes/ No (single choice) Is this institution tier-1 level of public governance?
GOV2	Parent institution	Open-ended text
LEV	Level of governance	Single choice - National or federal level - Subnational level - Other (specify as open-ended text)
STAT	Status	Single choice (if LEV= National) Ministry or department Directorate/unit within ministry/department Autonomous government agency Public-private agency Other (specify as open-ended text)  Single choice (if LEV= Subnational) - Subnational government institution Local autonomous government agency Local public-private agency Other (specify as open-ended text)
MAN1	Core mandate	Multiple choice (unlimited)  SME and Entrepreneurship policy Innovation policy (incl. digital) Competition policy FDI/investment promotion policy Trade policy Regulatory policy and public administration reform Tax policy Financial and monetary policy Labour policy Education policy Social and welfare policy (incl. inclusiveness) Infrastructure policy (transport, energy, digital) Regional and local development policy Land and housing policy Environment and climate policy Other (specify as open-ended text)
MAN2	Core mandate in brief	Open-ended text

Source: Authors' own elaboration.

## Annex 1.B. Template for mapping policy initiatives

COUNTRY	Country name	CODE ISO3
POLICY1	Policy name	Open-ended text
POLICY2	Policy in brief	Open-ended text
TIME	Timeframe	Multiple choice - Start year (specify YYYY) - End year (specify YYYY) - Open ended (specify as open-ended text)
OBJ1	Strategic Objectives SME&E	Multiple choice (7 maximum) - Improving SME internal capacity and access to strategic resources (not clickable) Access to finance Access to skills Access to innovation assets - Improving SME&E business environment (not clickable) Institutional and regulatory framework Market conditions Infrastructure - Improving SME&E policy governance (clickable)
PROJ	Source project	Single choice (1) - SME access to scale up finance - SME data governance - FDI-SME linkages
OBJ2	Strategic Objectives project	Multiple choice (see dedicated typologies for each project)
OBJ3	Strategic Objectives in brief	Open-ended text
INSTR1	Instruments	Multiple choice (5 maximum) - Financial support - Non-financial support - Platforms and networking infrastructure - Regulation - Public policy governance
INSTR2	Instruments in brief	Open-ended text
TARGET1	Targeted or generic initiative	Yes/No (single choice) Is this policy initiative targeted? - No, it is generic. - Yes, it is targeted towards ... (please tick relevant cases below)
TARGET2	Target types	Multiple choice (5 maximum) - Population (IF YES TARGET3) - Sector or supply chains (specify as open-ended text) - Technology (specify as open-ended text) - Region or place (specify as open-ended text) - Other (specify as open-ended text)
TARGET3	Target population	Multiple choice (17 maximum) - All SMEs - SMEs with size criteria (turnover or employment) - SMEs with growth or performance criteria (HG, scalars, laggards etc.) - SMEs with age criteria (start-ups, young, incumbents etc.) - Large firms or leading actors in sectors/ value chains/ ecosystems - Multinationals

		<ul style="list-style-type: none"> <li>- Universities or public research institutions</li> <li>- Government institutions</li> <li>- Business associations, chambers of commerce and other stakeholders</li> <li>- Investors (business angels, VCists or VC funds, banks, financing institutions etc.)</li> <li>- Entrepreneurs</li> <li>- Business owners or managers</li> <li>- Women</li> <li>- Youth</li> <li>- Minorities</li> <li>- Individuals with specific skillset (highly skilled, IT specialists etc.)</li> <li>- Others</li> </ul>
TARGET4	Target in brief	Open-ended text (make sure sector/ tech/ place are specified as well as other types of population if relevant)
INST1	Joint action	Yes/No (single choice) Is this policy initiative jointly administrated or implemented? (IF YES INST2)
INST2	Institution(s) in charge	Drop-down based on the institution mapping (single choice) Report all other institutions involved in administration and policy making. Add institutions to the institution mapping if needed.
INST3	Institution(s) in charge in brief	Open-ended text to explain respective responsibilities in case of joint programming or coordinated implementation, or different functions in the policy cycle
INIT1	Umbrella initiative	Yes/No (single choice) Is this initiative part of a broader strategic action plan?
INIT2	Umbrella initiative in brief	Open-ended text
EVAL1	Evaluation	Yes/No (single choice) Has the policy initiative been evaluated? (IF Yes EVAL2)
EVAL2	Evaluation in brief	Open-ended text and links if available
BUDG	Budget	Open-ended text
LINKS	Additional information on the initiative	Open-ended text for <ul style="list-style-type: none"> <li>- Websites and links</li> <li>- Emails and contact person(s)</li> <li>- Final comment</li> </ul>
NOTES	Internal notes for tracking and coordination	Open-ended text

Source: Authors' own elaboration.

## Annex 1.C. Lessons from microdata work

**A small number of “scalers” create the majority of new jobs.** In Finland, Italy, Portugal, the Slovak Republic and Spain, the five pilot countries of the project, HGFs (employment-based) represent 13-15% of non-micro SMEs only, but created between 47%-69% of new jobs generated between 2015 and 2017. Among scalers, those that grow faster than 20% annually account for about one-third of all scalers, but over half of the jobs created by scalers. **HGFs in turnover contribute even more disproportionately to job and value creation.** Scalers in turnover are about 50%-80% more numerous than scalers in employment. They also contribute to more than half of gross job creation and between 51% (in Spain) and 71% (in Finland and Portugal) to growth in total sales by non-micro SMEs.

### Scalers: who are they? Not who you think they are...

**Findings from the microdata work provide new evidence on the characteristics of firms that experience high growth** (in employment or turnover), shedding light on the characteristics and transformation pathways of scalers (Annex Table 1.C.1) (OECD, 2021<sup>[2]</sup>).

**Annex Table 1.C.1. What we knew and what we learned 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.

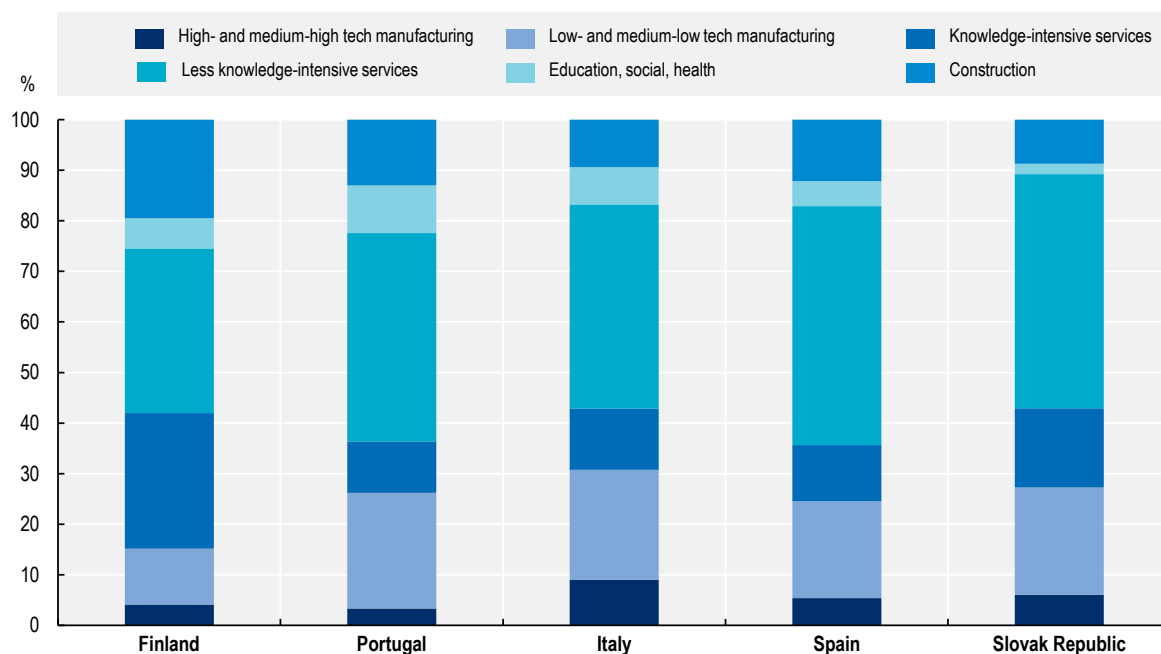
Source: (OECD, 2021<sup>[2]</sup>).

**The typical scaler is neither a knowledge-intensive nor a high-tech firm** (OECD, 2021<sup>[2]</sup>). While the propensity to scale up is highest in knowledge-intensive services, firms in this sector account only for a small share of all SMEs. As a result, less knowledge-intensive services or low/ medium-low tech manufacturing account for a higher share of scalers, even if firms in these sectors are characterised by an overall lower likelihood to scale. For instance, more than one-third of employment HGFs in Portugal (38%) and close to half (46%) of employment HGFs in Spain operate in less knowledge-intensive services (Annex Figure 1.C.1).




## Annex Figure 1.C.1. Most scalers operate in less knowledge-intensive services

Share of (employment-based) scalers by main sector of activity, 2018



Note: For each country, the chart reports the average share of high growth firms of a given sector group among all high growth firms. Employment and turnover scalers are firms with 10 employees or more that grow in employment or in turnover respectively, by at least 10% per year over 3 consecutive years on average over the period 2015-17.

Source: (OECD, 2021<sup>[2]</sup>).

StatLink  <https://stat.link/be2cjq>

**The majority of scalers are “mature” SMEs that are at least six years old at the beginning of their growth spell.** On average across the 5 pilot countries, mature scalers represent almost 80% of all employment scalers and they account for more than 70% of new jobs created by scalers over the 2015-17 period. “Young” SMEs (five years old or younger) are twice as likely to scale up than mature SMEs, but they account for only about 20% of all (non-micro) SMEs, which explains their smaller share among scalers and the lower contribution to job creation.

**Young scalers are however particularly likely to scale up twice over a six-year period, or to scale down or close.** Between 11% (Spain) and 29% (Portugal) of young scalers follow their first high growth phase with a second one. But their success is more volatile. Around 45% of young scalers shrink to go back to their initial employment size, or exit the market, in the three years following their initial high growth. For mature firms the average is about 8 percentage points lower.

**Size is no barrier to high growth.** SMEs of all sizes are equally likely to scale in Italy, Portugal and Spain. The probability of these firms to scale up (in employment) is very similar across size classes. It is even lower for larger firms in Finland and the Slovak Republic. Firms with 10 to 19 employees have a 16% probability of scaling in employment in Finland and 11% in the Slovak Republic, compared to 8% for large firms with more than 250 employees in both countries. The propensity to scale in turnover follows a similar pattern.

**Scalers are everywhere.** Across regions, the share of scalers (employment) in all non-micro SMEs ranges from 10% to 17% in Italy, 8% to 13% in Spain, and 8% to 14% in Portugal. In Italy and Spain, several

southern regions with below-national average GDP per capita (such as Basilicata, Campania and Puglia in Italy, and Andalusia and Murcia in Spain) have even a higher incidence of scaling than wealthier regions in the country.

## Scalers undergo a deep transformation that is all but linear or even for all

**Scaling up is a business transformation whereby SMEs mobilise specific growth drivers and then engage in different scaling up trajectories. The microdata work reveals different models underpinning scaling up.** Differences between scalers and their peers are anticipatory, transformational or constant differences (OECD, 2021<sup>[2]</sup>). Anticipatory differences are significant in the years just before the high growth phase and converge toward similar values by the end of the high-growth phase. Transformational differences are firm characteristics that vary significantly during a high-growth phase, and that tend to continue to be different also after it. Constant differences vary little during, before, or after the scaling-up phase (Annex Table 1.C.2).

**Annex Table 1.C.2. Transformational models and suggested scaling up drivers, based on microdata work**

Transformational models			Suggested scaling up drivers
Anticipatory (before high growth phase)	Transformational (during high growth phase)	Constant (before, during and after)	
Scalers are more R&D oriented (higher share of R&D staff)			Disruptive innovation
Scalers use more dedicated IT resources (IT specialists)			Digital adoption and innovation
Scalers employ relatively more educated workers (university degrees)	Scalers employ fewer women Scalers' workforce is on average around two years younger.	As they scale, scalers tend to hire younger employees and therefore further consolidate the average age gap	Skills and workforce (human capital investment)
Bank loans, as a proportion of turnover, tend to increase ahead of scaling and tend to fall as the scalers grow, suggesting upfront investments.	Scalers create financial buffer and accumulate internal resources to finance their operations as they grow (e.g., current assets such as cash, inventories, and other assets)		Financing (all sorts of) investments
Scalers increase their global market presence, in some cases exporting.			Internationalisation (market and network expansion)

Source: Author's elaboration based on (OECD, 2021<sup>[2]</sup>).

**Across all countries, scalers become more profitable as they grow.** The newly gained profitability is not only higher than before scaling, but scalers are also more profitable in comparison with firms in their new size class (OECD, 2021<sup>[2]</sup>). The profitability is a sustainable change, as it tends to last after the new scale is achieved. **Employment scalers are also up to 10% more productive than their peers before scaling up.** The rapid growth in labour costs associated with scaling lead the productivity indicators to align with the average of firms in the same size class.

# 2 Financing growth

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SMEs face a number of barriers in accessing finance, which hamper their scale up and growth potential. While public support for scale up has long focused on start-ups and highly innovative firms at the technology frontier for their exceptional potential, recent evidence has shown the existence of a long tail of scalers in different segments of the SME population, with different profiles and trajectories that may slip through the cracks. This chapter aims to understand how governments can unleash finance for innovation, investment and network expansion as drivers of SME scale up. Based on an analysis of 709 policies and 210 institutions across OECD countries, it provides an overview of the policy mixes that governments have put in place to improve SME access to scale up finance, as well as of the institutional and governance arrangements to support these policies.

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# In Brief

**Scale up finance policies aim to leverage different channels of growth, thereby reflecting the diversity of scalers' profiles and trajectories.**

**The diversity in scaling up profiles suggests that different types of scalers may need different types of support to access appropriate financing.** Depending on their scale up trajectory, and whether it is driven by innovation, investment and/or network expansion, their specific financing needs will also differ. Filling existing financing gaps – and addressing related barriers in leveraging internal and accessing external finance – for a diverse set of firms across all sectors that have the potential to scale up is therefore key for fully exploiting their potential for job creation and the deployment of more sustainable and resilient business models among SMEs.

In this pilot work, **scale up finance policies are understood as all initiatives that can unleash finance to support SME scale up activities, i.e. innovation, investment or network expansion.** These policies can be directed at SMEs themselves to unleash internal resources, or at a number of institutional actors to unleash external finance. **A cross-country mapping of 709 national policies and 210 institutions identifies the intensity of public efforts in this area.** An analytical framework allows policy initiatives to be structured according to whether they pursue specific scale up finance objective(s), and according to the scaling up drivers they leverage to this end. It also seeks to identify the key institutions involved at national level, as well as the various policy instruments they mobilise.

**Public action to improve SME access to scale up finance often falls beyond the SME and entrepreneurship (SME&E) policy domain,** with about half of institutions having “peripheral” mandates with sometimes less explicit links to the SME&E policy agenda. The scale up finance policy landscape is also characterised by a high degree of fragmentation (i.e., many institutions with many initiatives in place) and, in some countries, a high degree of decentralisation which overall reflects significant efforts towards targeting specific populations of potential scalers.

**Public measures to improve scale up finance are primarily targeted at SMEs, and to a lesser extent, at the finance market or institutional actors.** Most policies aim to reduce the financing costs for SMEs through a combination of grants and subsidies, tax incentives, loans, and improved credit conditions. The finance market can also play an important complementary role by acting as an intermediary through which SMEs can access a broad range of scale up finance solutions. Interestingly, **equity is key for financing SME scale up through innovation, both at national and European level, but plays a less important role in the funding mix of network expansion and investment for SMEs to grow.**

**Financing SME innovation is on average the primary objective of OECD countries,** with 40.2% of mapped policy initiatives aiming to unlock funding for this scale up channel, mainly research & development (R&D) and disruptive innovation. In terms of investment and network expansion, policy efforts focus on investment in physical capital and global expansion. Current **scale up finance policies thus seem to reflect a persistent techno-centred view of scalers and capital-intensive forms of innovation,** with less emphasis on skills, intangible assets, or incremental – even digital – innovation.

Future research could provide a better understanding of how governments aim to improve access to scale up financing for SME network expansion beyond **international trade, such as through supply chains, cooperation partnerships (for instance with multinationals), or the use of digital**

**platforms.** More policy information and data is also needed, notably on budgets earmarked to get a better perspective on the relative weight of government efforts across different areas, as well as on the effectiveness and efficiency of public intervention, e.g. through impact evaluation. Finally, there is also scope to explore more systematically the extent of **sub-national policy efforts to support the financing of potential scalers.**

### Infographic 2.1. Key aspects of SME access to scale up finance



Note: Word cloud based on the description of the relevant 709 national policy initiatives mapped in this area. Descriptions and more detailed information are available in the OECD Data Lake on SMEs and Entrepreneurship.

Source: Authors' own elaboration.

## Introduction

**For many years, policy makers have paid close attention to scalers due to their large contribution to job creation, or their potential to drive innovation,** especially in technology-intensive sectors or frontier areas (see Chapter 1) (OECD, 2021<sup>[1]</sup>). For instance, while scalers represent only 13-15% of SMEs in Finland, Italy, Portugal, the Slovak Republic and Spain, they contributed 47% to 69% of all new jobs generated by non-micro SMEs between 2015 and 2017. In this context, **many government efforts have focused on start-ups and firms conducting disruptive innovation,** as a high potential population for achieving exceptional performance and socio-economic benefits. Public action in support of SME scaling up has therefore mainly aimed to influence firm entry conditions (e.g. through taxation, competition or regulation), or early business growth and technology development (e.g. through R&D tax incentives, university spin-offs, equity capital etc.) (OECD, 2016<sup>[2]</sup>).

**However, the typical scaler is neither a knowledge-intensive nor a high-tech firm, nor a start-up. In fact, most of them are mature firms operating in low-tech sectors** (see Chapter 1). New OECD microdata work shows that about three-quarters of employment scalers have been established at least six years before the beginning of their high-growth phase (Box 1.1) (OECD, 2021<sup>[1]</sup>). While, overall, the propensity to scale up remains highest in knowledge-intensive services, more than one-third of employment scalers in Portugal (38%) and close to half (46%) of employment scalers in Spain operate in other sectors<sup>1</sup>.

**At the same time, there is still a lack of certainty – and broad evidence – on which firms could effectively become a scaler, making policy design more difficult, if not too random, and ex ante policy targeting highly hazardous.** Many start-ups, for example, fail within the first few years of life. Cross-country data suggests that survival rates are on average equal to just above 60% after three years from entry, to about 50% after five years, and to just over 40% after seven years, with the probability of exiting being highest when businesses are two years old (Calvino, Criscuolo and Menon, 2015<sup>[3]</sup>). However, there are important differences across countries and sectors, with survival rates being typically higher in industry than in services or construction, and for enterprises born with five employees or more (OECD, 2017<sup>[4]</sup>).

### Box 2.1. Unleashing SME Potential to Scale Up: a multi-year research project

The OECD project on *Unleashing SME Potential to Scale Up* is carried out in close consultation and with support of the European Commission. Its pilot phase (2019-21) is articulated across two pillars:

- **A measurement pillar** to better understand the internal drivers and barriers to SME high growth, through empirical work based on business microdata, and
- **A policy pillar** to analyse national policy mixes and approaches to unleash the potential of scalers through a mapping of relevant initiatives and institutions across the 38 OECD countries.

Leveraging firm-level data sources from five OECD pilot countries (Finland, Italy, Portugal, Slovak Republic and Spain), the measurement pillar aimed to capture the heterogeneity of scalers, the changes these firms undertake before, during, and after the high-growth phase, and the sustainability of their new scale. The work assesses in an internationally comparable way the factors that accompany growth, i.e., the dimensions through which the firm reached new scales or growth milestones, taking into consideration its capacity to operate in a sustained manner at a larger scale.

To identify the features that distinguish scalers from other firms, the analysis compares them with their “peers”, i.e., firms in the same sector, founded around the same time and of similar size before the scaler enters its high-growth phase. “Scalers” are identified through employment- or turnover-based (high) growth. High-growth enterprises are defined as firms with at least 10 employees that grow 10% per year on average in employment and/ or turnover over 3 years.

Findings of the measurement work that have informed the policy work were published in a summary report “*Understanding Firm Growth. Helping SMEs scale up*” (OECD, 2021<sup>[1]</sup>).

Source: <https://www.oecd.org/cfe/smes/sme-scale-up.htm>; (OECD, 2021<sup>[1]</sup>).

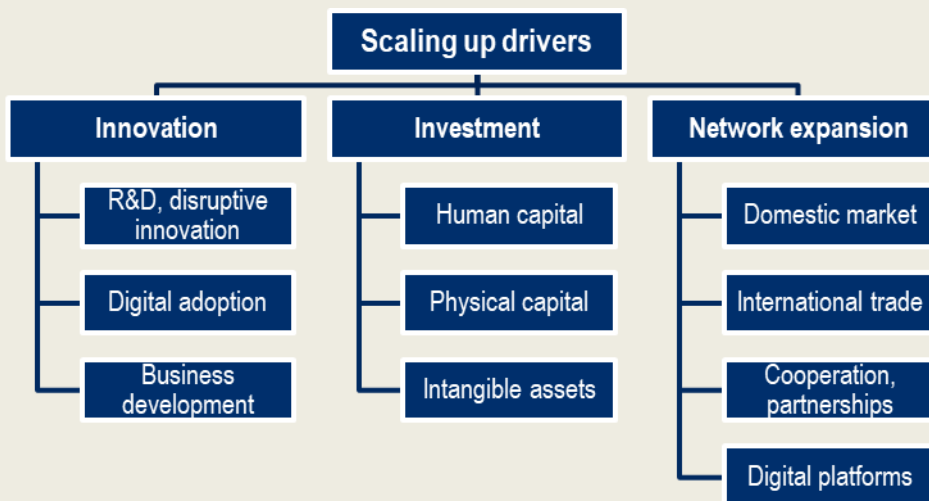
**Taken together, these new results call for a rethinking of scale up policies**, starting with a better understanding of what drives SME scaling up, the potential failures in scaling up dynamics that require policy intervention, and the form(s) of action governments could implement. Importantly, **scaling appears to be a strategic choice made by the firm, with related transformation(s) beginning before scaling actually materialises** (OECD, 2021<sup>[1]</sup>). These transformations are associated with a number of internal performance drivers, herein referred to as scale up drivers, which can operate in isolation or in combination. They include 1) innovation (including research and development – R&D – and digital uptake), 2) investments in financial, human and knowledge-based capital, and 3) market and network expansion (including abroad – see Chapter 1 for a more detailed discussion). Therefore, the scope for scaling up will result from the complex interaction of intertwined systems that can affect SME business conditions and incentives to grow (e.g. national versus regional innovation system, local entrepreneurship ecosystem, institutional and regulatory framework, integration into regional and international trade, and regional and global value chains, etc.). In addition, the growth ambitions of business owners also enter the scale up equation.



### Box 2.2. Scaling up drivers: lessons from microdata work and literature

Scaling up drivers have been identified as part of the measurement work (OECD, 2021<sup>[1]</sup>) and through a literature review, as innovation (including research and development –R&D– and disruptive innovation, digital adoption, or business development), investment (including in physical capital, skills or intangible assets), and network expansion (e.g. in the domestic market, through internationalisation, or cooperation and strategic partnerships) (see Chapter 1). External growth drivers, e.g. through mergers and acquisitions, are not discussed in this project.

Figure 2.1. SME scaling up drivers and their components



Note: In this pilot phase, the analysis of network expansion and the policy mapping do not cover indirect engagement in GVCs (e.g. through supply chains and linkages with multinationals (EC/OECD, 2022<sup>[5]</sup>), nor the use of digital platforms.

Source: Author's own elaboration.

In this context, the current range of policies that support the financing of scaling up may not sufficiently reflect the diverse financing needs that the heterogeneous population of scalars face. In particular, the specific policy attention placed on start-ups and highly innovative (most often tech-oriented) firms following both the 2007-08 global financial crisis and the COVID-19 pandemic (Box 2.3), suggests that a rather limited image of scalars has prevailed. This is likely to leave a broad range of potential scalars behind, thus missing the benefits they could bring in terms of job creation, increased resource efficiency and improved productivity. Such considerations are all the more important at a time when countries aim to build back better after the COVID-19 crisis, and shift towards more resilient, sustainable and inclusive growth models.

### Box 2.3. Trends in SME and entrepreneurship financing policy, from 2007 onwards

While improving SME access to finance represents today a well-established field of public intervention, the scope and focus of measures in this area has evolved significantly over the past decade and a half. In the aftermath of the 2007-08 global crisis, many governments expanded direct lending and guarantee schemes, as well as credit mediation and other measures to ease SME access to credit. These measures were accompanied by financial reforms to strengthen banks' resilience, such as the Basel III framework, which introduced new minimal capital requirements and designed new rules for liquidity management.

As the recovery took hold, policy emphasis shifted from counter-cyclical to more structural issues in SME and entrepreneurship (SME&E) financing. Equity instruments gained attention and credit measures (credit guarantees, direct loans) were increasingly targeted to specific subgroups of the SME population (innovative firms, women entrepreneurs, start-ups, etc.).

Table 2.1. Overview of the evolution in SME finance policies

Characteristic	2009-2012	2013-2019	2020	2021 -
	Global financial crisis	Interim period	Covid-19 crisis	Recovery phase
Target beneficiaries	Broad SME population	Subgroups of the SME population: innovative firms, start-ups, lagging regions, women-led	Broad SME population, with special emphasis on SMEs in distressed sectors. In the second half of 2020, special emphasis on self-employed and start-ups.	Viable SMEs and subgroups of SME population: innovative firms, start-ups, lagging regions, women-led, minority-owned businesses, self-employed
Support for debt financing	Strong increase in credit guarantee volumes Direct lending Credit mediation	More focus on the delivery and eligibility criteria of support measures Creation of SME banks	Respond to acute liquidity needs via credit guarantees, payment deferrals, direct lending, grants and subsidies	Need to balance the continuation of liquidity support and avoid a premature withdrawal
Support for alternative/equity financing	Equity instruments were kept largely in place	Tax incentives Establishment of funds/funds of funds SME bank activities	Used to a lesser extent than more traditional support channels in the first phase of the pandemic, but support was enhanced as of H2 2020	Changes in the structural support to SMEs, with significant new financing support linked to investment in digitalisation, sustainability, skills and innovation
Regulatory measures	Stringent regulatory changes to increase stability of financial sector (Basel III)	Continuation of stringent regulation for private banks. Innovation in regulations to enable emergence of new actors (e.g., sandboxes and innovation hubs to enable Fintech)	Loosened regulation to allow for swift provision of liquidity. Strong banking system thanks to Basel III	Higher innovation in regulations (Regtech) to facilitate SME access to finance

The response to the **COVID-19 pandemic represented a return to primarily counter-cyclical support**, but due to the nature and scale of the crisis, a significant range of new and short-term policy instruments were introduced to ease liquidity pressures on crisis-stricken SMEs. While the outlook for recovery remains uncertain, government policy was marked by changes in the structural support to SMEs as of 2021. Support is once again not only aimed at addressing traditional market failures that impact SMEs, with more emphasis being put also on financing SMEs' contribution to "build back better", including a greater focus on issues like investment in digitalisation, sustainability, skills and innovation.

Source: adapted from (OECD, 2020<sup>[6]</sup>) and (OECD, 2022<sup>[7]</sup>).

**Identifying scale up finance instruments therefore requires understanding both the characteristics of scalers, as well as the drivers of their transformation for which specific sources of finance could be needed**, as well as the specific market and system failures that may require a public intervention. In this pilot work, scale up finance refers to the financing sources that firms can access to leverage innovation, investment and/or network expansion as scaling up drivers - before, during and after their transformation phase(s).

**This chapter aims to better understand how governments address the financing gap for scalers.** It seeks to identify country approaches in supporting SMEs (by acting on the demand-side), or the financing system of SMEs (by strengthening the diversification of finance). The chapter starts by exploring the financing strategy of scalers and the different forms that scale up finance can take, as well as key opportunities and barriers for SMEs in this context. Importantly, the type of finance that will be most appropriate for scale up will largely depend on the scale up driver a firm leverages, and will likely include a range of both traditional and alternative financing instruments.

The chapter then proposes an analytical framework for mapping relevant national policies and institutions in this area. Based on a **cross-country analysis of 709 policies and 210 institutions across the OECD**, the chapter then provides an overview of the character and intensity of public efforts to improve SME access to scale up finance, as well as on the institutional and governance arrangements underpinning the implementation of national policy mixes.

## Identifying the diverse sources of finance to scale up (all sorts of) business

**SMEs need appropriate sources of finance that can differ over the course of their life cycle and across all stages of their transformation.** As a result, they combine different forms of funding, both internal and external, to support their activities and growth operations (OECD, 2019<sup>[8]</sup>) (OECD, 2020<sup>[6]</sup>). At the same time, and despite an extensive evidence base on financing gaps for certain firm segments (e.g. start-ups, young firms), research to date about the scale up financing gap faced by the broader SME population, including in the context of later stages of growth, is still scarce.

This particular section aims to **understand the funding mix of scalers, as well as the financing options different profiles of scalers can have, depending on their scaling up trajectory.** It builds upon a review of the literature in the field and the results of the microdata work conducted as part of this pilot project (OECD, 2021<sup>[1]</sup>).

### *Most future high growth firms resort to bank loans to prepare for scaling up*

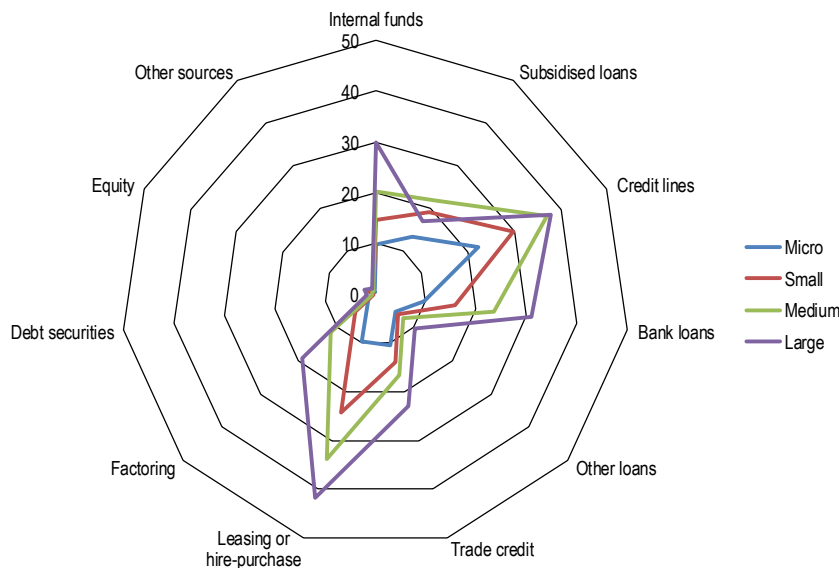
**Firms that (plan to) grow have different financing needs and make different financing choices than companies with no growth ambition** (OECD, 2021<sup>[1]</sup>). This project's microdata work shows that scalers turn to bank loans before growing, suggesting that bank finance is an enabling factor for exceptional growth and constitutes a key aspect of an anticipatory scaling up strategy. In Italy, Spain and Portugal, the loan to turnover ratio of future fast-growing enterprises is higher by 10% to 70% compared to peers. The decrease in the debt ratio at the end of this transformation phase shows that the funding needs are then less important or that the new size enable scalers to better self-finance operations (OECD, 2021<sup>[1]</sup>). Scalers also tend to be more leveraged than peers, i.e. they display a higher debt-to-asset ratio and they pay higher interest per unit of sales – indicating a higher risk rating (Bianchini, Bottazzi and Tamagni, 2016<sup>[9]</sup>). The average scaler in Spain, for instance, increases its debt ratio, i.e. bank loans as a percentage of turnover, by 50%, which corresponds to a 35% higher share than in non-scaling peers, i.e. firms in the same sector, founded around the same time and of similar size.

**The role of bank credit as a major external source of finance for most SMEs is well documented** (OECD, 2019<sup>[8]</sup>) (OECD, 2022<sup>[7]</sup>). The 25<sup>th</sup> round of the Survey on the Access to Finance of Enterprises

(SAFE), carried out between April and September 2021, shows that 48% of European SMEs considered bank loans as an important source of finance over the past six months, more than any other finance instrument. Interestingly, this figure has remained similar to pre-COVID levels, suggesting that increased demand for liquidity and other financial support has not played a significant role. At the same time, debt is still more used by large and medium-sized firms (31% and 23% respectively), and somewhat less by small and micro firms (16% and 10% respectively) (see Figure 2.2).


## Figure 2.2. The funding mix of micro, small and medium-sized enterprises differs from that of large firms

Use of internal and external funds among euro area enterprises, percentage of respondents, by firm size (2021)



Note: All enterprises. The data included in the chart refer to Question 4 (“Are the following sources of financing relevant to your enterprise, that is, have you used them in the past or considered using them in the future? If “yes”, have you obtained new financing of this type in the past six months?”) of the round 25 of the survey (April 2021-September 2021).

Source: Authors’ own elaboration, based on data from (European Central Bank and European Commission, 2021<sub>[10]</sub>).

StatLink  <https://stat.link/waglbcc>

### **The internal financing capacity of SMEs remains critical for scaling up**

**As they grow, scalars widen the difference with peers, notably by building financial buffers.** In this phase, the share of current assets<sup>2</sup> in total assets of scalars can increase by 2 to 3 percentage points (OECD, 2021<sub>[11]</sub>), providing new opportunities for growth-oriented SMEs to sell assets and create a buffer to accumulate funds for future investments. At the same time, the increase in current assets among scalars may also reflect a choice stemming from a greater need for liquidity or the expected volatility of future profits.

While research has largely focused on the availability and importance of external financing sources, **SMEs of all sizes tend to display a strong reliance on internal funds** (OECD, 2019<sub>[8]</sub>). Their importance varies across countries, firm size and age, as well as by business type, but tends generally to be more pronounced in emerging economies, where there are overall fewer incentives in the private sector to generate new credit evaluation and scoring instruments or specialised ventures. In Colombia, for example, studies show that around 70% of entrepreneurs in the country start their activity with their own resources, coming mainly from own savings or in the form of family loans (Gómez Núñez et al., 2019<sub>[11]</sub>) (Vesga et al., 2017<sub>[12]</sub>).

**On average, start-ups are for instance more likely to rely on internal funds than more mature companies, given their higher levels of human capital-specific assets, lower levels of traditional tangible assets, and less established reputation and historical performance** (OECD, 2019<sup>[13]</sup>). In addition, they are often perceived as riskier by investors, thus compounding their difficulty in accessing external finance. Overall one-third of SMEs in EU28 countries reported not using any source of external financing, relying instead on internally generated revenues for their growth - or ultimately renouncing to grow at all (OECD, 2019<sup>[8]</sup>).

**At the same time, SMEs are generally more financially constrained and display smaller financial buffers than large firms**, which may hinder their ability in leveraging scale up drivers “from within” to grow their business. Yet, research suggests that there is **a positive relationship between SMEs’ level of investment and their level of internal funds** (Bridges and Guariglia, 2008<sup>[14]</sup>). The added value of liquidity seems therefore higher for SMEs, as greater cash reserves are positively associated with their level of investment (Denis and Sibilkov, 2010<sup>[15]</sup>).

**Internal funding is also more important for innovation in smaller firms than for larger companies** (Ughetto, 2008<sup>[16]</sup>). Considering the role of internal financing on R&D expenditure, for example, (Riding and et al.<sup>[17]</sup>) and (Shaver<sup>[18]</sup>) identify positive relationships between cash flow, liquidity and R&D investment. Similar findings are evident for exporting, as financial constraints can act as a barrier to smaller firms engaging in exporting (Bellone and et al., 2010<sup>[19]</sup>), suggests there may be a need to help SMEs overcome initial (sunk) entry/ R&D costs related to innovation and exporting activities (Love and Roper, 2015<sup>[20]</sup>).

### ***There is a great diversity of financing sources available for a long tail of diverse scalers***

**Bank loans and self-funding are not the sole – and sometimes not the most appropriate – form of financing for all types of scalers.** In particular, firms that may have limited collateral and uncertain revenues in the short term (or no financial buffer at all) are likely to face difficulties in both obtaining traditional finance as well as in leveraging internal sources to fund growth operations.

**By broadening the range of instruments and sources they can access, potential scalers can better respond to the diverse set of financing needs they may face**, as well as increase their resilience to changing conditions in credit markets (OECD, 2015<sup>[21]</sup>). At the same time, developing alternative financing instruments also requires specific regulatory mechanisms, for example in terms of tax treatment or accounting, for which international standards are often missing and which can sometimes be complex and diffuse. Based on the OECD report *New Approaches to SME and Entrepreneurship Financing: Broadening the Range of Instruments*, Table 2.2 provides a structured overview of the different financing instruments for potential scalers (OECD, 2015<sup>[21]</sup>).

At the lower end of the risk/return spectrum are **asset-based finance instruments** (e.g. asset-based lending, factoring, leasing), allowing a firm to obtain cash, based not on its own credit rating or collateral, but rather on the value of specific assets (such as accounts receivables, inventory, machinery, equipment or real estate etc.). This can also include intangible assets, which have come to represent an increasing share of enterprise value in recent years. Intangible Asset-Based Lending (IABL), for instance, can leverage a portfolio of intangible assets such as R&D, patents, designs, databases and software, as well as managerial skills, organisation and business networks, to secure a loan (OECD, 2015<sup>[21]</sup>) (WIPO, 2021<sup>[22]</sup>).

**Alternative debt** is another way for SMEs to access financing with a low risk/return ratio for investors. However, the use of instruments such as corporate bonds, securitised debt or private placements, is still limited among SMEs wishing to seize growth opportunities. Corporate bonds, for instance, typically require the issuer to have a certain size, an established credit history, and limited volatility on revenues and earnings.

Within the medium risk/return category, **hybrid instruments** (e.g. subordinated loans, silent participations, mezzanine finance, convertible bonds) combine debt and equity features into a single financing vehicle, and are increasingly available to lower-tier SMEs. Hybrid instruments represent an appealing form of finance for firms that are approaching a turning point in their life cycle. This may e.g. be the case when risks and opportunities for the business are increasing or a capital injection is needed, but access to debt financing or equity is still limited, or the owners simply do not want the dilution of control that would accompany equity finance.

**Table 2.2. What sort of financing instruments for what sort of scalers?**

	Scalers by degree of investment risk and intrinsic characteristics		
	Lower risk and lower return	Medium risk and medium return	Higher risk and higher return
<b>Internal funding</b>	SMEs preserving their financial autonomy and controlling production costs, technology and quality		
<b>Bank loans</b>	Larger SMEs with collateral and financial records		
<b>Asset-based lending (e.g., factoring, leasing)</b>	SMEs with a minimum asset portfolio		
<b>Alternative debt (e.g., corporate bonds)</b>	SMEs of minimum size and scale, with established records and limited volatility		
<b>Hybrid instruments (e.g., subordinated loans, mezzanine finance)</b>		SMEs at a turning point in their life cycle, with limited access to debt/equity finance; More mature firms undergoing transformations and restructuring	High-growth firms beyond early stages of development
<b>Equity instruments</b>			Start-ups, new innovative SMEs; SMEs in high-tech or knowledge-based sectors; SMEs engaged in R&D requiring large funding
<b>Trade credit</b>	SMEs exporting directly or participating in GVCs with needs for short-term liquidity or guarantees	SMEs engaged in GVCs with needs for financing working capital and longer-term capital investments	
<b>Fintech solutions (P2P lending, crowdfunding)</b>	SMEs lacking collateral for creditworthiness; SMEs with small funding needs		

Note: Based on an SME-centred approach of scalers (Raes, 2021<sup>[23]</sup>). Typologies of SMEs according to their (high) growth and potential is the largest and most varied set of typologies presented in the literature, which includes the typologies on high-growth firms per se, but also the different typologies that try to capture firms or entrepreneurs attributes according to their growth (potential). The types of financing instruments are drawn from former OECD work on Financing SMEs and Entrepreneurs (OECD, 2021<sup>[24]</sup>) (OECD, 2019<sup>[6]</sup>) (OECD, 2021<sup>[24]</sup>) (OECD, 2015<sup>[21]</sup>). Source: Authors' own elaboration, based on (OECD, 2015<sup>[21]</sup>).

Short-term **trade finance instruments** that enable deferred payment come in numerous forms, e.g. intra-firm or inter-firm financing, as well as more dedicated tools such as letters of credit, advance payment guarantees, performance bonds, and export credit insurance or guarantees. These traditional forms of trade finance are decreasing in relevance for global trade (OECD, 2021<sup>[24]</sup>) (OECD, 2021<sup>[25]</sup>).

At the same time, medium- and long-term **export financing instruments** are increasingly used as supply chain solutions for financing capital equipment, which typically require longer repayment periods. These consist primarily of buyer credits that allow foreign buyers to purchase exporters' products and services

and to manage working capital in open account transactions, i.e. when goods are shipped in advance of payment. These supply chain finance solutions are gaining traction as global value chains (GVCs) expand, also pushed forward by digital platforms or block chain. If all forms of trade finance can enable greater SME engagement in direct export and GVCs, these medium- and long-term financing products may have greater impact on SME scale up potential, as they enable investment in productive capital and network expansion.

**Table 2.3. An overview of trade finance instruments**

Traditional Trade Finance Instruments	Supply Chain Finance Instruments	
Short-term loans and working capital financing	<i>Receivables purchase mechanisms</i>	<i>Advance-based mechanisms</i>
Letter of credit (L/C)	Factoring	Loan against receivables
Documentary Collection	Receivables discounting	Pre-shipment finance
Guarantees	Forfaiting	Distributor finance
	Payables finance	Loan or advance against inventory financing

Source: (OECD, 2021<sup>[24]</sup>).

**Equity financing is relevant for companies with a high risk-return profile, such as new, innovative and high growth firms** (Coad et al., 2022<sup>[26]</sup>). Seed and early stage equity finance can boost firm creation and development, whereas other equity instruments, such as specialised platforms for SME public listing, can provide financial resources for growth-oriented start-ups. In particular, **private equity investments, such as venture capital and angel investing**, have expanded substantially to provide new financing opportunities for innovative and high growth start-ups, as well as strategic advice. Equity can also be an important tool for firms that do not yet have a revenue stream and therefore cannot take on debt (“patient capital”). **Public listing of SME equity** also has the potential to provide funding for a company’s growth and support subsequent debt financing. This way, existing SME owners can realise their capital gains and tap a wider investor universe, including retail investors and sophisticated long-term institutional investors (Boschmans and Pissareva, 2018<sup>[27]</sup>).

**Across many of these instruments, digitalisation allows for innovative financial services to be offered to SMEs** (see Box 2.4). This includes new approaches to credit risk assessment and new digital tools for SME financing (OECD, 2020<sup>[6]</sup>). Peer-to-peer lending and equity crowdfunding for instance have experienced rapid growth, as they enable investment projects that are too small or too risky for traditional banks (Robano, 2015<sup>[28]</sup>) (Reza-Gharehbagh et al., 2020<sup>[29]</sup>) (Estrin, Khavul and Wright, 2022<sup>[30]</sup>). In turn, non-investment-based models allow firms to raise capital without being obliged to provide a monetary return to the individuals or institutions that funded the project, as in the case reward-based and donation-based crowdfunding (Cambridge Centre for Alternative Finance, 2021<sup>[31]</sup>). Such financial services still represent a minor share of financing for businesses; however, they are rapidly expanding starting from the non-profit and small-scale entertainment niche, to for-profit activities and businesses (OECD, 2017<sup>[32]</sup>). In France, for example, funds raised by crowdfunding platforms soared in the 2018-20 period, from EUR 402 million to EUR 1 020 million (OECD, 2022<sup>[7]</sup>).



### Box 2.4. The Advent of Fintech: Risks and opportunities

Fintech – combining technology and innovative business models in financial services – has gained considerable momentum in recent years, with global investments rising at exponential rates.

Fintech offers solutions to deal effectively with information asymmetries and collateral shortage on SME finance markets (OECD, 2017<sup>[33]</sup>). One application is credit scoring, i.e. the statistical analysis of creditworthiness, on which the decision to grant credit is often based. Another one is the broadening of evidence base for credit risk assessment by using “alternative data sources”, i.e. non-credit data (transactional, behavioural or social media data) (International Committee on Credit Reporting, 2018<sup>[34]</sup>). Moreover, Fintech instruments such as mobile payment have greatly facilitated daily payment needs for firms, or decrease transaction costs for lenders wishing to reach out to underserved segments of the SME population, such as micro-enterprises and informal ventures (OECD, 2018<sup>[35]</sup>).

While promising, Fintech also poses challenges for policy makers. First, they need to design a regulatory framework that is accommodative of novel developments and facilitates SMEs’ access to a broad range of financing instruments, without compromising privacy restrictions, financial stability, investor protection, and returns on investment. Second, expanding access to financial services at a very rapid pace with low controls may create systemic risks for financial stability and over-indebtedness for SMEs (Weidmann J., 2017<sup>[36]</sup>) (OECD, 2022<sup>[37]</sup>). These risks can be addressed by fostering SME financial literacy and awareness. Raising awareness of borrowers about digital risks and enhancing their digital skills are also essential, because remote access implies cyber risks that can extend to personal devices, or larger attacks with pervasive data breaches.

**Finally, SMEs’ green transition depends strongly on the availability and accessibility of green finance over the near and long term.** Whether they are eco-adopters, eco-entrepreneurs or eco-innovators, SMEs and entrepreneurs will rely on green financing instruments to green their operations or to develop and market green products and services. Against this backdrop, **sustainable finance for SMEs can unlock significant investments in climate-aligned products, processes and technologies and contribute to the broader structural transformation of economies in line with net zero.** When financing instruments are accompanied with well-targeted incentives and non-financial support, they can also stimulate SME demand for net zero investments (Kuzmanovic and Koreen, 2022<sup>[38]</sup>).

#### ***A number of internal and external barriers limit SME access to scale up finance***

**The funding of scale up drivers can raise specific concerns that compound with SME financing issues.** R&D and innovation are high cost and highly uncertain activities that require long time before returns on investment can be achieved. Their non-rival and non-excludable nature enables knowledge spillovers, which in turn can limit the scope for appropriating benefits and the incentives for investing (OECD, 2016<sup>[39]</sup>). Studies based on large-scale data for euro zone countries establish a link between financial constraints and productivity at the firm level, with the most pronounced impact in R&D and innovative sectors (Altomonte et al., 2015<sup>[40]</sup>; Ferrando and Ruggieri, 2018<sup>[41]</sup>). Lack of finance is also seen as a barrier to digital uptake and the related skills and organisational adjustments needed (OECD, 2021<sup>[42]</sup>). Likewise, with the rise of the knowledge economy, corporate investments have increasingly been targeting intangible assets, such as data, software, trademarks etc., that are more difficult to collateralise – and finance – than traditional tangible assets (Brassell and Boschmans, 2019<sup>[43]</sup>) (OECD, 2021<sup>[44]</sup>). Finance for expansion abroad could be problematic as well. Trading abroad implies exposure to counterparty risks, in particular on new markets or when dealing with new customers and suppliers, and significant working capital for covering payment delays and risks (OECD, 2021<sup>[24]</sup>).

In addition, (potential) scalers may face a number of more general supply- and demand-side barriers that may lead to a host of missed opportunities for firms to embark on a growth journey or undergo broader transformation (OECD, 2019<sup>[45]</sup>) (OECD, 2018<sup>[46]</sup>; OECD, 2015<sup>[21]</sup>).

This section looks at the difficulties SMEs and potential scalers face in accessing different sources of finance more generally, as well as for leveraging the scale up driver(s) relevant to their transformation at a given time in particular.

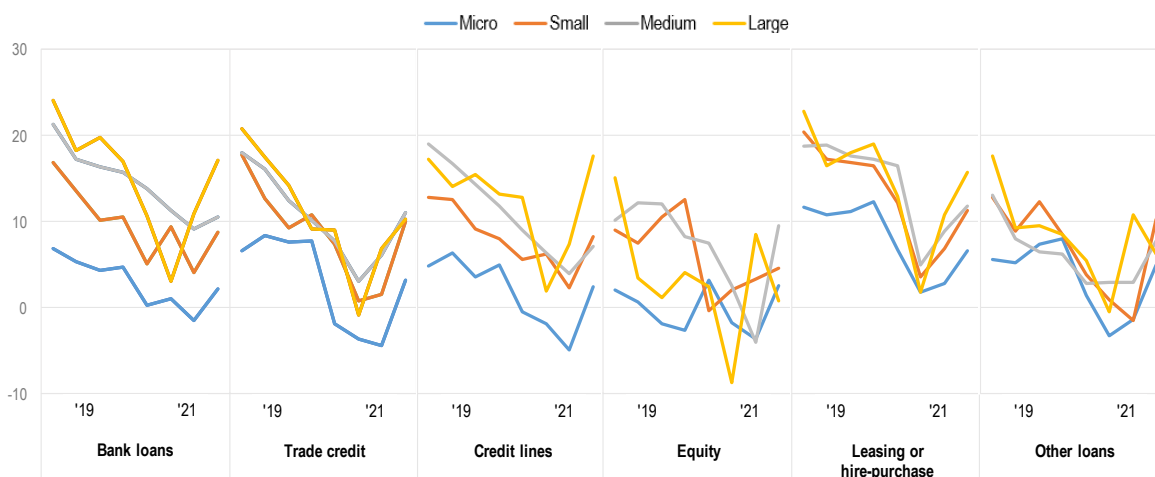
***There is a persistent gap for SMEs in leveraging internal and accessing external finance, across all scaler profiles and trajectories***

**SMEs have small liquidity reserves**, as exemplified most recently during the COVID-19 crisis (OECD, 2021<sup>[47]</sup>). Under favourable economic conditions, they are more likely to resort to self-funding and leverage own profits and revenues to finance scale up activities, but in more challenging circumstances, the smallest ones in particular can quickly lack internal financial capacity.

**There is a persistent external financing gap, especially among the smallest firms, and across all financing instruments.** According to the EU SAFE survey, the external financing gap – i.e. the difference between the change in demand for and the change in the availability of external financing – was positive in 2021, both at the euro area level and across almost all euro area countries (European Central Bank and European Commission, 2021<sup>[10]</sup>). While firms across all size groups reported a return to pre-COVID 19 levels of bank loan availability, micro firms reported a much smaller improvement in the availability of bank loans (2%), credit lines (2%), and trade credit (3%) compared to large companies (see Figure 2.3).

**Figure 2.3. SMEs systematically perceive a more limited access to external financing**

Changes in the share of euro area firms indicating that the availability of external financing has improved (net percentage of respondents, 2017-20)



Note: Enterprises for which the instrument in question is relevant. The figures refer to rounds 18-25 of the survey (October 2017-March 2018 to April 2021-September 2021). The data included in the chart refer to Question 9 of the survey which is “For each of the following types of financing, would you say that their availability has improved, remained unchanged or deteriorated for your enterprise over the past six months?”  
Source: Authors’ own elaboration, based on data from (European Central Bank and European Commission, 2021<sup>[10]</sup>).

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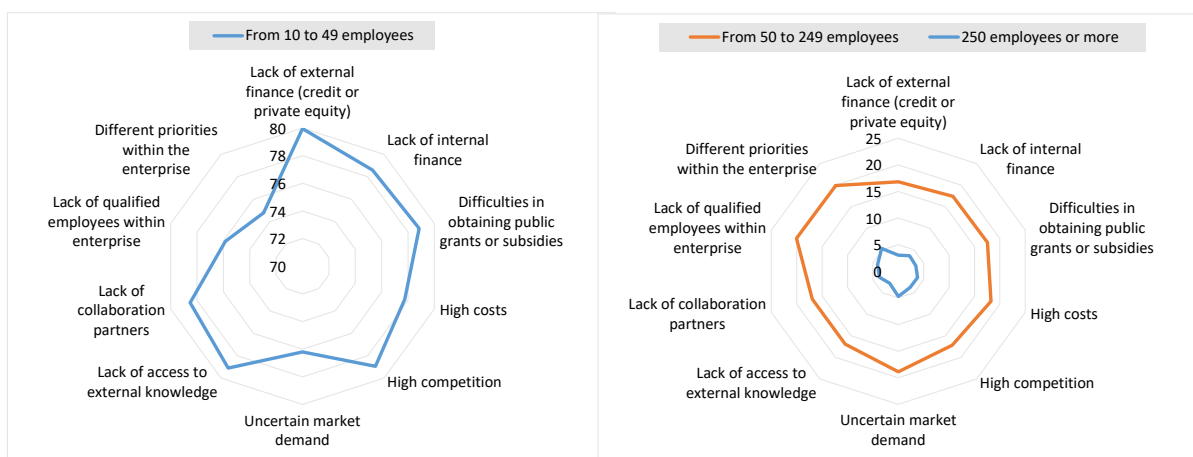
**Such disparities across firm size have an impact on the extent to which firms are able to mobilise financing to undertake specific activities related to scaling up such as innovation, investment and network expansion.** Figure 2.3, for instance, suggests that the external financing gap is particularly

pronounced with regard to debt instruments (i.e. bank loans, trade credit and credit lines). In light of recent evidence documenting that most future high growth firms resorting to bank loans to prepare for scaling up, existing barriers in this area might in turn be preventing a very large and diverse cohort of SMEs in reaching their full scale up potential.

**Lack of external finance remains, for instance, the main barrier to innovation among smaller firms,** especially combined with a general perception of high costs related to innovation activities (Figure 2.4). Business surveys show that 80% of innovative firms with 10-49 employees in the EU-OECD countries report a lack of credit or private equity, as hampering factors to their innovation activities. The situation is likely to be even worse for micro firms, and for SMEs in emerging economies, where current seed capital instruments are often not suited to the needs of highly risky, R&D intensive ventures, and government aid remains underdeveloped (Kantis and Angelelli, 2020<sup>[48]</sup>). At the same time, and even though **insufficient internal finance represents “only” the fifth most common barrier to innovation**, a significant share (78.6%) of small firms reports the lack of internal cash reserves as a major hampering factor to their innovation activities.

**Figure 2.4. Access to finance remains the primary barrier to innovation among small firms**

Percentage of innovative firms by type of barriers hampering innovation activities and firm size class, total EU OECD countries, 2018



Note: Percentage of firms by size class, all sampled firms in EU-OECD countries. Micro firms with less than 10 employees are not included.  
Source: Author's own calculations, based on (Eurostat, 2021<sup>[49]</sup>) data.

StatLink  <https://stat.link/k5trhs>

**On the other hand, access to both internal and external finance is less often reported as an obstacle to innovation among medium-sized or large firms,** where skills gaps and internal transaction costs seem more of an issue. 20.1% of medium-sized firms and 4.1% of large firms cite the lack of qualified employees as among the top barriers to innovation, along with different priorities within the enterprise (19.9% of medium and 5.3% of large firms). In addition, external factors including notably uncertain market demand play a greater role among them, compared to small firms.

**Financing constraints, including high levels of debt, can also weigh on SMEs' capacity for productive investment** (OECD, 2021<sup>[47]</sup>). While such trends were certainly disrupted by the COVID-19 pandemic, the past decade was overall marked by an increasing demand for long-term loans as opposed to short-term loans, possibly signalling an increased capacity of SMEs to finance short-term liquidity needs with internal resources, as well as an overall improved investment climate (OECD, 2020<sup>[6]</sup>). Latest survey evidence suggests indeed that firms' investment and hiring decisions have benefited from the recent recovery in economic activity. In 2021, a net percentage of euro-area SMEs reported increases in fixed

investment, inventories and working capital and the number of employees, with similar dynamics seen for firms of all sizes, although large firms seemed to experience a faster recovery and micro SMEs a much slower one (European Central Bank and European Commission, 2021<sup>[10]</sup>).

**Against this backdrop, both internal and external sources of finance play a role in determining incidence and scope of business investment** – albeit with differences across firm size. Evidence from Portugal and Ireland, for instance, suggests that cash flow levels are important determinants of investment, especially among smaller and younger firms, while greater levels of profitability are positively correlated with increased levels of investment expenditure (Farinha and Prego, 2013<sup>[50]</sup>); (Lawless, O’Toole and Slaymaker, 2018<sup>[51]</sup>). At the same time, external financing remains vital for investment across all firms, but especially so for SMEs, who struggle more to fund investments purely through internal resources compared to large firms. The 2014 European Competitiveness Report shows that long-term credit flows have positive and significant effects on investment in intangible assets, in particular among young firms and micro firms. In addition, the report suggests that investment patterns differ across sectors, with external finance representing a more important driver of new investment in manufacturing and construction than in services (European Commission, 2014<sup>[52]</sup>).

**SME access to finance for export and internationalisation likewise remains an issue**, even though recent evidence confirms the link between exporting and scale up (OECD, 2021<sup>[11]</sup>). Yet, prior to the pandemic, over half of trade finance applications from SMEs were rejected, compared to only 7% for multinational companies (International Chamber of Commerce, 2020<sup>[53]</sup>). Evidence also shows that uneven access to trade finance persists among SMEs and women entrepreneurs in particular – and often despite a strong, long-standing relationship with their bank (Auboin and DiCaprio, 2017<sup>[54]</sup>).

**Moreover, firms tend to face different types of export costs across their trade journey.** New entrants typically face a number of fixed entry costs such as administrative burdens, the adjustments of product designs to local preferences or regulations, as well as various information requirements, whereas incumbent exporters primarily face maintenance cost, related for instance to running a distribution network abroad (Auboin and DiCaprio, 2017<sup>[54]</sup>) (Greenaway, Guariglia and Kneller, 2005<sup>[55]</sup>). Against this backdrop, recent firm-level analysis from China finds that internal financing capacity is positively associated with export market participation rates of both new entrants and incumbents, while external financing matters only for new entrants. In addition, a firm’s internal financing capacity is positively associated with its export volume, whereas external financing is not (Meng et al., 2021<sup>[56]</sup>). This suggests that firms may often require external finance to kick-start exporting activities and cover the relatively high fixed entry cost associated with them, while once trade is up and running, maintenance costs related to trade can often be absorbed internally more easily.

***In addition, common SME financing barriers can arise and compound both on the supply and demand-side of the scale up finance market***

The availability and access to scale up finance is held back by a combination of different (more general) supply and demand-side barriers that often affect the SME population as a whole, but that may also prevent (potential) scalers from effectively leveraging one or several scale up drivers (see Table 2.4).

**On the supply side**, potential investors and financial institutions are often confronted with large information asymmetries on SMEs’ financial situation, lack of business track record and transparent credit data, or lack of collateral to reduce financial risk (OECD, 2021<sup>[24]</sup>) (OECD, 2019<sup>[8]</sup>) (OECD, 2017<sup>[32]</sup>) (Law, Lee and Singh, 2018<sup>[57]</sup>). This may even be the case for more mature firms, depending on their business model and scale up trajectory. In addition, these information asymmetries also limit investors and lenders potential to perform assessments of the credit risk of SMEs reducing SMEs capacity to raise funds (Vesga et al., 2017<sup>[12]</sup>). Access to debt finance is for instance more difficult for firms with a higher risk-return profile, such as innovative and growth-oriented enterprises, whose business model may rely on intangibles and whose profit patterns are often difficult to forecast (OECD, 2015<sup>[21]</sup>). In fact, banks may not consider the

intangible assets produced by an SME R&D process as reliable collaterals (Lee, Sameen and Cowling, 2015<sup>[58]</sup>). In addition, the lack of exit options and regulatory impediments on the equity market, or currency risks and resource-intensive monitoring of due diligence processes in trade finance add to the complexity of financing SME scale up.

Supply-side barriers lead to higher transaction and agency costs for banks and financial actors in serving certain segments of the SME population (OECD, 2021<sup>[24]</sup>) (OECD, 2019<sup>[8]</sup>) (OECD, 2017<sup>[32]</sup>). Kantis, Federico and Ibarra (2015<sup>[59]</sup>) corroborate such issues also in the context of emerging economies (with a focus on the Latin American countries), where the nature of ventures, and their risk profile in particular, does not suit the requirements of traditional banking, i.e. firms are highly risky, lack initial capital and their risk assessment is difficult. This is particularly an issue when put into perspective with the insufficient investment opportunities and the low transaction volumes SMEs can generate. Therefore, many (institutional) investors are still reluctant to invest in small businesses despite numerous government initiatives to support SME financing across OECD countries (OECD, 2017<sup>[33]</sup>).

**As a consequence, financial instruments for SMEs often operate in thin, illiquid markets, with a low number of participants,** which, in turn drives down demand from SMEs and discourages potential suppliers of finance (OECD, 2017<sup>[33]</sup>) (Kaousar Nassr and Wehinger, 2016<sup>[60]</sup>).

**Table 2.4. Market failures in the scale up finance market**

Market failures	Scale up drivers	Innovation	Investments	Network expansion through internationalisation
<b>Supply-side</b>				
Information asymmetry/ opacity that leads to high transaction and agency costs for financial institutions		x	x	x
Lack of scalers' track record and history to forecast revenues		x	x	x
Lack of collaterals (e.g., IA), especially in comparison with higher transaction costs		x	x	x
Lack of exit options		x		
Currency risk				x
Monitoring costs, due diligence, performance		x		x
Regulatory and tax barriers		x	x	x
<b>Demand-side</b>				
Lack of financial literacy and strategic vision		x	x	x
High cost, complexity and staff investment needed to access proper sources of finance		x	x	x
Tax burden		x		

Note: Network expansion through other drivers than internationalisation is not covered in this pilot phase.

Source: Authors' own elaboration.

**On the demand side,** many entrepreneurs and business owners, including potential scalers, often lack financial knowledge, strategic vision, resources and sometimes even the willingness or awareness to attract finance other than straight debt. As a result, they are very often unable or unwilling to comply with the requirements of financial intermediaries and/or professional investors, and produce sophisticated financial statements. High costs, complexity and staff implications in requesting diverse forms of scale up finance can discourage SME demand. The lack of appetite by SMEs for alternative financial instruments, equity in particular, can also be attributed to their tax treatment vis-à-vis straight debt (OECD, 2017<sup>[33]</sup>) (OECD, 2017<sup>[61]</sup>).

Analysis at EU level suggests that the **demand for equity capital in particular could be restrained by four main demand-side factors:** (1) ownership, (2) quality, (3) culture, and (4) knowledge (see Table 2.5).

**Table 2.5. Demand-side barriers in equity capital markets, EU**

Factors	Underlying reasons
Start-up owners are not willing to share or lose <b>ownership</b>	There are potentially investable businesses whose entrepreneurs are unwilling to take external equity because of their concerns about loss of control / dilution of ownership, and so choose not to raise venture capital, being willing to trade-off the potential adverse impact on their ability to scale and retain 100% ownership.
Lack of high-quality start-ups	Only a relatively low number of high-quality start-ups whose innovative ideas may be turned into viable business models require scale up funding, limiting in turn investment opportunities for late-stage VCs. European VC investors highlight an increasing competition among investors for investee companies (European Investment Fund, 2021 <sup>[62]</sup> ).
Weak entrepreneurial <b>culture</b>	A lower risk attitude and fewer people with entrepreneurial orientation, leading to a lower number of start-ups. This cultural difference is related to the aforementioned higher reluctance to share control of the business, which in turn limits the capital at disposal to scale up the business.
Weak financial <b>knowledge</b> and capabilities of SMEs	Financial literacy is relevant when it comes to attracting external finance for business growth. Innovative start-ups might specifically lack knowledge of the different financing opportunities they have, especially those that are relatively newer, such as peer-to-peer lending. Even if they know some of these opportunities, they might restrain from applying to those sources of finance if they feel they do not fully comprehend the implications of adopting them.

Source: Authors' own elaboration, based on (European Commission, 2021<sup>[63]</sup>).

Against this backdrop, a recent OECD study suggests that government venture capital has emerged as an important policy tool to complement private venture capital (VC) and help fund start-ups that do not fit the “classic VC profile”, notably start-ups trying to commercialise the outcomes of academic research and generating large positive externalities. In particular, government VC tends to go to firms that have a riskier profile: they have stronger links with academia, are more innovative and produce innovations that are more radical than private VC-backed firms. In this respect, these findings suggest that government VC can serve as an important instrument to promote innovation, and therefore contribute to broader policy objectives, such as the green transition, where innovation is needed but impaired by important barriers such as technological and policy uncertainty (Dechezleprêtre and Fadic, 2022<sup>[64]</sup>).

### ***Financing solutions for scalers could also be place-specific, or place-blind***

**Financing conditions change significantly not only across countries, but also across regions within the same country, as they tend to reflect local economic conditions.** This is especially true for SMEs, which depend more than larger companies on local financing conditions, as they are less likely to have more than one establishment and, therefore, less likely to draw on the transfer of internal resources, or to be able to find better financing conditions in another location.

**Local dynamics are likely at play when it comes to traditional bank finance.** SMEs in lagging regions typically find it more difficult to receive a loan and, when they receive one, are charged higher interest rates than SMEs in more affluent regions. Different financing conditions can be the outcome of the poorer financial indicators of the borrower (internal factors), but also a higher perceived credit risk by the lenders due to a deteriorated local business environment (external factors), as shown for example by higher-than-average rates of nonperforming loans in lagging regions (European Commission, 2017<sup>[65]</sup>).

**Access to funding also involves an element of trust that is often the result of a network or personal relationship, and implies some physical proximity.** Relationship lending for instance, where lending decisions are also based on the personal knowledge of the business by the bank branch officer, is expected to favour SME lending, although it typically comes with higher costs due to the transactions involved in building and keeping up the relationship. Recent research from France and Italy showed however that



relationship lenders charge higher rates in good times, but lower rates in bad times, when lending decisions based only on statistical models are more likely to lead to loan rejections or higher interest rates (Beatriz, Coffinet and Nicolas, 2018<sup>[66]</sup>) (Bolton et al., 2013<sup>[67]</sup>). This stream of research concludes that relationship lending can help extend credit to viable SMEs during downturns. Similarly, evidence show a close proximity between VC investors and the start-ups they invest in. The British Business Bank found that in 82% of equity investment stakes, investors had an office within two hours travel time of the company that they were backing. In 61% of stakes, the proximity was even closer: one hour or less (British Business Bank, 2021<sup>[68]</sup>).

**Equity finance is also geographically concentrated, depriving growth-oriented SMEs and start-ups in more peripheral regions of needed growth capital.** In the US, the VC industry is concentrated in California, New York and Massachusetts. These three states alone accounted for 92% of US VC investment in 2020. In Europe, investment flows are concentrated in a very small number of countries, with the UK and Ireland, France and Benelux accounting for more than half of total investment (Goncalves Raposo and Lehmann, 2019<sup>[69]</sup>). In the United Kingdom, London, the South East, the East of England and the North West absorb 86% of equity investment, although they host only 55% of the total business population, and, even more remarkably, only 55% of UK high-growth businesses, suggesting that growth capital may not be available in the right place (British Business Bank, 2021<sup>[68]</sup>). In Italy, companies in northern regions took in 83% of equity investment over the period 2015-20, with the only region of Lombardy receiving 41% of the total number of investment deals (Associazione Italiana del Private Equity, 2020<sup>[70]</sup>).

## Mapping scale up finance institutions and policies: analytical framework, sources and methods

**Improving SME access to finance for unleashing their potential to scale up requires a whole of government approach and a broad perspective to SME financing issues.** As barriers to accessing finance for their transformation arise in multiple areas, public intervention is complex and can overlap across different policy domains. The chapter aims to identify emerging practices in this field, and how governments mix policy options to help SMEs access the appropriate sources of finance for scaling up operations.

**This section defines the scope under review and presents the analytical framework used to identify and benchmark SME scale up finance policies and institutions across OECD countries.** It builds on the G20/OECD High-Level Principles on SME Financing (OECD, 2015<sup>[71]</sup>) (see Box 2.5), the *OECD Scoreboard on Financing SMEs and Entrepreneurs*, which serves as the international reference for monitoring developments and trends in SME and entrepreneurship finance and financing conditions, as well as on a broader body of OECD work in this area.

More specifically, the mapping exercise aims to identify to which extent national policy initiatives pursue (one or several) specific objectives in relation to scale up finance and which scale up drivers (e.g. innovation, investment, network expansion) they leverage to this end. It also seeks to identify the key institutions involved at national level (and, where possible and relevant, at subnational and international levels), and analyse the diverse set of policy instruments they mobilise, as well as their policy targets. As such, the mapping helps benchmark national scale up finance policy mixes by exploring their composition and balance.



### Box 2.5. G20/OECD High-Level Principles on SME Financing

The G20/OECD High-Level Principles on SME Financing<sup>3</sup> were developed by the OECD, together with other relevant international organisations, at the request of G20 Finance Ministers and Central Banks Governors. The Principles are addressed to G20 and OECD members and other interested economies, and can apply to diverse circumstances and different economic, social and regulatory environments. They provide broad guidelines for the development of crosscutting policy strategies to enhance access to a diverse range of financing instruments by SMEs and entrepreneurs. The Principles provide a coherent framework for government actions in this area, also taking into account the broader policy ecosystem in which SMEs operate. Such strategies are instrumental to define specific policy objectives; design, coordinate and implement policy measures; and to provide a framework for monitoring and evaluation (G20/OECD, 2018<sup>[72]</sup>).

#### G20/OECD High-Level Principles on SME Financing

1. Identify SME financing needs and gaps and improve the evidence base ;
2. Strengthen SME access to traditional bank financing ;
3. Enable SMEs to access diverse non-traditional bank financing instruments and channels ;
4. Promote financial inclusion for SMEs and ease access to formal financial services, including for informal firms ;
5. Design regulation that supports a range of financing instruments for SMEs, while ensuring financial stability and investor protection ;
6. Improve transparency in SME finance markets ;
7. Enhance SME financial skills and strategic vision ;
8. Adopt principles of risk sharing for publicly supported SME finance instruments ;
9. Encourage timely payments in commercial transactions and public procurement ;
10. Design public programmes for SME finance which ensure additionality, cost effectiveness and user-friendliness ;
11. Monitor and evaluate public programmes to enhance SME finance.

**The Principles aim to encourage dialogue, exchange of experiences and coordination**, including regulatory coordination, among stakeholders in SME finance, including policy makers, financial institutions, research institutions and SME management on how to enhance SME access to finance and increase their contribution to resilient and inclusive growth.

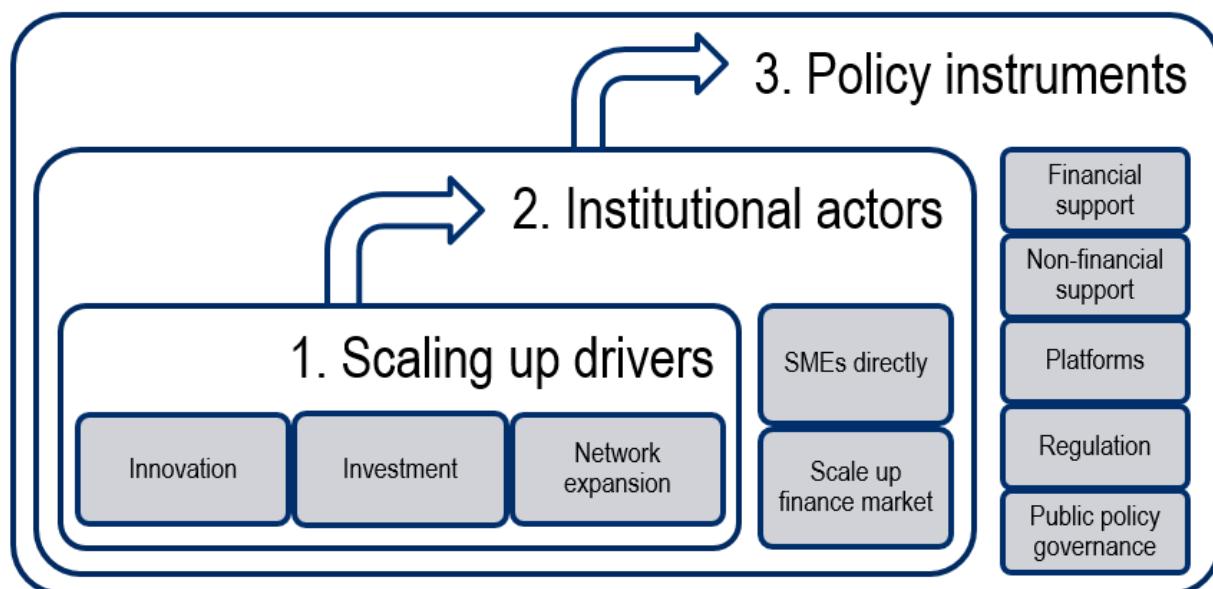
Source: G20/OECD High-Level Principles on SME Financing, <https://www.oecd.org/finance/G20-OECD-High-Level-Principles-on-SME-Financing.pdf> ; Financial Stability Board (2015), High-Level Principles on SME Financing. <https://www.fsb.org/2015/11/high-level-principles-on-sme-financing>

### Main strategic objectives pursued

**Scale up finance policies encompass all policies that can unleash internal or external sources of finance to support SME activities related to scaling up, i.e. innovation, investment and network expansion.** The policy options that governments can implement are therefore defined by the type of transformation that scalers are going through, i.e. the scale up drivers they pull on to grow their business and capacity. Such policies can either be aimed at SMEs themselves (for unleashing internal resources, or for addressing demand-side barriers), or at the finance market and a number of institutional actors (for unleashing external finance). In both cases, policy instruments can take the form of financial support, non-financial support, platforms and networking infrastructure, regulation, or public policy governance (see Figure 2.5).

- **When demand-oriented and SME-targeted**, policy initiatives aim to reduce SME financing costs or needs, raise their awareness on existing financing solutions or their ability to access new funding sources. **When supply-oriented and SME-targeted**, initiatives aim to increase scalers' self-funding capacity or incentivise reinvestment of profits;
- **Scale up finance policies can also be directed towards institutional actors operating in the financing system or the business sector.** In this case, they are supply-oriented and aim to create new or a more diverse set of financing sources. Institutional actors can include banks or venture capital/ private equity funds, as well as individuals such as business angels or investors (i.e., the **financial sector**), large enterprises, multinationals or leading actors in sectors, value chains, ecosystems (i.e., the **private sector**), and public/ development banks or other administrations (i.e., the **public sector**). Finally, the **civil society** can also be a source of finance for scalers.

Figure 2.5. Financing SME scaling up: which policy instruments for which actors for which drivers?



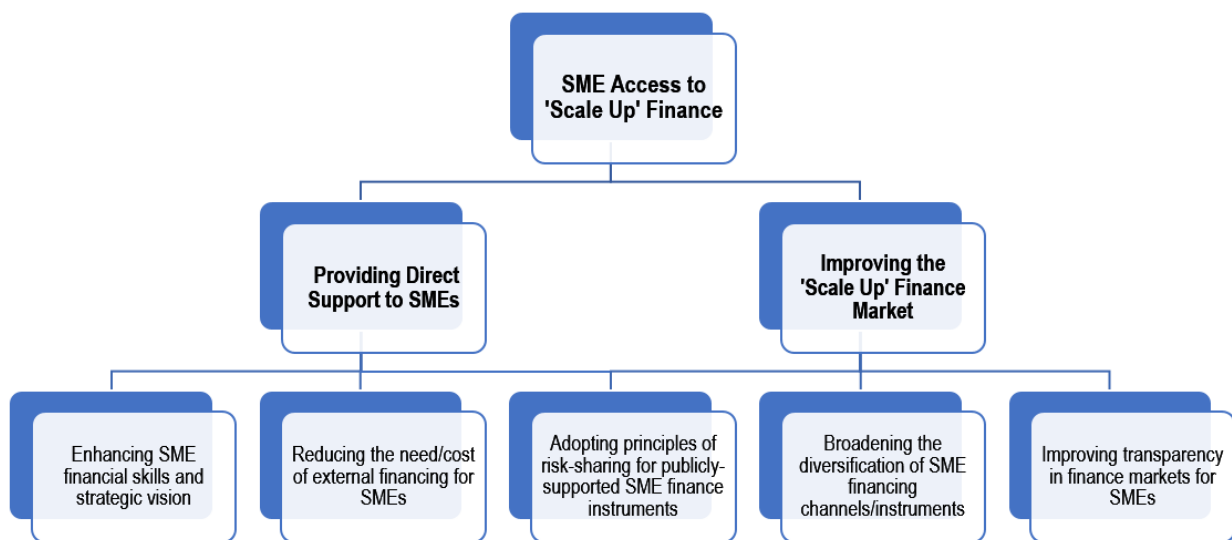
Note: Instrument typologies reflect the framework developed in the OECD SME and Entrepreneurship Outlook and will be used to structure the SME&E data lake knowledge infrastructure. The typology of instruments is drawn from Meissner and Kergroach (2019<sup>[73]</sup>).

Source: Authors' own elaboration.

The strategic objectives of scale up finance policy are aligned with in the G20/OECD High Level Principles on SME Financing (see Figure 2.6), and encompass:

1. Policies for reducing the need/cost of external financing for SMEs;
2. Policies for adopting principles of risk sharing for publicly-supported SME finance instruments to encourage the participation of private investors and develop appropriate risk mitigation mechanisms with private partners;
3. Policies for enhancing SME financial skills and strategic vision to enable them to develop a long-term approach to finance and improve their business prospects;
4. Policies for broadening the diversification of SME financing channels/instruments to enable SMEs access various non-traditional sources of finance in order to obtain the most suited scale up finance instruments according to their life cycle stage;
5. Policies for improving transparency in finance markets for SMEs to encourage greater investor participation and reduce financing costs for SMEs.

**Figure 2.6. Strategic objectives of policies to promote SME access to scale up finance**



Source: Authors' own elaboration.

### ***Cutting across multiple policy domains***

To account for the pervasive nature of scale up finance, the mapping of relevant institutions and policies cut across a number of policy domains that are relevant to finance innovation, investment and network expansion. Table 2.6 provides a schematic overview of what the exercise entailed.

**Table 2.6. Schematic overview of what SME scale up finance policies are and are not**

What it is	What it is not
<ul style="list-style-type: none"> <li>• <b>Traditional financing instruments</b> designed to explicitly support firm growth</li> <li>• Bank loans, credit guarantees</li> <li>• <b>Alternative financing instruments</b> designed to explicitly support firm growth</li> <li>• Alternative debt (corporate bonds, securitised debt, private placements, (debt) crowdfunding, etc.)</li> <li>• Hybrid instruments (subordinated loans/bonds, silent participations, convertible bonds, etc.)</li> <li>• Equity instruments (private equity, venture capital, business angels, (equity) crowdfunding, etc.)</li> <li>• Financing instruments designed to explicitly support <b>scale up drivers</b></li> <li>• Innovation: R&amp;D&amp;I tax incentives, technology funds, regulatory sandboxes, etc.</li> <li>• Investment: Funds to improve provisions of asset finance and leasing, public loans, grants, etc.</li> <li>• Network expansion : Export guarantees, trade credit insurance, trade finance, etc.</li> <li>• Finance for <b>long-term or structural corporate investments</b></li> <li>• <b>Platforms</b>, networking infrastructures, facilities for crowdfunding or improving transparency on financial markets etc.</li> <li>• Initiatives to <b>raise SME financial literacy and investment readiness</b>, e.g., training vouchers, mentoring programmes, business acceleration services etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Bank loans or credit guarantees that do not pursue growth objectives (to the extent it is made explicit)</li> <li>• Short-term loans and other financing instruments that cover cash flow or operating costs needs</li> <li>• COVID-19 emergency measures in support of liquidity shortages</li> <li>• Microloans, travel vouchers (e.g., to attend international fairs)</li> <li>• Business formalisation support, incubators, firm creation finance support</li> <li>• Support to SME public procurement</li> </ul>

Note: Categories of financial support were aligned with the analytical framework developed as part of the G20 Study Group on Financing for Investment, and specifically on the “The Role of Banks, Equity Markets and Institutional Investors in Long-Term Financing for Growth and Development” report (OECD, 2013<sup>[74]</sup>).

Source: Authors’ own elaboration.

### ***Identifying typologies of policy instruments***

Governments have a wide range of policy instruments at their disposal to address scale up finance-related challenges, with a great **diversity of tools when it comes to financial support for SMEs**. Table 2.7 provides an overview of typical policy initiatives and examples within OECD countries.

**Table 2.7. Financial support for SME scale up: diversity of instruments and selected country examples**

To SMEs directly	Policy initiatives	Country examples
Public loans	Direct loans, co-financing, direct guarantee, entrepreneurship fund, long-term buyer financing, growth line of credit	<p><b>The Green Fund (EST)</b> aims to lend to companies that create green technologies to solve environmental problems and achieve a climate-neutral and circular economy. Investments focus on companies in the seed stage (to generate deal flow), early stage (to deploy new technologies) or growth stage (to finance expansion).</p> <p><b>Low Risk Loans (NOR)</b> are loans on competitive, market-based terms with a long repayment period and terms tailored to the companies' needs. The low-risk loan financing covers the companies' needs for long-term financing of fixed assets, but also capital strengthening, internationalisation and development activities.</p>
Grants & Subsidies	Innovation vouchers, SME growth subsidies, investment funds, R&D&I grants, global acceleration programs	<p><b>Strategic Innovation Fund (CAN)</b> allocates repayable and non-repayable contributions to firms of all sizes across all industrial and technology sectors.</p> <p><b>Innovation Voucher (AUT)</b> is designed to help SMEs in Austria start ongoing research and innovation activities.</p>
SME tax incentives	R&D&I tax credit, corporate profit tax incentives, special tax regimes to support investment, training tax credit	<p><b>R&amp;D Tax Incentive (CHL)</b> allows a reduction in income tax of 35% of the R&amp;D investment, through a tax credit (maximum of US\$1 million). It also allows the remaining 65% of the R&amp;D investment to be considered as mandatory expenses for income tax deduction.</p> <p><b>Development Tax Allowance (HUN)</b> is based on corporate income and applies in the form of a withholding tax in various cases, including SME investments exceeding HUF 500 million, if the company increases the number of its employees by five (for small companies) or ten (for medium-sized companies) in the following four years, or if it increases its labour costs by at least 10 times (for small companies) or 25 times (for medium-sized companies) the annual minimum wage.</p>
Towards the scale up finance market	Policy initiatives	Country examples
Loans	Bank loans, credit guarantees, free interest rate loans	<p><b>Operating Credit Guarantee for SMEs (SWE)</b> helps banks share risk regarding loans, overdraft facilities, or invoice mortgages.</p> <p><b>The Insurance of Bank Loans (LUX)</b> is a mechanism that allows banks to reduce their risk by covering part of their loans for their clients' international activities against the risk of non-repayment. This protection allows banks to grant larger credit lines to Luxembourg companies that wish to develop their activities abroad.</p>
Alternative debt	Corporate bonds, securitized debt, covered bonds, private placements, (debt) crowdfunding	<p><b>Bond financing (FIN)</b> is designed for companies' general financing needs, such as investments, expansion and development of operations and the organisation of the financing structure.</p> <p><b>Basket Bonds (ITA)</b> meets the medium-long term financing needs of companies to ensure the implementation of their development and investment plans. This mechanism is based on the issue of a security, guaranteed by a pool of bonds issues by Italian SMEs and Mid-Caps.</p>
Hybrid instruments	Subordinated loans, silent participations, profit participation rights, convertible bonds, mezzanine finance	<p><b>Mezzanine Loans (LVA)</b> cover investment expenses related to the diversification of existing products, extension of the capacity or a fundamental change in the overall production process, setting-up of a new establishment, or extension of the capacity of an existing establishment.</p> <p><b>ERP-EIF-Länder Mezzanine Fund of Funds (GER)</b> participates in private sector professional mezzanine funds (including venture-debt funds) which invest heavily in German SMEs and young fast-growing companies. The Mezzanine Fund of Funds was established with an initial volume of EUR 200 million.</p>
Equity instruments	Private equity, venture capital, business angels, specialized platforms for public listing of SMEs, crowdfunding	<p><b>Italian Technology and Growth Fund (ITA)</b> is aimed at acquiring minority stakes with capital increase activities in Italian companies of a highly technological nature that intend to launch or consolidate expansion projects. It promotes their innovation processes and strengthens their competitive position.</p> <p><b>French Tech Acceleration Fund FTA (FRA)</b> invests minority stakes of between EUR 1 million and EUR 20 million alongside other investors. It can participate in follow-on rounds of financing. The fund seeks to promote the creation and the support of start-ups to maximise their growth potential.</p>

Trade finance	Export credit insurance, letter of credit	<p><b>Export Factoring (KOR)</b> is a trade finance facility whereby Korea Eximbank purchases exporters receivables arising from open-account export transactions, on a non-recourse basis.</p> <p><b>Bank-Financed Short-Term Export Supplier Credit Insurance (CZE)</b> is proposed when a loan is provided by an exporter to an importer (foreign person) in the form of deferred payment for delivered goods or services (export receivable). It is subsequently repurchased by the bank from the exporter without the possibility of retroactive penalty.</p>
Asset-based finance	Asset-based lending, purchase order finance, warehouse receipts, leasing	<p><b>Asset Based Lending (JPN)</b> uses current assets, such as inventory and accounts receivable held by businesses, to develop a method of lending that is not overly dependent on real estate collateral. It focuses on the "business life cycle" in which stocks are sold and become receivables, and receivables are collected and become liquid deposits.</p> <p><b>Leasing of Machinery and Equipment (POL)</b> is aimed at SMEs that need support for the purchase of specialised equipment for further development.</p>

Note: Instrument typologies only contain the category of financial support that is drawn from the framework developed in the OECD SME and Entrepreneurship Outlook and Meissner and Kergroach (2019<sup>[73]</sup>).

Source: Authors' own elaboration.

Aside from financial support, governments also have a number of other policy instruments at their disposal. **Non-financial support to help SMEs scale up can take the form of advisory services** (such as how to integrate or attract new sources of funding), **competence centres on financial literacy, or mentoring programmes**. In Ireland, the Funding Advisory Service is coordinated by *InterTradeIreland* and targets SMEs seeking new or alternative sources of finance to fund the growth of their business. It includes a series of free workshops on funding opportunities, alternative financing and practical advice on how to apply for and obtain funding for growth.

**Platforms and networking infrastructures can include online resources for SMEs such as digital portals, as well as knowledge and cooperation hubs**, where SMEs can get in touch with other firms, both large and small. In Canada, for instance, the Women Entrepreneurship Knowledge Hub helps women grow their businesses by providing access to finance, talent, networks and expertise, thus serving as a one-stop source of knowledge, data and best practices for women entrepreneurs.

**Although there are comparatively fewer initiatives in this area, regulation can improve the financing conditions for growth-oriented SMEs**, especially with regard to the expansion of alternative sources of finance. For instance, they can take the form of the Australian Securities and Investment Commission Regulatory Sandbox, which allows individuals and businesses to test certain innovative financial services or credit activities without first obtaining license, or the Finnish Crowdfunding Act, which eases the regulation of investment-based crowdfunding and clarifies the ground rules for loan-based crowdfunding.

**Public policy governance initiatives can support access to scale up finance mainly through national strategies and strategic plans** that coordinate policies in a specific area, sometimes also explicitly referring to SME access to scale up finance. The Hungarian SME Strategy (2019-30), for example, aims to create an SME-friendly business environment, develop e-governance solutions, strengthen innovation, provide appropriate financing facilities, and support internationalisation.

**Finally, public procurement has not been included in the mapping** as evidence of its ability to provide direct financial support to SME growth is mixed and access barriers remain for many SMEs (OECD, 2018<sup>[75]</sup>). While di Giovanni et al. (2022<sup>[76]</sup>) suggest that granting procurement contracts to small Spanish companies can help them overcome financial constraints, Sake (2017<sup>[77]</sup>) shows that the use of 'most economically advantageous' criteria in tenders has not contribute to increase SME participation and success rates. Glas and Essig (2018<sup>[78]</sup>) also argue that the effectiveness of splitting tenders into smaller lots does not significantly increase the success rate of SMEs in Germany.

## ***Methodology and sources***

Policy information is drawn from official sources (e.g. national strategies, action plans, websites of relevant Ministries and agencies, etc.), as well as OECD reports and publications, through desk research.

Information is collected at national and institutional level. The research work began by mapping the relevant institutions, such as Ministries, Public Investment Banks, SME specialised agencies, export credit agencies, etc., and then by identifying the relevant policy initiatives for scaling up finance, based on keywords, concepts search and text analysis. The information collected is structured and encoded, and made available through an online interface for the purposes of easing consultations and enabling re-use.

The policy work builds on similar exercises (EC/OECD, 2021<sup>[79]</sup>) (UNESCO, 2018<sup>[80]</sup>) (EC/OECD, 2016<sup>[81]</sup>) (OECD, 2012<sup>[82]</sup>) and follows the approach proposed by Meissner and Kergroach (2019<sup>[83]</sup>) to monitor and benchmark innovation policy mixes. Developments are also coordinated with the EC/OECD project on foreign direct investment (FDI) spillovers on SME productivity and innovation that follows similar approach for better understanding how public policies at national and regional levels can help strengthen FDI-SME linkages and increase productivity and innovation spillovers for local development and resilience (OECD forthcoming, 2022<sup>[84]</sup>).

Finally, the policy mapping and the experimental visualisation dashboard developed for the EC/OECD SME Scale Up project serve as a “proof of concept” for the OECD SME&E data lake (CFE/SME(2021)20). Going forward, the ambition is to build towards a broad-based rollout of policy indicators and a harmonised policy database across OECD countries and regions that increasingly leverages the breadth of information that is gathered throughout the thematic projects.

## **How are scale up finance policies shaping across OECD countries? Key findings of the pilot phase**

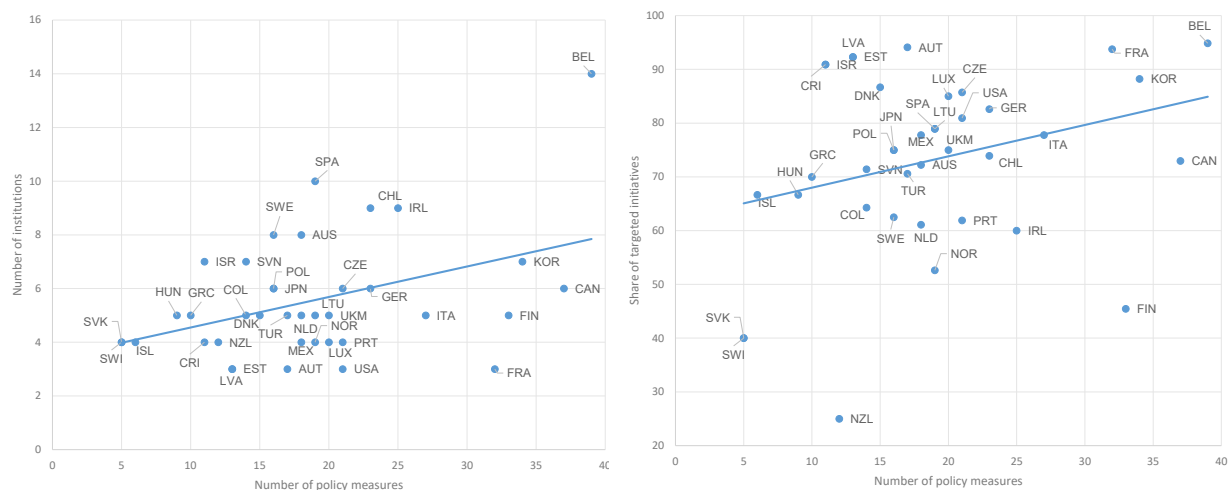
**Policy makers have long recognised that access to finance, in the form and quantity needed at each stage of their life cycle, is critical for SME creation and scale up** (OECD, 2019<sup>[8]</sup>). Accordingly, governments worldwide have developed policy responses to the challenges SMEs in need of external finance could face, often adopting a two-pronged approach of strengthening bank financing as well as providing support to diversify the finance mix of SMEs (OECD, 2015<sup>[71]</sup>) (OECD, 2015<sup>[21]</sup>).



## All OECD countries act to improve scale up finance, albeit at different intensities


**Figure 2.7. The number of policy initiatives in place increases with the number of institutions involved and the intensity of targeting efforts**

Number of scale up finance policy measures in place and number of institutions involved (left-hand) and share of measures that are targeted by design (right-hand)



Note: For countries with few initiatives (observations), interpretation of indicators should be done with caution. Targets include diverse populations of firms and individuals, including SMEs, and entrepreneurs and business owners, as well as sector(s) or supply chain(s), technology(ies) or region(s) and place(s).

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

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**This section looks at how national policy mixes have evolved in recent years to enhance SME access to scale up finance.** More specifically, this section seeks to understand which priority is given to different aspects or mechanisms of scale up finance, the balance between targeted and generic approaches to improving scalers' financing options, as well as the institutional arrangements in place to support policy design and implementation. It also intends to identify commonalities and differences in policy intervention across countries, and assess the overall intensity of public efforts in this area. It builds upon a pilot mapping of **210 institutions and 709 policy initiatives (18.7 on average by country)** conducted between September 2021 and March 2022 across the 38 OECD countries.

**All OECD governments have initiatives in place to improve SME scale up finance, but with different degrees of intensity in the efforts deployed.** The number of policy initiatives in place, used as a proxy for measuring governments' efforts in the field, varies markedly across countries, from less than five measures in Switzerland or the Slovak Republic, to more than six times as many in Korea, France, Finland, Belgium and Canada (Figure 2.7). The number of measures also tends to increase with the number of institutions involved, as well as the efforts made for targeting public intervention towards specific populations of firms or entrepreneurs, sectors or technologies.

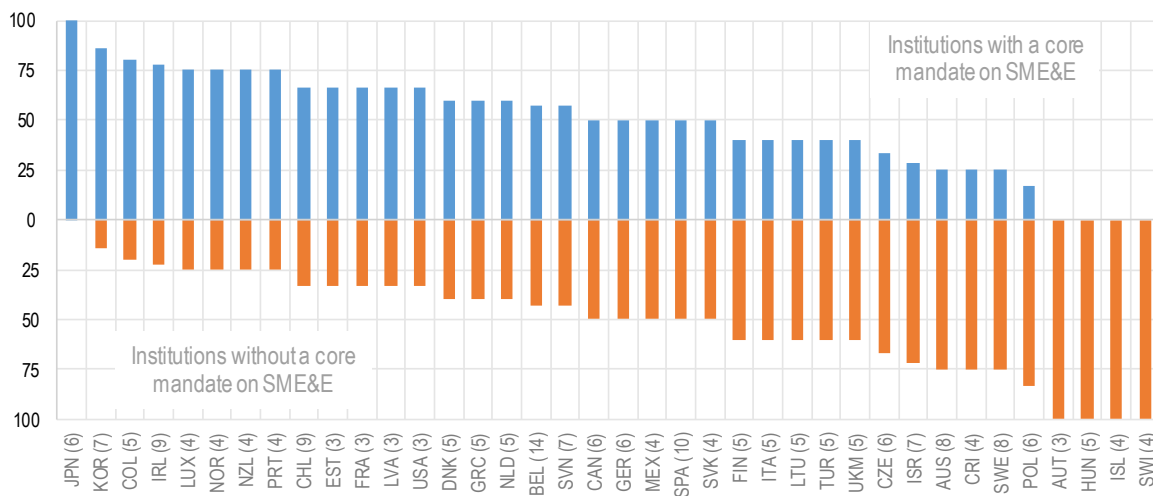
### **Public action for scale up finance often falls beyond the SME and entrepreneurship policy domain**

Not all institutions that design and implement scale up finance measures have SME and entrepreneurship (SME&E) as a core policy mandate. In most countries, only about half of institutions in charge of scale up

finance initiatives deal explicitly with SME&E policy considerations (Figure 2.8). This can range from more than 75% in Colombia, Ireland, Japan or Korea, but can also not be the case at all, such as in Austria, Hungary, Iceland and Switzerland. Other domains of public intervention include innovation policy (28.2%), trade policy (23.3%) and investment promotion policy (17.3%), which is broadly consistent with the methodology developed for mapping institutions. The role of financial and monetary policy institutions appears to be less prominent, although the situation differs across countries. In Hungary, Portugal and the Republic of Türkiye, more institutions are implementing SME scale up finance policy as part of broader innovation policy measures, while the same stands for the Czech Republic, Poland and the US with regard to trade policy.

**Figure 2.8. Not all institutions promoting scale up finance are responsible for SME&E policy**

Percentage of institutions with/without SME and entrepreneurship as a core mandate, in total (%)



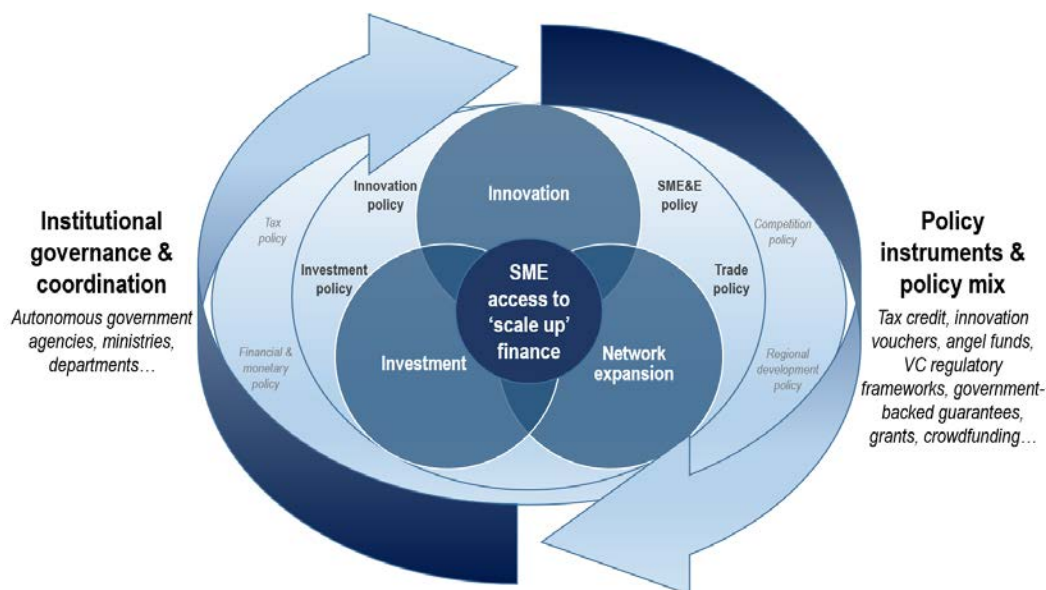
Note: Shares are computed as a percentage of total national institutions involved in promoting scale up finance based on unweighted count. Numbers into brackets are the number of institutions mapped in each country.

Source: Authors' own elaboration, based on the institution mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/mz8l6k>

**This heterogeneous institutional set up for the implementation of SME scale up finance policies might suggest different approaches to scale up policy more broadly**, as well as a possible fragmentation of policy areas that intersect with scale up finance, such as investment, skills, trade and R&D policy. Figure 2.9 presents the scope of scale up finance policies, as identified in this project.

Figure 2.9. Scope of SME access to scale up finance policies



Source: Author's own elaboration.

***There are signs of a general fragmentation of scale up finance policies...***

**There is often a high number of institutions involved in implementing SME scale up finance policies.** In Spain, Ireland, Sweden or Australia, between 8 and 10 institutions are active in the field, for a country average of 5.5 institutions across the OECD area<sup>4</sup>. Public intervention is more concentrated in Austria, Estonia, France, Latvia and the US, with only three institutions involved.

**There are also numerous initiatives deployed in countries,** with over 30 measures in place in Canada (37), Korea (34), Finland (33), or France (32). The number of measures per institution is about 3.38 on average across OECD countries, but ranged from 10 in France to six in the United States and Finland. In France, two main institutions, Bpi France (in charge of 20 policies) and the Ministry of Economy and Finance (administrating 11 initiatives) operate in the field (Box 2.6). The United States relies mainly on the Small Business Administration (16 initiatives) and the US Export-Import Bank (4 initiatives). Finland acts through Finnvera, a state-owned financing company and the official export credit agency for Finland (18), and Business Finland, a public organisation under the Finnish Ministry of Employment and the Economy (11).

### Box 2.6. France – the key role of Bpifrance and the Ministry of Economy and Finance

**France is above OECD average in terms of the number of scale up finance policies per institution.** This is mainly due to the large number of initiatives implemented by the Ministry of Economy, Finance and Relaunch and the Public investment bank Bpi France, who both list support for SME access to finance as a central element in their respective policy objectives.

**The Ministry of Economy, Finance and Relaunch provides support to SME growth through several instruments, including direct financial support.** In 2022, the EUR 2.3 billion “Industrial Start-ups and Deep Tech Strategy 2030” was launched to address the lack of financing solutions for risky projects carried out by French SMEs. The Strategy includes financial instruments such as industrial loans and two equity funds to accompany start-ups from innovation to industrialisation.

**Bpifrance provides financial support for SME scale up** through grants, guarantees, financing, export and trade finance, growth capital and transfer capital. It invests in businesses of all sizes through co-financing with banks as well as through equity investment, taking also minor stakes in growing companies, from the seed stage to the transfer. The French scale up “Botify”, for example, which is specialised in connecting websites to major search engines, was able to raise USD 55 million in 2021 thanks to the “Large Venture” policy initiative implemented by Bpifrance.

**Both institutions place a major focus on innovation as a driver for enterprise development.** To this end, the Ministry offers an Innovation and R&D tax credit (CII) of up to 20% of the total amount of investment in new and innovative products, dedicated exclusively to SMEs. Bpi France, on the other hand, supports individual and collaborative innovation projects, leveraging a diverse set of instruments, including such R&D and innovation support, as well as equity finance. Its Innovation and Industry Fund, for example, finances disruptive innovation through individual R&D and innovation support for high-tech enterprises (BPI France, 2020<sup>[85]</sup>). Bpifrance also supports export projects and the internationalisation of companies through growth loans, equity, and loan guarantees for international expansion.

Source: Bpifrance, <http://www.bpifrance.fr/> (accessed on 19 April 2022). Ministry of Economy and Finance, <http://www.economie.gouv.fr/> (accessed on 19 April 2022).

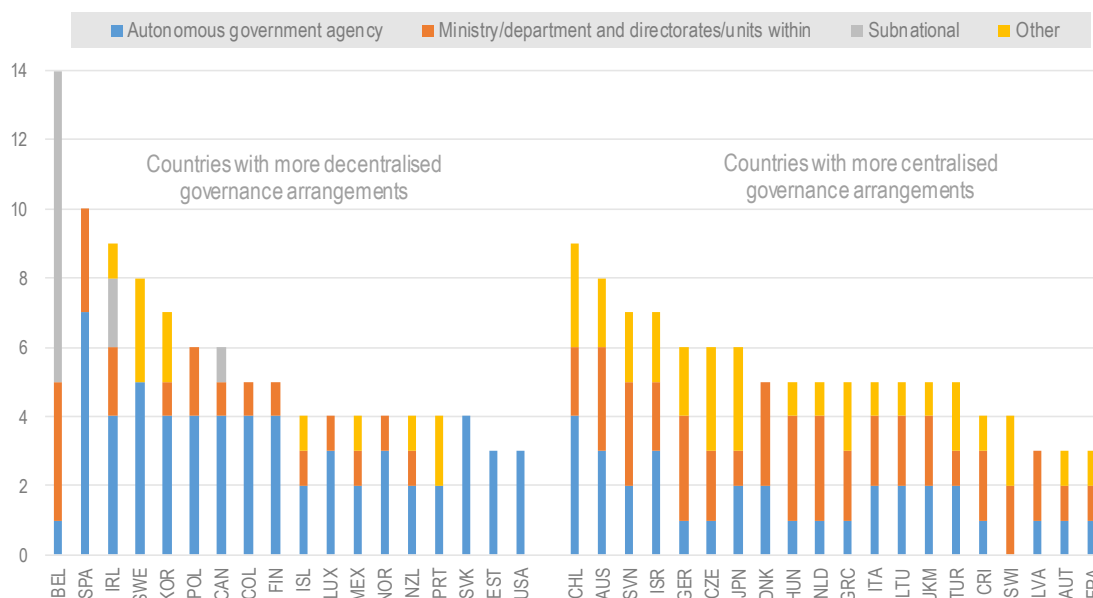
**In addition, the scale up finance policy landscape may be characterised in some places by a high degree of decentralisation.** Decentralisation refers to the extent to which policy implementation and evaluation are transferred to local or institutional level, e.g. through independent agencies with functions along the scale up finance policy cycle (Meissner and Kergroach, 2019<sup>[73]</sup>) (OECD, 2012<sup>[82]</sup>). Autonomous government agencies are common in a number of European countries, such as Spain or Sweden. For instance, in Spain 60% of implementing institutions are autonomous government agencies that have different core mandates including innovation, trade development and foreign direct investment policy. These six autonomous government agencies are in charge of implementing 10 out of the 19 SME scale up finance policies (see Figure 2.10).

**In other countries, most of the governance arrangements take place at ministry/ department level,** particularly within ministries in charge of economic and foreign affairs or science, technology and innovation. This is the case in Germany, with four out of the six implementing national-level institutions being Ministries, and the Federal Ministry for Economic Affairs and Climate Action being responsible for over half of relevant policies (see Figure 2.10). Similarly, the Italian Ministry of Economic Development is in charge of the implementation of 13 out of the 27 SME scale up finance policies, including initiatives that target different scale up drivers such as investment through the *Nuova Sabatini* programme and innovation through the *R&D tax credit* measure. In the Netherlands, the Dutch Venture Initiative is a fund of venture and growth capital funds launched by the European Investment Fund and supported by the Dutch Ministry of Economic Affairs, which aims to invest in fast-growing and/or innovative companies in sectors such as

ICT, clean technology, medical technology, renewable energy, and life sciences. It may be noted that more policy initiatives could also take place at subnational level which remains beyond the scope of this mapping and is not reflected in the current analysis.

**Figure 2.10. There is a high number of institutions involved in scale up finance policies, with different degrees of decentralisation**

Number of institutions implementing scale up finance policy initiatives by status



Note: Countries are counted among the more decentralised governance systems when more than half institutions involved are autonomous agencies or governance structures operating at subnational level.

Source: Authors' own elaboration, based on the institution mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/3pkqgz>

**Overall, in most countries, a multitude of governance arrangements co-exist**, including autonomous agencies, public-private agencies as well as a set of other structures. In Portugal, for example, half of implementing institutions are public-private agencies. These include the *Portuguese Development Bank*, which addresses market failures in lending and capital markets, focusing specifically on improving access to finance for projects in research and innovation, sustainable infrastructure, social investment and skills, as well as projects increasing the competitiveness of Portuguese companies; and *Startup Portugal*, a non-profit organisation that promotes entrepreneurship and innovation through initiatives that contribute to the growth of the entrepreneurial ecosystem and culture in the country.

**Adding to the policy fragmentation, institutions can also operate at subnational level.** There is a growing awareness of the importance and benefits of a “place aware” policy approach as structural economic policies do not consider specific regional factors adequately (OECD, 2019<sup>[86]</sup>). While not a focus of the policy mapping in this pilot phase, subnational policies can complement structural economic policies, including SME scale up finance policies, by creating an environment that supports the growth of firms and in particular of SMEs and start-ups. Against this backdrop, SME scale up finance policies implemented by subnational institutions take into account that firms operating in certain areas may face greater challenges to access debt and non-debt instruments and that unlike larger firms that have wider range of options to finance their growth projects, locally operating SMEs often seek finance from local financial institutions.

The European Regional Development Fund (ERDF) is a key initiative supporting SME competitiveness through programmes involving shared responsibility between the European Commission and the national and regional authorities of the Member States, thus allowing for a better articulation of SME access to finance policies between supranational and sub-national levels (Box 2.7).

### **Box 2.7. The European Regional Development Fund (ERDF): linking supranational and sub-national initiatives to support SME access to finance**

**The European Union supports SME creation and development through a variety of policy instruments. As part of the Cohesion Policy, the European Regional Development Fund (ERDF) is an important source of SME finance, linking sub-national and national funding with EU budget investments.** During the 2021-27 period, the ERDF Initiative has promoted the use of dedicated financial instruments for SMEs while strengthening coordination between EU, national and regional funds. These investments support SME competitiveness by:

- Fostering new businesses creation, start-ups/scale-ups growth, and accelerators;
- Encouraging the entrepreneurial ecosystem;
- Promoting SME participation in global value chains and in networks;
- Supporting SME internationalisation;
- Facilitating SME access to finance and advanced business services.

In Ireland, the “Southern & Eastern Regional Operational Programme” promotes SME competitiveness through targeted investment in high-growth and innovative micro-enterprises in the south and east of the country. The initiative focuses on specific growth opportunities and areas of innovation identified in Ireland's Smart Specialisation Strategy, which builds on the region's strengths.

Source: European Commission (2021), European Regional Development Fund, [https://ec.europa.eu/regional\\_policy/en/funding/erdf](https://ec.europa.eu/regional_policy/en/funding/erdf).

European Commission (2020), Southern & Eastern Regional Operational

Programme [https://ec.europa.eu/regional\\_policy/en/atlas/programmes/2014-2020/ireland/2014ie16rfop002](https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/ireland/2014ie16rfop002).

European Structural and Investment Funds (2019), An Economy that works for people: Cohesion Policy support for small and medium-sized enterprises. <https://cohesiondata.ec.europa.eu/stories/s/n4ee-2h83>

### ***... raising the risk of governance failures and the need for sound coordination across-the-board***

**Dedicated agencies can play the role of policy coordinator** by assuming a leadership on the national policy agenda in a particular policy domain (e.g. innovation) (see Box 2.8). However, challenges may arise when coordination should take place across numerous policy domains, especially in more decentralised governance systems, where over four and up to seven (Spain) autonomous agencies are involved in the scale up finance policy agenda.

### Box 2.8. Policy coordination: principles and instruments

Policy coordination relies upon a mix of interactions, with both vertical and horizontal aspects, the former ones referring to co-ordination between a ministry and its delivery agencies, and the latter covering for instance inter-ministry relations (OECD, 2012<sup>[87]</sup>). It can be fostered at different points in the policy cycle, from policy design over implementation to evaluation.

Coordination instruments can be based on regulation, incentives, norms and information sharing. They can be top-down, relying upon the authority of a lead actor or bottom-up and emergent (Peters, 2018<sup>[88]</sup>):

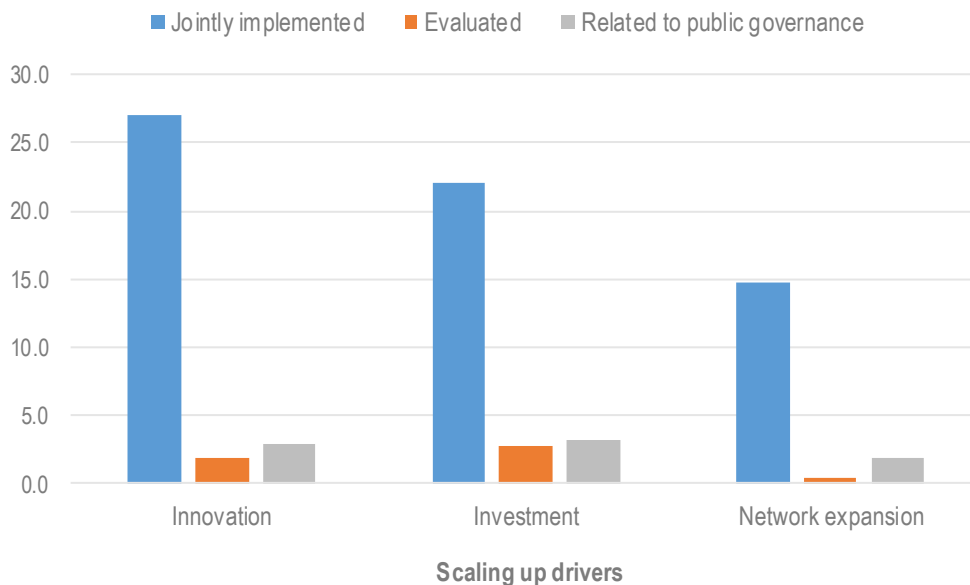
- **National strategies and action plans** typically involve wide consultation and deliberation, provide diagnostic overviews of what the strengths-weaknesses-opportunities-threats of an SME/innovation/local ecosystem could be, and set a shared vision of the goals pursued.
- Closely related, **policy evaluations and reviews** are a source of strategic intelligence, and a means for promoting greater co-ordination.
- **Dedicated agencies/ ministries** assume leadership of the national policy agenda in a policy domain (e.g. innovation or investment promotion), as well as the responsibility for coordination.
- At the same time, **inter-agency joint programming** can facilitate co-ordination and other aspects of governance as agencies share agenda and action.
- The **Centre of government (CoG)**, e.g. the President's or Prime Minister's Office, can bridge interests and bureaucratic boundaries. High-level policy councils can also deal with aspects of policy coordination although they often have variable roles and composition across countries.
- Finally, **informal channels of communication** between officials or job grades (of civil servants, but also experts and stakeholders) can play a role and suggest a relatively well-developed culture of inter-agency trust and communication.

**Joint programming of scale up finance policy initiatives remains rare.** On average, only 27% of policy initiatives aiming to support innovation finance are jointly administrated by different agencies or institutions in the OECD area, compared to 22% of policies for financing investments and 14% of policies aiming to support network expansion (Figure 2.11). **Policy and programme evaluations that can contribute to multilevel coordination are even scarcer**, with barely 1.9%, 2.7% and 0.5% of initiatives evaluated under each of the scale up drivers<sup>5</sup>. **Few initiatives also relate directly to public governance** (3.0%, 3.2% and 1.9% of all initiatives for each scaling up driver respectively).




**Figure 2.11. Few initiatives embed additional coordination mechanisms by design**

Share of scale up finance policies that are jointly implemented, have been evaluated or involved public governance arrangements, by scaling up drivers



Note: Further research would be needed to identify if policy initiatives have been evaluated. The contribution of policy and programme evaluation to coordination may therefore be underestimated in this pilot phase.

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/758fec>

**Guiding documents on SME access to scale up finance mostly refer to the SME & entrepreneurship, innovation and finance policy domains** (Table 2.8). National strategies are usually multi-annual plans that guide co-existing sets of policy initiatives in specific areas, and act as benchmarks in a country's institutional environment. Strategies that focus on SME & Entrepreneurship are generally oriented towards SME productivity or competitiveness, whether at national or international level, aiming to set out a favourable business environment for SMEs. Innovation-based strategies rely on a range of financial instruments to stimulate R&D&I in enterprises, while national plans towards the capital and finance market aim to increase the supply of finance for SME growth, and develop the financial literacy of SMEs. In this context, crowdfunding features among the key emerging issues that characterise the finance market policy domain.

**The diversity in the way scale up finance issues are addressed within national strategies further highlights that policy coordination in the area is carried out in different ways from one country to another.** In addition, some governments have several action plans in a single policy domain, as in the case of Estonia with both a "Strategic Activity Plan for Enterprise Estonia" and "Startup Estonia". Similarly, Norway combines an "SME Strategy" and the "National Entrepreneurship Plan". Other countries have dedicated national plans in several policy areas. The Czech Republic has built an "ecosystem of national strategies", including the "Strategy to Support SMEs (2021-27)", the "Innovation Strategy (2019-30)" and the "National Strategy for the Development of the Capital Market" that are all relevant for scale up finance (see Table 2.8).

**Table 2.8. Some countries articulate the scale up finance policy agenda as part of broader national strategies**

Strategic plans referring explicitly to SME access to scale up finance, selected examples in OECD countries

Main policy domain	Country	National strategy/ plan	In brief
SME & entrepreneurship	Czech Republic	Strategy to Support SMEs (2021-27)	Aims to increasing SME productivity and competitiveness. Key areas addressed in the strategy include access to finance, access to markets, skills, digitalisation and innovation.
	Estonia	Startup Estonia	Promotes the development of a start-up ecosystem and supports competitive scale ups by developing skills, improving funding diversity and addressing regulatory bottlenecks.
		Strategic Activity Plan of Enterprise Estonia	Aims to providing financial support to help enterprises enter foreign markets and strengthen their innovation capacity.
	Finland	Business Finland Strategy 2025	Addresses the needs of the Finnish economy, including helping domestic companies to be proactive about opportunities arising from important societal changes, such as financing green growth.
	Germany	The German SME Strategy	Supports SMEs in the areas of innovation and digitalisation, skills, access to finance and new market development locally and abroad.
	Greece	Growth Strategy for the Future	Aims to fostering the development of SME networks, helping companies grow, innovate and secure a larger share of international markets.
	Hungary	SME Strategy (2019-30)	Creates a favourable business environment for SMEs, enhancing innovation, providing appropriate financing facilities and supporting internationalisation.
Ireland	SME and Entrepreneurship Growth Plan	Sets out a wide range of measures to help businesses start up, grow, strengthen their digital capabilities and increase their export activities.	
Innovation	Czech Republic	Innovation Strategy (2019–30)	Introduces financial instruments to facilitate robotisation, automation and the promotion of innovation in enterprises, with a focus on SMEs in line with the standards set for Industry 4.0.
	Denmark	Digital Growth Strategy 2025	Contributes to the digital transformation, and the development of a pool of skilled professionals. The strategy consists of 6 pillars, one of which is dedicated to the digital enhancement of SMEs.
	France	France 2030 – Industrial Start-Ups and Deep Tech Strategy	Aims to (1) financing the industrialisation of innovative start-ups and SMEs, (2) strengthening support for the emergence of deep tech, and (3) creating a one-stop shop for industrial start-ups
	Israel	Plan for Encouragement of Institutional Investment in Hi-Tech	Provides a state guarantee for equity portfolios invested by institutional investors in high-tech companies with late-stage financing.
	Italy	4.0 Business National Plan	Improves the competitiveness of enterprises by supporting investments, digitalisation of industrial processes, development of new skills, products and processes.
Finance market	Canada	Venture Capital Action Plan	Increases the availability of finance for innovative firms, with the overall objective of helping high-potential SMEs to grow and innovate.
	Czech Republic	National Strategy for the Development of the Capital Market	Outlines 27 measures, including diversifying sources of finance for businesses, providing alternatives to bank financing and educating SMEs about market-based financing opportunities.
	Iceland	Fiscal Plan (2022-26)	Key priorities of the plan include increasing allocations to firm innovation, research and knowledge sectors
	Korea	Crowdfunding Development Plan	Aim to develop the crowdfunding market as an important growth path for unlisted start-ups and SMEs. Enables companies, investors and intermediaries to support innovative businesses.
	Mexico	National Financial Education Strategy	Promote the use of tech innovation in the financial sector to support financial education in the population; aim to generate data, information and measurements to improve financial education efforts.

Source: Authors' own elaboration, based on the institution mapping carried out as part of the EC/OECD SME Scale Up project and being part of the OECD Data Lake on SMEs and Entrepreneurship.

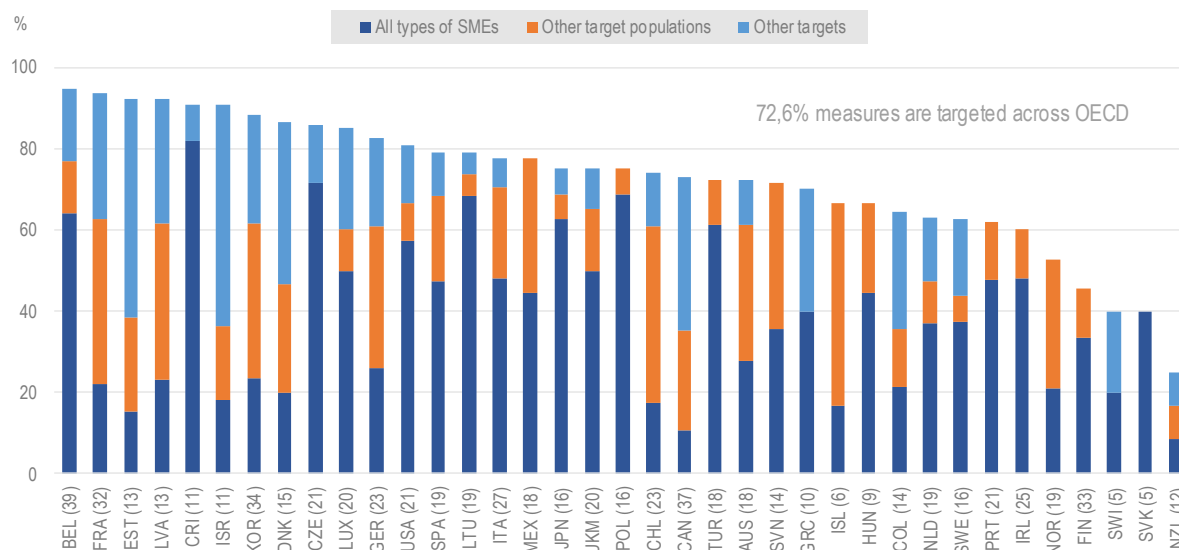
## Scale up finance policy is in fact highly targeted...

**Scale up finance policy is highly targeted and generic measures remain the exception more than the rule**, which may explain the relative policy fragmentation described above. On average 72.6% of measures in place across OECD countries are targeted, in most cases, at SMEs without differentiation (38.6%), but also often at certain sub-populations of firms (18.8%) or certain sectors, technologies or places (15.2%) (Figure 2.12). It is however not possible to say if policy targeting is more frequent for one scaling up driver or another, as the situation varies significantly across countries.

**The way scale up finance policies are designed is country-specific.** In Costa Rica (81.8%), the Czech Republic (71.4%) or Poland (68.8%), a large majority of measures is provided for all types of SMEs (Figure 2.12). In Iceland (50%), Chile (43.5%) or France (40.6%), more is done for SMEs with age, size or performance criteria. In Israel (54.5%), Estonia (53.8%) or Denmark (40%), other target criteria prevail. In Israel, for instance, the Venture Capital Fund (Orbimed) and the Plan for Encouragement of Institutional Investment in High-Tech target the biotech industry and high-tech sectors, while the MOFET R&D programme promotes innovative products and processes, for increasing the competitiveness of businesses in the manufacturing industry.

**Figure 2.12. Most scale up finance policies are targeted**

Share of scale up finance policies that are targeted by broad type of targets



Note: Target populations include all SMEs, and subpopulations of SMEs with size or performance criteria, or individuals such as entrepreneurs and business owners. Other targets include sector(s) or supply chain(s), technology(ies) or region(s) and place(s).

Source: Authors' own elaboration, based on the institution mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

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## Not all countries are giving the same focus to start-ups and high-growth firms in their policy mix.

In France and Germany, over half of population-targeted initiatives are designed for SMEs with age criteria (see Figure 2.13). In France, a number of VC Funds aim to address the financing needs of start-ups at seed, early or mid-stage of development, with a strong technological component and often an industrial approach. Germany combines VC funds – as the “European Recovery Program-European Investment Fund (ERP-EIF) Facility”, a joint initiative between the Federal Government and the European Investment Fund (Box 2.9) – and start-up loans. In addition, the KfW Corporate Loan has been established for

companies that have been active on the market for more than 5 years. In Korea and Denmark, more initiatives use performance and growth potential criteria to allocate support. Korea stands as an exception in the OECD area, by combining more extensively both start-up and high-growth-firms programmes.

### Box 2.9. The ERP-EIF Facility: A joint initiative of the German Federal Government and the European Investment Fund

The ERP-EIF Facility initiative was mandated in 2004 by the German Federal Ministry for Economic Affairs and Energy (BMWi) to provide venture and growth capital financing with a focus on early and later stage high-tech companies in Germany. The current volume of the Facility is up to EUR 4.6 billion and is financed by ERP Special Fund resources (“ERP Sondervermögen”) which are managed and complemented by the European Investment Fund. It consists of the following sub-programmes:

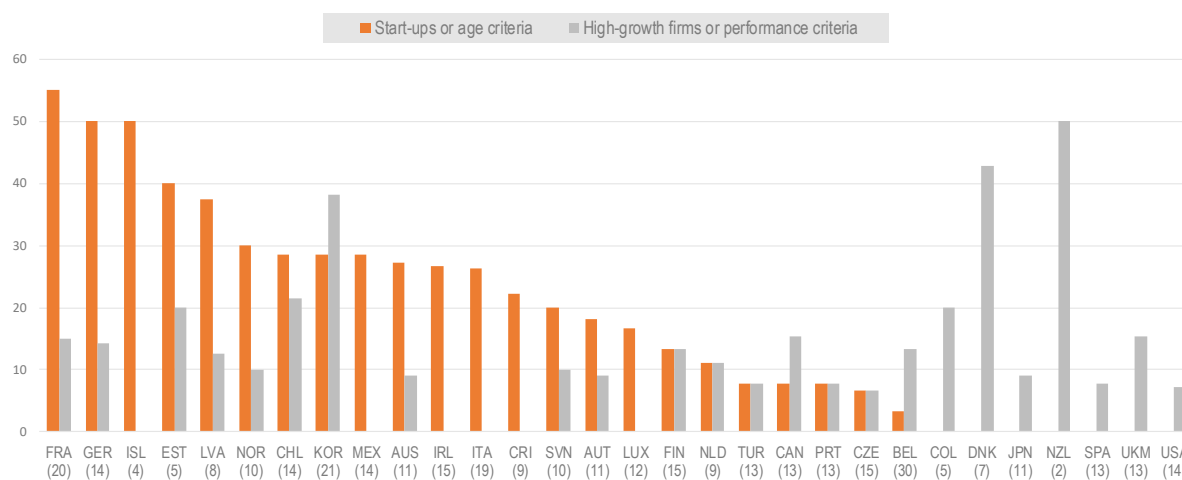
- The ERP-EIF VC Fund of Funds invests in VC funds (over 100 fund investments);
- The European Angels Fund Germany invests with experienced business angels in joint portfolios through more than 50 business angels and family offices;
- The ERP-EIF Growth Facility invests in VC-managed funds that provide expansion financing to high growth companies;
- The ERP co-investment in the German Future Fund-European Investment Fund Growth Facility expands the scope of the ERP-EIF Facility towards growth and later stages.

In total, intermediaries under the ERP-EIF Facility have invested in more than 2 000 SMEs in various technology areas, including ICT, life sciences as well as energy-related innovation.

Source: European Investment Fund (2022), The ERP-EIF Facility, [https://www.eif.org/what\\_we\\_do/resources/erp/index.htm](https://www.eif.org/what_we_do/resources/erp/index.htm).

### Figure 2.13. Some countries place a stronger focus on start-ups and high-growth firms, but not all

Share of population-targeted measures that are designed towards start-ups and high-growth firms



Note: SMEs with age criteria include young firms and start-ups but incumbents as well. SMEs with performance criteria include high-growth firms, scalars but also laggards.

Source: Authors' own elaboration, based on the institution mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

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***... which can raise difficulties for potential scalers to navigate a broad and disperse range of public services***

**There is a risk that potential scalers may not be able to identify the most appropriate solutions for their needs**, or even existing solutions, as public support schemes multiply, provided through a larger number of institutions, with a plethora of eligibility specificities. It is indeed widely acknowledged that smaller businesses tend to face disproportionate difficulties in navigating bureaucratic complexity and interacting with public administration, and therefore need to divert a relatively large share of resources to administrative functions (OECD, 2019<sup>[8]</sup>).

**Digitalisation opens up opportunities to simplify administrative procedures and improve public service outreach**, by reducing bureaucratic opacity and reducing transaction costs and delays in dealing and complying with administrative rules etc. (OECD, 2019<sup>[8]</sup>). The opportunities that e-government services open up for SMEs have become even more evident in the context of the COVID-19 crisis when public authorities aimed to reach out as quickly and to as many SMEs as possible (OECD, 2021<sup>[47]</sup>).

**Dedicated platforms in particular are increasingly set up to help SMEs and entrepreneurs liaise with the public administration and cut red tape.** Typically, digital “one-stop shops” serve as single entry points for accessing e-government services and reducing redundancy in public administration requests. The types of services offered through these platforms range from information provision and awareness raising, to assistance in procedures, to certification online, to simulation and diagnostic, etc.

**In this sense, one-stop-shops can represent a mechanism for joined-up government services** as they aim for user-centricity rather than government centricity (Askim, 2011<sup>[89]</sup>). In fact, as back-office and services are increasingly integrated, users may not even notice that different institutions deliver different services. In other words, one-stop-shops do not require users to understand how the government is structured or operated, to access the services it offers.

**Incidentally, the most frequent service provided by OECD governments through their one-stop-shops remains easing access to finance, after assistance in value-added tax administration and business registration**, as a recent OECD study shows (OECD, 2022 forthcoming<sup>[90]</sup>). Moreover, the same study stresses that more recent government-to-SME services have aimed to address SME difficulties in scaling up operations, through foreign trade assistance (e.g. import/ export assistance and e-customs), or assistance in dealing with legal requirements for product development (e.g. competition, product requirements, commercial and industrial norms, and environmentally-related permits), or in dealing with intellectual property rights (e.g. patents, trademarks, designs, etc.).

**It appears therefore that governments’ one-stop-shops can serve to deliver dedicated services to scalers and operationalise scale up and growth policies and strategies.** Canada has integrated its financing services in support of scalers and scaling up drivers into one single portal (Box 2.10).

### Box 2.10. Canada – One-stop shop of integrated public services for scale up financing

Canada provides an integrated offer for supporting scale up financing through a one-stop-shop digital portal that is developed in cooperation with banks, financial institutions and the business community.

**Start-Up Financing:** <https://www.bdc.ca/en/financing/starting-business-loan>

The government collaborates with the Business Development Bank of Canada to provide funds of up to CAD 250 000 to assist Canadian businesses that have been in operation for at least 12 months to jumpstart their business ideas into reality. Extremely flexible and tailored financing solutions are offered for investment, e.g. purchasing assets or buying a franchise, and business development, e.g. investing in marketing, a website or advisory services. Funding can complement the company's line of credit or replenish working capital.

**Small Business Loans:** <https://www.bdc.ca/en/financing/small-business-loan>

The Small Business Loan scheme is designed to help successful SMEs access funds of up to CAD 100 000 at any time after 24 months of existence. Canadian businesses that generate revenues and have a good credit history are eligible. The loans cover a range of different financing needs, including investment in physical capital (e.g. commercial real estate, equipment purchase or hardware), human capital (e.g. hiring a consultant) or intangible assets (e.g. software), as well as innovation (e.g. for tech companies, technology financing) or business development (online selling through upgrade in websites, marketing campaigns).

**Business Education:** <https://smallbusinessbc.ca/education>

Small Business BC provides practical seminars and online education to develop business skills and strategy to run a successful business. Training packages include financial literacy, financial management, the financial impact of growing a business, early-stage financing, in addition to market research, privacy law, cybersecurity and IP-related threats etc.

Source: (OECD, 2022 forthcoming<sup>[90]</sup>).

### **Scale up finance policies are different depending on the scale up driver at play**

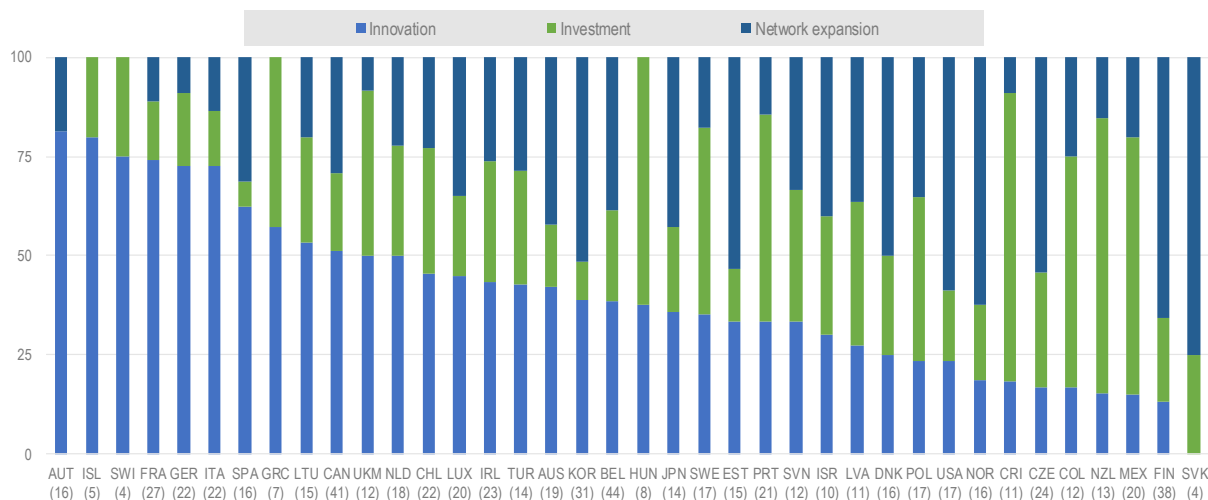
*National policy mixes are not geared towards the same scaling up drivers*

**Innovation is the main scaling up driver for which governments have financing support schemes in place.** On average, 39.9% of a country's initiatives aim to enable better SME access to finance for innovation purposes, compared to 30.3% for productive investment and 29.3% for network expansion. It should be noted that, in this pilot phase, not all aspects of network expansion have been covered, so the intensity of government's efforts for unleashing finance for networking is likely to be underestimated.

**Yet, national policy mixes are not geared towards the same scale up drivers and average numbers hide a great heterogeneity across countries.** Over 75% of the measures in Austria and Iceland and Switzerland, aim to improve innovation financing, compared to only 15% or less in New Zealand, Finland and Mexico. More than 60% of initiatives aim to enable the financing of productive investments in Costa Rica, Hungary, Mexico and New Zealand, but less than 10% do so in Korea and Spain. Finally, the same gaps stand for financing trading abroad and network expansion between Norway and Finland (over 60%), and Germany and the United Kingdom (less than 10%).

**Figure 2.14. Scale up finance policy mixes are not geared towards the same drivers**

Share of SME scale up finance policies, by scaling up drivers



Note: Shares are computed based on an unweighted count. “Innovation” includes R&D/disruptive innovation, Digital adoption and Business development. “Investment” includes investments in Skills, Physical capital and Intangible assets. “Network expansion” includes Domestic market/diversification, Direct trading (internationalisation), Cooperation/partnerships, and the use of digital platforms. The analysis of scale up through network expansion does not cover indirect engagement in international trade (e.g. through supply chains and other linkages between multinationals and domestic SMEs that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>)), nor the use of digital platforms. For countries with few initiatives (observations), interpretation of indicators should be done with caution.

Source: Authors’ own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

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*Disruptive innovation, investment in physical capital and global expansion are first in the line of sight of governments*

**Most of innovation financing schemes support research and development (R&D) or disruptive innovation**, which account for two-thirds (66.4%) of the OECD initiatives in this domain. Initiatives for digital adoption and business development are less common (see Figure 2.14).

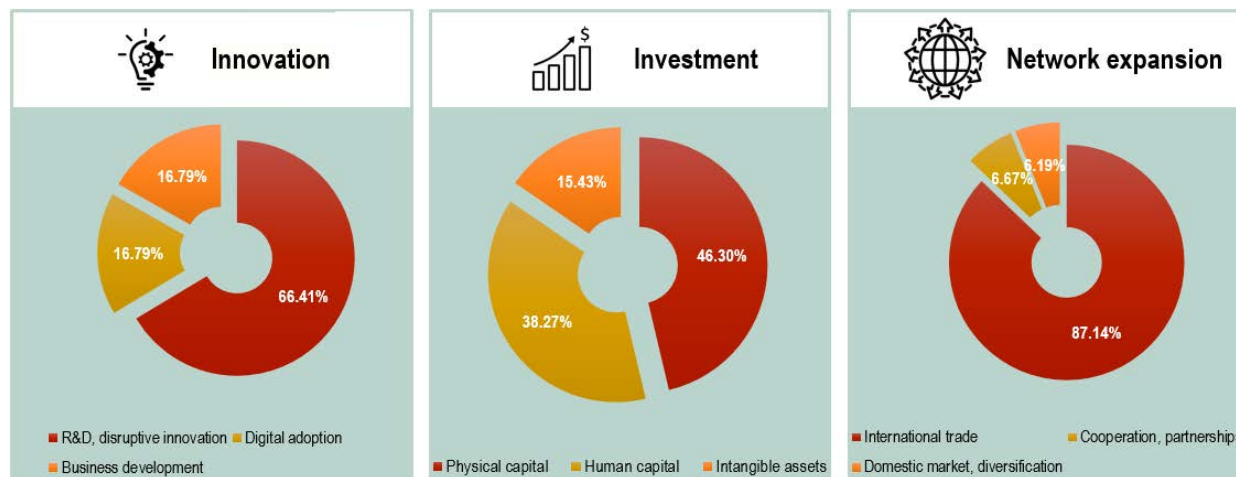
**Financing for investment essentially targets equipment and acquisitions of physical capital.** 46.3% of OECD initiatives for investment funding, on average, promote the formation of physical capital (i.e. tangible man-made goods that help and support the production of goods and services) (Figure 2.15). Skills investments (i.e. knowledge, skills, experience and talents that influence the ability of a firm to produce) account for an additional 38.3%, and investment in intangible assets (e.g. goodwill, brand recognition or intellectual property, such as patents, trademarks, and copyrights) for the remaining 15.4%.

**Due to the specificities of the present pilot, policies for financing network expansion are largely dominated by international trade support initiatives (87.1%)** (Figure 2.15). This is because the analysis does not currently cover indirect engagement in international trade, such as supply chains and other linkages between multinationals and domestic SMEs that are explored in a parallel EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>), nor the use of digital platforms that will be covered as part of the follow-up of this pilot phase.




**Figure 2.15. First in line of sight: disruptive innovation, investment in physical capital and global expansion**

Share of policy initiatives addressing each scaling up driver, by sub-driver, OECD total



Note: Shares are computed based on an unweighted count. “Innovation” includes R&D/disruptive innovation, Digital adoption and Business development. “Investment” includes investments in Skills, Physical capital and Intangible assets. “Network expansion” includes Domestic market/diversification, Direct trading (internationalisation), Cooperation/partnerships, and the use of digital platforms. The analysis of scale up through network expansion does not cover indirect engagement in international trade (e.g. through supply chains and other linkages between multinationals and domestic SMEs that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>)), nor the use of digital platforms. For countries with few initiatives (observations), interpretation of indicators should be done with caution.

Source: Authors’ own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

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**Overall, these early findings seem to reflect a strong focus of scale up finance policies on technology-push mechanisms and capital-intensive forms of innovation.** Policy attention has long been focused on the creation, dissemination and market application of scientific knowledge that was considered as a key driver of competitiveness and economic growth (Schumpeter, 1942<sup>[91]</sup>) (Nelson, 1959<sup>[92]</sup>); (OECD, 1963<sup>[93]</sup>) (Freeman, 1982<sup>[94]</sup>), (Freeman and Soete, 1997<sup>[95]</sup>) etc.). Evolutionary theories introduced the notion of feedback from the market (Nelson and Winter, 1982<sup>[96]</sup>) and the common understanding of innovation shifted away from a linear “technology-push” process to a “market pull” process, wherein knowledge interactions between institutions and actors within innovation systems were perceived as crucial for a broader diffusion (Freeman, 1987<sup>[97]</sup>) (Lundvall, 1992<sup>[98]</sup>) (Nelson, 1993<sup>[99]</sup>).

**The persistent orientation of scale up finance policies towards past objectives reveals a certain policy inertia that could arise from a lack of new evidence to support changes, especially regarding what scalers are, but also from a relative resistance in policy making.** Sometimes some instruments, particularly the financial ones, dominate others for no other reason than they have been important in the past and have attracted around them vested interests that protect their position (Borras and Edquist, 2013<sup>[100]</sup>). In fact, policy arrangements reflect bargaining processes that take place in multi-actor arenas where policies are formulated and evaluated. Resistance to change could be particularly strong at earlier stages in the policy cycle because processes, there, are highly political and subject to bargaining (Rogge and Reichardt, 2016<sup>[101]</sup>).

At a time when the digital lag of SMEs is dragging down the future prospects of a sustainable growth (OECD, 2021<sup>[42]</sup>), skills shortages have emerged as the most pressing challenge for SMEs (ECB, 2021<sup>[102]</sup>). In addition, most of businesses’ value today is made up of intangible assets, estimated at more than 70% of firms’ value in the United States and United Kingdom, for example (Andrews and de Serres, 2012<sup>[103]</sup>).

Such developments suggest that more government efforts towards financing SME scaling up could have been expected on digital adoption, or skills or IA investments. The current balance in policy mixes across OECD countries would thus require further investigation to confirm a possible misalignment and identify the reasons for this misalignment.

*Public measures for improving scale up finance often target SMEs directly, through various instruments*

**Public measures towards improving scale up finance are primarily targeted at SMEs, and to a lesser extent to the finance market or institutional actors.** Policies intend to reduce the financing costs for SMEs first, with a mix of grants, subsidies, and tax incentives and loans, as well as improved credit conditions (e.g. interest rate caps or credit guarantees). This is a consistent feature of national policy mixes across the OECD area, for all scaling up drivers. Over half measures to finance innovation (52.43%) or network expansion (55.45%) are aimed at SMEs, with the remaining parts (47.57% and 44.55%, respectively) aiming to change the behaviour of actors in the scale up finance market. SMEs are even more central in the policy mixes for financing productive investments (72.11%) (see Figure 2.16). However, there are disparities between countries.

**Grants and subsidies are the most frequent instruments for SME innovation financing**, accounting for 52.8% of total OECD policy initiatives in the field (see Figure 2.17). In Austria, the "Small Scale Project" supports R&D in SMEs and start-ups, whether carried out as a single company project or in cooperation, with project costs funded by grants of up to 60% and up to EUR 150 000 maximum. In turn, the "Eurostars" policy in the Netherlands is a subsidy scheme for SMEs and entrepreneurs working with international partners in the field of high-tech R&D. Other instruments include public loans (27.2%) and tax incentives (20%).

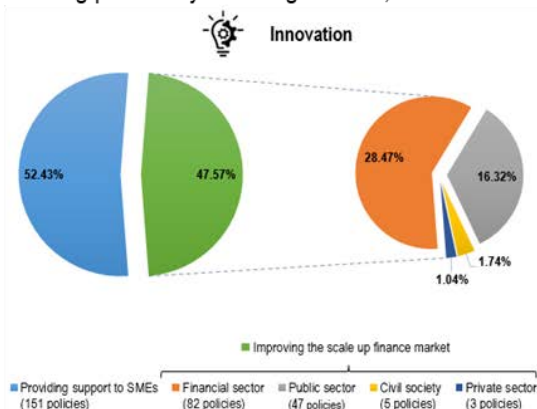
**For financing scalers' investment, governments prefer direct support through public loans** (62.7% of all measures compared to 30.1% for grants and 7.2% for tax relief). In Belgium, the "Co-Financing +" scheme allows the Flemish Participation Company – an investment company owned by the Flemish government – to grant subordinated loans to SMEs with a positive cash flow history to finance tangible, intangible and financial investments as well as working capital needs related to business expansion. The Slovene Enterprise Fund, a public financial fund owned by the Republic of Slovenia, also builds on the "P1 Plus 2021" initiative to ensure SME growth through new investments, upgrading of technological equipment and provision of working capital for development projects.

**For financing network expansion**, support is provided through a mix of public loans (57.4%) and grants-subsidies (41.6%), while the use of tax incentives remains marginal. The Polish International Development Fund, for instance, helps Polish SMEs to co-finance their investment projects abroad through public loans or the acquisition of minority interests with buyouts. In the Republic of Türkiye, the Small and Medium Enterprises Development Organization (KOSGEB) runs the International Market Support Programme which consists of a mix of grants and loans to support Turkish SMEs expansion in foreign markets.

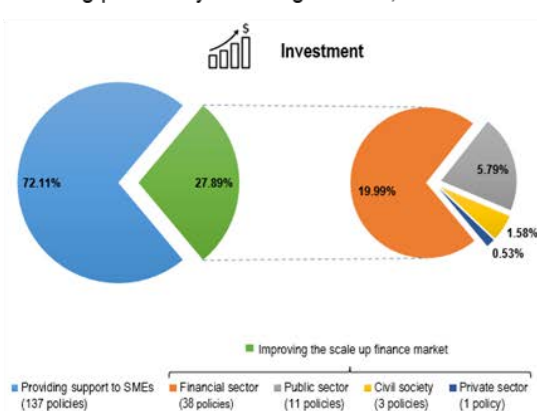
**Governments combine these instruments across scale up drivers.** In Chile for instance, the Production Development Corporation (CORFO) and Invest Chile provide the "Pro-Investment Guarantee" for covering the risk of long-term loans and the "R&D Tax Incentive" for reducing R&D costs.

**Figure 2.16. Scale up finance support is targeted first and foremost to SMEs, and to a lesser extent to the finance market and institutional actors**

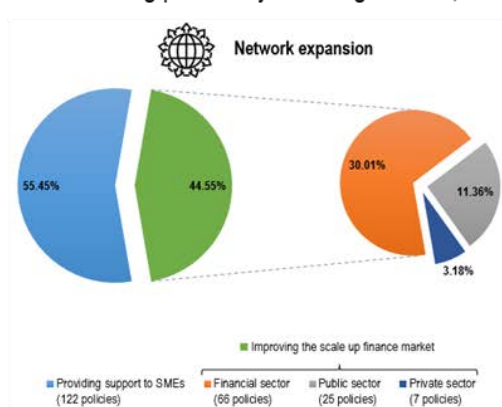
Panel a. Share of innovation financing policies by financing channel, OECD total



Panel b. Share of investment financing policies by financing channel, OECD total



Panel c. Share of network expansion financing policies by financing channel, OECD total

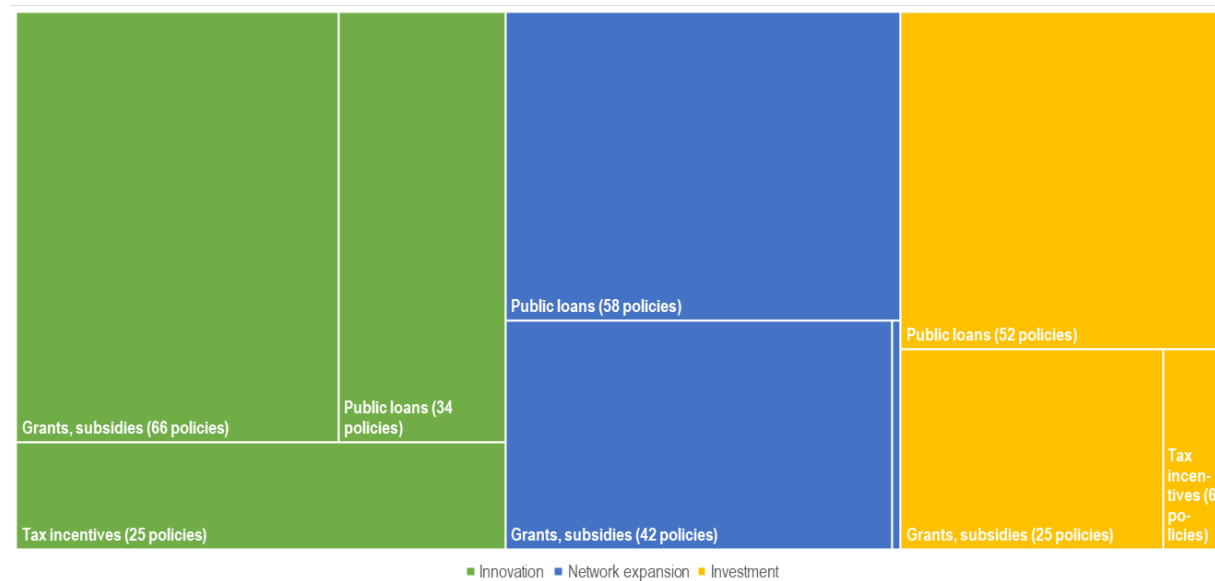


Note: Shares are computed based on an unweighted count. “Innovation” includes R&D/disruptive innovation, Digital adoption and Business development. “Investment” includes investments in Skills, Physical capital and Intangible assets. “Network expansion” includes Domestic market/diversification, Direct trading (internationalisation), Cooperation/partnerships, and the use of digital platforms. The analysis of network expansion does not cover indirect international trade (e.g. through supply chains and linkages between multinationals and domestic SMEs that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022[5])), nor the use of digital platforms. For countries with few initiatives, interpretation should be done with caution. The “Financial sector” comprises Banks, Business angels, Investors and VC/PE firms. The “Public sector” includes Public/development banks; the “Private sector” includes businesses other than SMEs and start-ups.

Source: Authors’ own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

## Figure 2.17. Policies directed at SMEs use mainly a mix of grants & subsidies and public loans

Total number of policy initiatives that support scalers financing, by policy instrument and scaling up driver, OECD total



Note: Information on the budget/ fiscal scope of individual measures have not been collected in a systematic manner in the pilot phase of this mapping exercise, which may distort the relative weight that specific policy instruments take in the overall policy mix. The "Innovation" driver includes funding solutions for R&D/ driver disruptive innovation, Digital adoption and Business development. The "Network expansion" driver includes funding solutions for Domestic market/diversification, Direct trading (internationalisation), and Cooperation/partnerships. The analysis of network expansion does not cover indirect engagement in international trade (e.g. through supply chains and linkages between multinationals and domestic SMEs that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>)), nor the use of digital platforms. The "Investment" driver includes funding solutions for investments in Skills, Physical capital and Intangible assets.

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

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**Most public initiatives aim to reduce the need for – or the cost of – external financing for SMEs, especially for innovation and investment** (39.9% of all OECD initiatives, with respectively 137 and 109 policy measures for the two drivers, see Table 2.9). In addition, 14.8% of the measures attempt to enhance SME financial skills and strategic vision, often in relation with easing the financing of investment (55 policies). Mexico, New Zealand, and the United Kingdom are the countries with the highest percentage of measures dedicated to improving SME financial literacy (over 30%).

*The finance market is an important intermediary for providing scale up finance, which could be further leveraged through government policies*

**If the finance market can play an important role as an intermediary where SMEs source scale up finance, it has a secondary place in governments' approaches.** Policies tend to focus on the market for financing innovation and network expansion, but more on SMEs themselves for productive investment (see Table 2.9). Between only 19.8% (for investment) and 29.9% (for network expansion) of total OECD initiatives aim to address failures in the financial market. Over a third of OECD countries (36.8%) rely exclusively on the financial sector to support SME network expansion.

**Table 2.9. Scale up finance policies mainly aim to reduce the need/cost of external financing for SMEs**

Total number of policy initiatives across OECD countries, by scaling up driver and strategic objective

	Innovation	Investment	Network expansion	Share in total policies
Enhancing SME financial skills and strategic vision	20	55	30	14.8%
Reducing the need/cost of external financing for SMEs	137	109	37	39.9%
Adopting principles of risk-sharing for publicly supported SME finance instruments	96	37	87	31.0%
Broadening the diversification of SME financing channels/instruments	126	19	38	25.8%
Improving transparency in finance markets for SMEs	2	1	1	0.01%

Note: The analysis of network expansion does not cover indirect engagement in international trade (e.g. through supply chains and other linkages with multinationals that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>)), nor the use of digital platforms. Some policies may target more than one scaling up driver and/or strategic objective, hence the total number of initiatives in the table (i.e. 795) is higher than the total mapping of this pilot (i.e. 709) and the sum of percentages in the last column is greater than 100%.

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

**In terms of strategic objectives, fewer initiatives relate to risk-sharing** (31.0% of all measures), although those are comparatively more in use for financing network expansion. Related measures aim to develop appropriate risk-sharing and -mitigation mechanisms with private partners to encourage their participation. In this case, policies are designed to avoid moral hazard (i.e. excessive risk-taking against the public interest) and potential crowding-out effects. Multilateral development banks (MDBs), national development banks (NDBs) and other public funds are also key actors in this endeavour (OECD, 2015<sup>[71]</sup>).

**While much policy attention has been given to broadening the diversification of SME financing sources in recent years** (OECD, 2021<sup>[24]</sup>), **only a quarter of the scale up financing policies addresses this particular issue**, and more notably for financing innovation (with a total of 126 initiatives). Yet, certain countries are placing greater efforts on the diversification of the financing instruments for potential scalers. In France, Korea and Greece more than 70% – up to 87.5% in France – of all initiatives intend to broaden the range of scale up financing solutions, for an OECD average of 40.6%. In France, many policy instruments are coordinated by Bpi France and aim to give SMEs easier access to equity capital (Box 2.6). “Small Cap” is an equity or quasi-equity fund investing in SMEs and small intermediate-sized enterprises to help them grow and consolidate. “Large Venture” is a capital fund that focuses on fast-growing, capital-intensive and highly promising innovative companies with a view to financing their organic or external growth.

**Efforts towards diversifying financing solutions for scalers can also take multiple forms:** e.g. employee share schemes (to encourage employees of an SME to hold shares in the company), innovation funds (to improve the attractiveness of SMEs to venture capital, such as the Baltic Innovation Fund 2 which promotes the development of venture capital markets for innovative SMEs with high growth potential in Estonia, Latvia and Lithuania (Box 2.11), growth mezzanine initiatives (a mix of debt and equity financing for SMEs with sound business plans demonstrating their ambition to grow and ability to repay debt), or asset-based lending schemes (that use current assets to develop a method of lending that is not overly dependent on real estate collateral). In Korea, the “Forfaiting” initiative has been launched by the Export-Import Bank (Eximbank) as a trade finance facility to purchase from exporters letters of credit issued by (or export bills guaranteed by) foreign banks on behalf of buyers. It thus relieves the exporter of the risk of buyer default and lightens the liability side of its balance sheet.

### Box 2.11. Baltic Innovation Fund 2: The “power of three” in North East Europe

Baltic Innovation Fund 2 is a EUR 156 million Fund-of-Funds launched in 2019 by the European Investment Fund (EIF) in co-operation with three Baltic national promotional institutions, namely KredEx (Estonia), Altum (Latvia) and Invega (Lithuania). The initiative supports investments in private equity and venture capital funds focused on the Baltic States over a 5-year period to boost equity investments in SMEs with high growth potential. Two types of investment opportunities are considered by the EIF acting as Fund manager:

- Investments in venture capital and private equity funds (including hybrid debt-equity funds) with proven experience and knowledge of the Baltic market ;
- Co-investments with investment funds, family offices, business angels or institutional investors in early stage or growth phase SMEs. The Fund co-invests with selected investors who are either domiciled in the Baltic States, connected to the Baltic ecosystem, or are considering investments in the Baltic States.

Source: European Investment Fund (2019), Baltic Innovation Fund 2 (BIF 2), [http://www.eif.org/what we do/resources/BIF2/index.htm](http://www.eif.org/what_we_do/resources/BIF2/index.htm).

**Initiatives to address information asymmetries and market opacity are rare**, with only 0.01% of all policies tackling this issue. Such initiatives mainly include the development of infrastructure for credit risk assessment (e.g. credit bureaus, registries or data warehouses with loan-level granularity) that could reduce investors’ perceived risk and help them identify investment opportunities, and in turn reduce financing costs for SMEs (OECD, 2015<sup>[21]</sup>). While a multitude of initiatives (or agencies), may not be required to address issues in this area (typically, a single credit bureau with a comprehensive reporting mandate is recommended), the low prevalence of policies in this area suggests that far from all OECD countries have introduced measures to improve transparency in the debt market.

**These early findings may suggest room for a greater role of the finance market in supplying scale up finance.**

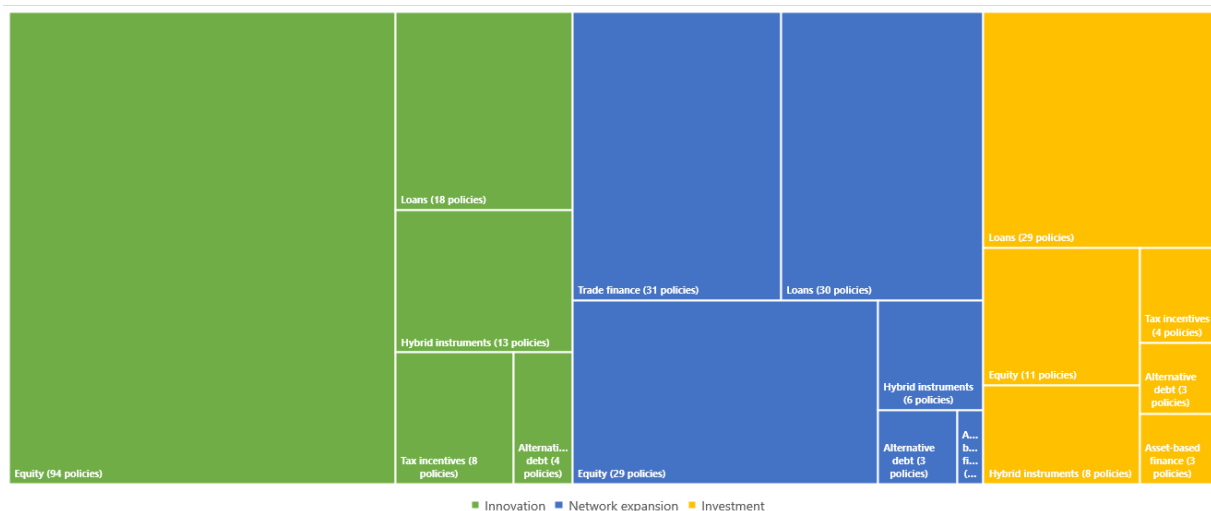
*In practice, increasing the supply of scale up finance is not only about equity*

**Equity is key for financing SME scale up through innovation, both at national and European level, but plays a smaller role in the funding mix of network expansion and investment.** OECD governments use a diverse set of policy instruments and combine them in different ways to improve the scale up finance supply and its accessibility for SMEs. 68.6% of total policy initiatives for improving the supply of innovation finance use equity (Figure 2.18). Other instruments include loans (13.1%), hybrid instruments (9.5%), tax incentives (5.8%) and alternative debt (2.9%). Some OECD countries (11/38) use however exclusively equity to stimulate the supply side.



## Figure 2.18. Equity dominates the funding mix for SME innovation

Policy initiatives to increase the supply of scale up finance, by policy instrument and scaling up driver, OECD total



Note: Information on the budget/ fiscal scope of individual measures have not been collected in a systematic manner in the pilot phase of this mapping exercise, which may distort the relative weight that specific policy instruments take in the overall policy mix. The figure displays the total number of initiatives mapped in OECD countries that improve the scale up finance market, by policy instrument and by scaling up driver. The “Innovation” channel includes R&D/disruptive innovation, Digital adoption and Business development. The “Network expansion” channel includes Domestic market/diversification, Direct trading (internationalisation), and Cooperation/partnerships. The analysis of scale up through network expansion does not cover indirect engagement in international trade (e.g. through supply chains and other linkages between multinationals and domestic SMEs that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>), nor the use of digital platforms. The “Investment” channel groups Skills, Physical capital and Intangible assets.

Source: Authors’ own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/hgytki>

**Hybrid instruments dominate innovation finance supply in Italy, Austria, Estonia, Spain and Korea** (accounting respectively for 33.3%, 22.2%, 20.0%, 20.0% and 18.2% of all measures in decreasing order). In Italy, the “Medium-Long Term Finance for Growth” are bond issues to support investment in R&D and innovation in new technologies and business growth, and “Basket Bonds” provide SMEs with medium and long-term financial resources to support their growth and innovation projects. These initiatives are managed by the *Cassa Depositi e Prestiti* (CDP). In addition, the “Technology Transfer Fund” that is coordinated by the Ministry of Economic Development is a programme for technology transfer and supports the entrepreneurial fabric for accelerating innovation processes.

**Tax incentives have turned into important instruments to stimulate R&D and innovation expenditures** (OECD, 2022<sup>[104]</sup>), **but they are more often designed towards SMEs as R&D and innovation performers**, rather than towards the finance market as investor potentially bearing the risks of innovation. Tax incentives account for only 5.9% of policies targeting finance market players, compared to 20.1% for initiatives towards SMEs. This is likely due to the fact that a more diverse set R&D or innovation tax breaks can be designed at firm level (e.g. targeting SMEs, specific technologies or sectors), whereas on the investor side possible tax measures are more limited.

**Alternative debt is one of the least used instruments to stimulate supply for scale up finance.** Across all countries, out of the 709 initiatives mapped, only ten have been identified as alternative debt solutions, four for innovation, three for network expansion and three for investment. Regarding innovation, examples include the “Win-Win Loan” initiative set up by the Flemish Participation Company in Belgium and the “Fond-ICO SME” managed by the Official Credit Institute in Spain. For the network expansion, the “Bond



Guarantee" managed by Denmark's Export Credit Agency is another example. As regards investment, the "Growth Loans for Entrepreneurs" from the Danish Growth Fund (Denmark) and the "Bond Financing" from Finnvera (Finland) should be highlighted.

**To stimulate market finance for SME network expansion, OECD governments mix trade finance, loans and equity.** Belgium, Canada, Finland and Korea use these three instruments with the following proportions: 20/40/20%, Canada 14/14/71%, 67/22/6% and Korea 29/35/29% respectively. However, results on network expansion should be interpreted with caution since part of the mapping is to be complemented in a next phase.

**OECD countries' policy efforts to improve investment finance supply take essentially the form of loans, and equity and hybrid instruments.** While Chile, Costa Rica, Czech Republic, Greece, Israel, Poland or the United Kingdom use exclusively loans for SME investment, Germany, Belgium and the Republic of Türkiye opt for a mix of loans, equity and hybrid instruments. Korea, Lithuania, New Zealand, Portugal and the Slovak Republic have the highest share of equity for SME investment across OECD countries, and Canada and Latvia the highest share of hybrid instruments.

**Asset-based finance is mostly relevant for SME investment, but remain in low use among OECD countries,** accounting for only 1% of initiatives for SME innovation and network expansion, and 5.2% for investment. Colombia, Italy and Latvia are the countries where policies in support of asset-based finance is the most widespread, in terms of number of initiatives in place. The "New Sabatini" policy, implemented by the Italian Ministry of Economic Development, the ALTUM and "Credit Guarantees" initiative in Latvia, and the National Guarantee Fund together with the "Colombia Export Guarantee" programme in Colombia are relevant examples.

Table 2.10 below provides examples and descriptions of policy initiatives designed to support SME access to scale up finance, differentiating examples by scaling up driver and whether they provide support to SMEs themselves or aim to act upon the finance market and institutional actors.

**Table 2.10. Initiatives to support SME access to scale up finance through innovation, investment and network expansion**

Policy examples across OECD countries by scaling up driver

	Innovation	Investment	Network expansion
Providing support to SMEs directly	<p><u>R&amp;D / Disruptive innovation</u></p> <p><b>Innovation Aid for SMEs (LUX)</b> is a scheme designed to stimulate innovation and help SMEs finance their R&amp;D-related costs, such as consultancy services or innovation advisory and support services.</p>	<p><u>Skills</u></p> <p><b>Training Tax Credit 4.0 (ITA)</b> supports businesses in their technological and digital transformation process by creating or consolidating skills in the enabling technologies needed to achieve the 4.0 paradigm.</p>	<p><u>Domestic market / Diversification</u></p> <p><b>SID Loan for SMEs &amp; Midcaps III (SVN)</b> is a loan facility that aims to improve access to favorable long-term funding of SMEs and Midcaps in Slovenia, and to enhance the competitiveness of the local economy.</p>
	<p><u>Digital adoption</u></p> <p><b>Pro-Innovative BEI Services for SMEs (POL)</b> finances services to support the implementation and development of technological process or product innovations in Polish SMEs.</p>	<p><u>Physical assets</u></p> <p><b>The Corporate Vitality Enhancement Fund (JPN)</b> provides loans to SMEs seeking to modernise management and service providers, build new shops, expand or refurbish shops, introduce machinery and equipment, rationalise distribution systems and eliminate vacant shops.</p>	<p><u>Direct trading</u></p> <p><b>International Trade (7(a) Loan Program) (USA)</b> is long-term financing for businesses that are expanding due to growing export sales, or that have been affected by imports and need to modernize to meet foreign competition.</p>
	<p><u>Business development</u></p> <p><b>EasyUp Loan (BEL)</b> is aimed at any Walloon SME that is involved in an innovation process. It finances product, service, production process or marketing innovation with or without a technological component, including the improvement of an existing product, service or process.</p>	<p><u>Intangible assets</u></p> <p><b>Patent Grant (ISL)</b> aims to support the preparation and submission of a priority patent application by SMEs, including in an international context.</p>	<p><u>Cooperation / Partnerships</u></p> <p><b>Cooperation Support Programme (TUR)</b> is a set of financial support measures aimed at strengthening the culture of cooperation between SMEs, as cooperation gives them a mutual and competitive advantage.</p>
Improving the finance market	<p><u>R&amp;D / Disruptive innovation</u></p> <p><b>First Penguin Guarantee (KOR)</b> aims to address the lack of tangible collateral among innovative start-up companies that are 5-year-old or younger and are challenging new fields with creative ideas and skills.</p>	<p><u>Skills</u></p> <p><b>Multipurpose Industrial Guarantee (COL)</b> supports all credits requested by micro, small and medium sized companies for projects aiming to increase their work capital and investment in skills.</p>	<p><u>Domestic market / Diversification</u></p> <p><b>Private and Venture Capital Funds (EST)</b> provides venture capital through funds of funds to help Estonian start-ups and fast-growing companies expand into national markets and finance their growth.</p>
	<p><u>Digital adoption</u></p> <p><b>Fond-ICO Next Tech (SPA)</b> promotes the development of innovative and high-impact digital projects in scale ups by supporting public financing instruments, attracting international funds and boosting the venture capital sector.</p>	<p><u>Physical assets</u></p> <p><b>Mezzanine Loans (LVA)</b> cover investment expenses related to capacity expansion or a fundamental change in the overall production process, or the expansion of the capacity of an existing facility.</p>	<p><u>Direct trading</u></p> <p><b>PyMEx Credit (MEX)</b> supports companies or individuals engaged in direct or indirect export or import business activities through financial intermediaries.</p>
	<p><u>Business development</u></p> <p><b>FODEMIPYME (CRI)</b> strengthens the competitiveness of micro, small and medium-sized companies (especially in the social economy), through the effective provision of guarantees, financing of intangibles and business development services.</p>	<p><u>Intangible assets</u></p> <p><b>Guarantee Programme (CZE)</b> enables SMEs to obtain a guarantee for a bank loan (investment and operational loans), using as a part of its funding resources former guarantees or repaid loans.</p>	<p><u>Cooperation / Partnerships</u></p> <p><b>Women in Technology Venture Fund (CAN)</b> is a venture capital fund dedicated to investing in women-led technology companies and helping build a robust ecosystem to support women in tech today and in the future.</p>

<p><b>Building on the private sector</b></p>	<p><u>R&amp;D / Disruptive innovation</u></p> <p><b>Technology Transfer Fund (ITA)</b> aims to support and accelerate the processes of innovation, growth and sustainable recovery of the national productive system. It promotes links between innovative SMEs and the entrepreneurial fabric operating in the field of technological innovation.</p>		<p><u>Cooperation / Partnerships</u></p> <p><b>One Single Hub (NLD)</b> is a government initiative that aims to strengthen the scale up ecosystem in the Netherlands, by encouraging cooperation between SMEs and other national companies.</p>
<p><b>Building on the public sector</b></p>	<p><u>R&amp;D / Disruptive innovation</u></p> <p><b>Grant for Research and Knowledge Creation (FIN)</b> is led by Business Finland – a government research funding agency – to support business R&amp;D that generates new knowledge and skills.</p>	<p><u>Skills</u></p> <p><b>Competence Center (NOR)</b> consists of online courses offered by Export Finance Norway, a government financial company, to enable SMEs to learn about export finance and take better advantage of the supply side in new and existing markets.</p>	<p><u>Domestic market / Diversification</u></p> <p><b>FOGAPE (CHL)</b> is a state fund designed to guarantee a certain percentage of the capital of credits, leasing operations and other financing mechanisms that financial institutions grant to micro firms and SMEs that do not have sufficient guarantees to present.</p>
	<p><u>Digital adoption</u></p> <p><b>Digitise Your Warehouse (CHL)</b> is a contribution from the National Technical Cooperation Service of the Ministry of Economy to support investments, technical assistance, training, marketing and digital technologies that enable new business opportunities for SMEs.</p>	<p><u>Physical assets</u></p> <p><b>Enable Funding (UKM)</b> aims to improve the provision of asset finance and leasing to UK small businesses. It is managed by the British Business Bank, a state-owned economic development bank.</p>	<p><u>Direct trading</u></p> <p><b>German Accelerator (GER)</b> helps the most promising start-ups break into international markets and expand their global activities. It is led by the Federal Ministry for Economic Affairs and Climate Action.</p> <p><u>Cooperation / Partnerships</u></p> <p><b>200M Co-investment Fund (PRT)</b> is an initiative of the Development Bank of Portugal to promote entrepreneurial and innovative potential by investing in the best Portuguese start-ups through public-private co-investments, in partnership with more than 30 co-investors from around the world.</p>
<p><b>Building on civil society</b></p>	<p><u>R&amp;D / Disruptive innovation</u></p> <p><b>Kibo Venture CAMP (KOR)</b> seeks to help promising start-ups grow into Korean-style hidden champions and create quality jobs. Key supports include crowdfunding brokers.</p>	<p><u>Physical &amp; intangibles assets</u></p> <p><b>PEA-PME (FRA)</b> is an individual savings account for equity investments, designed to encourage share ownership by individuals by offering tax incentives on dividend income and capital gains. It targets specifically the SME sector.</p>	<p><u>Domestic market / Diversification</u></p> <p><b>Employee Share Schemes (AUS)</b> provide an incentive for employees of small businesses to invest in the company as part of their remuneration. It helps start-ups to attract employees at a time when they are often cash poor.</p>

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

*The public sector and the civil society play a more marginal role*

**Public intervention less often targets the public sector (5.8%) or civil society (1.6%)** (see Figure 2.16) with regard to investment<sup>6</sup>. Canada, Denmark, Lithuania and the Slovak Republic are the only countries where public action mobilises the public sector exclusively for investment. These results certainly reflect the fact that peer lending and crowdfunding are not among the main sources of scale up finance. **France leads among OECD countries in terms of involving individuals and the civil society** (33.3% of all the country's initiatives). The "Madelin Tax Reductions" allow taxpayers who subscribe to the capital of an SME to benefit from an 18% reduction in their income tax. "Wealth Tax Reliefs" are offered to individuals as an alternative – mutually exclusive – to the "Madelin" scheme, and the "PEA-PME" initiatives ("Plan d'Epargne en Actions") are individual savings accounts that benefit from tax exemptions on dividend income and capital gains, specifically for investments in the SME sector. All these initiatives are coordinated by the Ministry of Economy and Finance.

**For financing innovation, the public sector plays a key role, which reflects the non-excludable and non-rival nature of innovation.** On average, 16.3% of innovation financing policies are delivered via public sector institutions such as public or development banks, which compares slightly higher than for network expansion (11.4%) or investment (5.8%). Colombia and Japan are countries that exclusively mobilise this type of actors to finance scalers innovation. Bancóldex, the Colombia's Business Development Bank, which provides financial and non-financial support to boost the competitiveness, productivity, growth and development of enterprises, both in the export and domestic markets – operate "Funds of Funds", i.e. an entrepreneurial capital fund that seeks to invest in high-impact, scalable and cross-sector companies in the commercial, industrial, tourism, service and creative industries. In Japan, Shoko Chukin Bank is a public financial institution engaged in facilitating the financing of cooperative SMEs, and it coordinates the "Private Placement Bon Trust" to raise long-term funds for SMEs by issuing guaranteed private placement bonds.

## Conclusion

While many government efforts have focused on firms conducting disruptive innovation as a high-potential population to achieve exceptional growth, **recent evidence shows that the majority of scalers are neither knowledge-intensive firms nor high-tech companies or start-ups, but in fact mature firms operating in low-tech sectors** (OECD, 2021<sup>[1]</sup>). As a result, the range of policies that support the financing of scaling up may not sufficiently reflect the diverse financing needs faced by the heterogeneous population of scalers.

**This chapter aims to better understand how governments are addressing the financing gap for scalers, and seeks to identify country approaches to supporting SMEs (by acting on the demand side) or the SME financing system** (by strengthening the diversification of finance). It explores the financing strategy of scalers and the different forms that scale up finance can take, as well as key opportunities and barriers for SMEs in this context. Importantly, the most appropriate type of finance for scalers depends largely on the scale up driver a firm leverages (i.e., innovation, investment or network expansion) and includes a range of traditional and alternative financing instruments.

A mapping of relevant national policies and institutions to scale up finance allows identify **a total of 709 national policies and 210 institutions across the 38 OECD countries**, and explores the composition of national policy mixes in the field and institutional and governance arrangements that underpin their implementation.

**In most OECD countries, only about half of institutions operating scale up finance initiatives deal explicitly with SME&E policy considerations.** Most common domains of public intervention include instead innovation, trade or investment promotion policy, which is consistent with the methodology

adopted. The heterogeneity in institutional set up, if it reflects country-specific governance arrangements, also suggests different country approaches to scale up policy, and possible overlaps across policy areas. In fact, not all national policy mixes are geared towards the same scaling up drivers. Disruptive innovation, investment in physical capital and global expansion are first in the line of sight of governments. The scale up finance policy landscape is characterised in some places by a high degree of decentralisation, most implementing institutions being autonomous government agencies, especially in European countries. In other countries, intervention takes place at the level of ministries/departments, particularly within ministries in charge of economic and foreign affairs or science, technology and innovation. But overall, joint programming of scale up finance policy initiatives remains rare across OECD countries.

**The relative fragmentation of the scale up finance policy reflects governments' efforts to reach high potential firms first and above all. Action is indeed highly targeted and generic measures remain the exception rather than the rule.** Public measures often target SMEs directly, most frequently in order to reduce the financing costs of scaling up activities, through a mix of grants and subsidies, tax incentives, and loans and improved credit conditions (e.g. through interest rate caps or credit guarantees). More than half of the measures to finance innovation or network expansion are aimed at SMEs directly, with the remaining parts intending to unlock financing solutions from the market. SMEs are even more central to national policy mixes for financing productive investments.

**High targeting approaches however raise questions about support accessibility and policy efficiency.** First, there is a risk that potential scalers may not be able to identify the most appropriate solutions for their financing needs, or even existing solutions, as public support schemes multiply, provided by a larger number of institutions, with a plethora of eligibility specificities. Second, the risk of governance failure is high without proper coordination mechanisms in place. Third, to ensure policy efficiency and impact of public spending, a sound evidence base on scalers is required. This is precisely a lack of certainty — and evidence — on who are future scalers that motivated this work

**Despite the important intermediary role it could play for SMEs seeking funding, the finance market has a secondary place in governments' approaches to scale up.** Only a quarter of all policy initiatives mapped addresses the particular issue of diversifying SME financing sources for scaling up. These findings may suggest room for a greater role of the finance market in supplying scale up finance across the different scale up drivers, and enhanced attention to be given to broadening the diversification of scalers' finance solutions.

**The scale up finance market mainly relies on equity to support SME innovation, but offers a wider range of instruments when it comes to support growth through other drivers.** While equity is the most prevalent tool for financing scale up through innovation, it plays a smaller role in the funding mix of network expansion and investment. To stimulate market finance for SME network expansion, OECD governments combine trade finance, loans, and equity. In turn, policy efforts to improve investment finance supply take essentially the form of loans, equity and hybrid instruments.

As this work is still in the pilot stage, several improvements could be made to refine the existing results that would require additional research and information. First, the analysis of network expansion does not cover financing in support of **indirect engagement in international trade**, such as through supply chains and other linkages between multinationals and domestic SMEs, **nor the use of digital platforms**. The mapping is limited to tax incentives that clearly propose preferential conditions to SMEs, or identify SMEs as beneficiaries, to the exclusion of **generic schemes that could be nonetheless beneficial for SMEs**.

**In addition, the work presents some methodological limits.** The analysis is based on an unweighted count of initiatives that does not take into account the scope of national spending on initiatives (due to a lack of information or irrelevance, e.g. in case regulatory changes), nor the strategic importance of some policies as compared to others (e.g. a national strategy versus a business voucher). More policy information and data is therefore needed, e.g. on budgets earmarked to get a better perspective on the

relative weight of government efforts across different areas, as well as on the effectiveness and efficiency of public intervention, notably through impact evaluation.

Finally, considerable heterogeneity in governance systems and funding mixes has been observed across OECD countries. This diversity calls for more **in-depth analysis of national contexts and better linking scalars' performance with the local specificities of policy mixes**, i.e. advancing on better linking the measurement and the policy pillars of this pilot project. The time lag between microdata on scalars and policy information on governments' measures (the former being anterior to the latter) will have to be addressed. In this context, the 2022 **update of the G20/OECD High-Level Principles on SME Financing could provide further guidance** regarding the inclusion of Fintech, sustainable finance for SMEs, and the strengthening of the resilience of SME finance in times of crisis.

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## Notes

<sup>1</sup> The purpose of the OECD microdata work is to put internationally comparable evidence together. However complementary evidence may be available at country level. For example, in Colombia, regardless of the size with which a company is born, after 5 years, US companies are 24% larger than Colombian companies and this gap increases to 32% after 10 years, translating into greater difficulties among Colombian SMEs to innovate and increase productivity (Eslava, Haltiwanger and Pinzon G., 2018<sub>[105]</sub>).

<sup>2</sup> Current assets include cash, inventory and other assets.

<sup>3</sup> The CSMEE Programme of Work for 2021-22 and the work of the G20 Finance Track includes the development of an update to the Principles. It reflects recent developments in the landscape for SME finance, including the growing importance of Fintech; the role of sustainable finance to support the green transition of SMEs; the importance of strengthening the resilience of SME finance in times of crisis; and the need for more disaggregated data to design better and more tailored policies.

<sup>4</sup> Belgium tops the ranking for methodological reasons. Due to institutional specificities and a high number of subnational bodies, Belgium has a total 14 institutions and 39 policies mapped in this pilot.

<sup>5</sup> It should be noted that further research is needed to identify which policies and programmes have effectively been evaluated, as information is not always available in the implementing institution's website or documentation. The contribution of policy and programme evaluation to coordination may therefore be underestimated in this pilot phase

<sup>6</sup> These figures should be taken with caution given the comparatively smaller number of policies mapped for this scaling up driver.



## Annex 2.A. Standard instruments to promote conditions for scaling up in SMEs

Annex Table 2.A.1. Standard instruments to promote SME access to scale up finance, by scaling up driver and institutional actor

		Innovation			Investment			Network expansion		
		R&D; disruptive innovation	Digital adoption	Business development	Skills	Physical capital	Intangible assets	Domestic market; diversification	Direct trading	Cooperation; partnerships
<b>Providing support to SMEs directly</b>		Research tax credit; start-up law	Innovation vouchers; tax credit	Innovation tax credit; innovation vouchers	Business opportunity networks	Tax benefits; law on pledge over movable assets; legislation on collaterals		SME strategic plans	Business meetings	Cooperation programmes; community-oriented platforms
<b>Improving the finance market</b>	<b>Banks</b>	Regulatory sandboxes	Loan guarantees; risk sharing mechanisms; interest rate			Credits; loan guarantees; risk sharing mechanisms; zero interest rates		Government-backed guarantees; regulation on credit reporting	Export guarantees	
	<b>Business angels</b>	(B2B) Tech start-ups investments			Angel funds			VC regulatory framework; co-investments		Founders and investors networks; business angels matching service
	<b>VC firms; PE firms</b>	Funds of funds; technology funds; VC support programmes						Consolidation funds; funds of funds; VC support programmes; tax relief schemes; VC regulatory framework; legislation		
	<b>Other</b>	Regulatory sandboxes	Risk sharing mechanisms; FinTech	Guarantee processing platforms				Direct investments; government-backed guarantees; business promotion		

			legislation					services; securitisation funds		
<b>Building on the private sector</b>		Tax incentives						Entrepreneurship plans	Trade credit insurance; trade finance	Public-private (equity) co-investments; cooperation programmes
<b>Building on the public sector</b>	<b>Public banks; development banks</b>	Grants; (public) VC funds	(Public) VC funds; public loans	(Public) VC funds; public loans	Online courses; online guides/mentoring	Funds to improve provisions of asset finance and leasing; public loans	Private equity (or quasi-equity) funds; auctions; guarantee certificates	VC funds; (risk) guarantees; export credit; pre-export financing; mezzanine finance; trade finance	Public-private (equity) co-investments	
	<b>Other public administrations</b>	Grants; (zero-interest) loans; bond issues; asset-backed securities; equity/mezzanine financing; consulting services on innovation financing	Grants; subsidies; business national plan		Grants; (online) training programmes; online guides; database on subsidies for SMEs	Lines of credit; leasing	Partially refundable aids; zero-interest loans; ABS; guarantees; grants; hybrid funding; silent participations; equity investments	Loans for development; support programmes; grants; ABS; trade credit; VC funds; export credit insurance; training programmes; minority holdings; trade subsidies	Grants; subsidies	
<b>Building on civil society</b>		Crowdfunding; tax incentives		Tax credit		Tax incentives	Regulation; employee share schemes; tax credit			

Note: The upper part of the table (1) displays standard policy instruments to promote the conditions for scale up in SMEs, by scaling up drivers. The lower part of the table (2) displays standard scale up finance instruments to improve the functioning of the finance market, by institutional actors and scaling up drivers. The analysis of scale up through network expansion does not cover indirect engagement in international trade (e.g. through supply chains and other linkages between multinationals and domestic SMEs that are covered in the EC/OECD project on FDI-SME ecosystems (EC/OECD, 2022<sup>[5]</sup>)), nor the use of digital platforms.

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.



# 3. Turning data into business

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Data have become a key asset for increasing productivity and innovation capacity, and enabling SMEs to scale up. Yet SMEs are less aware of the potential and need for them to implement better data governance. This chapter aims to understand how governments create the incentives and conditions for improving SME data governance. It first presents the rationale and scope for policy intervention, and proposes an analytical framework for mapping relevant national policies and institutions in this area. Based on cross-country analysis of 487 policies and 209 institutions across the OECD, the report provides an overview of the policy mixes governments have put in place to enhance SME access to, protection and exploitation of data, as well as on the institutional and governance arrangements behind.

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# In Brief

**Better data governance can create unprecedented opportunities for SMEs to scale up. Yet, in this new policy field, more attention could be paid to engaging institutions in charge of SMEs and entrepreneurship issues in data policy making.**

Policies in support of SME data governance aim to help SMEs turn data into economic value to scale up business activities and grow. With data emerging as a key driver of firm performance, and potentially enabling a broader deployment of more sustainable, energy- and resource-efficient business models, there is a need to better understand the extent to which and how governments act for improving SME data governance.

**A number of barriers, notably uneven access to data, technology and skills limit opportunities for SMEs in increasingly data-driven economies**, frequently paired with a lack of financing options and demanding regulatory requirements (e.g. related to personal data protection). Outdated data infrastructures, data silos, as well as management practices or cultures that are not conducive to digital innovation and change, represent additional challenges inherited from analogue business models.

**Based on a cross-country mapping of national data governance policies and institutions, this chapter aims to identify emerging practices in the field and the considerations given to SMEs and potential scalers.** At this pilot stage of the project, the objective is to develop an initial overview of the policies governments have put in place to improve SME access to data, as well as their protection and exploitation, that can help policymakers understand how data policies are shaping across countries and thereby offer them more informed policy options.

**SME data governance policies are cross-cutting by nature, with a diverse set of institutional and governance arrangements in place.** Out of **209 institutions** mapped across the OECD area, different types and models of institutions are in charge of policy design and implementation. Policy coordination takes place through national strategies on cybersecurity, digitalisation or innovation etc. These horizontal instruments represent the most prevalent instrument in national policy mixes, suggesting that data governance remains **an emerging field** where public efforts still focus on broader governance considerations. Data policy institutions also cover a broad range of mandates, beyond SME and entrepreneurship policy, which **calls for greater attention to mainstreaming SME&E considerations into data policymaking.**

**In their policy mix, countries are currently placing a strong focus on strengthening SME internal capacity to use data.** Out of the **487 mapped policies**, the vast majority of initiatives (72%) seek to raise SMEs' internal capacity to effectively exploit and protect their data. Notably, close to two thirds of policy initiatives (64%) seek to promote data culture and skills among SMEs, suggesting that data governance issues are addressed from an awareness and training entry point. **Less focus is given to enabling SME access to external data**, with only 28% of mapped policies oriented toward improving data sharing or the deployment of data related infrastructure.

**Countries typically combine generic data policies with more targeted measures that aim to tackle specific barriers that SMEs or certain segments of the SME population face.** Across the OECD area, data governance policies targeted at populations, sectors and/ or regions represent 41% of the mapped initiatives. The majority of those aims at SMEs as a whole (54%), and less often at specific subgroups (22%), such as start-ups or entrepreneurs. Overall, however, less than one third (29%) of all

policies mapped in this area are SME-targeted, and even fewer are specifically dedicated to data issues, which rather tend to be weaved into broader SME digitalisation initiatives.

Future research could help shed further light on how data can support greater **SME sustainability as well as their ability to apply IPR mechanisms** in this context.

### Infographic 3.1. Key aspects of SME data governance



Note: Word cloud based on the description of the relevant 487 national policy initiatives mapped in this area. Descriptions and more detailed information are available in the OECD Data Lake on SMEs and Entrepreneurship.

Source: Authors' own elaboration.

## Introduction

### **Small and medium-sized enterprises (SMEs) that scale up achieve greater business performance.**

A change in scale signals the capacity of the firm to create new competitive advantages, or increase productivity, resource efficiency or profits (See Chapter 1).

**For long, policy makers have paid close attention to scalars for their significant contribution to job creation, or their potential to drive innovation,** especially in technology-intensive sectors or frontier areas (OECD, 2021<sup>[1]</sup>). For instance, while scalars only represent 13%-15% of SMEs in Finland, Italy, Portugal, the Slovak Republic and Spain, they contributed 47% to 69% of all new jobs by non-micro firms between 2015 and 2017. However, **most of these scalars are mature firms operating in low-tech sectors** (see Chapter 1), with about three-quarters of employment scalars having been established at least six years before the beginning of their high-growth phase (OECD, 2021<sup>[1]</sup>).

**This diversity in scalars' profiles and trajectories has increased concerns that policy makers may look for potential scalars in the wrong (or only in a limited number of) places and support them with the wrong instruments.** So far, most of governments' efforts in support of scaling up have focused on start-ups and enterprises enabling disruptive innovation, giving by default stronger emphasis on policies that influence market entry (such as taxation, competition or regulation), or policies that affect early business growth and technology development (such as R&D tax incentives, university spin-offs, or equity capital etc.) (OECD, 2016<sup>[2]</sup>).

**New results from the measurement work of this pilot project call for a rethinking of scale up policies,** starting with a better understanding of what the SME scaling up drivers are, the potential failures that require policy intervention and the form(s) of action governments could implement (see Chapter 1 for a more detailed discussion). Based on literature review and early evidence from the microdata work of this pilot project, there are a number of internal factors that can drive SME scale up: 1) innovation; 2) Investments in financial, human and knowledge-based capital, and 3) market and network expansion, including abroad. These drivers can operate in isolation or in combination. In this context, scaling appears to be a strategic choice and most often a firm-driven process, with the associated transformation(s) often beginning before actual scaling materialises (OECD, 2021<sup>[1]</sup>).

More specifically, **scalars tend to invest more in dedicated IT resources, as evidenced by a systematically higher share of IT employees in these firms, across all sectors, and at all stages of their transformation** (before, during and after the scaling-up phase) (see Chapter 1). This suggests a higher digital intensity of future scalars which require above-average ICT handling capacity. In this context, **the volume of data these firms access or generate is likely to increase,** implying in turn a need to raise internal capacity for data management and for addressing a possibly greater exposure to digital security risks (OECD, 2021<sup>[3]</sup>).

**Better access and use of data, and data-related technologies and skills, could help SMEs raise capacity to operate in a sustainable way at a higher scale of performance.** There are multiple data types, with multiple data applications possible across sectors, or within the firm across business functions (see Box 3.1). These applications are poised to give tremendous opportunities to smaller businesses to pull on scale up levers, e.g. by achieving greater cost or resource efficiency, specialising or differentiating products, innovating with new data-enabled or data-enhanced business models, increasing own-financing capacity, or expanding markets and networks including abroad (see Chapter 1).



### Box 3.1. What is data? What is data governance?

'Data' refers to recorded information in structured or unstructured formats, including text, images, sound and video. Data can be in any format, including analogue formats like paper, or emerging quantum forms like qubits, but the rise of digital technologies has enabled the growth and policy relevance of digital data, namely information stored by a computer in binary format. Almost every aspect of the digital environment, including a website or a banner advertisement, is data. Data in digital formats are characterised by their ability to be processed and analysed by digital technologies (OECD forthcoming, 2022<sup>[4]</sup>). For the purposes of this chapter, data is meant to refer to digital data, unless this is otherwise made clear.

Data can be categorised as **personal, public, or proprietary data** (OECD, 2021<sup>[5]</sup>). Personal data, for instance, typically requires more restrictive access regimes than non-personal or certain **public sector data**. With regard to the latter, most OECD countries today have adopted "open by default" approaches, thus paving the way for more mature open government data policies. This approach reflects the notion of "public data as a public good", which in turn should be delivered with a purpose, proactively, with a focus on re-use, and in line with user needs and its potential contribution to value co-creation. At the same time, it should be governed by the right policies in terms of data protection, privacy, transparency, ethics and digital rights (Rivera Perez, Emilsson and Ubaldi, 2020<sup>[6]</sup>).

On the other hand, **industrial data** is in most cases proprietary data and therefore access and sharing tends to be more restrictive compared to public sector data, which in many cases can be shared through open data portals. Some **data types may also overlap** or lead to conflicts of interest among different stakeholder groups (OECD, 2019<sup>[7]</sup>). Such concerns are compounded when dealing with **cross-border data flows**, where data moves beyond the reach of domestic regulatory bodies and thus becomes subject to differing regulations depending on the type and location of the data.

While the term **data governance is often primarily associated with the public governance of data, the concept is increasingly also being applied to the private sector, including at firm level**, thus recognising the different models of how businesses access, use and share data – see for example (Petzold et al., 2020<sup>[8]</sup>) (Begg and Cairn, 2017<sup>[9]</sup>) (Linck, 2021<sup>[10]</sup>) (European Commission, 2020<sup>[11]</sup>). Against this backdrop, data governance can be thought of as a system of rules, policies, and processes that ensures data quality, reliability, compliance and security and provides a framework for data collection and use – across various types of organisations. Its concept thus covers key aspects such as data access and sharing, data quality and curation, data control and ownership, data protection and privacy, data interoperability and standards, trans-border data flows and investments in data-related infrastructures, skills and competences. These are closely tied to the data value cycle and its phases, from datafication (i.e. process by which subjects, objects, and practices are transformed into digital data), data collection and data curation to data processing via data analytics, including artificial intelligence (AI) algorithms, to knowledge creation and data-driven decision making (OECD, 2019<sup>[7]</sup>).

In this context, the *OECD Recommendation on Enhancing Access to and Sharing of Data* represents the first internationally agreed upon set of principles and policy guidance on how governments can develop data governance frameworks that maximise the cross-sectoral benefits of access to and sharing of all types of data while protecting the rights of individuals and organisations (OECD, 2021<sup>[5]</sup>).

Note: The concepts of digitisation and digitalisation have distinct meanings. Digitisation means to convert *analogue information* into a digital format, i.e. encoding of data and documents so that computers can store, process, and transmit such information. Unlike digitisation, digitalisation doesn't have a single, clear definition, but it typically refers to converting (*business*) processes over to use digital technologies, instead of analogue or offline systems, such as paper or whiteboards (OECD, 2019<sup>[12]</sup>)

Source: (OECD, 2021<sup>[13]</sup>) (OECD, 2022 forthcoming<sup>[14]</sup>)

**Improving SME data governance has thus emerged as a potentially critical condition for scaling up, and a central point of policy attention** in support of job creation and the deployment of more sustainable and resilient business models. The cross-country analysis presented in this chapter seeks to provide an overview of how SME data governance policies shape across OECD countries, and will feed relevant policy lessons into a broader body of work on the subject (see Box 3.2).

### Box 3.2. Going Digital III: Data Governance for Growth and Well-being

The OECD Horizontal Project on Data Governance for Growth and Well-being represents the third phase of the OECD Going Digital project and aims to provide policy guidance on how governments, businesses and citizens can benefit from data, address related challenges, and foster a holistic and coherent approach to data governance, across policy trade-offs and between policy regimes. It brings together contributions from different OECD policy communities to account for the multidisciplinary nature of the topic.

More specifically, the Horizontal Project is articulated across four core modules:

1. Data stewardship, access, sharing and control
2. Fostering cross-border data flows while preserving trust
3. Data shaping markets and firms
4. Measurement of data and data flows

Importantly, the project has also contributed to **proposing a definition of the data governance concept**, which has been lacking thus far, whereby “*Data governance’ refers to a range of arrangements, including technical, policy, regulatory or institutional provisions, that affect data and its creation, collection, storage, use, protection, access, sharing and deletion, including across policy domains and organisational and national borders. Efforts to govern data can take many forms and often seek to maximise the benefits from data, while addressing related risks and challenges, including to rights and interests.*”

The analytical framework of the present work, while narrower in scope, has been aligned with the concepts developed as part of the Horizontal Project and seeks to reflect the dimensions laid out in the above definition. On that basis, it will provide a substantive contribution to the third module around *Data Shaping Firms and Markets*. This module will explore trends in data use by firms, technical aspects relevant for policy makers, as well as policy implications for helping firms prosper in data-intensive/driven markets. In particular, the module will look at the emerging opportunities for SMEs and entrepreneurs, the obstacles they face in accessing, using and managing data to enhance their businesses, as well as at measures that governments can implement to remove or lower those barriers and improve SME data governance.

Source: <https://www.oecd.org/going-digital/project>.

This chapter starts by introducing data governance as an emerging policy field that is critical to SME scale up and presents the rationale for policy intervention by discussing key opportunities and barriers for SMEs in this area. It then proposes an analytical framework for mapping relevant national policies and institutions in this area. Based on **cross-country analysis of 487 policies and 209 institutions across the OECD**, the chapter then provides an overview of the character and intensity of public efforts to improve SME access to, protection and exploitation of data, as well as on the institutional and governance arrangements for implementing national policy mixes.

## Businesses are increasingly leveraging data, with broad scope for driving SME scale up

Businesses have long been using data, but in recent years both **the scale of data usage and their central importance for many business models have grown exponentially**, as reflected by increasing data traffic around the world and the global use of data centres (OECD, 2021<sup>[13]</sup>).

**Progress has been driven by the deployment of key technologies that improved the conditions for storage, processing and use of data** (see Box 3.3). Combined together, the Internet of Things (IoT), big data analytics and cloud computing have increased firms' capacity for prototyping, decision making and automation (OECD, 2017<sup>[15]</sup>) (OECD, 2021<sup>[3]</sup>).

### Box 3.3. Potential benefits of the adoption of fourth industrial revolution technologies

Fourth industrial revolution technologies have recently risen to the top of the SME policy agendas of OECD countries. The adoption of these technologies have the potential to drive SME scale up and reap the benefits of the data economy.

- The **Internet of Things (IoT)** supports machine-to-machine communication and enables the generation of an unprecedented volume of data through the hyper-connectivity of devices, sensors and systems.
- **Artificial intelligence (AI)** leverages machine learning and new algorithms for data exploration and data analytics. AI allows for the processing of large amounts of data to recognise patterns and infer specific sets of rules, enabling greater automation and predictive capacity.
- **Cloud computing** allows storing and processing more data, especially at a more affordable cost as upfront investment in hardware or maintenance costs are reduced. Cloud computing allows access to “software as a service” (e.g. for storage, servers, databases, and software) and to leapfrog to new technologies along a pay-as-you-go model that better suit the needs of smaller actors. These set of cloud services, tools or applications enable SMEs to **improve their data management and integration capacity**, and represent a first step toward a more efficient organisation of data flows within the firm. In addition, some technologies, specialised software and hardware, **enhance business capacity for data protection and security**.
- **Block chain** (and distributed ledger technologies) for instance are typically secure decentralised database technology that enable transparent transfer of data without intermediation. A widespread use of block chain applications can ensure the protection of sensitive data, while enhancing accountability and trust among parties.
- **Big Data analytics** permits SMEs to improving their decision-making, forecasting and allowing for better consumer segmentation and targeting,
- **3D printing** or additive manufacturing might increase SMEs manufacturing capabilities, allowing them to increase their competitiveness and product offering.
- **Quantum computing** have the potential to increase computing capacities and address problems that are intractable on any classical computer. In particular, it is expected to foster R&D and innovation in different sectors such as agriculture, drug development, and manufacturing, among others.

Source: (OECD, 2020<sup>[16]</sup>) (Andrenelli and López González, 2021<sup>[17]</sup>).

**As a result, data are increasingly generated across business operations**, e.g. production and delivery (process data), and compiled at various stages of business transactions (user, consumer and supplier

data) (OECD, 2019<sup>[18]</sup>). The growing variety of data types and applications across business models and industries suggests that **data governance will play a key role in corporate strategies and policies, and may ultimately also prove pivotal in driving business scale up.**

- *Process data* for instance can improve stock management, logistics and maintenance, and business reactivity to just-in-time production requirements. They also increase the scope of efficiency gains including in terms of energy and resource consumption, or waste generation. Data can help reduce operation costs along the internal value chain of the firm and generate productivity gains, without need for the firm to create additional mass.
- *User, consumer and supplier data*, on the other hand, are crucial for developing market knowledge, improving customisation and shaping new products and business models. Data can help scale up capacity for product differentiation and market segmentation, as it enables businesses to gain insights on their customer base (“Know Your Customer”). Data also offer opportunities for achieving greater regional and global reach through network effects, or by reducing information asymmetry on markets.

In addition, **better access to external data, including for example open government data**, can allow entrepreneurs to develop innovative commercial or social goods and services, as well as create new business opportunities for data intermediaries, including data brokers, mobile apps and personal information management systems (OECD, 2019<sup>[7]</sup>). A recent study finds a significant and positive relationship between open government data and levels of entrepreneurship, especially in countries with high institutional quality. At the same, publishing government data alone does not seem to be sufficient to boost innovative entrepreneurship, rather governments need to focus on a broader set of policy initiatives that promote good governance, including rules related to contractual relationships and market exchanges between data publishers and users (Huber et al., 2022<sup>[19]</sup>).

**As a result, data is emerging as a strategic asset for an increasing number of SMEs.** In the OECD, they already represent the majority of businesses in sectors that process large volumes of data, such as professional, scientific and technical services, or sectors where data analytics and machine learning are poised to have a tremendous impact in the near future, e.g. retail, transport and logistics, travel, automotive and assembly and consumer packaged goods (OECD, 2019<sup>[18]</sup>) (OECD, 2021<sup>[3]</sup>). Table 3.1 illustrates how **different data-driven applications may benefit SMEs in their operations and help them scale up** through efficiency gains, enhanced innovation capacity, greater potential for diversification, differentiation and specialisation (typically, major levers on SME competitiveness) or network expansion, etc.

**Table 3.1. Examples of data applications in SME-dominated sectors and business models**

Data applications	Sectors of application	Applications across business functions (all sectors)	Expected impact on business operations	Potential benefits for SME performance and scale up capacity
Customer profiling	Retail trade; food and accommodation services, ICT services, transports etc.	Marketing, sales, product development	Capture a wide range of behavioural data about customers/users: e.g. identify behavioural shopping patterns such as purchasing similarities between customers to predict their preferences toward new items. Track customer movement in store and provide high volume of information at low cost (in-store behaviour analysis for store layout) Greater use of customer data in product conception and early development. Optimise assortment for micro-segments of customers	Mass customisation and product differentiation; improved sales and marketing opportunities; Higher sales revenues by exposing customers to new or customised products.
Design and conception	All sectors, e.g. construction	R&D, product development	Generative designs: Generate a wide assortment of design solutions that meet the given design requirements	Product differentiation and cost efficiency in design

Pricing strategies	All sectors, e.g. retail trade	Marketing, sales, finance/budget	Evaluate sources of sales lift and plan future promotions; together with greater anticipatory capacity of input cost fluctuations.	Higher profits through more optimal pricing strategies
Consumption analytics	All sectors, e.g. construction, manufacturing	Procurement, production and distribution	Yield-energy Throughput (YET) analytics: maximize yield/ throughput of individual assets by optimising working parameters. Fuel consumption analytics: optimize energy consumptions. Building energy management systems (BEMS): Monitor the energy consumption of buildings Improved input price and forecasting accuracy; Resource optimization and waste reduction by design	Higher productivity through cost efficiency. Raising profiles (e.g. ESG) for investors
Predictive maintenance	Manufacturing; transport services, construction	Production, logistics and distribution	Reduced machine downtime. Automation of safety control processes. Improved supply operations. Optimize building operations and maintenance.	Higher productivity through cost and time efficiency and increased production output.
Quality Management	Manufacturing	Production	Cut down on test times and reduce the number of tests required to assure desired quality. Replacement of manual inspections.	Higher productivity through cost efficiency and improved product quality
Network and system management	Transports, manufacturing, automotive industry, tourism, retail and wholesale trade; construction	Logistics; supply chain management, production	Analyse network traffic in real-time, including e.g. geospatial distribution of demand or congestion risks. Real-time monitoring of the mobility system (smart traffic systems) and improved real-time fleet management Inventory optimization: enhanced real time inventory tracking and stock management and greater capacity for just-in-time production /delivery. Adaptive, real-time control and increased coordination over an ever-expanding array of building activities. Dynamically define optimal setup point (e.g. sales mix, value allocation, procurement mix) to maximize profit per hour. Enhanced integration of operational systems, from manufacturing to end-to-end value chain.	Cost efficiency (e.g. maintenance, insurance, fuel etc.), new business models (e.g. taxis, trucks and delivery services, with implications for the automotive industry and the chains of part suppliers),

Note: Based on (OECD, 2021<sup>[3]</sup>) and (OECD, 2019<sup>[18]</sup>).

Source: Authors' own elaboration.

**There are however varying degrees of capitalisation on data across business sectors, which will likely impact the degree to which specific SMEs can leverage data as a strategic asset.** In 2019, for example, the Swedish government commissioned its Agency for Economic and Regional Growth to map the enabling conditions for SMEs to use data as a strategic resource and to identify particular sectors that hold most promise or face most challenges. The study identifies the Transportation and Storage sector as strategic for investment, with the sub-industry Road transport of goods as particularly relevant given the prevalence of SMEs in this sector, where access to real-time data sets has enabled new business models for transport activities. On the other hand, the study argues that the low digital maturity of the hospitality and construction industries, for example, made SMEs in these sectors less conducive to data-enabled business models (Tillväxtverket, 2020<sup>[20]</sup>). Such findings suggest that not all industries would benefit equally from targeted investments or policies related to data.

### ***Data create economic value by enhancing business operations, and sometimes even enable the creation of new business models...***

A growing body of literature offers empirical insights on the **relationship between the adoption and use of data and firms' performance**. For instance, (DeStefano, Kneller and Timmis, 2020<sup>[21]</sup>) find that small firms in the UK that adopted cloud technologies were more likely to experience growth in both employment



and revenue. Similarly, (Tang, Huang and Wang, 2018<sup>[22]</sup>) explored the adoption of IoT solutions at firm level and found that, controlling for industry, IoT adopters tend to display on average better financial performance (including return on assets, asset turnover and profit margins) than non-adopters. Lastly, (Müller, Fay and vom Brocke, 2018<sup>[23]</sup>) found that the adoption of big data related assets<sup>1</sup> was associated with an average improvement in firm productivity of 3%-7%.

In the manufacturing sector, more specifically, a recent study by McKinsey found that **predictive maintenance, system/ supply chain dynamic optimisation and Yield-energy Throughput (YET) analytics**<sup>2</sup> can deliver EBITDA (earnings before interest, taxes, depreciation, and amortization) margin improvements of as much as 4-10% for firms. By using these advanced data analytics, companies can determine the circumstances that tend to cause a machine to break and monitor input parameters so they can intervene before breakage happens—or be ready to replace it when it does—thus minimising downtime. Predictive maintenance typically reduces machine downtime by 30-50% and increases machine life by 20-40% (Dilda et al., 2017<sup>[24]</sup>).

While some firms lag behind, the digital age has facilitated the rise of firms at the cutting end of the technological frontier, whose current business models would not exist without the access to and use of data. Unlike firms whose operations are simply enhanced by data, some data-enabled firms rely on their ability to generate, collect and analyse data (Nguyen and Paczos, 2020<sup>[25]</sup>). Put differently, the more data-enabled a firm is, the more data represents a critical input into its productive activities, and data or data-related tools may be *among* the most valuable assets it controls. Based on this broad distinction, four categories of data-related business models emerge (Table 3.2).

**Table 3.2. Typologies of data-driven business models and SME examples**

		Data-enabled		Data-enhanced	
		Selling or licensing raw or aggregated data	Developing and selling new data-related products	Using data to improve existing products	Using data to improve production processes
SME examples	<b>Verified (NZL)</b> offers background data for screening purposes.	<b>Flowbase (EST)</b> using AI turns cameras into actionable, real-time data.	<b>Darwin AI (CAN)</b> generates high-performing design for products based on parameters using machine learning.	<b>Zelros (FRA)</b> , an AI and Machine Learning technology firm, helping insurance companies increase sales efficiency.	
	<b>Data Stream (USA)</b> collects, analyses and sells customer and business databases.	<b>Altilia (ITA)</b> provides a platform that uses AI for data collecting and data analysis.	<b>INBA (SVN)</b> a Real Estate marketplace that uses block chain to make transactions instantaneous.	<b>Worldsensing (ESP)</b> a provider of data loggers and sensors to monitor the safety of mines.	
	<b>Databroker (UK)</b> sells data for direct mail, telemarketing, and email marketing campaigns.	<b>Taptap (ESP)</b> , a Data Marketplace which helps users find, buy and sell data online.	<b>Deep Instinct (ISR)</b> applies deep learning to cybersecurity.	<b>Daisee (AUS)</b> offers automated quality management of customer interaction using AI voice analytics technologies.	

Note: Data-enabled firms include businesses that have been created by the use - or new use - of data and that would not exist without those, (e.g. communication and technology firms, digital platforms) Data-enhanced firms include businesses whose primary function is not data-based, but whose efficiency may significantly improve, or whose business model may significantly change through the use of data (e.g. firms operating in the utilities, transportation, finance, or health sector).

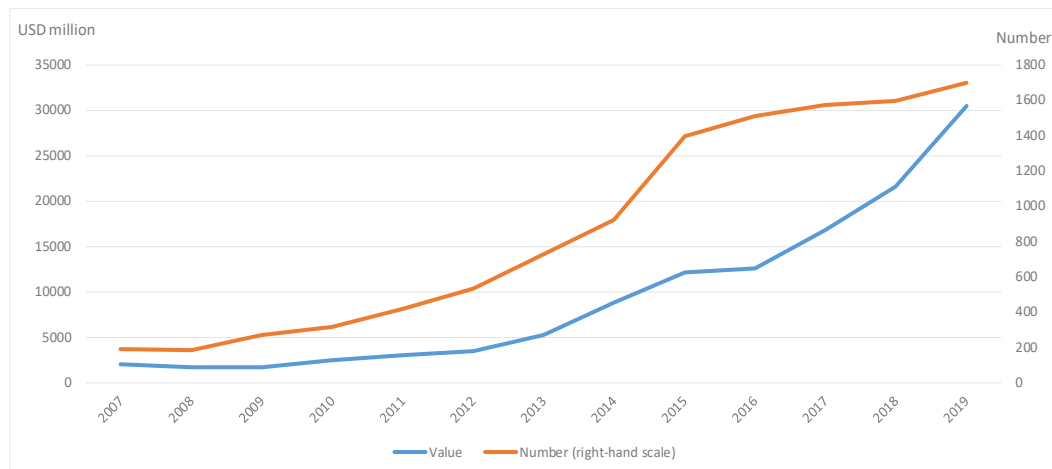
Source: Authors' own elaboration, based on (Nguyen and Paczos, 2020<sup>[25]</sup>).

**As a result, markets increasingly value firms that can make use of the growing volumes of data they generate**, which is notably reflected in the exponential growth that private equity investments in big data firms have experienced recent years. Data from Preqin Pro, a platform providing access to private

capital and hedge fund data worldwide, suggests that venture capital (VC) investments in “big data” firms, which reflect the investors’ evaluation of the long-term value of the data assets owned by these firms, grew significantly over 2007-19, both in terms of the number of deals (9-fold increase, from 190 to 1702) and in terms of their value (15-fold increase, from USD 1.98 billion to USD 30.5 billion) (Figure 3.1).

### Figure 3.1. VC deals in big data firms worldwide have grown exponentially

2007-2019, Value in USD million and total number (right-hand scale)



Note: The definition of “big data” firms includes firms providing solutions for large volumes of data, through data gathering, storing or analysis, but excludes firms producing hardware, software or services that underpin the provision of big data services.

Source: OECD, based on Preqin Pro, [www.pro.preqin.com](http://www.pro.preqin.com) (last accessed in February 2021). DSTI/CDEP/MADE(2021)3

### ***...and data will play a key role in helping SMEs scale up through more sustainable business models***

**Improved data governance can also create new opportunities for SMEs to grow and respond to growing environmental pressures, as well as the need for more responsible business conduct (RBC).**

**Efficiency gains can be achieved through energy and resource savings.** Process data combined with an optimised use of data-intensive technologies, for example, enable consumption analytics and predictive maintenance (Table 3.1), which will help reduce wastage, and support the introduction of more environmentally-friendly practices in production process (Ortega-Gras et al., 2021<sup>[26]</sup>). This way, SMEs can identify operations at low energy consumption level, and implement strategies in order to modify their energy consumption practices curtailing carbon emissions. The deployment of smart grids and the Internet of Things (IoT) – a range of smart objects, sensors, devices and software that connect and exchange data - could also support data collection and transfer. For instance, Woodsense – a Danish SME – has created a product called “moisture meter”, which automatically monitors the moisture in timber structures through IoT sensors as a way to improve energy efficiency of building maintenance.<sup>3</sup>

**In particular, the circular economy creates room for SMEs to scale up,** because a circular approach - as opposed to the traditional linear one - raises business capacity to reduce costs, improve resource price predictability and increase resilience to supply disruptions. The circular economy carries a transformational and high profit potential for a broad range of industries, where SMEs are in the majority (Ellen MacArthur Foundation, 2015<sup>[27]</sup>). ‘Share’ models can help cut costs and improve performance in



distributive trades (i.e. wholesale and retail trade) or accommodation and food services; 'virtualise' models in administrative and support services, legal and accounting and head-office consulting, as well as in a range of knowledge-intensive services; 'loop' models in construction, transportation and storage. The building sector, for example, could halve construction costs with industrial and modular processes.

In addition, **SMEs embracing circular - and more broadly green - models could expand networks and benefit from access to emerging markets and obtain greater visibility** to a customer base (OECD, 2019<sup>[18]</sup>). According to survey data, accessing new markets, together with saving material costs and creating competitive advantages, are indeed among the main reasons for European SMEs to take action towards more circular practices (Rizos et al., 2016<sup>[28]</sup>). SMEs can operate in circular and green supply chains in local markets that may be unattractive or impenetrable for large global firms, including in emerging economies and low-income countries. The circular economy also encourages a shift in business strategies towards more customer-focused design thinking for which smaller firms may have a comparative advantage due to their greater reactivity, local footprint, and proximity to end markets (OECD, 2019<sup>[18]</sup>).

**To enable circular and green business models, SMEs need data.** Information and data on the property of products and materials are required either as a way to create new products or for extending the lifetime of existing goods (Dubey et al., 2019<sup>[29]</sup>). With IoT devices compiling data across the value chain, firms that participate in the circular economy can obtain consistent and accurate insights on the conditions and functioning of assets (Suciu (Vodă) et al., 2021<sup>[30]</sup>). Without access to relevant data, however, SMEs will face barriers to repairing, refurbishing or upgrading goods and the development and creation of secondary markets will remain limited (Stahel, 2016<sup>[31]</sup>). To date, siloed data, lack of data interoperability and data standards remain indeed common barriers faced by actors of the circular economy (Nordic Innovation, 2021<sup>[32]</sup>).

**Data is also instrumental to access sustainable finance or obtain eco-certification, a sesame to green markets and green public procurement.** In recent years, markets, customers and investors have shown an increased interest in aligning decisions with environmental or personal values. As a consequence, more and more brokerage firms and mutual fund companies have started offering exchange-traded funds (ETFs) and other financial products that follow environmental, social, and governance (ESG) criteria (see Box 3.4) (Boffo and Patalano, 2020<sup>[33]</sup>). These criteria have become an increasingly popular way for investors to evaluate companies in which they might want to invest in, leading in turn to a soaring in the number of ESG indices, spurred by the growth in ESG-related data and benchmarks (Kuzmanovic and Koreen, 2022<sup>[34]</sup>). **Eco-labels and green certifications also require business process data** to estimate carbon footprint or environmental impact (Zhao, Guo and Chan, 2020<sup>[35]</sup>), and the increasing demand for sustainable products and services is likely to steer the development of green-certifications and further consumer demand for environmentally friendly goods (OECD, 2018<sup>[36]</sup>).

### Box 3.4. Environmental, social, and governance (ESG) performance

Environmental, social, and governance (ESG) performance criteria are a set of standards for a company's operations that investors may use to screen potential investments and that can also drive consumers' preferences. Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights.

More specifically, the three dimensions typically take into consideration the following elements:

- **Environmental criteria** may include a company's energy use, waste, pollution, natural resource conservation, and treatment of animals. The criteria can also be used in evaluating any environmental risks a company might face and how the company is managing those risks.
- **Social criteria** look at the company's business relationships, e.g. whether its suppliers hold the same values the company, possible donation of its (part of its) profits to the local community volunteer work by employees, or the company's working conditions and their regard for its employees' health and safety.
- **Governance criteria** usually require that a company uses accurate and transparent accounting methods and that stockholders are allowed to vote on important issues. They may also want assurances that companies avoid conflicts of interest in their choice of board members, do not use political contributions to obtain unduly favourable treatment and, of course, do not engage in illegal practices.

The growing investor interest in ESG criteria reflects the view that environmental, social and corporate governance issues - including risks and opportunities - can affect the long-term performance of issuers and should therefore be given appropriate consideration in investment decisions.

Source: Based on (OECD, 2020<sup>[37]</sup>) and on (Boffo and Patalano, 2020<sup>[33]</sup>)

**Accessing sustainable finance requires that SMEs are able to effectively respond to reporting requirements and leverage internal data** (both financial and non-financial). ESG ratings rely mainly on self-reported data or proxy data that is often not verified or audited. The current quality of these data is likely to reflect the capacities of companies to adequately measure and report on their environmental performance and greening actions. This reporting burden likely disadvantages SMEs, because in many countries they are either not required to report on their non-financial performance – or simply have limited capacities to collect, measure and report on the relevant indicators (Kuzmanovic and Koreen, 2022<sup>[34]</sup>). A case in point is the 2020 EU Taxonomy Regulation<sup>4</sup> which aims to create an EU-wide classification system for sustainable activities, but whose reporting requirements currently do not include SMEs, for which disclosure of relevant data remains voluntary. Recent research suggests indeed that there is an ESG scoring bias in favour of large-cap companies, and ESG ratings are positively correlated with the resources that companies devote to reporting, with larger companies that can dedicate more resources displaying higher scores (Boffo and Patalano, 2020<sup>[33]</sup>). In turn, higher ESG ratings can help advance capabilities in producing relevant data and metrics that conform to the needs of rating firms and a plethora of investors.

**Business incentives to meet reporting requirements are likely to grow further, including among SMEs, with standardisation of ESG criteria.** While there are many different solutions for ESG reporting for large and listed companies, dedicated solutions for SMEs are still scarce and the few existing ones can be found mostly in the emerging fintech ecosystem that deals with data collection for reporting purposes (Möslinger, Fazio and Eulaerts, 2022<sup>[38]</sup>). At the same time, regulators are increasingly standardising the

definitions, data and methodologies with a view to limiting the scope for “greenwashing” in ESG (i.e. artificial elevation of environmental scores that provide a misleading picture of a company’s environmental performance). This, along with the development of sector/ industry specific metrics, should help overcome existing market inefficiencies and unlock useful ESG information from smaller companies by helping them prioritise their data collection efforts and develop core metrics that are most decision-relevant to equity and debt investors (Kuzmanovic and Koreen, 2022<sup>[34]</sup>).

## A number of barriers continue to prevent SMEs’ access to and use of data for scaling up their business

A number of barriers, notably **uneven access to data, technology and skills** limit opportunities for SMEs in increasingly data-driven economies, frequently paired with a lack of financing options and burdensome regulatory requirements (e.g. related to personal data protection) (Bianchini and Michalkova, 2019<sup>[39]</sup>). A recent study examining how the EU General Data Protection Regulation (GDPR) can affect firm performance across 61 countries and 34 industries found that enhanced data protection reduces the financial performance of companies targeting European consumers. Importantly, the negative impact on profits among small technology companies was almost double the average effect across the full sample, suggesting that the compliance costs brought about by this regulation affect SMEs disproportionately (Chen, Frey and Presidente, 2022<sup>[40]</sup>). **Outdated data infrastructures, data silos, as well as management practices or cultures that are not conducive to digital innovation and change**, represent additional challenges inherited from analogue business models.

Taken together, these **barriers largely reflect the key drivers of SME performance related to their business environment and access to strategic resources**, as conceptualised in the OECD SME and Entrepreneurship Outlook (OECD, 2019<sup>[18]</sup>). A recent study demonstrates a widespread awareness of the benefits related to the use of digital platforms among EU SMEs operating across many sectors and exhibiting various levels of R&D intensity. It also points to a number of persisting challenges related in particular to scaling up activities, which is often hampered due to limited access to assets, resources, and markets. In this context, firms located in peripheral regions seem to face increased difficulties in finding complementary resources (De Marco et al., 2019<sup>[41]</sup>).

In addition, the **perspective of lower-income countries** has so far largely been absent, even though they are likely to face increased barriers in terms of developing adequate legal and regulatory frameworks, and deploying the required broadband infrastructure. It is estimated that less than 20% of low- and middle-income countries have modern data infrastructure such as colocation data centers and direct access to cloud computing facilities, thus further limiting SME potential for accessing, creating and using data (World Bank, 2021<sup>[42]</sup>).

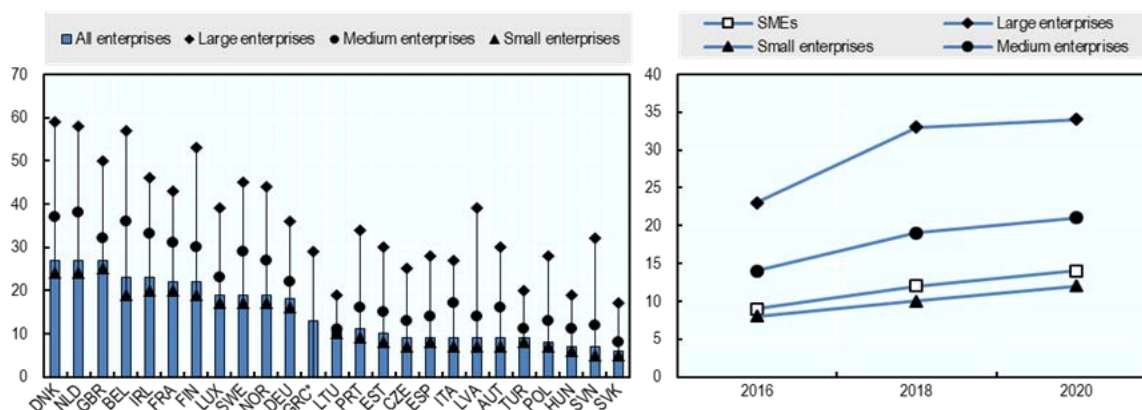
**Overall, SME readiness to harness the value of data is strongly determined by their adoption level of digital technologies** - and here, they tend to lag behind large firms, with adoption gaps typically larger the more advanced the technology is (OECD, 2021<sup>[3]</sup>). Even though digital technology adoption tends to spur further digital adoption, with cloud computing as prime example of a tool that can help SMEs leapfrog to more advanced technologies, effectively exploiting data generated within a business and implementing data-driven decision making typically requires significant complementary investments on the side of the firm. Such investments may include the purchase of hardware/ software to increase data storage and computing capacity, implementation of data-driven processes (management, supply chain), or the creation of a data analytics division, for which the required resources may not be proportional to the size of the firm (Brynjolfsson and McElheran, 2016<sup>[43]</sup>). At the same time, the fast evolving nature of data technologies, and extremely short technology cycles, may imply frequent investments into new tools, as well as high depreciation rates on the equipment needed, which may in turn act as a disincentive for SMEs and micro

firms to invest. As a result, large enterprises are often better placed to absorb the necessary demands that data governance places on firms' resources (Begg and Caira, 2017<sup>[9]</sup>).

Recent data on EU firms show that the **share of large firms performing big data analysis in 2020 was 2.4 times higher than that of SMEs**, suggesting that SMEs have not yet fully capitalized on data as a strategic asset, albeit with considerable differences across firm size (Eurostat, 2021<sup>[44]</sup>). Although SMEs continue to lag behind large enterprises, medium-sized firms (50-249 employees) are in fact on average 75% more likely to perform big data analysis compared to small firms (10-49) (Figure 3.2).

**Figure 3.2. Large firms are more advanced users of big data analysis than small firms**

Big data analysis among firms in the EU, by firm size, 2020 (left chart) and as a percentage of all firms, 2016-20 (right chart)



Note: Disaggregated data for small and medium enterprises for Greece is missing (left chart). EU average by firm size category (right chart). Source: Eurostat (2021), database, [http://ec.europa.eu/eurostat/data/database?node\\_code=isoc\\_eb\\_bd](http://ec.europa.eu/eurostat/data/database?node_code=isoc_eb_bd) (accessed September 2021).

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**Gaps in adoption are broadly similar for cloud computing and IoT**, with 38% of small firms using cloud technologies and 16% making use of IoT devices, compared to 72% and 38% of large firms, respectively. They are however **more pronounced across more advanced technologies like AI and 3D printing**, where the adoption rate among large EU firms in 2021 was four to five times higher compared to the EU average of small enterprises using this technology. More specifically, 28% of large firms used AI, compared to only 6% of small firms, and 17% of large firms had adopted 3D solutions, compared to only 4% of small firms (Eurostat, 2021<sup>[44]</sup>).

**An increased volume of data SMEs may access or generate are making them also more vulnerable to digital security incidents.** Such developments have been amplified by the COVID-19 crisis, where many SMEs in a rush to move operations online, left themselves exposed to new digital risks. Despite recent increases in the frequency and costs associated with cyberattacks, available evidence suggest that SMEs are less likely to undertake digital risk assessments or have insurance against ICT incidents. They are also less likely to be aware of digital security obligations and to implement security tests or regular backups (OECD, 2020<sup>[16]</sup>) (OECD, 2021<sup>[3]</sup>). The most common factors for the low uptake of digital security solutions are often the associated costs (Hiscox Ltd, 2019<sup>[45]</sup>), as well as a common misconception of being too small to be targeted (Abbott et al., 2015<sup>[46]</sup>). As a result, the implementation gap with regard to digital security practices between European SMEs and large firms was around 30% in 2020 (Eurostat, 2021<sup>[44]</sup>).

Taken together, existing barriers to data governance may result in SMEs failing to manage, protect and value data to the same extent as other tangible assets that underpin their success, or in the same way

large firms could do, thus foregoing the potential to improve business performance through the adoption of data intensive technologies.

**What is more, the timing of technology adoption is crucial** as early adopters of innovation tend to reap the largest benefits, while latecomers usually receive lower or even no benefits (OECD, 2021<sup>[3]</sup>). Therefore, SMEs' overall lag in the digital transition is also an obstacle in generating and accessing more data, which may further widen the gap with more digitally-advanced firms, who are already reaping the opportunities of the data economy (OECD, 2019<sup>[18]</sup>).

### ***From skills gaps...***

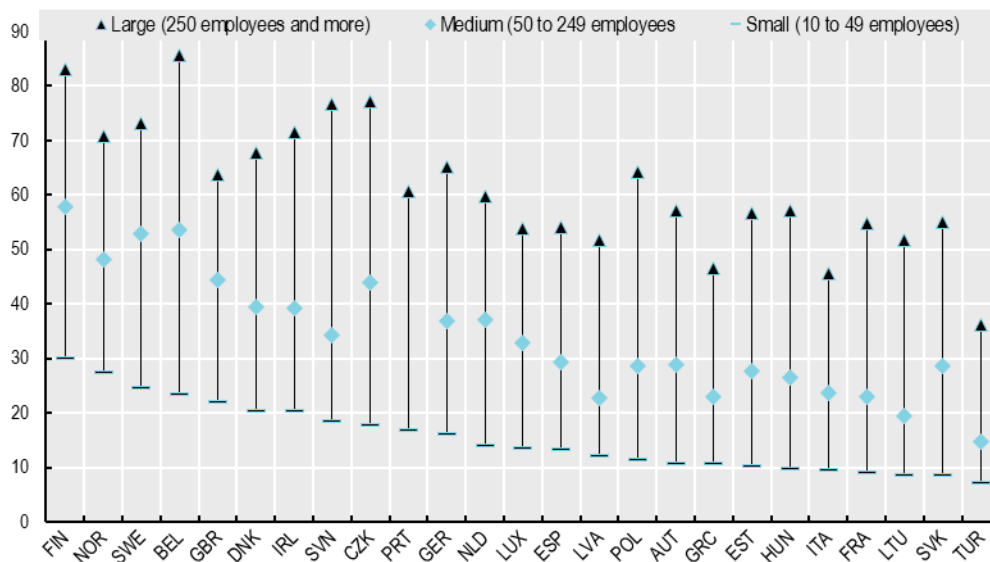
**One of the main barriers to data governance is SMEs' lack of skills to adopt and effectively integrate relevant digital technologies in business processes**, in particular as the adoption gap vis-à-vis large firms tends to increase the more advanced, i.e. data-driven, the technology. This includes notably a **lack of capacity and networks** to identify and access talent, higher job turnover, often due to **less attractive remuneration and working conditions**, resulting in higher relative costs in finding and retaining talent, as well as **lower levels of management skills** to anticipate needs. In addition, training requirements also typically imply elevated levels of time off the job and reskilling of SME staff, including the bearing of associated expenses. In this context, the **financial costs of tailored training and development opportunities** are relatively higher for SMEs, which constrains their capacity and willingness to invest in skills development (OECD, 2021<sup>[3]</sup>).

At the same time, **there is a difference between digital literacy and advanced digital skills**. While the adoption of advanced technologies can benefit all SMEs, including those operating in traditional sectors, not all SMEs need to develop or acquire the skills to code and produce software in-house. However, they do need to invest in internal capabilities so as to have an understanding of what advanced digital technologies (e.g. Block chain, Artificial Intelligence, Internet of things) could do for their business and how they could leverage them, even if they are provided by third parties. At the same time, the importance of early steps in the digital journey should not be overlooked, such as the benefits that small businesses may accrue by effectively using accessible digital tools that require basic skills, such as social media or launching a website. Acquisition and usage of basic digital technologies are the first steps toward more advanced digital adoption, which nonetheless demand strategic decisions for integrating the technology with the business model and process (OECD, 2021<sup>[47]</sup>).

Against this backdrop, the **development of digital skills should be diffused across employees and managers and not be limited to ICT specialists**. The share of firms offering ICT trainings to their employees, for example, seems to be positively correlated to the share of firms using social media across OECD countries, with a higher effect the smaller the size of the firm. Yet, across the OECD area, there is still a pronounced gap between large and smaller firms in terms of ICT training provided to non-ICT professionals (see Figure 3.3).

**Figure 3.3. Smaller firms offer less ICT training to employees**

Share of firms providing ICT training to non-ICT professionals, in %, 2020



Note: Data for the UK and for small and medium-sized businesses in Greece refer to 2019.  
Source: OECD ICT Access and Usage by Business database (accessed September 2021).

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With regard to data governance in particular, while there is **no common definition (or exhaustive list) of the skills that are typically required in data-related professions**, there is a general convergence on key elements that are recurrent across online job postings in the field. Overall, it is estimated that by 2030, an estimated 90% of jobs will require some level of data skills in order to access the opportunities of the global digital economy (ICTworks, 2022<sup>[48]</sup>). Typically, data analysts are required to have a well-developed toolbox of technical skills, combined with a number of soft skills (see Box 3.5 for an overview).

### Box 3.5. What are data skills, as per job postings?

At its core, data analysis implies translating a business question or need and into a data question – and then transform and analyse data to answer that question. In this context, having a foundation of **advanced statistical and mathematical skills**, including an in-depth understanding of statistical concepts like linear regression, classification and resampling methods, is usually key. With **econometrics**, on the other hand, analysts apply statistical and mathematical data models to the field of economics to help forecast future trends based on historical data – often a key requirement for jobs in the financial sector.

Against this backdrop, data professionals require specific skills to thrive in their field. While their qualifications are primarily tech-centric, they also need a number of soft skills.

#### Technical skills

- **Data Visualisation** makes (complex) trends and patterns in data easier to understand, including for audiences that may lack advanced analytical training. It typically requires the use of visualisation software, like *Tableau*, which allows data professionals to transform analysis into charts, graphs, maps, and other visual representations like dashboards, data models or business intelligence reports.
- **Data cleaning and preparation** is one of the most critical steps toward gaining meaningful insights from data, accounting for around 80% of data professionals' work. Commonly, a data analyst will need to retrieve data from one or more sources and prepare the data so it is ready for numerical and categorical analysis. Data cleaning also involves handling missing and inconsistent data that may affect analysis.
- **Data management** refers to the practices of collecting, organising, and storing data in a way that is efficient, secure, and cost effective. While some organisations will have roles dedicated to data management – e.g. data architects and engineers, database administrators, and information security analysts - data analysts often manage data in some capacity and thus usually require a broad understanding of how databases work, both in physical and cloud environments.
- **Structured Query Language (SQL)** is the standard language used to communicate with databases. It allows data professionals to update, organise, and query data stored in relational databases, as well as modify data structures. On the other hand, NoSQL systems do not organise their data sets along relational lines, but based on a variety of alternative (non-relational) frameworks, which follow flexible hierarchies instead of tabular relations – thus requiring a broader set of skills/ languages (e.g. *MongoDB*).
- **Statistical programming languages** enable data professionals to clean, analyse, and visualise large data sets more efficiently. In this context, *Python* is a high-level, general-purpose programming language, which was ranked the top programming language in the 2019 IEEE Spectrum survey<sup>5</sup>. Python's applicability to AI development is particularly important, making it a key tool in an increasingly AI-concerned professional landscape. Another pervasive and well-used language in data analytics is *R*, which often appeals to businesses thanks to its ability of handling complex or large quantities of data. In addition, businesses interested in big data and machine-learning models have begun turning to *MATLAB*, an advanced programming language that supports algorithm implementation, matrix manipulations, and data plotting, allowing analysts to cut down on the time they spend pre-processing data and facilitating quick data cleaning, organisation, and visualisation.



- **Machine Learning**, a branch of artificial intelligence (AI), has become one of the most important developments in data science. This skill focuses on building algorithms designed to find patterns in big data sets, improving their accuracy over time. The more data a machine-learning algorithm processes, the “smarter” it becomes, allowing for more accurate predictions. While data analysts are not systematically expected to have a mastery of machine learning, these skills can give them a competitive advantage.
- **Microsoft Excel** is used by an estimated 750 million people worldwide and the term “Excel skills” frequently appears under the qualifications section for jobs posted on hiring services. While there is now significantly more advanced technology data analysts have at their disposal, Excel is well-used among businesses and many of its automated features, such as Visual Basic for Applications (VBA), Microsoft’s programming language for Excel, can save analysts a lot of time on frequently-performed, repetitive tasks such as accounting, payroll, or project management.

### Soft skills

In addition, there are non-industry-specific skills that data analysts require to succeed. While their specific scope will inevitably depend on the roles and responsibilities of the person a business is seeking to recruit, as well as on the sector it operates in, they typically include transversal soft skills like **communication, critical thinking and problem solving**. As data becomes increasingly essential to decision-making across industries, analysts are expected to translate complex technical information into something simple enough for their audience to understand and effectively communicate their findings – both vis-à-vis clients and business partners, as well as internally to their colleagues. In addition, they are often tasked with conducting experiments, testing hypotheses and making inferences from the data within their reach, requiring them to think critically and creatively about solving problems and applying human judgment to business challenges. Finally, a strong **domain knowledge and business acumen** will also be essential for making an impact on an organisation. This implies understanding things that are specific to the particular industry and company one is working for – which might require understanding the nuances of e-commerce, if it is a business with an online store, but which might equally imply understanding mechanical systems and how they work, in the case of an engineering company.

Source: Based on (Columbia Engineering, 2022<sup>[49]</sup>); (Grupman, 2021<sup>[50]</sup>); (Coursera, 2022<sup>[51]</sup>); (University of Massachusetts Global, 2019<sup>[52]</sup>)

This is also reflected in a recent OECD study analysing the skills sets (“skills bundles”) demanded in artificial intelligence (AI)-related online job postings, based on Burning Glass Technologies’ data for the United States and the United Kingdom over the 2012-19 period. The paper finds that with regard to skill bundles related to programming, management of big data and data analysis, **skills related to the open source programming software Python and to machine learning represent “must-haves” for working with AI**. Employers additionally value specialised skills related to data mining, cluster analysis, natural language processing and robotics. Beyond the technical dimension, **network analysis relating AI skills to general skills highlights the growing role of socio-emotional skills, including notably communication skills, problem solving and creativity**, while for managers in the AI field, presentation skills, planning, budgeting and business development are also important (Sameki, Squicciarini and Cammeraat, 2021<sup>[53]</sup>).

### *...to a lower capacity in leveraging intellectual property rights (IPRs)*

**Data assets increasingly form the majority of firms’ value.** Recent OECD analysis seeking to provide an estimate on the value of data suggests that **production of data assets covers nearly 40% of intangible investment** (ranging from data stores with raw records of data over structured databases ready

to be exploited to advanced data intelligence, which reflects the further integration of data with advanced analytic tools). While there is no one-to-one correspondence between components of intangibles and different data asset components (sometimes also referred to as data stack or data value chain), **intangible investment is likely to include most forms of data intelligence, which tends to represent the most valuable stage of the value chain** and can take on many forms, including e.g. data tools/ apps and databases, but also related scientific/ engineering design, marketing, or business strategy (Corrado et al., 2022 forthcoming<sup>[54]</sup>) (Corrado et al., 2022 forthcoming<sup>[55]</sup>).

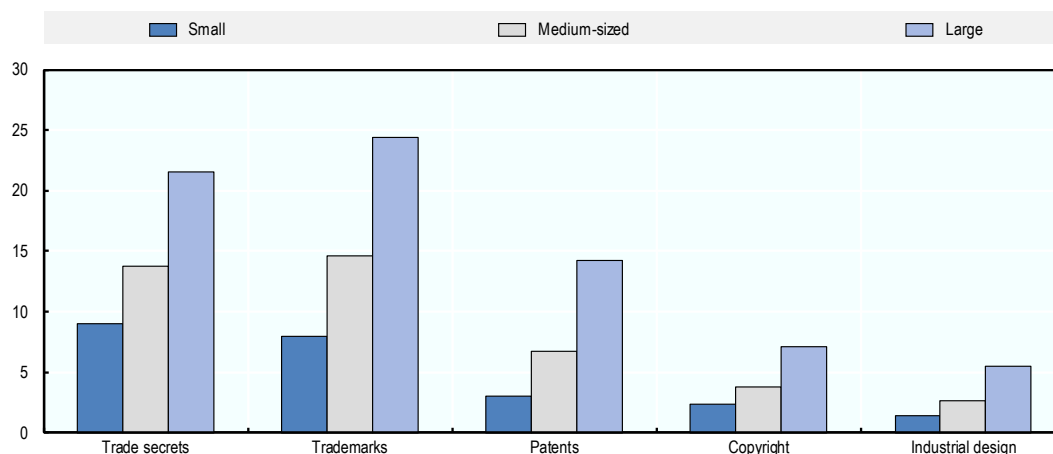
**To protect their data and/ or related data-enabled products and activities enterprises can resort to intellectual property rights (IPRs).** As data is a non-rival good by nature, i.e. multiple agents can use them at the same time, IPRs can provide innovators with a temporal monopoly in this context (Ilie, 2014<sup>[56]</sup>). Among the formal IPRs such as patents, trade secrets, trademarks, copyrights and industrial designs, some can be particularly suitable for businesses to appropriate the value of their data and secure a return on their investments in intangible assets (including data software and external data) (EUIPO, 2020<sup>[57]</sup>). Recent evidence on European SMEs documents the benefits of IPRs for high-growth firms. In particular, **SMEs with prior IPR activities are more likely to grow than other SMEs**, and SMEs that use bundles of trademarks, patents and designs instead of a single category of IPR, are even more likely to achieve high growth (EUIPO, 2020<sup>[57]</sup>). Similarly, recent data suggest that trademarks are the basic building block of effective IP bundles. Business surveys provide further evidence on the effect of IPRs on SMEs scaling up (EUIPO, 2019<sup>[58]</sup>). After registering their IP rights, 54 % of SME owners claim to have seen a positive impact, through an increase in reputation (52 %), turnover (39 %) and ability to access new markets (37 %).

**However, SMEs face some challenges in applying IPRs that might hinder them from scaling up operations through data.** In particular, while there is a large range of IPR mechanisms that could be used, they do not apply to data and data repositories to the same extent, thus raising the level of complexity SMEs may have to deal with. For instance, datasets are protected by copyright, with different levels of protection in the EU and in the United States. Algorithms and other methods for data processing and analysis, on the other hand, can usually not be protected through copyright, but through trade secrets<sup>6</sup> (Maggiolino, 2019<sup>[59]</sup>) (IusMentis, 2005<sup>[60]</sup>). Unlike patents, trade secrets are protected by law on confidential information, e.g. confidentiality agreements or non-disclosure or covenant-not-compete clauses (OECD, 2019<sup>[18]</sup>).

**Historically, SMEs have faced various barriers in using and applying intellectual property**, with latest innovation surveys showing significant gaps among size classes of firms in using IPRs. While trade secrets remain the most popular IP solution for SMEs, only 9% of small enterprises were using trade secrets as compared to 13.7% of medium-sized enterprises and 21.5% of large ones in 2018 (Eurostat, 2021<sup>[61]</sup>). Similarly, there were on average three times more large firms applying for trademarks and copyright than small enterprises, and gaps are even more pronounced in the area of patents and industrial design, where the share of large firms leveraging these mechanisms is roughly four times higher than those of small firms (Figure 3.4).

### Figure 3.4. SMEs are less prepared to protect their data through IPRs

Share of enterprises that apply for a patent, registered an industrial design, or trademark or used trade secrets, by size class, 2018



Note: Country average on EU countries for which data are available

Source: Eurostat (2022), Community Innovation Survey, [https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=inn\\_cis11\\_ipr&lang=en](https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=inn_cis11_ipr&lang=en).

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Among the common barriers faced by SMEs in using and exploiting intellectual property are the **lack of awareness, lack of legal skills as well as the high cost of application and enforcement procedures** (Agostini, Filippini and Nosella, 2016<sup>[62]</sup>) (Sukarmijan and Sapong, 2014<sup>[63]</sup>). In particular, SMEs report the length and complexity of related procedures, or the risk of potential litigation and difficulties enforcing IPRs as the main reasons for not taking any measure, with only 17% of surveyed firms having a dedicated unit in place to monitor their IPR infringement in 2019 (EUIPO, 2019<sup>[58]</sup>).

Finally, the **protection of data and databases through IPRs may limit the availability of external data SMEs can use, or increase the costs for accessing these data**, especially for smaller scale businesses, and *in fine* limit the potential for effective data sharing. In addition, while trade secrecy and IPRs do not offer the same level of protection to the same sorts of assets and are complementary by nature, trade secret law is more difficult to enforce than a patent, and is set within national legal frameworks that apply to a certain jurisdiction, limiting transnational data transfers (OECD, 2019<sup>[18]</sup>).

### Mapping SME data policy and institutions: analytical framework, sources and methods

With data emerging as a key driver of firm performance, and possibly a major barrier for business scale-up, there is a need to ensure more even data access and use for smaller firms, and to better understand the extent to which governments account for these issues in their national policies.

**What is at stake goes beyond the employment benefits SME scaling up can bring, as a broader transformation capacity within the SME population could also drive the broader deployment of more sustainable, responsible and greener business models.** If SMEs cannot achieve their full potential through better data governance, there may be a broader loss of opportunity to create the collective capacity that is required to reduce greenhouse gas emissions and address the urgent challenge of environmental degradation – at least in certain contexts or industries (see Chapter 1).

SME data governance has emerged as a multidimensional challenge reflecting the diverse set of internal- and external-to-the-firm barriers, and calling for a holistic approach in policy making – both in terms of institutional set up, as well as in terms of the policy mix. Yet, policymakers and regulators continue to face difficulties in defining a common ground and language for discussions, co-operation and coordination in this area, as they naturally tend to focus on aspects that are relevant to their policy domains (OECD, 2022 forthcoming<sup>[14]</sup>).

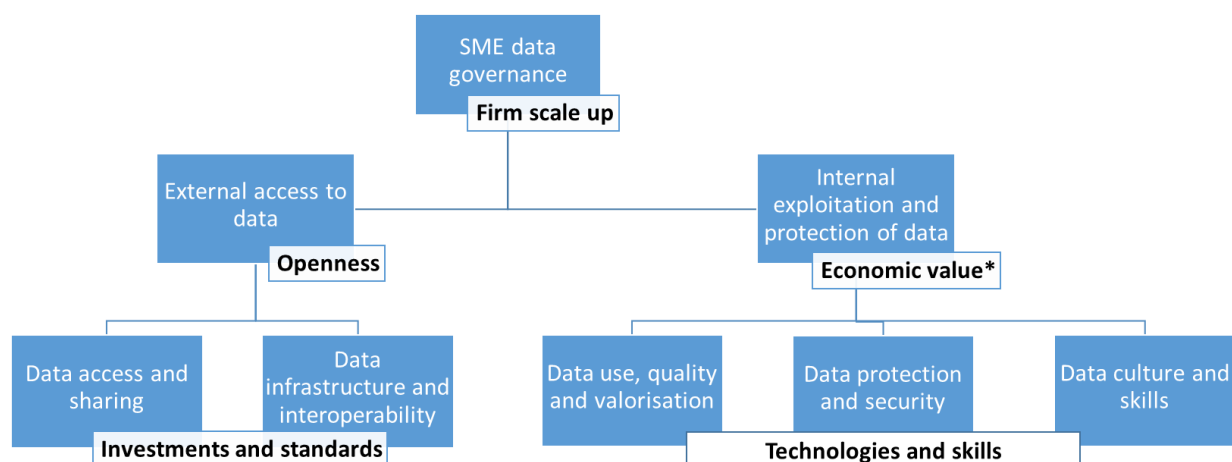
This section presents the analytical framework, sources and methodology used to identify emerging practices in this new policy field and inform policymakers on existing policy options with regard to how they can help SMEs better use data, build a data culture and improve data governance within the firm (OECD, 2021<sup>[13]</sup>).

This provides the bases of an international policy mapping of policies and institutions across the 38 OECD member countries in relevant areas. The mapping exercise aims to identify to which extent national policy initiatives pursue (one or several) specific data governance objectives, identify the key institutions involved at the national (and where possible and relevant at subnational and international level) and diverse set of policy instruments they mobilise (see Chapter 1 for operational definitions),

### ***Main strategic objectives pursued***

**Policies in support of SME data governance aim to help SMEs turn data into economic value and capitalise on internal and external data to scale up capacity and grow business.** Adopting the right cultural, policy, institutional, and technical environment could enable firms of all sizes and sectors to control, manage, share, protect and extract value from their data – and address relevant barriers in this context. In line with the OECD Going Digital Horizontal Project on Data Governance (see Box 3.2), the **strategic objectives of SME data policy** are depicted in Figure 3.5.

**Figure 3.5. Strategic objectives of policies to promote SME data governance**



Note: Generating economic value is to be understood in a broad sense, including not only growth in turnover or profit. It can notably also include increased innovation capacity, a firm's ability to improve its environmental performance and its transition to a more sustainable business model, or improved capacity to comply with responsible business conduct (RBC) requirements or broader environmental, social and governance (ESG) criteria (see Chapter 1 for further discussion).

Source: Author's own elaboration.

Policy intervention for improving SME data governance falls into two categories according to the strategic objectives it pursues. First, SME data policy can aim to improving SME access to external data, which is largely shaped by the degree of openness the policy environment allows for (but also the willingness of

business partners to share data). Second, SME data policy can aim to incentivise and enable better exploitation and protection of data within the firm, both approaches aiming ultimately to greater business, economic, environmental or social value for the firm.

On that basis, **five distinct data policy (sub-)objectives emerge**, whose realisation mostly depends on an interplay between (infrastructure) investments and standards, on the one hand, and the availability of necessary assets, including technology and skills, within the firm, on the other hand.

Policies aiming to improve **SME access to external data**

- *Data access and sharing*: increase SMEs' overall access to data as an economic asset, including both open-source data, but also data from business partners and other relevant bodies via relevant sharing mechanisms.
- *Data infrastructure and interoperability*: create the necessary (physical) infrastructure and conditions to allow for effective sharing of data via common standards, platforms or networks that bring together SMEs with other relevant players from their ecosystem (large firms, academia, etc.)

Policies aiming to strengthen **SME exploitation and protection of data** within the firm

- *Data use, quality and valorisation*: enable SMEs to optimise the use of their data (whether internally generated or accessed externally) to create value for their business through relevant digital technologies and practices (e.g. data analytics).
- *Data protection and security*: ensure that SMEs have the relevant safeguarding mechanisms (e.g. technologies, processes, as well as awareness and behavioural capacities) in place that allow them to protect their data in the same way as they (ideally) protect other business assets – both from external attacks/ infringements as well as from internal misuse.
- *Data culture and skills*: strengthen awareness about the importance of data governance issues among SMEs and foster the development of relevant (digital) skills and skills strategies at firm level.

### ***Cutting across multiple policy domains***

With barriers to better data governance arising in multiple areas, public intervention is becoming more pervasive across different (and non-IT) policy domains. Against this backdrop, the **mapping exercise has screened several policy areas simultaneously in order to identify relevant institutions and initiatives that aim to achieve one (or several) of the policy objectives identified above**, as well as assess to which extent they address the specific challenges faced by SMEs in this area.

It looked at **policies aiming to scale up SME's internal capacity** to access, share, manage, protect and leverage the value of their data, as well as at more structural elements, which shape the **overall business framework and market conditions** related to data. In line with the OECD SME&E Outlook and Strategy (OECD, 2019<sup>[18]</sup>) (OECD, 2021<sup>[64]</sup>), the framework is thus based on the assumption that looking at specific SME-targeted measures to encourage better SME data governance is a too narrow focus to understand how SMEs are effectively enabled (or hindered) in their data transition, and a broader set of policy measures and levers need to be considered.

The mapping exercise starts therefore with an institutional mapping of the national governance arrangements and structures pursuing the SME data governance objectives above, on the basis of keywords and concepts search and text analysis (e.g. data access, data use, data protection, data infrastructure, cybersecurity etc.). Then the relevant policy initiatives these institutions administrate (alone or through joint implementation with other institutions) are identified, still on the basis of the same concepts and further text analysis.

For initiatives and institutions, where objectives on data governance are not articulated specifically, but which are likely to have an impact on SMEs' capacity to turn data into value (either through greater access, upskilling or capacity building), additional criteria related to specific data-driven technologies are used (i.e. AI, machine learning, big data/ data analytics, cloud computing services, block chain, hardware/ software, 5G, 3D printing, IoT, robotics, etc.).

The mapping is consolidated based on an analysis of each institution and policy measure with a view to ensuring their respective relevance to the topic. Table 3.3 provides an overview of what the exercise entailed.

**Table 3.3. What does the mapping of SME data governance policies entail? A schematic overview**

What it is	What it is not
<ul style="list-style-type: none"> <li>• Initiatives to <b>help SMEs create (economic) value with data</b> <ul style="list-style-type: none"> <li>○ SME <b>access/ uptake of data-intensive technologies</b> (e.g., data analytics, artificial intelligence)</li> <li>○ Reinforcing <b>digital security</b> practices in SMEs</li> <li>○ Related <b>reskilling and raising awareness</b> efforts (e.g., guides and other information material/ campaigns as well as targeted training programmes and incentives)</li> </ul> </li> <li>• Initiatives enabling data openness and sharing           <ul style="list-style-type: none"> <li>○ <b>Data (sharing) infrastructures</b> (e.g., open data portals, supercomputers, data centers)</li> <li>○ <b>Data laws/ Directives</b> (e.g. on data privacy, sharing, portability)</li> <li>○ <b>Technical standards</b></li> </ul> </li> <li>• Comprehensive approaches through <b>National Data Strategies and Action Plans</b>, but also relevant pillars in national Digital Agendas, Innovation Plans, SME Strategies, and Smart Specialisation/ AI/ Industry 4.0 Strategies etc....)</li> </ul>	<p>Basic (SME) digitalisation support (e.g., related to e-commerce or building website activities)</p> <p>Generic R&amp;D/ innovation support</p> <p>Innovation clusters/ networks/ platforms <u>without</u> an explicit tech/ data dimension</p> <p>e-Government policies</p>

Source: Author's own elaboration.

### Identifying typologies of policy instruments

Governments have a **diverse set of policy instruments** at their disposal to address generic or SME-specific data-related challenges (see Table 3.4). Some guiding instruments have coordination functions and ensure overarching policy governance (e.g. Multi-annual Strategies or Action Plans).

**Table 3.4. Policy instruments to strengthen SME data governance and selected country examples**

Instrument typologies	Instrument examples	Country initiatives
<b>Financial support</b>	e.g., vouchers, tax incentives, grants, subsidies to foster the access to and uptake of digital technologies in SMEs	<ul style="list-style-type: none"> <li>▪ <b>KMU Digital (AUT)</b> – provides SMEs financial support for consulting services as well as for investments in digitalisation projects including CRM-tools, electronic invoices, 3-D printing, use of big data, logistics, data security, and IT security, among others.</li> <li>▪ <b>AI Voucher Initiative (KOR)</b> – non-refundable grants to help SMEs procure AI services and solutions from other companies.</li> </ul>
<b>Non-financial support</b>	e.g., technical assistance, capacity building, access to facilities (labs), training to enable SMEs to participate in data-driven activities, as well as guidelines and information material on the subject	<ul style="list-style-type: none"> <li>▪ <b>Capacitar i4.0 (POR)</b> - This initiative aims to improve specialised skills of individuals and firms related to big data, Internet of Things and cybersecurity.</li> <li>▪ <b>Activa Ciberseguridad (ESP)</b> - An SME-targeted Cybersecurity Innovation program, providing firms with tailored advice based on a diagnosis of their specific situation, including: a cybersecurity audit, a proposal for the implementation of a cybersecurity plan, as well as tools for monitoring implementation of the proposed measures.</li> </ul>

<b>Platforms and networking infrastructure</b>	e.g., data (sharing) infrastructures such as open data portals; R&D and open innovation initiatives; clusters/ networks/ platforms with a tech/ data dimension, providing knowledge-related/ scientific services, incl. IT-enabled organisational and marketing practices	<ul style="list-style-type: none"> <li>▪ <b>Meluxina (LUX)</b> Luxembourg's first supercomputer, providing SMEs and start-ups access to run applications related to modelling, research, new product development, forecasting and Big Data.</li> <li>▪ <b>Industry 4.0 Testlabs (AUS)</b> - A programme providing SMEs with physical space and technical assistance to explore and showcase industry 4.0 and ICT technologies.</li> </ul>
<b>Regulation</b>	e.g., Data laws/ Directives	<ul style="list-style-type: none"> <li>▪ <b>Experimentation Italy (ITA)</b> – regulation that allows start-ups, SMEs, universities and research centres to experiment with their own innovative project, for a limited period of time through a temporary derogation from current regulation.</li> <li>▪ <b>Artificial Intelligence Ethics Framework (AUS)</b> - Set of voluntary ethics principles that guides businesses and government to responsibly design, integrate develop or use AI.</li> </ul>
<b>Public governance</b>	e.g., National Strategies and Action Plans, including in particular Digitalisation Agendas, Innovation Plans, SME Strategies, Smart Specialisation Strategies, AI Strategies, Industry 4.0 Strategies, etc...)	<ul style="list-style-type: none"> <li>▪ <b>SMEs Support Strategy (CZE)</b> - aims to help Czech SMEs adopt new technologies (Automation, AI) and support their participation in a data driven economy through the provision of data infrastructure (data centres, HPC technology).</li> <li>▪ <b>National Data Strategy (UK)</b> - Pro-growth strategy aiming to improve use of data across businesses, government, civil society and individuals to boost productivity, create businesses and jobs and improve public services</li> <li>▪ <b>National Action Plan for Smart Industry/ Industry 4.0 (SWE)</b> - Sets out the general guidelines and objectives for the digitalisation of industry and with a particular focus on SMEs through 37 new measures across four vectors: 1) Industry 4.0, 2) Sustainable production, 3) Industrial skills boost, and 4) Test bed Sweden.</li> </ul>

Note: Instrument typologies reflect the framework developed in the OECD SME and Entrepreneurship Outlook and will also be used to structure the SME&E data lake knowledge infrastructure. The typology of instruments is drawn from Meissner and Kergroach (2019<sup>[65]</sup>)  
Source: Authors' own elaboration.

## Methodology and sources

Policy information is drawn from official sources (e.g. national strategies, action plans, websites of relevant Ministries and agencies, etc.), as well as OECD reports and publications, through desk research. In particular, the work builds on recent work on SME digitalisation (OECD, 2021<sup>[3]</sup>) and ongoing OECD activities on data governance, carried out as part of phase III of the OECD Going Digital project (see Box 3.2). Information is collected at institutional level. The information collected is structured and encoded, and made available through an online interface for the purposes of easing consultations and enabling re-use.

The policy work builds on similar exercises (EC/OECD, 2021<sup>[66]</sup>) (UNESCO, 2018<sup>[67]</sup>) (EC/OECD, 2016<sup>[68]</sup>) (OECD, 2012<sup>[69]</sup>) and follows the approach proposed by Meissner and Kergroach (2019<sup>[70]</sup>) to monitor and benchmark innovation policy mixes. Developments are also coordinated with the EC/OECD project on foreign direct investment (FDI) spillovers on SME productivity and innovation that follows a similar approach for better understanding how public policies at national and regional levels can help strengthen FDI-SME linkages and increase productivity and innovation spillovers for local development and resilience (OECD forthcoming, 2022<sup>[71]</sup>).

Finally, the policy mapping and the experimental visualisation dashboard developed for the EC/OECD SME Scale Up project serve as a “proof of concept” for the OECD SME&E data lake (CFE/SME(2021)20). Going forward, the ambition is to build towards a broad-based rollout of policy indicators and a harmonised policy database across OECD countries and regions that increasingly leverages the breadth of information that is collected throughout the thematic projects.



## How are SME data policies shaping across countries? Key findings

**OECD countries have acknowledged the growing importance of data as a key source of growth and resilience in the 21<sup>st</sup> century and have done increasingly more to encourage investment in data enabled technologies and promote data sharing and reuse.** A 2015 OECD report suggests that governments have been acting to seize these benefits by training more and better data scientists, reducing barriers to cross-border data flows, and encouraging investment in business processes to incorporate data analytics. However, it also stressed that at the time few companies outside of the ICT sector were able to change internal procedures to take advantage of data (OECD, 2015<sup>[72]</sup>).

This section looks at how SME data policy mixes have shaped recently, which priority is given to different aspects of data governance, the balance between targeted and generic approaches to fostering SME data governance, as well as the institutional arrangements in place to support policy design and implementation. It also intends to identify commonalities and differences in policy intervention across countries, and assess the overall intensity of public efforts in this emerging policy area. It builds upon a **pilot mapping of 487 national policies and 209 institutions** conducted between June 2021 and February 2022 across the 38 OECD countries.

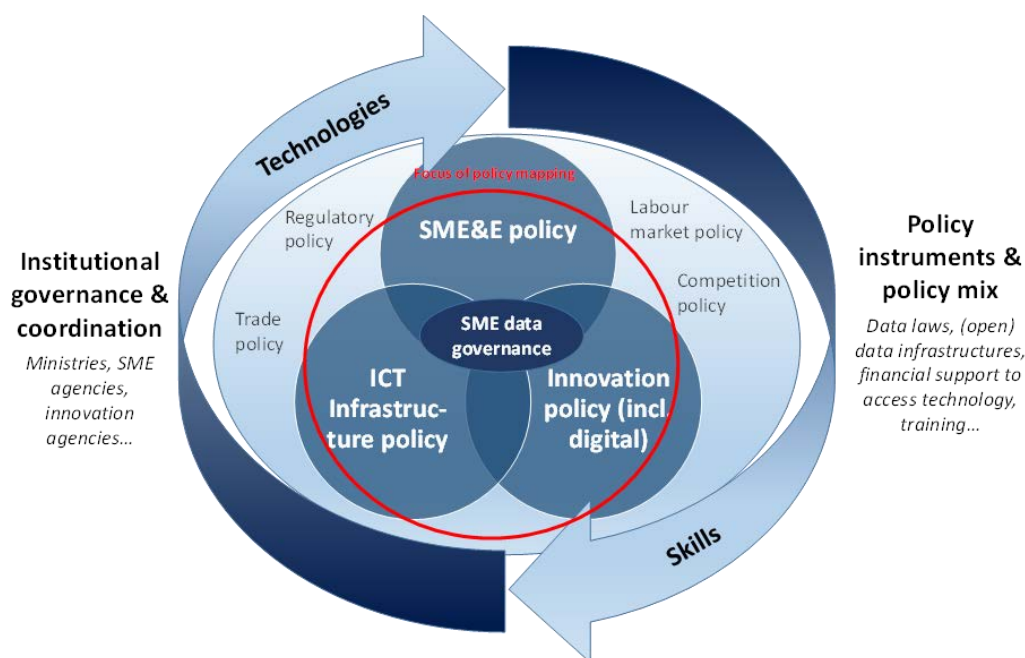
### ***SME data policies are cross-cutting by nature***

With barriers to better data governance arising across multiple fields, public intervention is becoming more pervasive across different (and non-ICT) policy domains. As a result, the scope of SME data policies tends to cut across a number of policy areas – with some measures directly linked to data issues and others addressing them in a more indirect way; with some measures applying to businesses (or business conditions) and citizens alike, and others targeted specifically at SMEs. This diversity also reflects more broadly the diverse forms of policies and policy frameworks that can affect the SME and entrepreneurship (SME&E) business environment and performance (OECD, 2019<sup>[18]</sup>) (OECD, 2021<sup>[64]</sup>).

On that basis, the “policy universe” of SME data governance can be situated at the intersection of the three main areas encircled in red in Figure 3.6, namely **SME&E policy, innovation policy (incl. digitalisation) and ICT infrastructure policy**. Relevant measures that aim to enable SMEs to better exploit and manage their data are often – implicitly or explicitly – weaved into wider SME digitalisation (and innovation) measures, without necessarily articulating specific objectives on data governance. Rather, they target complementary investments, including cloud computing, skills and organisational capital, thus encouraging firms to invest and use data.

In addition, and without being the focus of the mapping at this stage, **measures falling into other policy domains, such as regulatory, competition<sup>7</sup>, trade or labour market policy**, could have a direct bearing on data governance in SMEs. Economies of scale in data collection, for example, typically increase the value of networks as more participants join platforms. Competition policy can thus play a critical role in preventing a concentration of market power that precludes the entry of small firms and ensure that producers and consumers equitably share the value created by platform-based business models.

Figure 3.6. Scope of SME data governance policies



Source: Author's own elaboration.

### **Consequently, implementation takes place through a diverse set of institutional and governance arrangements**

The cross-cutting nature of SME data policies results in countries having put in place a diverse set of governance arrangements, which **tend to increase the number of institutions for policy design and implementation**. An overview of implementing institutions is depicted in Table 3.5.

**Table 3.5. Overview of institutions in charge of SME data governance policies**

Institutions	Description and examples	Policy domains
Ministries/ relevant Departments	In charge of SME and entrepreneurship policy, R&D and innovation, digital affairs, (ICT) infrastructure...	Core SME&E policy
Data governance entities	Data protection authorities, Cybersecurity agencies, Data trusts, Data Committees/ Task forces, Data stewards, Data governance councils/ boards, etc....	Innovation policy Digitalisation policy (ICT) Infrastructure policy
Dedicated agencies	SME agencies, digitalisation/ innovation agencies, business development agencies, skills and education bodies...	But also: Competition policy Regulatory policy Education policy Labour market policy Trade policy ...

Source: Author's own elaboration.

**In this context, several distinct models of public governance emerge that characterise implementation of national SME data policies.** Out of a total of 209 institutions mapped across OECD countries with responsibilities in improving SME access and use of data, different types of structures exist, with a relatively broad range of mandates, and organised along different governance models.

Consequently, attention has been paid to joint programming as the main coordination mechanisms to the extent available information allow.

*Multiple institutions with different mandates*

**Most OECD countries rely on diverse institutional set ups**, including a range of Ministries, autonomous government agencies, public-private agencies and other institutions, for implementing SME data governance policies. In fact, only in Costa Rica, Germany and Mexico, SME data policies are exclusively implemented by ministries.

**The most frequent implementation body is the autonomous government agency with a special mandate**, representing 38% of the mapped institutions. This includes, for example, the Lithuanian Agency for Science, Innovation and Technology, who is in charge of implementing half of the mapped policies in the country. Another example is the Norwegian Digitalisation agency that implements initiatives such as the guide for mapping digital security culture, the national toolbox for data sharing and the National Data Catalogue. **Another 37% of implementing institutions across the OECD are ministries**, with a particular prevalence of ministries in charge of ICT and of economic affairs, including industry, commerce and trade. The Federal Ministry for Economic Affairs and Climate Action, for instance, is involved in the implementation of 64% of SME data governance policies in Germany.

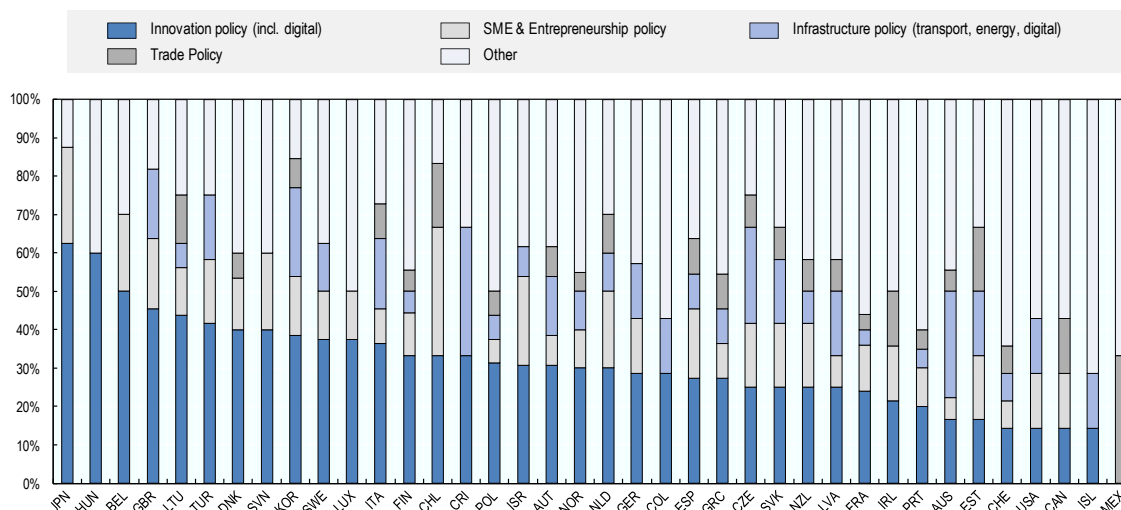
Other actors involved in the design and implementation of SME data governance policies include **public-private agencies and other organisations such as public research institutions or associations**, which taken together represent 13% of the mapped institutions. The Danish Digital Initiative (MADE Digital), for example, facilitates SME adoption of data-intensive technologies through partnerships between public and private institutions, and is implemented by the Manufacturing Academy of Denmark. Finally, some OECD countries have also created **specialised units or directorates within ministries** in an attempt to better mainstream SME digitalisation and data issues into their policymaking, which correspond to 11% of the mapped institutions. This is for example the case of the unit for the future and the social adoption of technology (FAST unit) within the Chilean Ministry of Economy, Development and Tourism. This unit aims to provide support to SMEs in adopting advanced digital technologies by leveraging, among other things, the Ministry's "Digitalise your SME" initiative - originally created to strengthen SME engagement in e-commerce - as an umbrella for its more recent efforts.

**There is a strong prevalence of institutions that have innovation, SME and entrepreneurship, ICT infrastructure and trade policy as their core mandates** (Figure 3.7). Looking at the relative share of mandates across all implementing institutions, innovation policy emerges as the most prevalent core mandate, representing on average 30% of mandates among implementing institutions in a country, followed by SME&E policy (12%). In addition, as data access and usage require physical and digital infrastructure, unsurprisingly, ICT infrastructure policy features as the third most common core mandate among implementing institutions (10%). Finally, trade policy (6%) is also among the core mandates of ministries and departments that are commonly involved in the design and implementation of SME data governance policies, certainly highlighting the commercial nature of data and the fact that it is a tradable good that frequently involves cross-border transactions.

In addition, **the cross-cutting nature of data governance issues results in a sometimes significant share of other institutions with more "peripheral" core mandates and less obvious links to digital/data issues forming part of the institutional landscape**. This share ranges from over two thirds of policies in Iceland and Mexico to a little over 12% in Japan and includes mandates such as FDI/Investment promotion policy, regulatory policy and regional & local development policy. In Costa Rica, for example, the Ministry of Agriculture and Livestock is in charge of implementing the "Agroinnovation 4.0", a programme for promoting the adoption of Industry 4.0 technologies in SMEs of the agricultural sector.


### Figure 3.7. Implementing institutions most often have innovation policy as their core mandate

Core mandates of implementing institutions, as a relative share of mandates across all implementing institutions in the country, 2022



Note: Institutions for Belgium cover only the federal level. The chart depicts the four most prevalent mandates among the mapped institutions, which typically tend to have multiple mandates going beyond one single policy domain. The category “Other” groups the following additional mandates: Competition policy, FDI/ investment promotion policy, Regulatory policy and public administration reform, Tax policy, Labour policy, Education policy, Social and welfare policy (incl. inclusiveness), Regional and local development policy, Land and housing policy, Environment and climate policy, and Other (specified as open-ended text).

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/7b06sy>

Overall, the **distribution of core mandates across implementing institutions clearly shows that SME and entrepreneurship policy is NOT the focus of the majority of these institutions**. Across the 209 institutions involved in improving SME data governance, only 26% of them have SMEs in their core mandate. As a result, a good portion of them is unlikely to be used to explicitly taking SME considerations into account when developing policies. This in turn suggests that there might be challenges in addressing the specific barriers that these firms face with regard to data governance issues, and also explain the relatively low share of SME-targeted policies in this context. These findings may call for a greater attention to mainstreaming SME&E considerations into policymaking.

#### *Different governance models*

As SME data policies tend to cut across multiple policy areas, there is a strong need for increased coordination among institutions to mitigate policy fragmentation. A network analysis<sup>8</sup> of the institutional set up has been carried out for a sample of 15 countries, based on geographical balance across OECD members<sup>9</sup> These networks depict the links between institutions and identify the locus (or loci) of the national data policy landscape. They allow for a better visualisation of the different sets of institutions and the heterogeneity of governance arrangements across countries, as well as on relevant coordination mechanisms that are necessary to implement SME&E data policies.

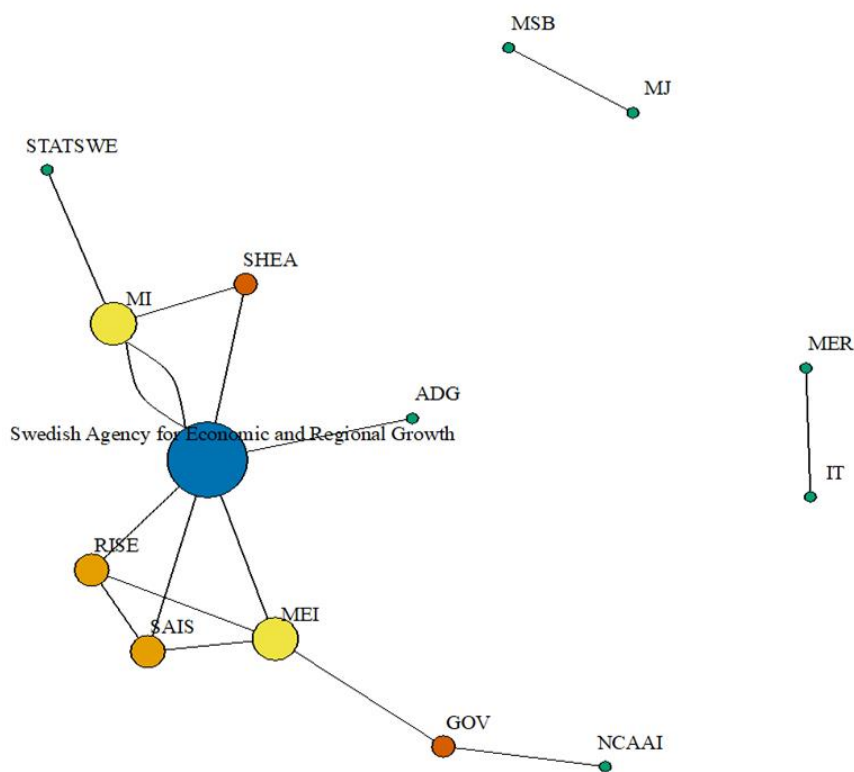
The network analysis of joint programming and joint responsibilities suggests that **about half of the identified policies (50.6%) are implemented by two or more institutions, thus requiring varying levels of interaction and coordination**. Overall, three different forms of institutional and governance

arrangements emerge for the design and implementation of SME data policies: centralised, diffused and blended. A detailed description of these three governance arrangements is presented below.

### Centralised governance (Estonia, Chile, Sweden and the Republic of Türkiye)

The institutional and governance landscape for SME data policies in Estonia, Chile, Sweden and the Republic of Türkiye is centralised. This implies that even though there might overall be a relatively large number of institutions in charge of implementing SME data governance policies, there is one predominant institution that is involved – either alone or together with other institutions - for implementing most of the identified policies. In the case of Sweden, for example, the implementation of SME data policy governance gravitates around the Swedish Agency for Economic and Regional Growth (Figure 3.8). The agency is the main implementing institution for only one initiative - the *CHALLENGESGOV.SE Platform*, which organises innovation competitions and major hackathons around current societal challenges and encourages participants to make use of different public data sets in this context. At the same time, it is also involved in the joint implementation of three (out of the seven) initiatives alongside other Swedish institutions, including policies for enhancing SMEs data skills, as well as the adoption of robotics, AI and big data.

**Figure 3.8. Network of organisations responsible for SME data governance policies in Sweden**



Note: Based on a total of 15 policy initiatives mapped for Sweden. Institutions depicted in Sweden's network analysis are: Agency for Digital Government (ADG), The Swedish Agency for Economic and Regional Growth, Ministry of Enterprise and Innovation (MEI), Ministry of Justice (MJ), Government of Sweden (GOV), Swedish Agency for Innovation Systems (SAIS), Swedish National Centre for applied Artificial Intelligence - AI Sweden (NCAAI), The Institute of Technology (IT), Ministry of Infrastructure (MI), Statistics Sweden (STATSWE), Swedish Higher Education Authority (SHEA), Research Institutes of Sweden (RISE) and The Swedish Civil Contingencies Agency (MSB).

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

In the case of Estonia, the leading institution on SME data policy is the Ministry of Economic Affairs and Communications that is involved in implementing six (out of thirteen) initiatives. The Ministry is for instance in charge of implementing *Digital Diagnostics*, a SME-targeted grant provided to carry out a diagnostic with regard to the digitalisation and automation of manufacturing, mining and quarrying activities.

In Chile, the prevalent SME data policy institution is the Ministry of Economic Development and Tourism, which is in charge of implementing four out of the nine mapped policies, taking for instance part in the implementation of the “Digital route” programme that aims to enhance SME digital skills.

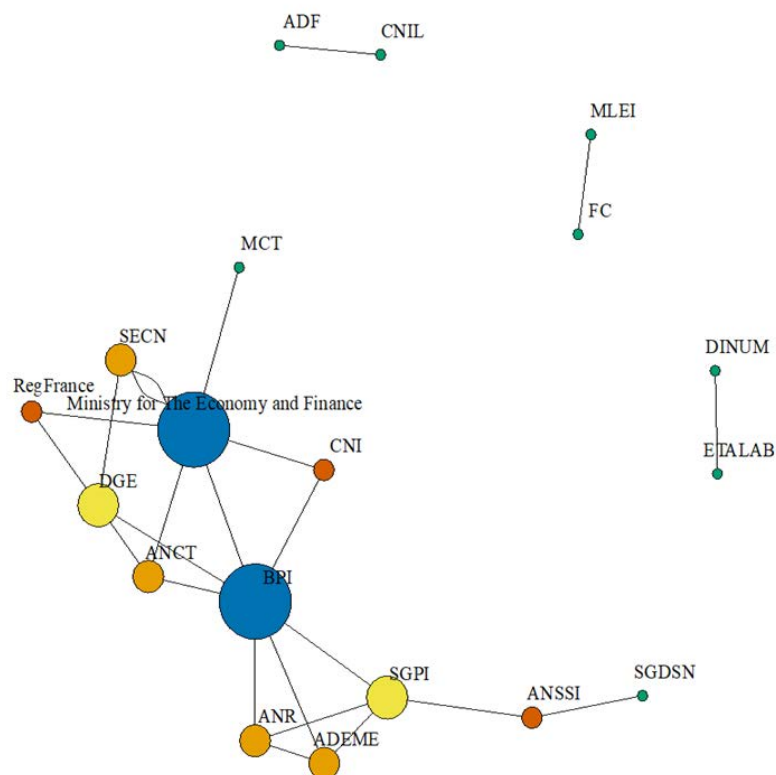
Lastly, in the Republic of Türkiye SME data governance policies are equally centralised under a single Ministry, namely the Ministry of Industry and Technology, which is responsible (alone or jointly) for the implementation of eight out of 17 Turkish SME data policies.

### **Blended governance (Austria, France, Germany, Ireland and the United Kingdom)**

The blended governance model where not one but two central organisations form the loci responsible for the implementation of the largest number of policies is prevalent in Austria, France, Germany, Ireland and the United Kingdom.

The French institutional arrangement, for example, situates the Ministry for the Economy and Finance as well as the French Public Investment Bank (BPI France) at the centre of the governance network, with both institutions directly and/ or jointly implementing 12 out of the 19 SME data governance policies (see Figure 3.9). While the Ministry for the Economy and Finance is in charge of developing SME&E policy, BPI France contributes to the promotion of high-growth industries through the provision of dedicated financing instruments, including notably equity capital. The complementarity between the core mandates of these two institutions is for instance reflected in the *Industry for the Future* initiative. This is a national strategy developed by the Ministry for the Economy and Finance that aims to modernise the French industry - and in particular SMEs - through the development of relevant workforce skills and capacity building that can facilitate the adoption of data-enabling digital technologies, including through loans provided by BPI France.

**Figure 3.9. Network of organisations responsible for SME data governance policies in France**



Note: Based on a total of 20 policy initiatives mapped for France. Institutions depicted in France's network analysis are: Ministry for the Economy and Finance, BPI France (BPI), Etalab (Etalab), National Agency for Information Systems Security (ANSSI), National Commission for Information Technology and Civil Liberties (CNIL), France competencies (FC), Directorate General for Enterprise (DGE), National Agency for Territorial Cohesion (ANCT), National Research Agency (ANR), Direction interministérielle du numérique (Dinum), Secretariat d'Etat chargé du Numérique (SECN), Regions de France (RegFrance), Conseil national de l'industrie (CNI), SGDSN (Secretariat-General for National Defence and Security), Secrétariat général pour l'investissement (SGPI), French Environment and Energy Management Agency (ADEME)  
Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

The institutional patterns differ in the institutional set up for Austria, Germany and the United Kingdom. In those countries, two ministries serve as the centre of the two policy clusters. For instance, in Austria they are centred around the Federal Ministry for Climate Action, Environment, Energy, Mobility and Technology and on the Federal Ministry for Digital and Economic Affairs. In Germany, SME data governance policy gravitates around the Federal Ministry for Economic Affairs and Climate Action and the Federal Ministry for Education and Research that together implement 14 out of 16 policies. In the United Kingdom, the Department for Digital Culture Media and Sports and the Department for Business, Energy & Industrial Strategy interact with over eight institutions for implementing 40% of the existing policies. Lastly, for Ireland the loci of SME data governance are located around the Department of Enterprise, Trade and Employment and Science Foundation Ireland, an agency operating under the auspices of the Department of Further and Higher Education, Research, Innovation and Science, who is in charge of funding (applied) research.

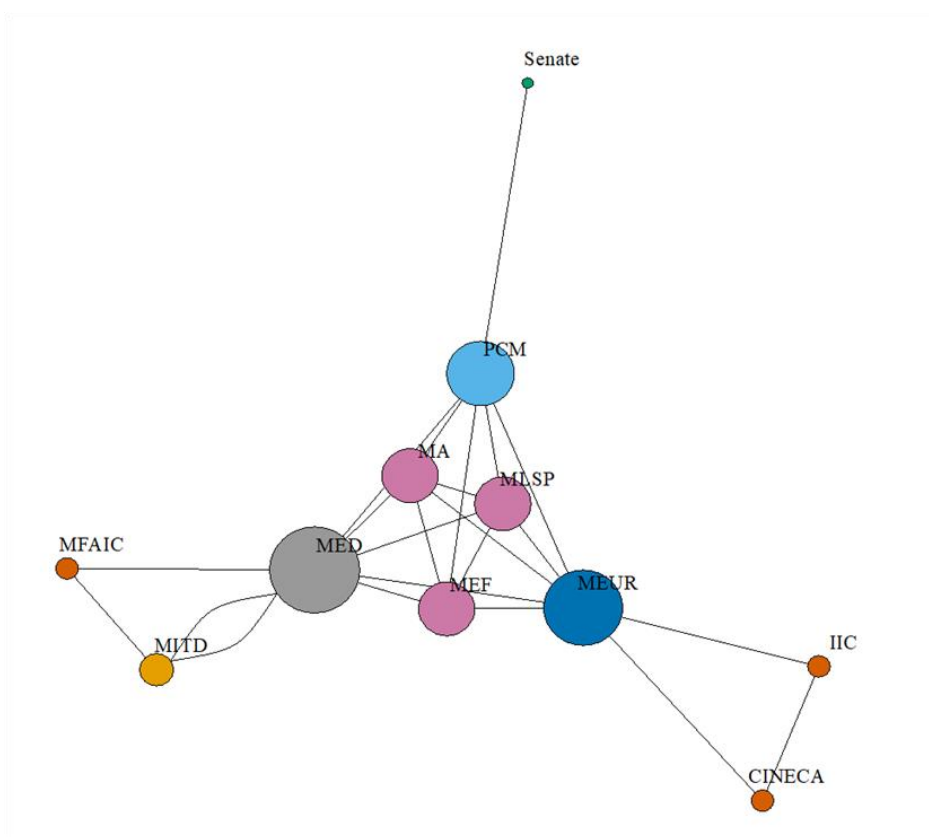
### **Diffused governance (Italy, Norway, Portugal, Slovenia, Spain and Switzerland)**

A diffused governance model can be found in Italy, Norway, Portugal, Slovenia, Spain and Switzerland, with a rather decentralised institutional landscape, where the implementation of SME data governance policies is not concentrated in one or two clusters, but distributed across multiple implementing institutions.



The Italian network of organisations responsible for the deployment of SME data governance (Figure 3.10) illustrates that there are three major clusters around the Ministry of Economic Development, the Ministry of University Education and Research and the Presidency of the Council of Ministers. These clusters are connected through an inter-ministry collaboration in the implementation of SME data governance policy. Moreover, with almost all nodes representing a Ministry, these institutions heavily dominate the Italian SME data governance landscape as ministries account for 58% of the institutions that directly or jointly implementing SME data governance policies. Remaining institutions include not only autonomous agencies but also the Senate, as the creation of the National cybersecurity agency represented a legislative initiative.

**Figure 3.10. Network of organisations responsible for SME data governance policies in Italy**



Note: Based on a total of 17 policy initiatives mapped for Italy. Institutions depicted in Italy's network analysis are: Senate of the Republic, Agency for Digital Italy, Ministry of University Education and Research (MEUR), Ministry for Technological Innovation and Digital Transition (MITD), Ministry of Economic Development (MED), Invitalia SpA (IIC), Ministry of Economy and Finance (MEF), Ministry of Labour and Social Policy (MLSP), Presidency of the Council of Ministers (PCM), Ministry of Agriculture (MA), Consorzio Interuniversitario dell'Italia Nord Est per il Calcolo Automatico (CINECA), Ministero degli Affari Esteri e della Cooperazione (MFAIC)

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

A similar pattern is observed in Spain, where six ministries are in charge of the implementation or joint implementation of the vast majority of SME data governance policies. In addition, contrary to what is seen for Italy, there are two initiatives – the Cybersecurity Helpline and the GDPR Guides for Spanish SMEs – that are implemented solely by the Spanish Data Protection Agency and the National Cyber Security Centre.

A somewhat different diffused governance model is observed for Switzerland, where the implementation of 11 policies takes place through six small and rather independent clusters. The existence of these unconnected clusters suggests less horizontal coordination among the implementing institutions, which might be linked to the federal system of the Swiss state that calls for context-specific coordination mechanisms and arrangements.

***Governance aspects are predominant, with policy coordination taking notably place through national strategies on cybersecurity, digitalisation or innovation***

With the increasing importance of data for their socio-economic outlook, governments have started incorporating relevant data governance dimensions into their policy mix. In particular, **data issues now feature regularly in comprehensive national economic development strategies, action plans, and other multiannual strategies**, over one third of the mapped policies represent such wider framework and public policy governance instruments. The relatively high prevalence of these instruments vis-à-vis others suggests that **data governance remains an emerging policy field, where many efforts continue to focus on broader governance considerations** and overall few dedicated data initiatives, especially for SMEs.

Within these wider plans, **national strategies on Artificial Intelligence (AI) or Industry 4.0** serve as a specific example of policy governance instruments that give a particular focus on data-heavy digital technologies, sometimes with a dedicated focus on increasing their uptake among SMEs. National AI strategies<sup>10</sup>, for example, define policies and institutional frameworks for guiding the design and use of AI and increasingly tend to formulate strategic policy objectives related to SMEs and data (OECD, 2021<sup>[3]</sup>). As such, they have significantly contributed to putting SME data governance issues on the policy agenda. The Italian National AI Strategy, for example, includes a range of initiatives, including tax credits for trainings on AI related skills, voucher schemes for consulting services on AI technology adoption, as well as broader curriculum changes in higher education institutes, with new AI courses to train students in generating and interpreting AI applications and results.

As a response to the growing severity of cyber threats and data breaches, many OECD governments have also developed dedicated **national cybersecurity strategies**. While in the past, cybersecurity policies were mainly focusing on public networks and national security systems, more recent efforts in this area have expanded in scope, aiming to also protect private information networks, functions, and data. As a result, recent cybersecurity strategies include measures on education, training and awareness raising for SMEs, as for example the case in Luxembourg's National Cybersecurity Strategy IV. In this context, for example Chile and Italy have created dedicated cybersecurity agencies to allow them to protect both public and private networks, including protection from data breaches. Such developments suggest a shift toward a broader approach in this area, with the objective of creating a safe digital ecosystem for businesses, including for SMEs and Start-ups.

Overall, **national digital strategies seem to indicate an evolution of government approaches towards explicitly acknowledging the economic value of data**. While some years ago, data policy was limited to open public data initiatives, where data was conceived as an input for designing evidence-based policies and improving the efficiency and service of public administrations, data is now increasingly being recognised as a strategic innovation asset for improving firms' competitiveness. The UK Data Strategy represents a specific example in this regard, which was launched by the British Department for Digital, Culture, Media and Sport in 2019 with the aim to support better use of data in the public sector, businesses and third sectors, as well as to encourage investment, entrepreneurship and innovation in the digital sector. Colombia's National Data Infrastructure Plan, on the other hand, places particular attention on promoting data exchange among different actors through relevant governance models and infrastructure, such as data trusts, data commons and data marketplaces.

**At the same time, specific provisions for SMEs in such strategies have remained rare to date.** A recent example includes Sweden, which released the *"Assignment to promote the ability of small and medium-sized enterprises to use data as a strategic resource"* in 2019, delegating to the Swedish Agency for Economic and Regional Growth the responsibility of 1) mapping the conditions for increasing SMEs' ability to use data strategically, including in those sectors that have the greatest potential to develop the work with data and realize its potential, and 2) promoting their ability to use data as a strategic resource through targeted knowledge-raising initiatives.

Lastly, it should be highlighted that **subnational governments are responsible for 57% of total public investment and 40% of total public expenditure across the OECD** – and thus increasingly in charge of executing government programming and expenditure across a wide range of areas (OECD, 2019<sup>[73]</sup>). In this context, the digital transformation of subnational governments can also represent an additional level of policy intervention, in particular for strengthening local economies through entrepreneurship with business models based on data analytics. While subnational efforts have not been the focus of this pilot phase, Box 3.6 provides an overview of selected initiatives at city, regional or municipal levels.

### Box 3.6. SME data governance policies at subnational level – selected examples across OECD countries

Although SME data governance remains an emerging policy field for national governments, regional and local governments have also started implementing policies for improving SME access to, protection and exploitation of data.

- **Smart Enough Factory programme (Government of Victoria, Australia):** The programme introduces local defense SMEs to Industry 4.0 principles with a focus on data-driven production to enhance businesses' operational performance and manufacturing productivity. More specifically, it assists participating businesses to adopt digital technologies, overcome barriers such as costs, skill shortages or security vulnerabilities and create opportunities to enter defence supply chains.
- **Cyber Security Voucher (Digital Agency of Wallonia, Belgium):** A voucher of up to EUR 60 000 to help SMEs assess their level of digital security and purchase relevant cybersecurity consulting services.
- **Software Valley Centres (City of Medellín, Colombia):** Software Valley Centres are spaces equipped with technological tools, a prototyping laboratory and collaborative work areas, where SMEs and entrepreneurs can receive support to use data-intensive technologies for improving their business process. The centres offer trainings and workshops for using virtual reality (VR) and 3D printing.
- **SME Digitalisation Offensive (City of Amsterdam, Netherlands):** An initiative for promoting the digital transformation of SMEs in Amsterdam. The programme provides an initial digital business diagnostic for assessing the capabilities of small businesses, and helps them develop a digital transformation plan, adopt data-intensive technologies (big data, IoT, blockchain) and improve their digital skills.
- **Deep tech Node (Barcelona City Council, Spain):** Joint platform created by the Barcelona City Council and the public universities of Barcelona that supports start-ups and deep tech spin-offs in the areas of advanced materials, artificial intelligence, blockchain, robotics, photonics, electronics, quantum computing, biotechnology and space technologies for facilitating their access to the market through mentoring, funding and the necessary tools for technology transfer.
- **Industry 4.0 grant programme (Michigan Economic Development Corporation, USA):** This grant covers up to 50% of SME implementation costs of eligible technologies, including additive manufacturing, artificial intelligence, cybersecurity, robotics, and automation, up to USD 25 000.

Note: Subnational initiatives in Belgium have been covered in the pilot phase of the SME Scale Up project.

Source: Smart Enough Factory Programme, Australia: <https://www.australianmanufacturing.com.au/new-smart-enough-factory-program-to-help-victorian-smes-enter-defence-supply-chains/>; Secretaría de Desarrollo Económico de Medellín (2022) SoyMiPymeDigital <https://soymipymedigital.com/>; Amsterdam city Council (2022) SME Digitalization Offensive: <https://www.iamsterdam.com/en/business/news-and-insights/news/2020/amsterdam-introduces-sme-digitalization-offensive>; Ayuntamiento de Barcelona (2022) Deeptech Node <https://deeptechnode.barcelona/es/web/quest/deeptechnode-contact>; Michigan EDC (2022) Industry 4.0 technology implementation grant: <https://www.michiganbusiness.org/industry4-0/grant/>.

**Countries place a strong policy focus on improving SMEs' internal capacity to manage data...**

**Countries are placing a greater focus on policies to strengthen SME internal exploitation and protection of data.** An overview of the relative weight that the five data policy objectives take across the mapped policy initiatives in OECD member countries is shown in Table 3.6.

**Table 3.6. Distribution of SME data policy objectives across policy initiatives**

As a share in terms of prevalence across mapped policies by country, in %

Country	External Access to Data		Internal exploitation and protection of data			# policy initiatives
	Data access and sharing	Data infrastructure and interoperability	Data use, quality and valorisation	Data protection and security	Data culture and skills	
Australia	7%	21%	36%	57%	50%	14
Austria	23%	15%	31%	31%	85%	13
Belgium	8%	8%	25%	33%	58%	24
Canada	33%	17%	33%	50%	50%	6
Chile	11%	0%	56%	11%	67%	9
Colombia	18%	18%	29%	29%	59%	17
Costa Rica	20%	20%	40%	20%	80%	5
Czech Republic	0%	9%	9%	36%	73%	11
Denmark	15%	15%	62%	15%	85%	13
Estonia	20%	13%	47%	13%	80%	15
Finland	20%	0%	70%	10%	80%	10
France	5%	15%	15%	25%	70%	20
Germany	18%	24%	59%	35%	65%	17
Greece	7%	21%	14%	29%	50%	14
Hungary	20%	20%	35%	5%	75%	20
Iceland	25%	0%	25%	50%	75%	4
Ireland	6%	6%	59%	24%	47%	17
Israel	12%	12%	24%	18%	65%	17
Italy	12%	6%	59%	6%	29%	17
Japan	15%	15%	62%	31%	38%	13
Korea	31%	31%	69%	0%	31%	13
Latvia	14%	14%	57%	14%	71%	7
Lithuania	10%	0%	70%	10%	20%	10
Luxembourg	44%	11%	56%	22%	56%	9
Mexico	33%	0%	33%	0%	67%	3
Netherlands	11%	11%	44%	22%	67%	9
New Zealand	0%	0%	70%	10%	40%	10
Norway	37%	21%	26%	32%	68%	19
Poland	13%	20%	20%	33%	73%	15
Portugal	0%	0%	42%	11%	47%	19
Slovak Republic	0%	0%	83%	33%	100%	6
Slovenia	10%	20%	30%	20%	70%	10
Spain	0%	6%	41%	35%	76%	17
Sweden	13%	20%	27%	7%	60%	15
Switzerland	45%	36%	45%	27%	73%	11
Republic of Türkiye	6%	12%	35%	35%	76%	17
United Kingdom	20%	13%	20%	40%	67%	15
United States	0%	0%	17%	33%	83%	6
OECD	15%	12%	41%	24%	64%	<b>487</b>

Note: Shares are calculated as a percentage of the total of national initiatives in place based on an unweighted count. Shares may be higher than 100% when policy initiatives respond to one or several policy objectives at the same time. For countries with few initiatives (observations), interpretation of indicators should be done with caution.

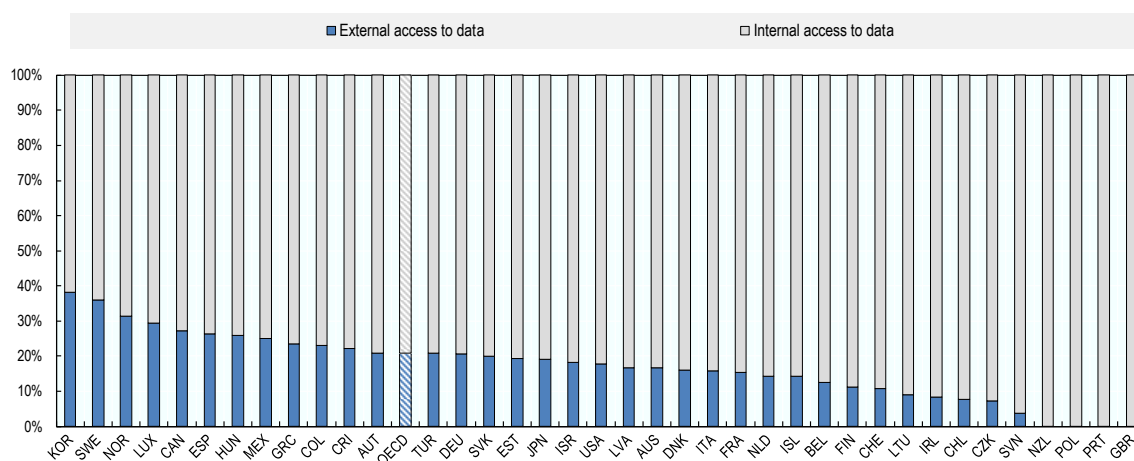
Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

In relative terms, the vast majority of initiatives (72%) across the OECD focuses on enhancing the capacity of SMEs to effectively exploit and protect their data. Many different types of policies fall under this category, ranging from SME targeted training programmes and subsidised technology procurement, over smart factory/ industry initiatives to broader national strategies on digitalisation or AI, among others (Figure 3.11). Importantly, within this category policies attempting to *capitalise* on data's *business value* are typically being developed alongside *digital security* policies (i.e. protection against cyber-attacks or respecting data privacy) – e.g. by facilitating firms' access to data-intensive technologies or data-based business analytics, while raising awareness around cybersecurity issues. This reflects the complementarity of measures that frequently respond to several data policy objectives at once and may signal an emerging process of mainstreaming the notion of “data as a strategic asset” within the policy mix of OECD countries.

**Less focus is given to enabling SME access to external data.** Only a small share of initiatives - less than one third (28%) - is oriented toward improving data-sharing mechanisms or the deployment of data related infrastructure. These often take the form of more horizontal or framework-oriented policies, such as national strategies or the establishment of specialised agencies and research centres, which aggregate all or several data governance objectives by virtue of their wider scope, but which rarely focus on SMEs. A “classic” example in this context are open data portals, which exist today in the majority of OECD countries and increasingly display more interactive features that aim to facilitate the use and contribution of a broad set of stakeholders.

**Figure 3.11. Countries place a stronger focus on improving SMEs' internal capacity to manage data**

Prevalence of SME data policy objectives in terms of aggregate distribution between external and internal data objectives, as a share of total national data policies, 2022



Note: Shares are calculated as a percentage of the total of national initiatives in place based on an unweighted count. Shares may be higher than 100% when policy initiatives respond to one or several policy objectives at the same time. For countries with few initiatives (observations), interpretation of indicators should be done with caution.

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/shct21>

### *Improving data culture and related skills, first in focus*

At the more granular level, where the external access vs. internal exploitation dichotomy is further articulated across the five data objectives, a more heterogeneous picture emerges. Notably, close to two thirds of policy initiatives (64%) seek to promote data culture and skills among SMEs<sup>11</sup>, **suggesting that**

**many countries address data governance issues and related adoption of advanced digital technologies from an educational and training entry point.**

Relevant training initiatives, for example, are typically characterised by an offer that places a particular **focus on more specialised technical skills** necessary to work with data, including e.g. IoT and /or cybersecurity. This is supported through targeted funding for the activities of high-tech research institutions and academia-industry clusters. Examples include the Republic of Türkiye’s increased research funding for “strategic” technologies through dedicated centres (e.g. the Strategic Technology Transformation Research Centres) or Estonia’s Business Agency funding “Technology competence centres” in order to provide SMEs with the technical capabilities to deploy ICT-based solutions, data driven business models and encourage knowledge sharing between researchers and SMEs. Another example are the Australian *Industry 4.0 Testlabs initiative* that are facilities at research and education organisations like universities where experts provide tailored skills training and education programs for SMEs’ workforce.

However, as adopting data intensive technologies requires complementary investments in human capital, **governments have also turned toward implementing more targeted initiatives for strengthening up- and re-skilling efforts among SMEs.** In many cases, a first step often consists in some sort of assistance to help them navigate the increased training offer and identify the solutions that best fit their needs, with several types of policy initiatives to support the development of workforce skills in SMEs. Support measures mainly focus on reducing training costs for firms and promoting workplace training in the form of tax incentives, training subsidies (e.g. vouchers), and awareness raising, and often leveraging multiple public and private stakeholders as well as relevant networks.

As a result, **much of the financial assistance available for innovation and (advanced) technology support focuses on the procurement of consulting services or digitalisation training**, thus contributing to fostering data skills and culture among SMEs. For example, the Irish digitalisation voucher offers SMEs up to EUR 9 000 for purchasing advisory services that could support the design and implementation of measures to move toward a data-driven business. The Slovenian Voucher for raising digital competencies, on the other hand, offers funding to finance trainings to develop relevant managerial and workforce skills in the context of digitalisation projects within businesses.

#### *Improving data use and valorisation, second in focus*

**The second most prevalent data policy objective is related to improving data use, quality and valorisation, with 41% of all mapped initiatives across the OECD aiming to advance in this area.**

There is a very diverse set of policies and instruments implemented for that purpose and typically in combination with other data objectives, that are frequently formulated as part of broader (SME) digitalisation policies. A large share of policies in this area are in fact technology adoption programmes, often specifically targeted at SMEs, aiming to support these firms with the take up of more advanced digital technologies that allow for the exploitation of large amounts of data. Many of these policies often aim to promote the adoption of AI, and/ or target specific sectors, such as manufacturing, industry or agricultural businesses/ SMEs. This includes, for example, Spain’s *Agroimpulse* initiative, which provides SMEs that operate in the agri-food value chain and in rural areas with financial support (loans) for the digital transformation projects including the adoption of data intensive technologies as well as for the AgriTech and Foodtech SMEs involved in the development of data-related technological solutions that benefit the agricultural sector.

In this context, a more emerging focus seems to be the **effort of reflecting ethical standards or approaches in policies addressing data governance issues.** This includes notably Denmark’s *Digital Ethics Compass*, which offers various tools/ guidelines and workshop modules to help companies adopt an ethical approach to data use and digital products. Another example is Finland’s IHAN business programme, which consist in a six-month training programme that aims to help SMEs develop new business models based on better and fairer use and sharing of data.



*Protecting data and closing the digital “back door”*

**Data protection emerges as another “established” policy objective**, with 24% of all policy initiatives being exclusively or partially dedicated to this issue across the OECD. Indeed cybersecurity acts, strategies and agencies now form a key ingredient of basically all countries’ policy mix, building on previous, but generally narrower efforts in this area (OECD, 2020<sup>[16]</sup>). In particular, whereas the protection of public networks has been standard practice for a number of years now, targeted support for data protection in the private sector, or for SMEs in particular, represents a more recent development that is not systematically found across countries<sup>12</sup>. Examples of the latter include the creation of a free cybersecurity helpline in Spain, where the Spanish National Cybersecurity Institute (INCIBE) offers personalised services including help with phishing, malware, and identity theft for citizens and enterprises, including SMEs.

In addition, **several OECD countries have created national cybersecurity centres**, mandated to protect countries against cyber-threats. These agencies have typically a broader mandate, but frequently also offer targeted support to businesses including SMES, through workshops, guidelines, certifications and trainings on how they can protect themselves against cyber-attacks and data breaches (e.g., UK National Cybersecurity Centre, French National Cybersecurity Agency, National Cybersecurity Centre Portugal).

**...and less attention on access, infrastructural and interoperability issues...**

**Overall, only a smaller share of policies aim to strengthen data access and sharing and/ or improve data infrastructure and interoperability, with 15% and 12% of initiatives respectively responding to these two objectives.** In Iceland, New Zealand, Portugal, the Slovak Republic and the United States, none of the mapped initiatives pursues either of these objectives. In the United States, for example, three out of the eight mapped initiatives focus on cybersecurity issues, with the remainder developed to promote the use of AI and other digital technologies. In addition, in a number of countries that do have initiatives in this area, these have remained fairly “basic” and typically come in the form of an open data portal as the only measure addressing issues of data access, such as e.g. in Denmark, Ireland or Lithuania.

At the same time, **more business-oriented initiatives are slowly emerging in this area**, including for example Japan’s *Development Project on Data Sharing in collaborative areas and AI systems to achieve “Connected Industries”*, which aims to develop cross-sectoral AI systems and an industry-shared data infrastructure that is open to start-ups and other new players. A similar approach has been taken in Austria through the *Data Market Austria (DMA) initiative*, implemented by the Austrian Institute of Technology (AIT), which aims to create a data service ecosystem in the country by advancing the technological foundations for developing secure data markets and cloud interoperability, thereby creating an environment that encourages data-centred innovation.

In addition, there is also **a small number of countries that place a relatively large focus on data access and infrastructure/ interoperability issues.** This is the case of Austria, Costa Rica, Korea or Switzerland, where about one third of policies respond to each of these two objectives. In Korea, for example, the Ministry of Sciences and ICT has developed the so-called *Data Dam* initiative, which consists in collecting data from participating public and private networks across a variety of sectors, including biotechnology, finance, manufacturing, and medicine. The Data Dam standardises and processes the information, with the objective of creating more intelligent AI systems. As part of this initiative, the Ministry is also establishing several big data platforms and centres, with the aim of creating an innovative data ecosystem for producing and facilitating access to high-quality data in Korea and improve competitiveness of companies.

However, an important caveat in this context remains, that **overall less attention has been paid to these types of initiatives during this first phase of the mapping**, even though a number of them might have important consequences on SMEs, even without being directly targeted at them. This includes notably

relevant privacy regulation, for example, which has important consequences for data access, as well as measures on data portability, which are key to facilitating data sharing among businesses.

***...with some nascent policy efforts to leverage data as a way toward more sustainable business models<sup>13</sup>***

As data-intensive technologies are also considered enablers toward more sustainable business models, a few OECD countries have started implementing policies to advance the so-called twin transition, i.e. combining digital and greening objectives. In Belgium, the Agency for Innovation and Entrepreneurship introduced a EUR 25 000 subsidy for helping SMEs hire strategic consultants to develop and implement growth strategies in the areas of digital transformation or sustainable and circular entrepreneurship. Another example is the Swedish Advanced and Innovative Digitalisation programme that provides grants for developing automation components and system solutions in the areas of the circular industry in order to develop new products and services in Sweden.

With regard to linking greening and data governance issues more specifically, policy makers equally have started introducing initiatives to create the necessary conditions that can allow SMEs to compete in specific industries. For instance, the Product Circularity Datasheet, launched in 2019 by the Luxembourg Ministry of Economy, intends to create an industry standard template in order to provide reliable and comparable data on circular product properties (see Box 3.7).

### **Box 3.7. The Product Circularity Datasheet Luxembourg (PCDS)**

The Product Circularity Datasheet Luxembourg (PCDS) is a flagship of the Luxembourg Circular Economy Strategy. This initiative was launched in 2019 by the Ministry of Economy and aims to promote the development of the circular economy through big data solutions. To do this, the Ministry of Economy created an industry standard template, where manufactures can introduce data on their circular product properties. This includes, among other things, information on the ingredients, the proportion of recycled materials and the ability to repair, dismantle and recycle. With reliable data on the circular product properties, information asymmetries in the value chains can be mitigated, thus allowing firms to reuse, repair or refurbish products more easily.

In addition to the creation of a standard template, the information is also audited by a third party to validate the content of the PCDS, as trade secrecy might hinder the transparency of self-reporting. After the information is validated by an external auditor, it is uploaded to a decentralised data storage location.

#### **Ongoing pilot project in the steel sector**

Since 2019, more than 50 companies from 12 different European countries are participating in a dedicated pilot project in the steel sector, with ArcelorMittal S.A., one of the biggest steel manufacturing corporations, among the first companies to participate in the Product Circularity Data Sheet. The company introduced information on the circular attributes of steel sandwich panels in the PCDS. With the information of properties including the design for disassembly, recyclability, recycled content, and design for circular use of ArcelorMittal products, SMEs that participate in the steel circular value chain have access to information to process potentially valuable secondary material.

Source: <https://luxembourg.public.lu/en/invest/innovation/product-circularity.html>

At a supranational level, a number of EU initiatives are also aiming to facilitate access to data as a way to help SMEs transition to more environmentally sustainable business models. This is for example the case

of DigiCirc<sup>14</sup> a European cluster-led accelerator for the digitalisation of the circular economy across key emerging sectors. DigiCirc offers tool to SMEs for enabling the use of digital technologies for developing innovative circular products and services. Among other things, DigiCirc offers a circular economy data hub composed of 261 datasets that allows SMEs to freely access data on waste, people, energy and other topics relevant to the greening their business activities and services. Likewise, it offers a matchmaking platform for connecting SMEs with business partners and customers, as well as a platform called 'industrial symbiosis' that allows SMEs to model material flows and logistics for designing circular business plans.

***If dedicated data policies are rare, public action in the field remains relatively targeted***

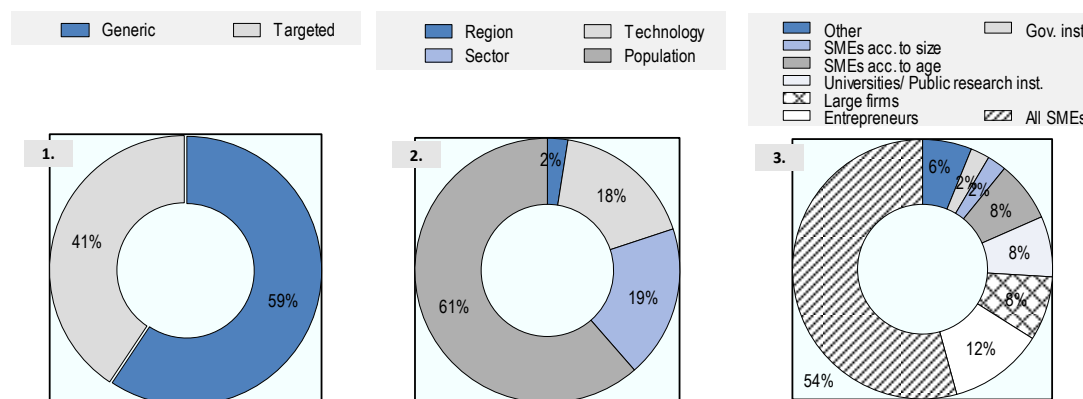
**Country approaches typically combine generic data policies with more targeted measures aiming to tackle barriers that SMEs or certain segments of the SME and entrepreneurs population face frequently with regard to accessing and using data.** Overall, however, less than one third (29%) of all policies mapped in this area are SME-targeted, and even fewer are specifically dedicated to data issues, which rather tend to be weaved into broader SME digitalisation initiatives.

- **Non-targeted policy initiatives** to improve data governance include in particular the creation of dedicated institutions with specific data-related mandates (e.g. cybersecurity agencies), as well as the development of new data infrastructures (e.g. interactive open data portals).
- **SME-targeted measures**, on the other hand, focus in particular on increasing data-related skills in the SME workforce, as well as facilitating SMEs adoption of relevant digital technologies. Spain's Digital Spain 2025 Plan, for example, aims to accelerate the country's digital transformation, including through the creation of a dedicated Data Office for promoting the sharing and use of public and private data, as well as a cloud infrastructure plan. In addition, the plan includes SME-targeted policies to enable SMEs to access and use data through capacity building and digital skills training.

**Across the OECD, targeted data governance policies represent 41% of the mapped policies.** At this level, the targeting can occur across several dimensions and eligibility criteria, including notably specific populations (including SMEs, but not only), sectors of activity, geographical regions and technologies. A number of policies also target several of these dimensions at once. For instance, the *Industry 4.0 testlabs* initiative from the Australian Government provides SMEs of the manufacturing sector designated facilities to implement Industry 4.0 technologies and to train their workforce. More specifically, 61% of the 197 targeted data governance policies are aimed at a specific population, while policies with a sectoral or a technology focus represent 19% and 18% of targeted policies, respectively (see Figure 3.12).

### Figure 3.12. Data governance policies are relatively targeted, but initiatives specifically around data issues and for SMEs are rare

Policy targeting as a share of: 1. Total data governance initiatives implemented; 2. Targeted initiatives; 3. Population targeted initiatives, OECD average, 2022



Note: 1. Shares of generic and targeted policies are calculated as a percentage of the total 487 implemented SME data governance initiatives. 2. For the target types, as policies can be directed at more than one type of target, the shares were calculated as a percentage of the number each target type was ticked. 3. Population targeted data governance initiatives labelled as 'Other' include: Multinationals; Government institutions; Business associations, chambers of commerce and other stakeholders; Investors (business angels, venture capitalists or VC funds, banks, financing institutions etc.); Business owners or managers; Women; Youth; Minorities; Individuals with specific skillset (highly skilled, IT specialists etc.); and others.

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

StatLink  <https://stat.link/tm02jc>

**While population-targeted data governance policies mostly consist of policies that target SMEs as a whole (54%), the heterogeneity of this population might represent a challenge** for the implementation of policy solutions that suit the highly diverse needs of these firms (Raes, 2021<sup>[74]</sup>). As a result, OECD governments have also developed a number of policies that target specific subgroups of the SME population, such as start-ups, young firms or entrepreneurs. For example, in Israel, the National Innovation Authority implemented the “Incentive programme: Technological Innovation Incubators” that provides grants for start-ups and entrepreneurs that are interested in developing a commercial product in several fields, including industry 4.0, artificial intelligence, and quantum computing. Taken together, these form another 22% of population-targeted policies.

**Data policy initiatives with a specific focus on SMEs exist in a number of countries, albeit with significant differences in their scope.** For instance, the Polish Agency for Enterprise Development launched its Industry 4.0 competition in 2021 as a measure dedicated exclusively to SMEs and with a focus on the field of Big Data and activities related to data analytics. The Dutch Government has also been making efforts to tailor data-related policies more to the needs of SMEs, with several initiatives undertaken by the Ministry of Economic Affairs and Climate Policy aiming to help small firms overcome barriers to the adoption of data-heavy digital technologies. Its “Accelerating digitalisation for SMEs” initiative, for instance, was launched in 2018 to support SMEs and entrepreneurs in the areas of big data, online sales and automation, while the Commit2data programme included the creation of six regional data innovation hubs to provide SMEs that are late technology adaptors with up to date knowledge, tools and training modules related to the responsible use of AI and data.

An overview of SME-targeted data policies across a selected number of OECD countries illustrates the diverse character that initiatives in this domain can take (see Table 3.7)

**Table 3.7. Overview of SME-targeted data policies in selected OECD countries**

Institution	Policy	Description
<b>Australia</b>		
Department of Industry, Science and Resources	Digital business-to-business partnership (B2B)	The partnership aims to strengthen business linkages between Australian SMEs and large firms to promote the adoption of and access to digital products and services, including through data sharing and the promotion of data use
	Industry 4.0 Testlabs (pilot)	A programme providing SMEs with physical space and technical assistance to explore and showcase industry 4.0 and advanced ICT technologies
<b>Chile</b>		
Ministry of Economy Development and Tourism	Digitalise your SME	The Programme offers events, workshops, trainings and tools, as well as a network of allies for the adoption of digital technologies, with the objective of guiding and accompanying SMEs in their digital transformation process
Technical Cooperation Services	Digital Route	The Programme seeks to provide training to SMEs, in order to facilitate the incorporation and use of technology in the management of their businesses. This includes for instance online training courses for SMEs on cybersecurity challenges and related tools
	Digitalise your Store	Grants for investments, technical assistance, training and marketing actions on digital technologies for warehouse management
<b>Denmark</b>		
Danish Design Centre	Sprint: Digital	A programme offering Danish SMEs tailor-made design prints to develop, implement and market test new digital solutions, which can support their digital transformation
Ministry of Industry, Business and Financial Affairs	SME Digital	A coordinated scheme to support the digital transformation of Danish SMEs, which can benefit their ability to innovate in AI. It involves grants to SMEs to commission private consulting services on digitalisation matters
Odense Robotics	Digitalisation Boost	The programme aims to support small to medium-sized companies in developing new products, concepts or solutions within industry 4.0.
<b>Estonia</b>		
The Information System Authority (RIA)	X-tee	A data exchange layer in the form of a technological and organisational environment enabling a secure Internet-based data exchange between information systems. Any legal entity (incl. private entrepreneurs), whose membership application has been approved, can use the services and data of other members to improve their own business processes. The solution is based on the software X-Road, developed by Estonia, Finland and Iceland, through the MTÜ Nordic Institute for Interoperability Solutions
<b>Germany</b>		
Federal Ministry for Economic Affairs and Energy	Digital Now	Digital Now offers financial grants to stimulate digitalisation of small and medium-sized enterprises. Grants are provided to support investments in digital technologies and in training employees on digital topics
	Mittelstand (SME) 4.0 Competence Centre	The Centre informs the medium-sized IT industry and promotes networking and the implementation of cooperative business models. Its core task is to facilitate the networking of medium-sized IT companies and their IT solutions
<b>Greece</b>		
Ministry of Development and Investment	Digital Jump	The initiative aims at digital upgrading and transformation of SMEs across all sectors through the integration of technologies such as Cloud, IoT and Cybersecurity in their processes
	Elevate Greece	A one stop shop operating as an information, networking and collaboration space for start-ups. It provides a database based on the mapping of the innovation ecosystems, monitoring the number of start-ups per region, statistical data regarding the industry sectors start-ups operate in, and the technology they use
<b>Hungary</b>		
AI Coalition of Hungary	Data economy accelerator centre Debrecen	A centre dedicated to supporting business owners in generating data-based business intelligence. Company managers who are interested in the digital development of their business, and in harnessing internally generated data, can receive organisational and business development advice free of charge from specialised experts
<b>Korea</b>		
	AI data processing voucher support	The project aims to support the development of innovative AI services by converting data held by SMEs and start-ups into data for AI training. It supports companies that need data for AI training to

Ministry of Sciences and ICT	project	receive processing services from their suppliers when they apply for vouchers
	AI voucher project	The project provides vouchers to SMEs and venture companies in various fields to introduce AI in their products and services with the objective of improving their productivity and competitiveness
	Smart MSMEs	The programme deploys smart IT technologies for SMEs, start-ups and micro-enterprises. It supports the development of smart factories, where smart innovation is utilised across the value chain-from manufacturing processes over logistics to distribution and sales
<b>Netherlands</b>		
Ministry of Economic Affairs and Climate Policy	Commit2data	A multi-year research and innovation programme based on a public-private partnership to explore new business models and opportunities around big data in specific application areas such as smart industry, energy and logistics. The programme also includes 6 data innovation hubs providing companies, particularly SMEs that are late adopters concerning innovation, with up-to-date knowledge, tools and training modules for the responsible use of AI and data
	Accelerating digitalization of SMEs	Through workshops the programme provides SMEs and entrepreneurs support in the areas of big data, online sales & marketing and automation, enabling them to independently apply digital applications
	SME IDEA	A programme that supports SMEs in the development of lifelong learning activities including data skills that fit the needs of their specific company type, size and sector
<b>Poland</b>		
Polish Agency for Enterprise Development	Vouchers for innovation for SMEs	The programme is intended for micro, small and medium-sized entrepreneurs. It offers co-financing for the initial implementation of investments related to the technological product or process innovation in the applicant's enterprise
	Industry 4.0	A competition supporting small and medium-sized manufacturing enterprises in pilot activities related to their transformation towards industry 4.0 to prepare them to implement selected areas of activities in the field of big data and activities related to data analysis, industrial IoT, cybersecurity, AI and block chain
	Acceleration Programme Spark 2.0	The programme aims to combine the potential of start-ups in the fields of cybersecurity, AI, AR, VR and IoT with the resources, infrastructure and experience of mature businesses while educating medium and large companies in the field of cooperation with start-ups
<b>Slovenia</b>		
Slovene Enterprise Fund	Cybersecurity Voucher	The purpose of the voucher is enhancing the digital security of MSMEs thereby increasing their competitiveness and revenues from sales. The voucher has two application areas: the protection of company against cyberattacks and the security aspects related to the products of the company in their working environment on the client side
	Vouchers for the preparation of a digital strategy	The purpose of the voucher is to encourage SMEs to prepare a digital strategy with a view to the digital transformation of companies. The digital strategy covers the assessment of the situation in the field of digitalization, preparation of a plan for the development of digital capabilities of the company and the preparation of a strategy for digital transformation
	Voucher for raising digital competencies	The purpose of the voucher is to encourage SMEs to provide adequate skills for employees and management staff for key areas of digitalization and co-financing of eligible training costs (group, individual) for raising digital competencies (outsourcing costs)
<b>Spain</b>		
Spanish data protection agency	GDPR Guides for Spanish SMEs	A set of guides to be used by SMEs to comply with the European Union's General Data Protection Regulation (GDPR)
Spanish National Cybersecurity Institute	Activa Ciberseguridad	An SME cybersecurity innovation programme, whose objective is to support SMEs determine their current level of cybersecurity and establish the level they must achieve to protect corporate systems and information

Source: Authors' own elaboration, based on the policy mapping carried out as part of the OECD/ EC SME Scale Up project and forming a building block of the OECD Data Lake on SMEs and Entrepreneurship.

**Some OECD countries have also targeted institutions such as think tanks, universities and larger firms that form part of the data governance ecosystem.** The rationale for targeting these other actors is that they can collaborate with SMEs in the adoption of data-intensive technologies through joint programmes, capacity building, consultancies or technology transfer. For instance, the Danish MADE digital programme finances applied industrial research projects, where large companies and research teams from universities collaborate to helping manufacturing SMEs install intelligent supply chains or smart factories.

Finally, there is also a significant involvement of the private sector in data governance related initiatives, with a variety of actors being active in this space, including chambers of commerce, business associations as well as large companies (Box 3.8). While such initiatives have not been systematically included in the mapping of this pilot phase of the project, going forward, it will be important to better understand complementarities between existing initiatives aiming to develop more practical and relevant digital learning for SMEs, take stock of possible gaps, as well as identify potential for improving collaboration between different actors, given that this is still an emerging policy field in many countries.

### **Box 3.8. Selected private sector initiatives in support of SME data governance**

#### **Luxembourg Chamber of Commerce: Go Digital support programme for small businesses**

Go Digital aims to raise awareness and support small companies in their digital transformation. The services include a Digital check-up to help SMEs assess digital maturity, workshops and personalised support, as well as financial aid for the acquisition and implementation of digital solutions, such as specialised software for digital marketing, customer relationship management and organisation management software.

#### **Join Data and iSHARE (Netherlands) Open data private initiative**

Join Data is a Dutch non-profit organisation that was created in 2017 by farmer cooperatives to facilitate data sharing in the agricultural sector in a more efficient and transparent manner. This platform contributes to better interaction between players in the value chain and allows users to decide on the access to and use of their data, which can be used to develop applications for helping agri-SMEs improve their economic performance.

#### **IndesIA (Spain): Industrial consortium for AI in Spain**

A strategic consortium of six major Spanish and Spanish-based companies aiming to promote the use of data and AI in Spanish industrial companies with the support of pioneering organisations in the field such as the Basque Artificial Intelligence Centre (BAIC). The consortium offers the possibility for interested SMEs to join IndesIA with the aim of accelerating their digitisation processes, productivity and sustainability in the sector. It is also focused on working to galvanize employment and bridge the training gap in STEM disciplines (science, technology, engineering, and mathematics) to create new high-skill jobs, while also mobilizing the attraction and retention of tech talent in Spain.

Sources: Luxembourg Chamber of Commerce (2021) Programme Go Digital <https://www.godigital.lu>. Join Data (2021) <https://join-data.nl/en/>. Spain: creation of the IndesIA consortium to promote artificial intelligence in industry: <https://www.actuia.com/english/spain-creation-of-the-indesia-consortium-to-promote-artificial-intelligence-in-industry/>

### ***International policy initiatives are advancing in parallel to national ones***

Given the global and non-rival nature of data, an increasing number of international initiatives have been emerging with the aim of developing a sound data ecosystem beyond national borders.



### Box 3.9. The European data strategy towards a single market for data

With a worldwide market for new digital technologies expected to reach EUR 2.2 trillion by 2025, a large part of Europe's future growth potential resides in digital markets (Gaub, 2019<sup>[75]</sup>). As a result, EU policy-makers have been designing measures to adapt the EU's industrial and technological capacity to the new environment.

Among these measures is the **European Data Strategy**, which lays down a path towards the creation of European data spaces. Concretely, the strategy aims at creating a single market for data to secure Europe's global competitiveness and data sovereignty.

As part of its data strategy, the Commission has proposed a **Regulation on European data governance (Data Governance Act)**. The Regulation aims to increase trust in data sharing, strengthen mechanisms to increase data availability and overcome technical obstacles to the reuse of data. It will also support the set-up and development of common European data spaces in strategic domains (e.g. health, environment, energy, agriculture, mobility, finance, manufacturing, public administration and skills), to ensure that more data becomes available for use in the economy and society, while keeping the companies and individuals who generate the data in control.

The regulation is articulated across four broad sets of measures:

- Mechanisms to **facilitate the reuse of certain public sector data** that cannot be made available as open data (e.g. health data).
- Measures to **ensure that data intermediaries will function as trustworthy organisers of data sharing or pooling** within the common European data spaces.
- Measures to **make it easier for citizens and businesses to make their data available** for the benefit of society.
- Measures to **facilitate data sharing, in particular to make it possible for data to be used across sectors and borders**, and to enable the right data to be found for the right purpose.

More dedicated proposals on data spaces are expected to follow in 2022, complemented by a Data Act to foster data sharing among businesses, and between business and governments (Hidaka and Modrall, 2021<sup>[76]</sup>).

Source: A European Strategy for data, available at: [Strategy for Data | Shaping Europe's digital future \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/inline-photos/2020/02/12/P122020021201_en.pdf) (last accessed: 16.01.2022)

#### *The EU impulse*

Recent regulatory approaches such as the European data strategy (see Box 3.9), the General Data Protection Regulation (GDPR)<sup>15</sup>, the EU Cybersecurity Act<sup>16</sup>, or the EuroQCI Declaration<sup>17</sup> for improving communication networks have for instance all been adopted within the last five years.

In this context, efforts around data access, sharing and use that more specifically target SMEs have also emerged at international level, with the potential to drive their scale-up. This is for example the case of the EU-funded *DigitaliseSME* project<sup>18</sup>, which was launched in 2018, and which seeks to connect SMEs with digitalisation consultants that can provide them with tailored guidance and support to digitalise specific business areas or processes. Implemented projects cover a wide range of digital technologies, including more data-intensive ones such as the use of customer relationship management software, cloud hosting services and the implementation of 3D printing in manufacturing procedures.

In the same vein, the EU funded European Digital Innovation Hubs (EDIH)<sup>19</sup> offer European SMEs a one-stop-shop, where they can access not only dedicated digital capacity building and training activities, but also relevant technologies that allow them to pilot the implementation of data-driven solutions in their business processes. In addition, several international initiatives have also started proliferating that aim to develop more sophisticated data infrastructures, benefiting both public and private actors. The GAIA-X initiative<sup>20</sup>, for example, brings together European governments, the private sector and academia to create a common data infrastructure for accessing data pools, thus facilitating data sharing and analysis across a large range of stakeholders, including SMEs.

Moreover, the European High Performance Computing (HPC) Joint Undertaking, which intends to create a joint supercomputing infrastructure at European level will also facilitate SMEs' access to high-performance computing-related technologies. To this end, the initiative has also created dedicated HPC Competence Centres, where SMEs can experiment and adopt HPC supported modelling and simulation, data analytics, machine learning and AI.

### *Cross-border partnerships*

Beyond EU-level **coordination, many countries – often those bound by geographic proximity – have established a diverse set of bilateral or multilateral cooperation and coordination mechanisms.**

For instance, the Nordic-Baltic region stands out for its advanced cross-border cooperation on different data governance issues, including data infrastructure, data sharing, open-source development, and applied research. Examples of initiatives include X-Road that allows automated cross-border exchange of population data between Finland and Estonia and the joint-declaration on making the Nordic-Baltic region a digital frontrunner. SME targeted initiatives have been also implemented in the Nordic-Baltic region. The Nordic Council of Ministers has implemented SME data governance policies such as innovation vouchers and, importantly, the Nordic Smart Government strategy launched in 2018, which aims *“to create value for SMEs by making real time business data accessible and usable for innovation and growth across the region, in an automatic, consent based and secure manner”*<sup>21</sup>. This cross-country cooperation arguably underpins the high performance of the region's countries vis-à-vis the digitalisation of industry, public services, and society at large<sup>22</sup>.

**An increased collaboration on emerging cutting-edge technologies through joint research centers or knowledge transfer programs** is also, at least indirectly, increasing data skills, assets and underlying infrastructure available to SMEs in participating countries. Artificial Intelligence is gaining traction within such transnational agreements, signified by the UNESCO global agreement on the Ethics of Artificial Intelligence, The Global Partnership on Artificial Intelligence (GPAI) initiated by the G7, or the Recommendation of the OECD Council on Artificial Intelligence. These agreements have explicitly stated recommendations of assisting SMEs, in capitalizing on the potential of AI and machine learning techniques for advanced data analysis and in order to fuel innovation and increase business value.

**Yet, although countries have introduced an increasing number of data regulations as a result of accelerated digitalisation trends and related growth in data-driven business models, the development of international data infrastructures remains in its infancy.** While restrictions on cross-border data flows are probably (still) a non-issue for the vast majority of SMES, they could pose a disproportionate barrier for trading SMEs who have a data driven business model. Looking ahead, the challenge is to strike a balance between ensuring that important objectives, such as consumer privacy and security, are met while maintaining the benefits from free flows of data, including the benefits from increased and more inclusive digital trade (Casalini and López González, 2019<sup>[77]</sup>).

## Conclusion

**Data governance remains an emerging policy field with different approaches and priorities across countries.** While businesses have long been using data, growing levels of digitalisation have made data access, management and protection pivotal to the operations for an increasing number of businesses. SMEs are not exempt from this trend, with data emerging as a strategic asset for enhancing their scaling up capacity or by enabling their very existence through the emergence of new business models. However, **SMEs still face a number of barriers, related notably to uneven access to data, technology, finance and skills, paired with sometimes burdensome regulation and outdated (data) infrastructures,** which taken together may result in SMEs failing to manage, protect and value data to the same extent as other tangible assets that underpin their success.

As a result, **SME data governance has emerged as a crucial area of policy attention,** with countries developing measures to help SMEs turn data into economic value as a means to scale up capacity and grow. A policy mapping carried between June 2021 and February 2022 across the 38 OECD countries, identified a total of **487 policies and 209 institutions that allow for a first assessment of the intensity and form of public efforts in this area.** The analytical framework proposes five data governance objectives that policies can respond to – either alone or in combination, with a specific attention to (digitalisation) measures that address data issues and that simultaneously target SMEs.

The pilot mapping suggests that OECD countries have started acknowledging the increasing importance of data as a key driver of SME performance and scale up, but the extent of policy efforts and degree of SME targeting vary greatly across countries. Overall, **countries place a strong focus on improving SMEs' internal capacity to manage data,** with 72% of the mapped initiatives aiming to enabling better exploitation and protection of data within SMEs. Zooming in, policies attempting to capitalise on data's business value are typically being developed alongside digital security policies (i.e. protection against cyber-attacks or respecting data privacy). In turn, **less policy effort is directed toward addressing data access, infrastructural and interoperability issues,** although a number of more business-oriented initiatives that go beyond traditional open data portals have started slowly emerging in a few countries.

**The cross-cutting nature of SME data governance issues results in a diverse set of governance arrangements for the design and implementation of relevant measures.** The policy mapping indicates that across the 209 implementing institutions, the majority of them has a core mandate in innovation policy, while those with a core mandate in SME and entrepreneurship policy represent only 26%. This suggests that there may be a **need for mainstreaming SME&E considerations across a broader set of institutions and policy communities** in charge of data policy making. In this context, joint implementation of policies could support such policy mainstreaming. A network analysis carried out across a sample of 15 selected OECD countries shows that roughly half of the mapped policies are implemented by two or more institutions, with varying levels of interaction and coordination. Currently, policy coordination takes notably place through national strategies on cybersecurity, digitalisation or innovation.

**Looking ahead, more granular evidence on the scope, (relative) weight and impact of the data policy initiatives could help further fine-tune the present analysis.** While the objective of this pilot exercise was to provide an overview of the character and intensity of public efforts in an emerging policy field that is critical to SME scale up, more information on a broader set of variables could help provide a better understanding on the relative balance of public efforts and their impact. However, information on the budget of specific measures, for example, is largely missing (or is difficult to collect through desk research), and given that many efforts have been developed fairly recently (i.e. in the past five years), there is no evaluation of the impact of these measures (yet).

**Understanding the scope of SME data governance policies also requires a broader perspective.** The current mapping exercise focused on a limited number of policy domains. While already useful and informative, the work gave less attention to a number of relevant areas, notably regulatory aspects

(e.g. data laws, data portability measures, privacy regulation) and provisions in international agreements on cross-border data flows, which might all have a potential effect on SMEs data governance issues. In addition, measures related to broader data access, infrastructure and interoperability could be investigated further, as the current inventory of related policies is rather preliminary. While such measures might frequently lack an SME focus, they still represent crucial components of the SME data governance policy landscape.

It should also be stressed that **better data governance on the part of public administrations can be beneficial for SMEs in different ways**, both direct and indirect, and these aspects have been little developed. First, a more coordinated and structured approach to making available public sector information and data, which could be of commercial interest (and without interfering with privacy rights), could help encourage businesses, and in particular smaller firms, to make use of such data for their operations. Thus, by encouraging a more effective use, reuse and free access to public datasets, governments can further strengthen business creation and innovation (Rivera Perez, Emilsson and Ubaldi, 2020<sup>[6]</sup>). Second, better data governance across the public sector can help reduce the administrative burden on firms by eliminating duplication and excessive reporting requirements. Ultimately, improved data governance and analysis on the part of public authorities is not only likely to promote more citizen-centric services, but also to improve policy making for SMEs, and foster a more evidence-based culture with positive spillovers, including to the private sector more generally.

In addition, while **better data access, use and protection could contribute to helping SMEs transition toward greener and more sustainable business models, only a small number of measures were identified** that specifically attempt to link these issues. Therefore, it may be worthwhile to investigate further whether this is a reflection of the limited scope of the mapping at this pilot stage, or rather due to a real lack of tailored approaches, which seek to support SMEs in their green transition by leveraging data as a strategic asset.

In a similar vein, while **issues around intellectual property rights (IPR)** have received increased policy attention from the SME&E policy community (OECD, 2019<sup>[18]</sup>); (EPO/ EUIPO, 2019<sup>[78]</sup>), this is likewise an area, where the obvious linkages to data governance issues are less well reflected in the present mapping. The need for SMEs to protect this intangible asset as a way of unleashing scale up potential and further developing data-driven business models, along with the potential of leveraging IPR-protected assets like data as collateral to access finance, certainly call for a broader investigation into how governments reflect these issues into their policy mix.

Finally, **innovation clusters and (industrial) networks might play a critical role in connecting SMEs to key stakeholder in their data ecosystem**, including e.g. large enterprises, IT companies, R&D centres, universities or chambers of commerce. All these actors can play a role not only in facilitating SMEs' access to data (and related digital technologies), but also in helping them access the broader set of skills and capacities that they require to leverage data as an asset for their operations. This will be all the more critical in the context of a broad-based push for the digitalisation of large swaths of traditional SMEs that are not at the cutting edge of technology, but rather need help with starting to deploy more basic digital tools. Progress in this area will not only require the setting up or strengthening of widespread and vast support and advisory mechanisms, but also a well-managed coordination effort of all available business stakeholder and other SME support organisations. It would thus be crucial to shed further light on the contribution of existing networks (in the broadest sense) to strengthening SME data governance – and the extent to which the policy mix of countries takes account of this dimension.

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## Notes

<sup>1</sup> The authors define big data assets as 1. Databases and data warehouses running on high performance in-memory computing appliances, both on-premises and in the cloud, as well as tools for modelling and management of data. 2. Data mining and machine learning solutions, and 3. Data visualization and presentation tools

<sup>2</sup> These and other concepts are explained further in Table 3.1 in relation to different data applications, sectors and business functions.

<sup>3</sup> For more information, see: <https://en.woodsense.dk/>.

<sup>4</sup> For more information see: [https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities\\_en](https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en)

<sup>5</sup> *IEEE Spectrum* is a technology magazine and the flagship publication of the Institute of Electrical and Electronics Engineers (IEEE), the world's largest professional organisation devoted to engineering and the applied sciences.

<sup>6</sup> Broadly speaking, trade secrecy is confidential business information that can cover new manufacturing processes, improved recipes, business plans or commercial information on whom to buy from and whom to sell to (e.g. customer list).

<sup>7</sup> In this context, data portability and interoperability measures, for example, can represent a means to foster competition in an increasing number of data-driven markets and across a growing array of sectors, ranging from automobiles to finance. However, recent work in this area also suggests that when implemented with objectives other than competition (such as data protection), these measures may not always have pro-competitive impacts, or even create unintended consequences if they result in new entry barriers or entrench incumbent technologies (OECD, 2021<sup>[80]</sup>).

<sup>8</sup> Network mapping is a technique used to develop graphical representations of connections, such as the physical connectivity of networks. Based on the full policy mapping of 38 OECD countries, a network analysis of national governance and institutional arrangements has been carried out for a selection of countries.

<sup>9</sup> The countries that were part of the sample are Austria, Chile, Estonia, France, Germany, Ireland, Italy, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, the Republic of Türkiye, and the United Kingdom.

<sup>10</sup> The OECD's AI Policy Observatory collects information on national strategies, policies and initiatives on AI in OECD countries. See here: <https://oecd.ai/en/>

<sup>11</sup> It is important to note that the relatively large prevalence that data culture and skills take in terms of policy objective is in part due to the fact that all national strategies (e.g. on digitalisation, AI, Industry 4.0, etc.) have usually been mapped as responding to this objective. The reason for this is simply that as governance instruments they typically seek to orient policy in a given area and form a framework for a broad set of policies that governments aim to implement as part of these strategies. Nonetheless, the noise introduced by this approach is not significant – even when removing policy governance instruments from the calculation, data culture and skills remain the most prevalent objective across policy initiatives with 54% of measures addressing this dimension.

<sup>12</sup> According to the OECD Recommendation (OECD, 2015<sup>[79]</sup>), national digital security strategies serve as major container for related policies and should consider SMEs specifically in design and implementation, especially because of possible governance failures between digital security agencies and SME policy instances (OECD, 2021<sup>[3]</sup>).

<sup>13</sup> While initiatives in this specific area have not been the focus of this policy mapping exercise, they overall seem a rather nascent phenomenon across countries. Based on search of a few key words (sustainable/sustainability, energy, circular, green, carbon, etc.), only about 10 initiatives in total combine data/ digital and sustainability objectives, representing less than 1% of all mapped policies.

<sup>14</sup> See : <https://digicirc.eu/tools/>

<sup>15</sup> The General Data Protection Regulation 2016/679 is an EU regulation on data protection and privacy that harmonised data privacy law across the European Union and the European Economic Area. For more info, see: <https://gdpr-info.eu/>

<sup>16</sup> The EU Cybersecurity Act 2019/881 is an EU regulation that enabled the adoption of a permanent mandate for ENISA, the European Cyber Security Agency, as a facilitator of exchanges between Member

States and that defines a European cybersecurity certification framework to harmonize at the European level. For more info, see: <https://digital-strategy.ec.europa.eu/en/policies/cybersecurity-act>

<sup>17</sup> The European Quantum Communication Infrastructure (EuroQCI) Initiative to design, develop and deploy a secure quantum communication infrastructure by 2027. For more info, see: <https://digital-strategy.ec.europa.eu/en/policies/european-quantum-communication-infrastructure-euroqci>

<sup>18</sup> For more info, see: <https://www.digitalsme.eu/>

<sup>19</sup> The European Digital Innovation Hub (EDIH) is defined by the Digital Europe Programme as a legal entity with a not-for-profit objective that supports companies – especially SMEs and mid-caps – and/or the public sector in their digital transformation by providing directly, or ensuring access to, technological expertise and experimentation facilities, such as equipment and software tools. Ongoing work between the European Commission’s Joint Research Centre (JRC) and DG CNECT will analyse EDIH data to better understand which types of SMEs the Hubs provide digitalisation services to. For more info, see: <https://digital-strategy.ec.europa.eu/en/activities/edihs>

<sup>20</sup> GAIA-X is a joint private-public project that aims to create a common data infrastructure among EU governments. The aim of the project is to further digitalisation and networking, by providing a standard on cloud computing services. For more info, see: <https://www.gaia-x.eu/>

<sup>21</sup> See: <https://nordicsmartgovernment.org/>

<sup>22</sup> In 2020, the European Commission found the Baltic Sea region the leading area in digitalisation, with Finland, Sweden and Denmark, forming the top three followed by Estonia in 7<sup>th</sup> place. For the full Digital Economy and Society Index (DESI) 2020 report see: [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=67086](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=67086)

# OECD Studies on SMEs and Entrepreneurship

## Financing Growth and Turning Data into Business

### HELPING SMES SCALE UP

Small and medium-sized enterprises (SMEs) that scale up have long raised policy interest for their extraordinary potential in terms of job creation, innovation, competitiveness and economic growth. Yet, little is known about which firms could effectively become scalers, and what policies could effectively promote SME growth. This report is part of a series aiming to help policy makers unleash scalers' potential. Building on new evidence from microdata work, it rethinks the nature and scope of scale up policies, suggesting the need for a broader and more cross cutting approach. The report then explores two thematic areas that are relevant for SME scaling up, i.e. SME data governance and their access to 'scale up' finance. Based on an international mapping of 369 institutions and 1174 policy initiatives across OECD countries, the analysis shows that SME and entrepreneurship policy is not among the core mandates of many implementing institutions, calling for sound coordination across the board and further mainstreaming of SME growth considerations in both policy areas. Moreover, national policy mixes vary significantly across countries, reflecting different approaches to promoting SME growth and to SME targeting, but also revealing possible policy blind spots.



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