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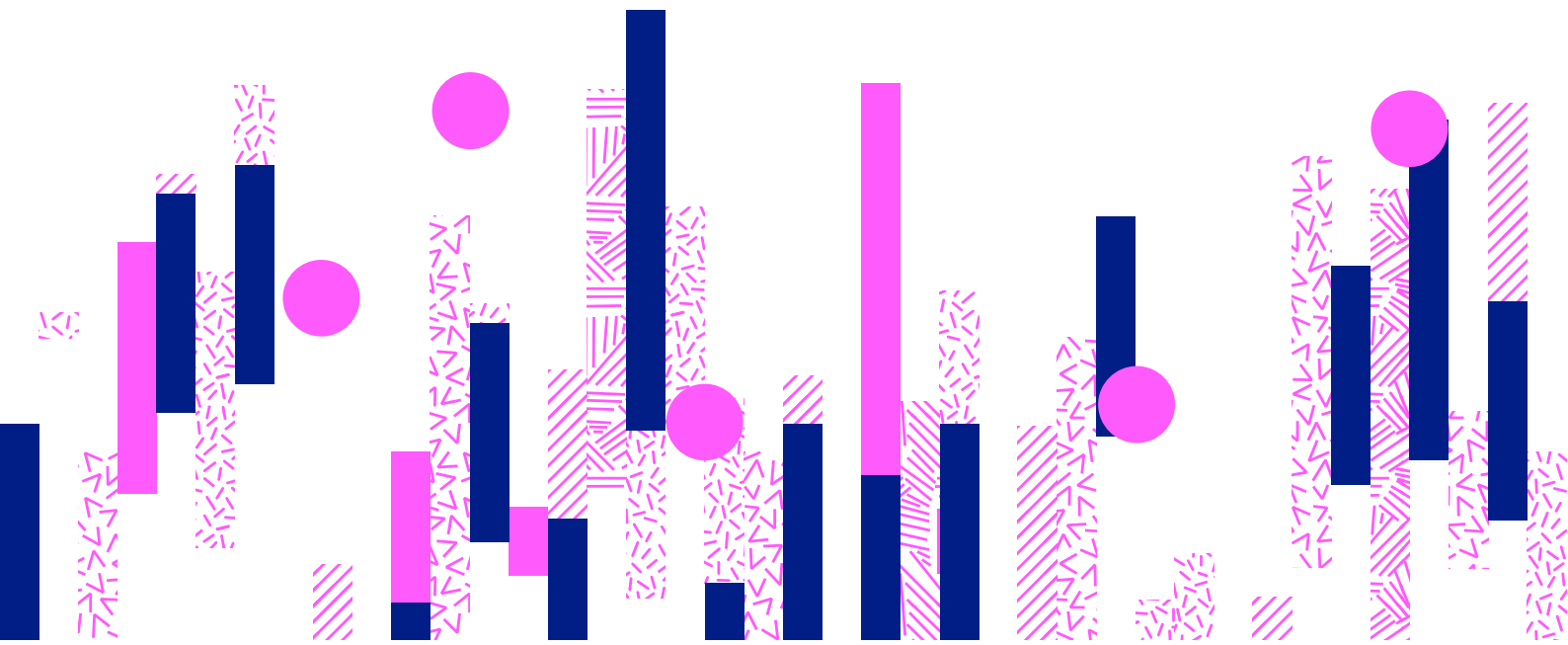
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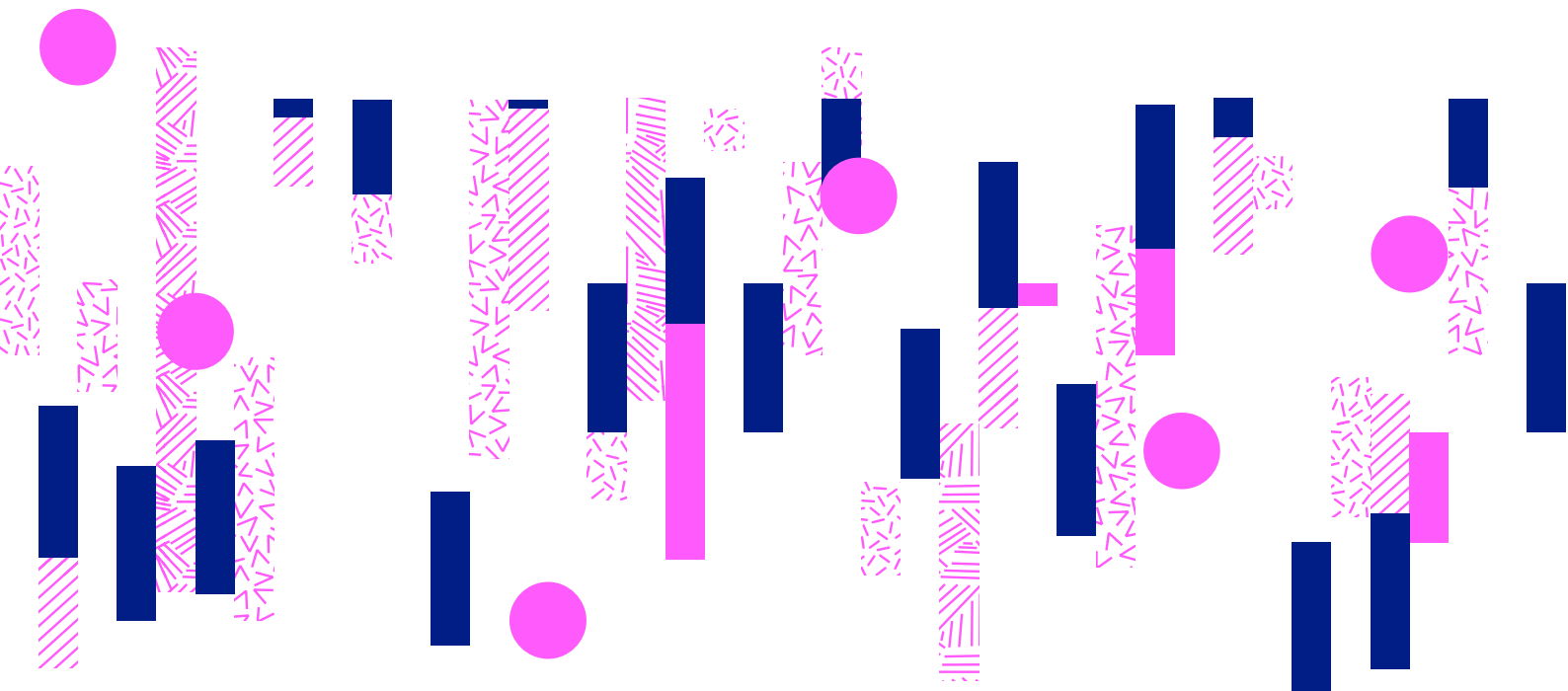
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The European Small Business Finance Outlook 2021

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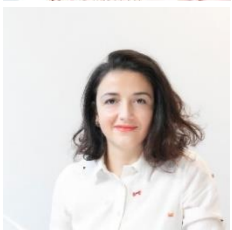


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Executive Summary¹

This European Small Business Finance Outlook (ESBFO) provides an overview of the main SME financing markets (Equity, Guarantees, Securitisation),² as well as a number of thematic areas (Inclusive finance, Fintechs, Green finance & investment) that are central to the European Investment Fund (EIF)'s mission as Europe's main public provider of financing solutions for SMEs and mid-caps. The current ESBFO publication constitutes an update of the September 2020 edition.

Economic Outlook

- The outlook of the global economy has improved considerably and global economic growth for 2021 is currently projected at 6%.
- The European economy is expected to outperform initial forecasts but is nevertheless outpaced by other global regions, such as China and the US.
- Policy makers have partly succeeded in cushioning the impact of the COVID-recession on important economic outcomes, such as unemployment and corporate insolvencies, although the full impact of the COVID-19 pandemic is still unclear.
- The risks to the European recovery are on the downside, as the spread of new virus variants and inflationary pressures remains an ongoing concern.
- All EU-27 countries are projected to register positive growth numbers for 2021, but wide country-level divergence of the severity of the COVID-19 crisis has led to a deepening of the economic divide between EU Member States.
- Economic sentiment indicators point towards a newfound optimism among European businesses.
- Insolvencies are set to increase in many countries. In particular, Spain has experienced a particularly strong surge in corporate bankruptcies. Insolvencies rose most pronouncedly in the hospitality sector, which could be one of the driving factors behind the Spanish bankruptcy experience.

¹ This paper benefited from comments and inputs of many EIF colleagues, for which we are very grateful: Francesco Battazzi, Alicia Boudeau, Julien Brault, Georgiana Buturoiu, Jeffray Cosson, Andrea Crisanti, Stephanie Descoubés, Oscar Farres, Daniela Francovicchio, Carsten Just, Elitsa Pavlova, Diego Sanchez, Simone Signore, Arnaud Vanbellingen and Virginie Varga. We would also like to thank Hendrik Meyer-Jürshof and colleagues from AECM, AFME, ECB, EMN, Euler Hermes, GEM, the Invest Europe research team and the SMEunited study unit for their support. All errors are of the authors.

² We are using the term "equity finance" to combine semantically the areas of Venture Capital and Private Equity. However, if we refer here to equity activities, we mainly consider those of EIF's investment focus, which excludes Leveraged Buyouts (LBOs) and Public Equity. The term SME Securitisation (SMESec) comprises transactions backed by SME loans, leases, etc. The reader is also referred to the respective market glossaries in Annex 1 and Annex 2 in Kraemer-Eis et al. (2018c).

SME finance environment

- The most recent update of the EIF SME Access to Finance index reveals that the use of (subsidised) debt-based instruments was the most important driving factor in determining the aggregate 2020 SME access to finance conditions.
- SMEs' balance sheets have deteriorated significantly over the past 12 months, which could potentially pose a threat to the financial stability of the European SME segment in the years ahead.
- From the most recent results of the ECB's SAFE survey, it emerges that the widespread availability of public financial support seems to have sheltered European SMEs from the worst of the crisis, enabling them to meet their most urgent liquidity needs. On the other hand, divergent country fortunes indicate the need for ongoing vigilance for policy makers.
- The COVID-19 pandemic had a significant impact on aggregate corporate lending activity in the Euro area. Lending activity spiked to its highest level since the run-up to the 2008 financial crisis, which caused the outstanding corporate loan amount to rise to exceed EUR 4.75tr.
- The stock of corporate outstanding bank lending increased most strongly in France, which led total French outstanding corporate debt to exceed 50% of French GDP in Q2/2021, the second highest level among all EU countries.
- Outstanding corporate bank loans increased over all sectors considered, but most strongly for service sectors.
- While corporate indebtedness has risen substantially because of the pandemic, corporate outstanding debt levels, expressed as a share of GDP, are still far below their pre-financial crisis levels.
- In recent months, long-term lending has been on the rise, potentially indicating a revival of durable investment projects.
- COVID-19-related government guarantees continued to support corporate lending during the first half of 2021.
- After two quarters of considerable tightening of credit standard, banks have kept borrowing conditions to SMEs constant during the third quarter of 2021.

Private equity

- Over the past 20 years, the European private equity (PE) and venture capital (VC) activity exhibited booms and busts. The most famous peak periods were in 2000 and 2006. However, both booms were followed by significant downturns, i.e. the "dotcom crisis" in the early noughties and the financial and economic crisis from 2007 onwards. The severe crash of the European PE activity in 2008-2009 was followed by a rebound and PE fundraising and investments reached new record levels in 2019. However, due to the COVID crisis, the market activity slumped in the first half of 2020, but then recovered since the second half of 2020.
- During the full year of 2020, the PE investments in portfolio companies based in Europe decreased by 12% to EUR 88.1bn. This development was mainly driven by a drop in investments in the buyout segment (-11% to EUR 59.7bn) of the PE market, but

considerable decreases were also recorded for growth and replacement capital. VC investments, which are of particular importance for the financing of young innovative companies with high growth potential, increased by 7% to a new record level of EUR 12bn. Results from the EIF VC Survey indicate an ongoing high market activity. Business Angel investments provided additional equity capital for ventures, despite a visibly negative impact of the crisis in 2020.

- Total amounts raised by PE funds in Europe decreased by 12% to EUR 100.5bn in 2020. At the same time, VC fundraising reached EUR 15.5bn, which constitutes the second biggest level ever. During and after the various European PE/VC market crises of the past 15 years, the European ecosystem benefitted substantially from market-stabilising public intervention. Since 2012, a normalisation set in, although public support still plays an important role for further market development. In the exceptional year of 2020, the share of government agencies' investment in VC funds increased again.
- In 2020, the PE exit market suffered a sharp setback, which further exacerbated the negative developments of the past three years. The decrease in the total PE divestment amount (–34% to EUR 23.4bn) was mainly due to substantially lower activity in the buyout (–40% to EUR 15.6bn) segment of the market, but also divestments in the venture (–18% to EUR 2.3bn) and growth (–24% to EUR 4.4bn) capital segments decreased.
- EIF survey results confirm that expectations about the forthcoming months have considerably improved. As per the biggest challenges in 2021, both VC and PE MM fund managers were mainly concerned about high investee company valuations, but also fundraising ranked high among the top challenges.
- As the European PE/VC ecosystem will continue to experience significant challenges in the aftermath of the COVID-19 pandemic, a strong policy response in support of the PE/VC markets is imperative.

SME guarantees

- Among the government-support programmes aimed at mitigating the effects of the COVID-19 crisis on SMEs, guarantees on loans emerged as the preferred credit-support instrument.
- Demand factors, namely differences in the demand for liquidity support by firms, drove to a large extent the differences in the usage of the offered facilities across countries.
- After an initial surge in demand for public guarantees, the usage of credit-support programmes in most countries began to slow down in mid-2020 and gradually levelled off in the second half of the year. As a result, the largest guarantee envelopes are unlikely to be fully used and much of the guaranteed funds may serve as liquidity buffers.
- Based on AECM data, 2020 saw an extraordinary expansion in guarantee activity, reflecting the enormous roll-out of supporting measures for SMEs affected by the pandemic.
- All-time high levels were documented both for outstanding guarantees in portfolio and for newly-granted guarantees.
- The total number of supported SMEs also reached the highest ever registered level; as did the ratio of new volume to outstanding guarantee volume.

- The average size of outstanding guarantee in portfolio picked up significantly; and so did the relative importance of guarantees over GDP.
- France and the United Kingdom were the two countries that accounted for most of the guarantee activity in 2020.

SME Leasing

- Leasing is an important additional instrument to facilitate access to short- and medium-term financing for SMEs, ranked second after traditional bank-related products.
- During the second semester of 2020, Euro area SMEs stated that the availability of leasing or hire-purchase improved the most compared to other external financing sources; with a slight further improvement in future availability to be expected.
- Leasing is mainly used for investments in property, plant or equipment.
- Finland, Germany and Austria are the countries with the highest proportion of SMEs using leasing, contrary to countries in the south of Europe.
- Leasing as a financing source is more prevalent among industrial firms.
- The use of leasing grows with firm-size.

SME securitisation

- Overall, the SME securitisation (SMESec) market in Europe is underdeveloped; it has potential to further grow and to help mitigate negative economic effects from the COVID-19 crisis. Strengthening this market is an effective way to facilitate the flow of funds to the real economy, without creating distortions.
- In terms of new issuances, the visible SMESec market was weak in 2020, with only EUR 7.5bn. Also 2021 started poorly, with only EUR 2bn of visible issuance in HY1. However, over the recent years there was a significant rise in number and volume of synthetic SMESec transactions, which are not visible in the statistics (e.g. unrated bilateral transactions).
- The impact of COVID-19 on SMESec asset quality and deal performance remains to be seen, as well as the strength of structural protection and their ability to buffer adverse effects of the pandemic. The impact on SMESec performance will vary by region, depending on many parameters like structure and flexibility of the economy (and the SMEs), shape and speed of the economic recovery (which is related to the previous point), the withdrawal of public support and the success of vaccine rollouts. Although the economic framework conditions worsened, SMESec market performance has been stable in the recent past.
- Many support measures are aiming at a market revival, amongst which are important regulatory adjustments. Given the important role of synthetic securitisations, potential STS eligibility (which was previously only available for "true sale" securitisations) under the new regulation framework is to be seen as a very positive development, as well as the European Commission's green light to a new synthetic product under the European Guarantee Fund (EGF).
- Driven in particular by investors' demand but also by risk aspects, the perspective of "sustainability" is gaining importance in securitisation - and in structured finance in

general. The sustainable securitisation market is still in its early days. There seems to be plenty of investor's interest, but the supply side is still constraint.

Microfinance and inclusive finance

- The COVID-19 crisis affected the most vulnerable segment of the labour market. Persons having relatively unstable, low-paid, and part time jobs were hit first. Young people, especially new graduates, found it difficult to find jobs. Self-employed persons and free-lancers also suffered massively from the lockdowns.
- Microenterprises and social enterprises play an important role in the recovery process, as they are crucial contributors to employment and social innovation, especially in countries with high unemployment rates.
- According to the data from the latest ECB SAFE survey, microenterprises have perceived a significant increase in the external financing gap indicator. Moreover, the share of enterprises which see access to finance as their most important problem has increased and remained higher among microenterprises than among their larger peers.
- Microenterprises, in general, use less bank loans than their larger peers, as they are more likely to be rejected if they decide to apply for a bank loan. Often they choose not to apply for a bank loan due to fear of rejection, insufficient collateral, high interest rates and excessive paper work.
- Access to finance is crucial not only for existing microenterprises, but also for those who are eager to create a business in order to escape poverty or unemployment and contribute to job creation. In addition to financial support, unemployed people are often in need of acquiring the necessary skills for success through coaching and mentoring.
- Customers, as they are rejected by or discouraged from banks, often apply for a microcredit from Microfinance institutions (MFIs). MFIs do not always charge lower interest rates than banks, but they are less demanding in terms of collateral and guarantee requirements.
- MFIs are currently facing challenges when seeking for finance. Unavailability of funding and funding price are frequent issues MFIs face.
- Digitalisation of microfinance operations is efficient for both lenders and borrowers especially, but not only, in the imposed social distancing context, yet suppliers are only partially digitalised and poor customers often have no access to digital payments. Non-financial services (for example, coaching, mentoring, and consulting) are also poorly provided online to their clients.

Fintechs

- Recent trends confirm that the COVID-19 pandemic has created significant growth opportunities for European Fintechs. Two thousand-twenty is shaping up to be a record year for VC and growth financing for European Fintechs, with financing volumes exceeding EUR 9bn by the end of Q3/2021, already more than double the amount of the full year 2019.
- While volumes have increased exponentially, the number of deals in the Fintech innovation space stagnated over the past five year, leading to a steady rise in average deal size.

- Not all segments of the Fintech market were impacted equally by the pandemic. The lockdown and social distance measures brought about opportunities for Fintechs focussing on payment technologies, but the impact on Fintechs focussing on alternative financing was ambiguous.
- The European crowdfunding sector seems to have emerged from the crisis relatively well, although 2020 growth was entirely due to institutional support, while the crowd took a step back.

Green finance & investment

- By endorsing the Paris Agreement on climate change, the European Union has committed itself to follow a path of sustainable economic growth.
- The wide-reaching nature of the environmental regulation contained in the FF55 package will be of significant relevance to European SMEs.
- The production of greenhouse gas emissions is concentrated in a few key sectors of the economy. How SMEs will be affected by Europe's transition towards net-zero depends on the sector under consideration.
- Greentech innovation is a key element of Europe's net-zero strategy.
- Greentech innovation financing has been on the rise in recent years. After a minor setback during the period 2013-2016, VC and PE growth investments in European Greentech companies have increased sharply from 2017 onwards. Even during the COVID-19 crisis, the European Greentech sector continued to expand steadily.
- With a total investment volume of nearly EUR 6bn since 2015, Sweden is the largest beneficiary of Greentech financing in Europe.
- Unsurprisingly, given the urgency of the climate issue and its prominence in the public debate, the largest category of Greentech investees was energy, accounting for about 40% of companies.
- In recent years, the European Greentech ecosystem has grown increasingly focused on mobility solutions, but regional differences in Greentech specialisation patterns exist throughout Europe.
- More than half of European SMEs consider access to finance to be an obstacle for climate investments, suggesting an important role for public finance providers in the EU's path towards climate neutrality.

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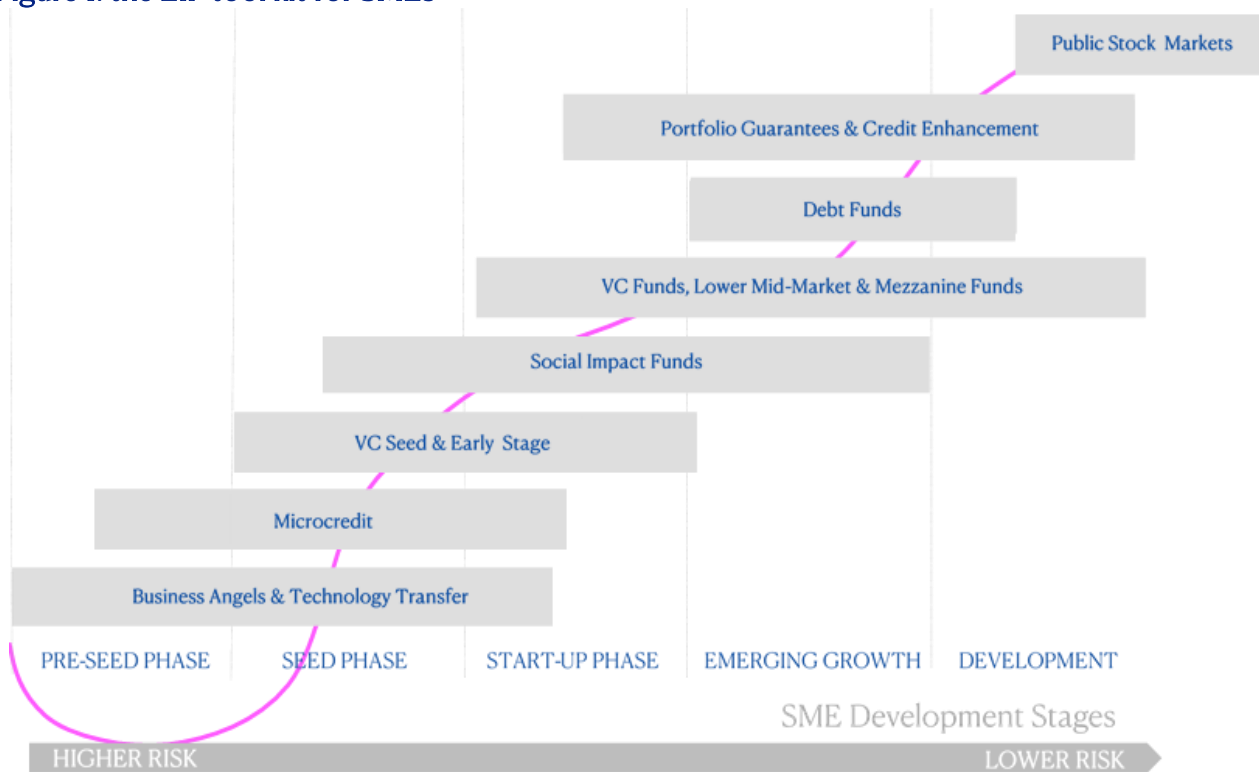
1 | Introduction

1.1 | The European Investment Fund

This European Small Business Finance Outlook (ESBFO) provides an overview of the main SME financing markets (Equity, Guarantees, Securitisation), as well as a number of thematic areas (Inclusive finance, Fintechs, Green finance & investment) that are central to the European Investment Fund (EIF)’s mission.

The EIF is the European Investment Bank (EIB) Group’s specialist provider of risk financing for entrepreneurship and innovation across Europe. It focuses on the whole range of small and medium-sized enterprises (SMEs), starting from the pre-seed, seed-, and start-up-phase (technology transfer, business angel financing, microfinance and early stage VC) to the growth and development stage (formal VC funds, mezzanine funds, debt funds, and portfolio guarantees/credit enhancement, Figure 1). It delivers the full spectrum of financing solutions (equity instruments, guarantee and credit enhancement instruments, as well as microfinance) through financial intermediaries.

Figure 1: the EIF tool kit for SMEs



By supporting entrepreneurship throughout Europe, the EIF contributes to the European Union’s (EU) thematic priorities, by promoting inclusive growth, enhancing SME digitalization and helping Europe to achieve the environmental targets of the EU Green Deal.⁵

1.2 | SMEs in Europe

SMEs,⁴ the main target group of EIF’s support, are firms that employ less than 250 workers and have an annual turnover below EUR 50m or a balance sheet total of less than EUR 43m (Table 1).

Table 1: EU definition of SMEs*

	Employees	Turnover	Balance sheet total
Micro	<10	≤ EUR 2m	≤ EUR 2m
Small	<50	≤ EUR 10m	≤ EUR 10m
Medium-sized	<250	≤ EUR 50m	≤ EUR 43m

* Within the category of non-SMEs, one often distinguishes between mid-caps and large corporates, the former being defined as enterprises that employ no more than 2,999 employees, with an additional distinction of small mid-caps, employing no more than 500 employees.

Source: European Commission (2021e)

Making up 99.8% of all non-financial enterprises in Europe, SMEs contribute significantly to European job creation and economic growth (Figure 2, panel a). In 2019, 22.5 million European SMEs employed around 83.5 million workers (65.2% of total employment) and generated 53% of European value added (EUR 3,338bn). While the SME employment and value added shares have decreased since 2010, the most recent data seems to suggest this declining trend has come to a halt (Figure 2, panel b).⁵

The relative importance of SMEs in national production and employment varies substantially between EU Member States (Figure 2, panel c). Greek SMEs, employing more than 80% of the total workforce, contribute significantly more to aggregate employment than French SMEs, who employ only about half of French workers.

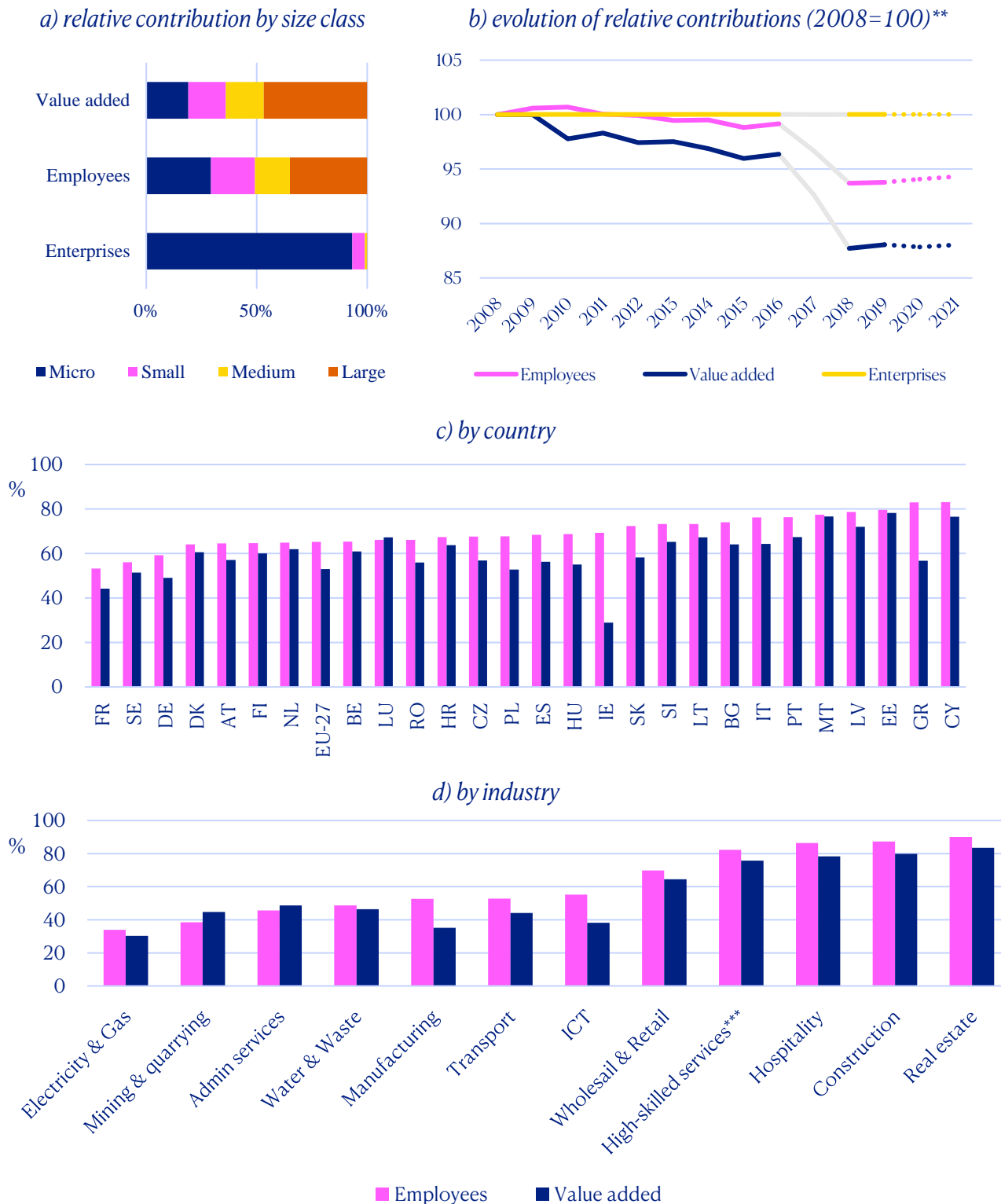
Differences in the relative contribution of SMEs to national economies can reflect differences in national industrial structures, given that firm-size distribution differs widely across sectors (Figure 2, panel d). In particular for service sectors (construction, hospitality, high-tech services), SMEs are important job creators, with employment shares well above 80% in high-skilled services, the hospitality sector, construction and real estate.

³ For more information on the European Investment Fund and its mission, see www.eif.org.

⁴ As defined by the European Commission (Commission Recommendation 2003/361/CE of 6 May 2003).

⁵ Not taking into account the stark drop in measured shares, driven by a change in the definition of what constitutes a corporate entity, which was implemented throughout the EU Member States between 2017 and 2018.

Figure 2: SME employment and value added shares in the EU (2020)*



* Excluding financial services sectors.

** The decline in the times series of employment and value added shares during 2017 and 2018 (grey lines) is driven by a structural break in the data collection, caused by the switch from legal units to statistical units as a proxy for an enterprise. Post-2018 data are forecasted values.

*** NACE section M: Professional, scientific and technical activities.

While industry mix undoubtedly explains an important share of the observed country differences, heterogeneity in the employment share of SMEs also exists within a given sector (see Annex 1). Hence, it appears that country-idiosyncratic elements, such as cultural attitudes towards entrepreneurship, legal frameworks, or other institutional differences, also determine the relative importance of SMEs in country's economic structure.

Labour productivity is typically lower among SMEs, compared to large firms, evidenced by the fact that SME contribution to value added undercuts their contribution to employment. SMEs typically run business models that are more labour intensive (European Commission, 2021a), which –at constant value added- leads to lower labour productivity.

The difference between employment contribution and value added contribution is particularly large for Ireland and Greece. For Ireland, the relatively limited value added contribution manifests itself mostly in the industrial sector, and to a lesser extent in high-skilled services and ICT. One potential explanatory factor is the presence of highly productive, large, multinational corporations on Irish soil (OECD, 2019b). For Greece, the relatively small value added contribution of SMEs is common across sectors. This could indicate that cultural or institutional factors, rather than sectoral composition, could underlie the Greek specificities of the national firm-size distribution.⁶

Regardless of the cross-sector and cross-country diversity in SME importance, the above analysis renders clear that everywhere in Europe, small corporates form the backbone of the economy. In light of the importance of SMEs to the European economy, this European Small Business Finance Outlook (ESBFO) aims to inform policy makers, professionals and academics on recent trends on SME external financing markets, in order to foster an informed public debate on SME financing, to the benefit of the European SME population.

The remainder of this edition of the ESBFO is structured around the financing instruments and thematic areas that make up EIF's most important target markets. Chapter 2 | and 3 | prelude finance-specific analyses by providing a discussion of the current economic outlook and an overview of the recent SME business environment. Chapters 4 | and 5 | discuss recent trends on European private equity, guarantee, leasing and securitisation. Chapters 6 |, 7 | and 8 | provide an overview of a number of thematic areas that are central to EIF's public mission, such as inclusive finance, Fintechs and green finance & investment.

⁶ See Annex 1 for a complete country-level overview of employment and value added shares within the EU-27.

2 | Economic outlook

Since the publication of the previous edition of the ESBFO in September 2020, at the onset of the second European COVID-19 wave, the outlook of the global economy has improved considerably. Global economic growth currently is projected at 6% for 2021 and 4.9% for 2022, after having experienced one of the largest worldwide economic contractions since the Second World War one year earlier. Rapid vaccination rollout in developed regions have led to an upward revision of their growth prospect. Despite higher than anticipated growth numbers, global output will remain subdued for the years to come and will still undercut pre-COVID projections by 4% in 2024. Global near-term risks are on the downside, as slower-than anticipated progress in vaccination campaigns in developing regions risk further mutations of the COVID-virus (IMF, 2021a) and an increased divergence of economic fortunes on the global economic scene.

While extensive pandemic economic support programs launched by governments worldwide have led to a temporary boost in the availability of credit, mounting price pressures could result in a trend reversal, as central banks might respond by tightening credit conditions. The IMF, however, expects current inflationary trends to be of temporary nature and warns policy makers to avoid prematurely restricting access to credit, thereby hampering the economic recovery process (IMF, 2021a).

The EU economy contracted by 6% in 2020, materialising 2 percentage points above the European commission's earlier estimate (European Commission, 2020a). At -7.4%, the decline in investment also turned out less stark than initially anticipated. Aggregate investment was supported by a rise in public investments, which grew by 3.3%, in part due to the expansionary fiscal policy response to the pandemic. Equipment investment, on the other hand, declined severely, by more than 12%, while construction investment fared better (-4.6%).

Policy support programs and temporary unemployment schemes were successful in preventing wide spread layoffs of workers in Europe, and as it stands today, the unemployment rate was impacted only marginally by the crisis, rising from 6.7 to 7.1%. However, the aggregate labour market performance masks underlying divergent trends across labour market segments, as the labour market situation of vulnerable groups, such as women, young people and low-skilled workers, remains precarious (Bruegel, 2021). In addition, unemployment is known to react with a lag to the business cycle and could still edge higher once default rates are starting to increase.

Table 2: European Commission Summer 2021 forecast for the EU

(Real annual percentage change, unless otherwise stated)					Forecasts	
	2017	2018	2019	2020	2021	2022
Real GDP growth	2.7	2.1	1.6	-6.0	4.8	4.5
Inflation	1.7	1.9	1.4	0.7	2.2	1.6
Unemployment rate	7.6	7.2	6.7	7.1*	7.6	7.0
Total investment	4.1	3.5	5.4	-7.4*	6.2	5.4
<i>equipment investment</i>	5.2	4.3	2.1	-12.4	9.3	6.8
<i>construction investment</i>	3.7	3.9	3.6	-4.6	5.1	5.0
<i>public investment</i>	2.8	2.9	3.0	3.3	3.5	3.5

* 2020-values for unemployment and investment are estimated.

Source: European Commission (2021a); European Commission (2021b)

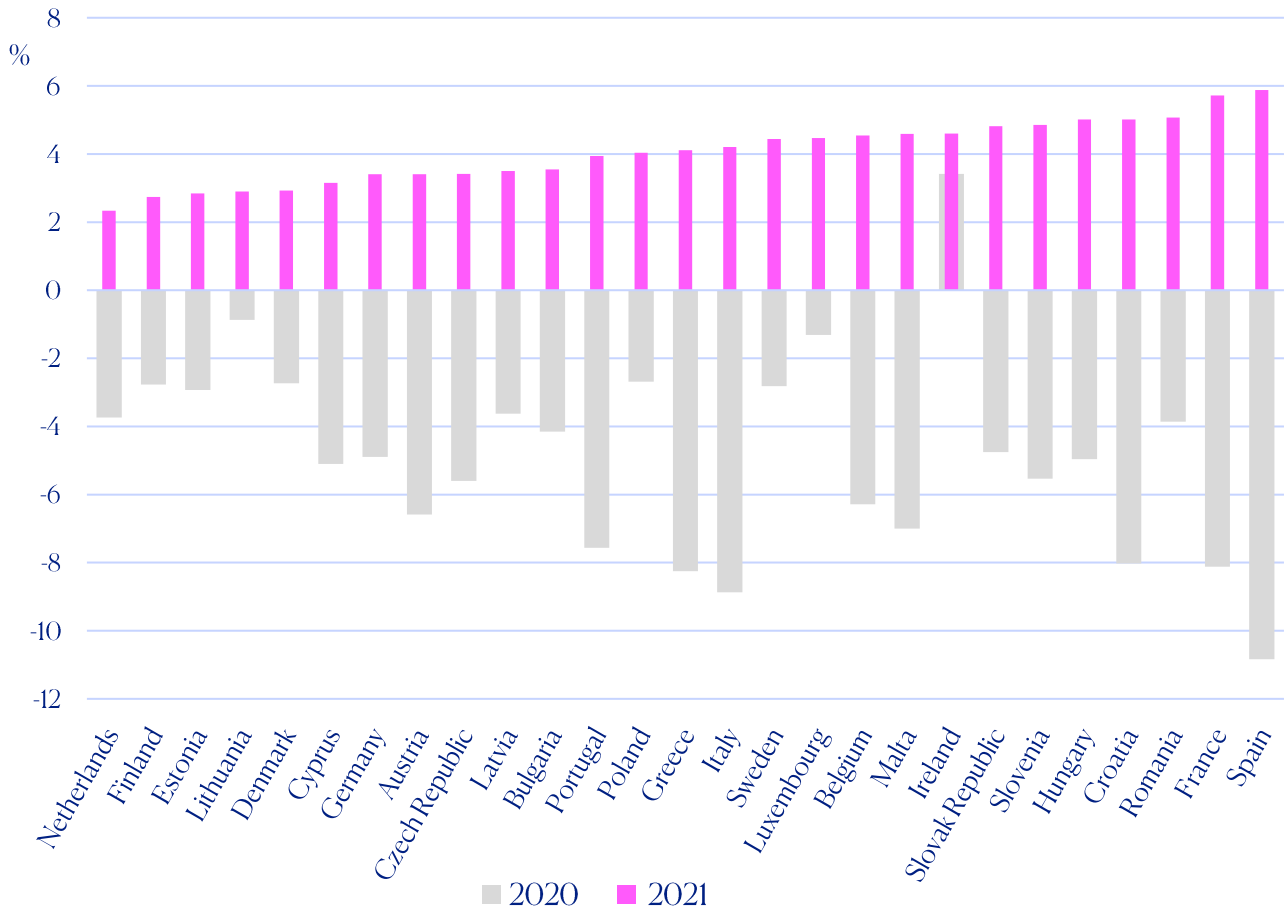
For 2021, the European Commission predicts a faster economic recovery than initially anticipated and forecasts growth at 4.8%. The recovery process is expected to continue one year later, with an additional expected expansion of 4.5% throughout 2022. While the economic rebound is turning out to be stronger than projected, the EU is nevertheless set to underperform vis-à-vis other global regions, most notably the US and China, where the recovery process following the pandemic shock progressed at a much faster pace (Bruegel, 2021).

The projected recovery also translates to a pronounced increase in European investment across all categories. Particularly equipment investment is expected to expand significantly, forecasted to grow at 9.3% and 6.8%, for 2021 and 2022 respectively, in part due to the materialisation of postponed investment projects in 2020. Investment in construction is also expected to rise above its equilibrium level for 2021 and 2022, while the public rate of investment will be maintained at 3.5%.

The economic recovery process could drive inflation to its highest level since 2012. Upwards price pressures are caused by rising energy and commodity prices, driven by rising demand due to the fast-paced economic recovery, as well as persistent COVID-related production bottlenecks. Currently, the uptick in inflation is still expected to be short-lived, as price levels are likely to normalise once supply chain disruptions settle and the pace of economic recovery declines (European Commission, 2021a).

With the exception of Ireland, all EU-27 economies contracted throughout 2020 (Figure 3), with declines in GDP exceeding 10% (Spain). Ireland was the only country to register positive growth, driven by the performance of its multinational corporations (European Commission, 2021a). In contrast, the 2021 growth forecast are unambiguously positive. The strength of countries' economic rebound often inversely relates to the severity of the preceding economic contraction, as was the case for Spain, which experienced the largest economic contraction in 2020, but is forecasted to grow at 6% in 2021, higher than any other country in the EU. On the other side of the spectrum, countries like the Netherlands, Finland, Estonia and Lithuania are only projected to grow modestly in the present year, at just over 2%. However, their economies withstood the pandemic much better in 2020, resulting in a relatively limited combined impact.

Figure 3: Country-level growth forecasts

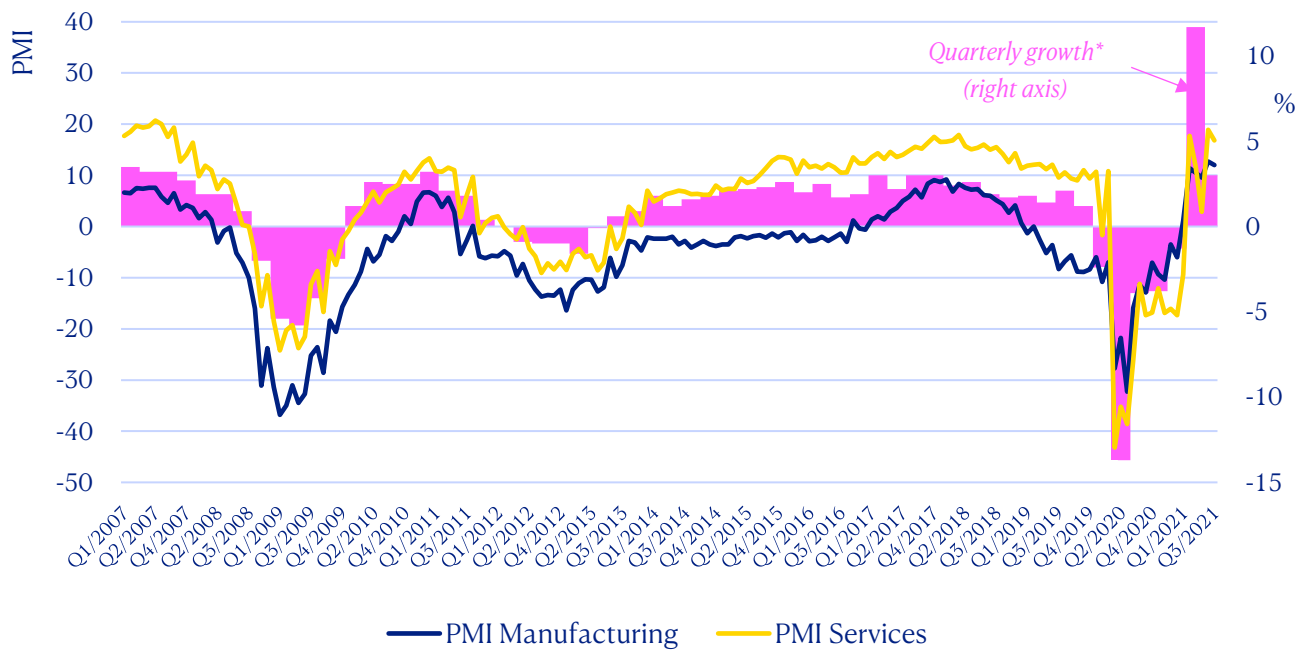


Source: European Commission (2021b), authors' calculations

The COVID-19 pandemic has led to widening gaps in national economic fortunes within Europe, as a handful of countries that experienced some of the deepest economic recessions were only able to register average growth numbers in 2021. Italy, Portugal and Greece, for example, all experienced a contraction in economic activity that exceeded 7.5% during the crisis, yet find themselves only in the middle of the ranking when considering subsequent economic performance in 2021.

In recent months, confidence indicators show a strong revival in entrepreneurial optimism, both for industrial producers as for service providers (Figure 4). Industrial sector sentiment has experienced a steady rise from the low-point of March 2020, when the first wave of the COVID-pandemic started to unfold. Sentiment in the service sector recovered as well, albeit following a much less stable pattern, as it jig-sawed in response to the introduction and abolition of confinement measures throughout Europe.

Figure 4: EU-27 Economic Confidence Indicators and quarterly GDP growth



* Growth numbers refer to year-on-year growth vis-à-vis the same quarter one year earlier. Q2/2021 and Q3/2021 GDP growth are forecasted values based on European Commission (2021b).

Source: Eurostat, authors' calculations

The COVID-pandemic also weighed heavily on the sentiment of SME business owners, as evidenced by the nose-dive of the EU Craft and SME Barometer Index (Figure 5, left panel).⁷ However, SME business sentiment improved rapidly as European vaccination campaigns progressed and the economic outlook improved. During the early phases of the pandemic, SMEs' sentiment was negative across all driving factors (Figure 5, right panels), with negative figures reported for all factors considered. While expectations for 2021 were initially quite bleak as well, materialised sentiment turned out to be substantially more positive, and all factor considered reportedly contributed positively to SMEs' business environment.

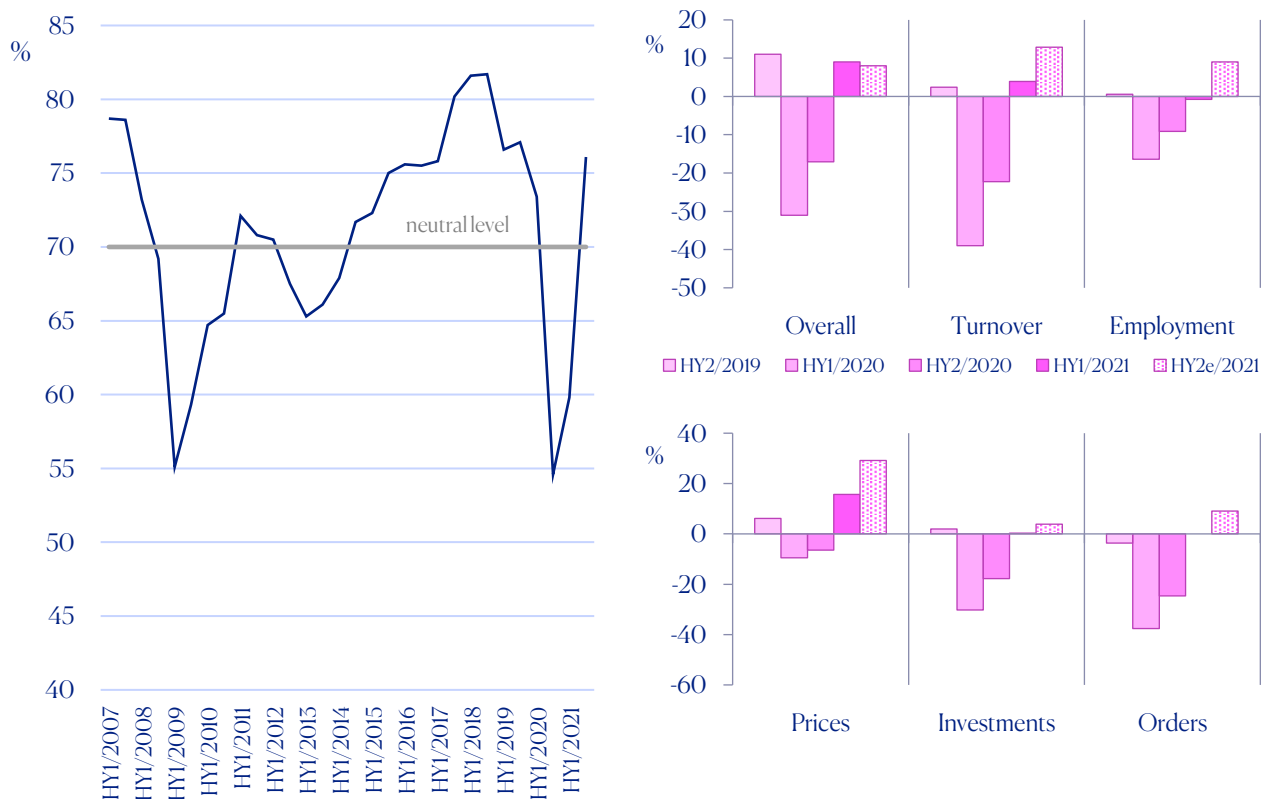
The relatively positive European business sentiment is in accordance with the fact that the impact of the COVID-crisis on corporate insolvencies has thus far been limited (Figure 6). During the initial phase of the pandemic, somewhat unexpectedly, corporate bankruptcies had declined considerably (-35% during the first half of 2020), in part due to pandemic bankruptcy protection legislation, but likely also due to administrative delays in the registration of insolvencies during the lockdown periods.

However, as of late, European insolvencies are on the rise. As some pandemic support programs are currently phasing out, businesses are increasingly exposed to the impact of the confinement measures and the resulting accumulated liquidity shortages. This has led to a significant rise in

⁷ The EU craft and SME barometer is calculated as the average of companies that have reported positive or stable business situations and expect a positive or stable development for the next period. Therefore, the index can range from 100 (all positive or neutral) to 0 (all negative), see SMEunited (2021) for an elaborate description of the index.

bankruptcy risk from the second half of 2020 onwards. The uptick in corporate insolvencies occurred across all sectors, but was most noticeable in the hospitality sector, where bankruptcies nearly doubled since Q3/2020 (Figure 6, panel b). Insolvencies also jumped markedly in the transport sector, where in particular the commercial segment suffered strongly from the COVID-crisis. Transport insolvencies were already on the rise before the pandemic started, likely driven by increasing competitive pressures in the sector.

Figure 5: SME Business Climate Index and the EU Craft and SME barometer HY1/2021

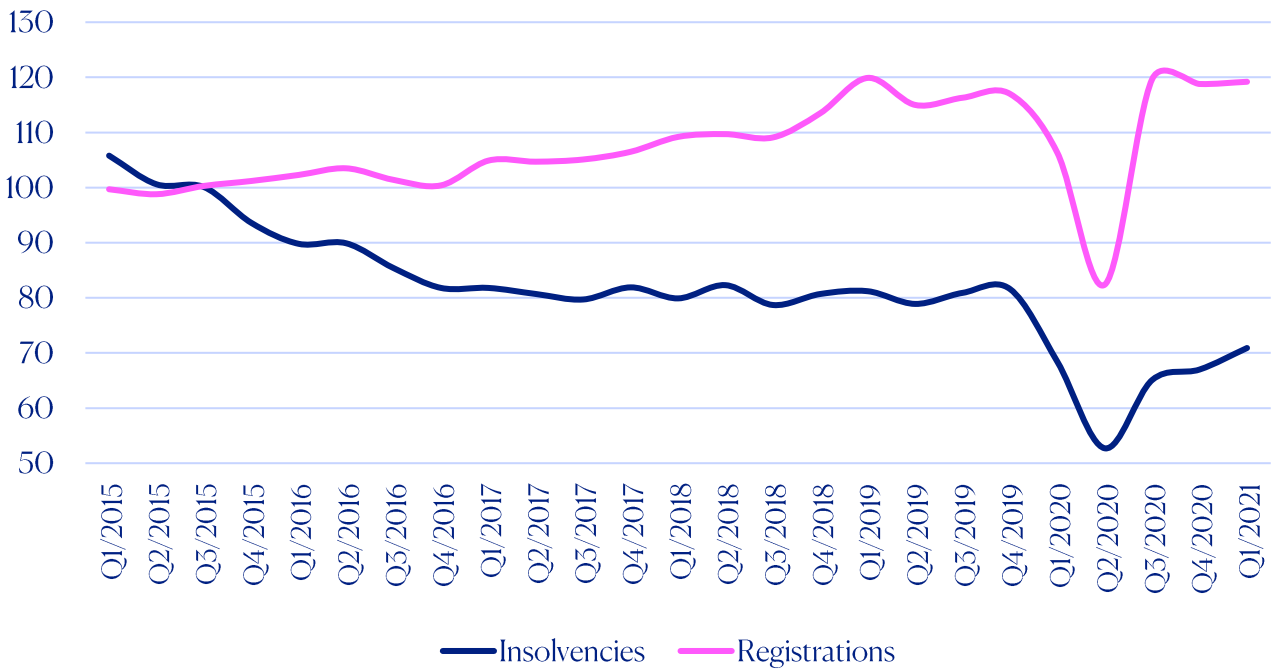


Source: SMEunited Study Unit (2021a)

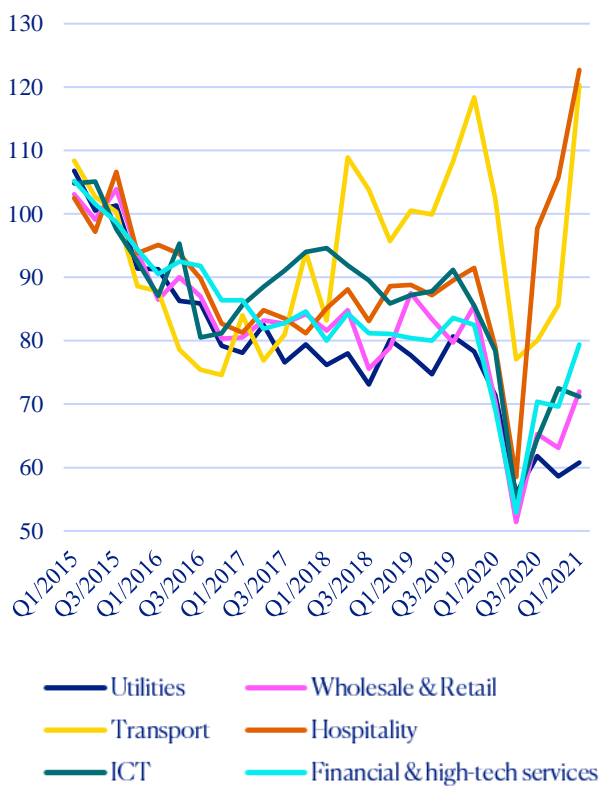
Also at the country-level, some remarkable differences in the evolution of insolvencies emerged (panel c). While for most countries, the trend complies with the European average, Spain has seen a strong surge in corporate bankruptcies. Earlier this year, the bank of Spain communicated that nearly a fifth of Spanish companies were in imminent danger of default, a prediction that has begun to materialise over the first semester of 2021. Spain was among the countries worst hit by the initial and subsequent waves of the pandemic and was consequently subjected to the harshest lockdown measures. In addition, Spanish policy makers only partly succeeded in compensating for associated impact on its businesses, with corporate income losses in 2020 close to 3% of Spanish GDP, exceeding all other countries in the Eurozone (ING, 2021).

Figure 6: Short-term business dynamics in the EU-27 (Q4/2014=100)

a) EU-27 wide evolution of business insolvencies and new business registrations



b) Insolvencies by sector



c) Insolvencies by country



Source: Eurostat, authors' calculations

All other European insolvency rates remain below their pre-pandemic level, apart from Romania, where a minor jump occurred in Q1/2021 (see Annex 2). The persistent low level of bankruptcies possibly indicates the ongoing impact of the temporary regulatory reforms in insolvency declaration procedures that were put in place to prevent a widespread wave of COVID-related bankruptcies. It remains to be seen how the situation will evolve when such measures are gradually being lifted, which is likely to happen in the months ahead.

Box 1: Measuring the impact of the COVID-19 pandemic on EU corporate demography in the first half of 2020: bankruptcies and firm creations

How can we measure the effects of the COVID-19 pandemic and the ensuing public policy response on EU corporate demography? An on-going EIF Research & Market Analysis (RMA) data-driven exercise measures their weekly impact on bankruptcies and firms' creations based on Bureau Van Dijk's Orbis database. The World Health Organisation (WHO)'s announced on March 11th 2020 that COVID-19 characterised as a pandemic, triggering a wave of lockdowns across European Union Member States. We hence use the following week, beginning on March 15th, as a "treatment" effect in a *pseudo*-difference in differences (diff-in-diff) setup. In this case, weekly data before and after March 15 in the years 2015 to 2019 act as the "control group", whereas post-March 15 weekly data in 2020 represent the "treated group".

Administrative statistics such as Eurostat only provide provisional and sometimes forecasted insolvency and registration data for a limited sample of firms and countries with only basic sectoral decomposition. Balance-sheet statistics such as Orbis give access to a wider sample of firms and countries, quicker updates on actual firm status, and deeper levels of decomposition. Statistical filtering techniques are necessary to deal with the increased volatility of such smaller clusters combining for instance country, sector, and firm age. The diff-in-diff approach allows to formalize the estimation of bankruptcy and creation rate differentials and to give precise cluster-level estimates of the demographic impact of the crisis. These impact estimates are also easily expandable to a wider range of balance-sheet variables including notably productivity and employment.

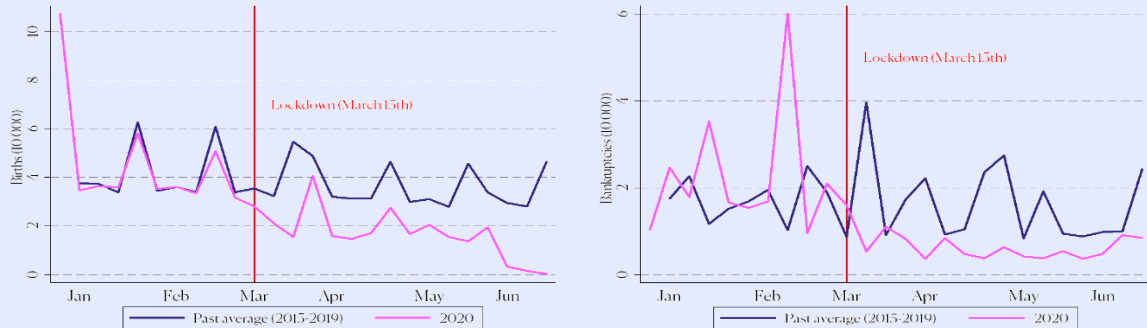
Figure B1.1 shows the aggregate EU-level impact. To mitigate the effects of highly volatile corporate default and establishment data, we use a combination of statistical filtering based on thresholds of the rolling standard deviation and appropriate econometric modelling based on Poisson regressions.

Figure B1.2 shows the average impact across the EU calculated at cluster-level. Each cluster is a combination of country, sector, and firm age. Volatility is mitigated by statistical filtering, moving average smoothing, and confidence interval adjustments.

Both figures overall show similar effects. Results at EU-level for the entire period show that the March 2020 lockdown had an even deeper impact on European corporate demography than the one estimated by Eurostat in the first half of 2020, leading to -45% bankruptcies and -56% firms' creations. Our cluster-level analysis confirms the magnitude of this fall.

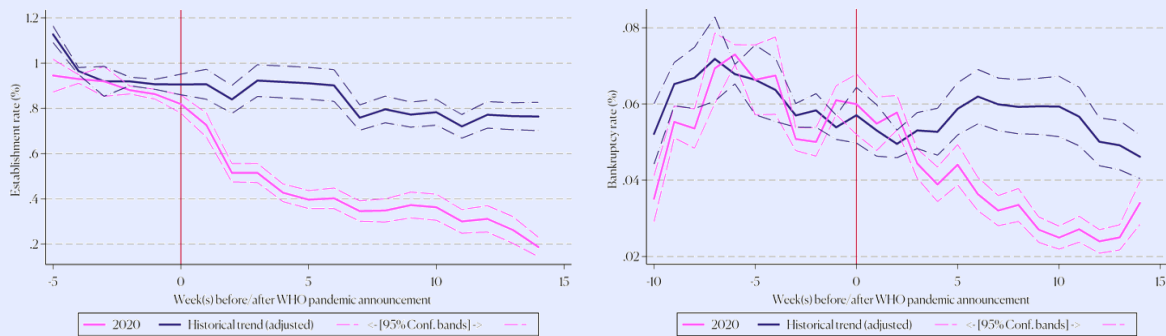
Box 1 continued:

Figure B1.1: The EU-level aggregate impact of the March 2020 lockdown on EU firms' bankruptcies and creations: a diff-in-diff analysis*



*All coefficients are significant at the 95% level.

Figure B1.2: The average (cluster-level) impact of the WHO pandemic announcement on EU firms' bankruptcies and creations: a diff-in-diff analysis



Clearly, the mitigating effects of policy support linked to the COVID-19 economic shock significantly affected the evolution of bankruptcies and firms' creations. Moreover, multiple COVID-19-induced delays to administrative records might explain the temporary fall in bankruptcy and establishment rates. This "missing" wave of bankruptcies could be indicative of a delayed effect of the COVID-19 recession on SMEs and Mid-caps, the extent to which could become apparent once public support measures are lifted and/or fully absorbed by the economy. Moreover, the observed fall in firms' creations risks leading to long-term scarring of the EU economy and constitutes a major concern. On the other hand, in the longer run, sectoral reallocation may lead to increased start-up creation in specific sectors.

This on-going project will be extended in the future by decomposing results by sector, country and age of firms. Preliminary results show major divergences at all three levels, as well as ongoing sectoral reallocation processes.

Source: Brault and Signore (2021, forthcoming)

In sum, Europe's economic outlook has improved over the past twelve months. The IMF has estimated that Europe's pandemic policies might have saved up to 15% of EU employment and nearly a quarter of corporate value added (IMF, 2021b). However, while policy makers have

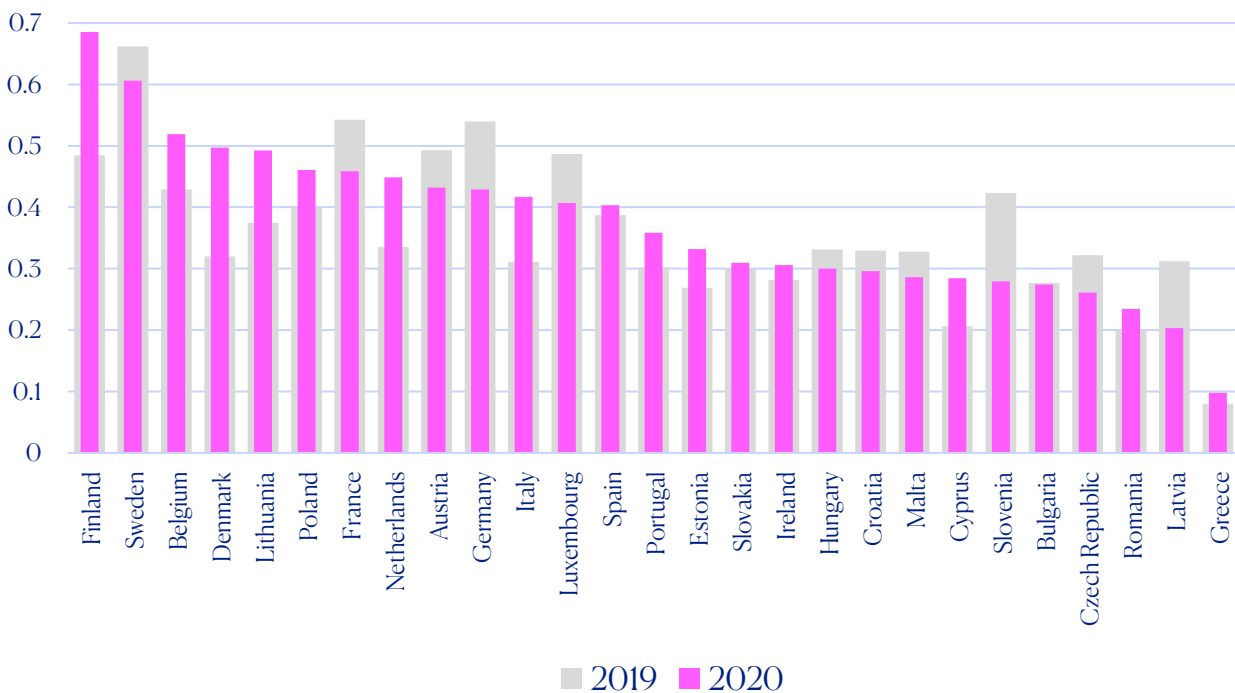
succeeded in cushioning the impact of the COVID-recession on important economic outcomes, such as unemployment, and corporate insolvencies, the risks to the European recovery are on the downside, as the spread of new virus variants remains an ongoing concern. Furthermore, the supply chain disruptions, which are currently exerting a significant upward pressure on prices, could turn out to be more persistent than initially anticipated, leading to a further increase in inflation. This might force monetary policy makers to respond by tightening credit conditions, which in turn could pose a threat to the ongoing recovery process. Finally, it remains uncertain how European economies will respond to the withdrawal of economic support programs, which are currently still in place in most EU Member States (European Commission, 2021b).

3 | SME finance environment

3.1 | The EIF SME Access to Finance Index (ESAF)

The EIF SME Access to Finance (ESAF) Index introduces the discussion on the general SME access to finance environment. The ESAF Index is a composite indicator that summarises the state of SME financing for each of the EU Member States. Box 2 provides an overview of the ESAF’s building blocks. The aggregate ESAF results for the year 2020 are presented in Figure 7.⁸ According to the ESAF index, 2020 (October 2021 update) SME finance conditions were most favourable in Finland, followed by Sweden, Belgium, Denmark and Lithuania.

Figure 7: The 2020 EIF SME Finance Index



Source: Torfs (2021)

⁸ The results are based on the most recent data available at the time of writing (October 2021) and refer to the full year 2020, or the second half of 2020 for all survey-based indicators. Therefore, the results incorporate the initial impact of the COVID-19 pandemic, but do not reflect the subsequent recovery that initiated mostly from the first half of 2021 onwards. Note that the ESAF Index is a relative indicator, which measures financing conditions of any given EU Member State, relative to other EU countries, and its interpretation should proceed accordingly. For more details on the ESAF and its interpretation, see Gvetadze et al. (2018).

Box 2: The four ESAF subindicators

Loans:

- Percentage of SMEs using bank loans in last 6 months
- Percentage of SMEs using grants or subsidised bank loans in last 6 months
- Percentage of SMEs not applying for a bank loan because of possible rejection in last 6 months
- Interest rate for loans under EUR 250k (floating rate with IRF up to 1 year)
- Interest rate spread (under EUR 250k vs over EUR 1m for floating rate with IRF up to 1 year)

Equity:

- Venture Capital Investments / GDP
- Value of IPO market / GDP
- Percentage of SMEs using equity capital in last 6 months

Credit and Leasing:

- Percentage of SMEs using bank overdraft, credit line or credit card overdraft in last 6 months
- Percentage of SMEs not applying for the above because of fear of possible rejection in last six months
- Percentage of SMEs using leasing or hire-purchase in the last 6 months
- Median interest rate charged to SMEs for credit line or bank overdraft application in last 6 months

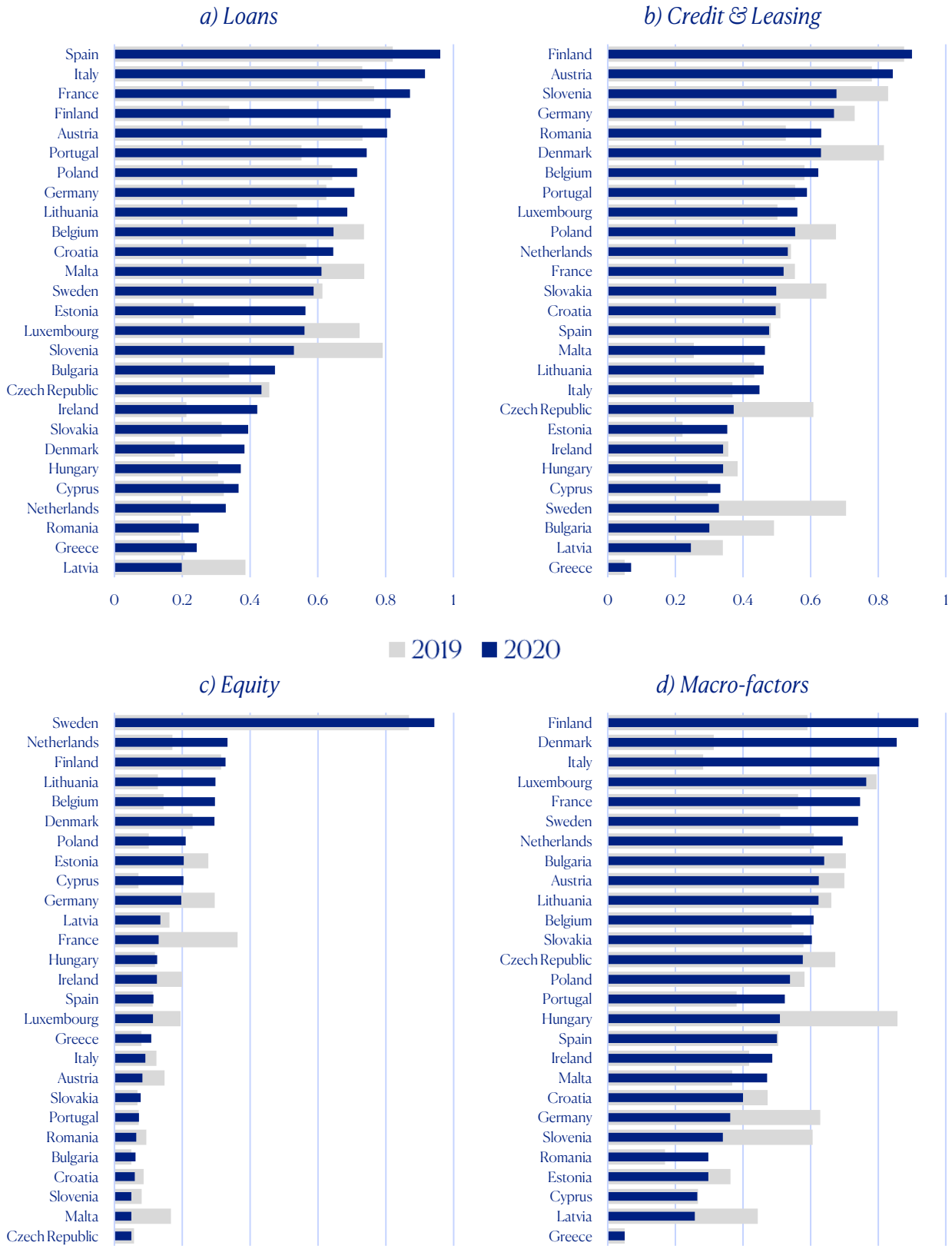
Macro Factors:

- Gap between actual and potential GDP
- Bank non-performing loans to total gross loans
- Percentage of SMEs feeling that there are no financing obstacles

Source: Torfs (2021)

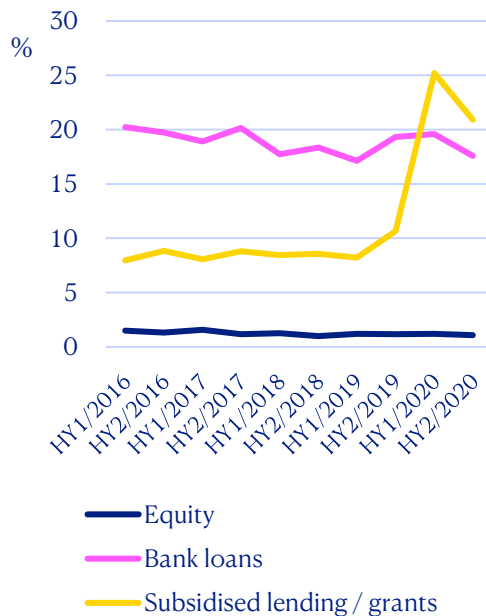
While Sweden has been able to establish itself at the top of the ESAF ranking for seven consecutive years, the other four countries that populate the top 5 have experienced a strong increase in their index value since the last update and accordingly have moved upwards in the ranking considerably. Particularly Denmark's progression (+13 spots) is noteworthy, which occurred against the background of deteriorating conditions on its SME credit and leasing market. However, these were more than compensated for by a rise in its loan and macro conditions subindexes. The percentage of Danish SMEs that reportedly used bank loans in the second semester of 2020 nearly doubled, compared to one year earlier, while the share using subsidised lending products even tripled. Interestingly, the share of Danish SMEs that did not apply for bank loans, out of fear of possible rejection, dropped from 6% to just 0.8%. While such trends are observed for many countries, as a consequence of COVID-19 related liquidity support programs, the relative outperformance of Denmark on this subject potentially evidences the effectiveness of the Danish pandemic response.

Figure 8: The 2020 EIF SME Access to Finance sub-indexes



A closer look at some of the underlying indicators of the loan and equity subindexes sheds further light on the observation that the initial stage of the economic recovery process was fuelled by a vast increase in the use of subsidised lending or grant-based support instruments

Figure 9: Share of EU SMEs using...



Source: ECB SAFE, authors' calculations

(Figure 9). One in four SMEs in Europe reportedly made use of subsidised loans or grants during the first semester of 2020, up from just 10% prior to the pandemic. This share remained high throughout the year, dropping only slightly during the second half of 2020. In contrast, the use of normal bank lending and equity remained constant or even decreased during HY2/2020.

These observations reflect the extensive use of the different kinds of government support programs that were rolled out from April 2020 onwards and are still in place today. The relative increase in the use of debt-based instrument, vis-à-vis equity products, implies SMEs balance sheets have likely deteriorated significantly over the past 12 months, which could potentially pose a threat to the overall financial stability of the European SME sector in the years ahead. In Section 3.3 |, a more elaborate analysis of the recent evolution on bank lending activity provides more background on this issue.

Also at the low-end of the ESAF distribution, the COVID-19 pandemic has led to some major shifts in the country ranking. The ranking is still concluded by Greece, as it has been since the beginning of its construction in 2013. The remaining spots at the lower end of the ESAF ranking are occupied by Latvia, Romania, Czech Republic and Bulgaria. Especially Latvia and Czech Republic experienced a significant downward revision in their ranking, each falling back 8 spots.

The drivers of the Latvian decline in SME finance conditions are to be found on the bank lending and macro side. Only 4.6% of Latvian SMEs reported to have used subsidised loans in 2020, far below the European average and a possible indication pandemic recovery programs fell short of reaching their target. At the same time, the share of SMEs that did not apply for bank loans out of fear of rejection more than doubled compared to 2019, to 13%, contrasting the EU-wide declining trend. Potentially related, the Latvian gap between its potential and actual GDP also exceeded the EU country average (-5.3% vs -3.5%). For the Czech Republic, the deterioration of the ESAF index was driven by a decline of the Credit & Leasing subindex, with an above average drop in the share of SMEs using leasing products, and an above average increase in the share of SMEs that did not apply for bank overdraft out of fear of possible rejection.

The largest relative decline was registered for Slovenia (22nd place). The Slovenian downfall is particularly remarkable, considering the country was still ranked 4th on the 2018 ESAF ranking, falling four spots in 2019 and another 14 in 2020. In the aftermath of the COVID-19 pandemic, Slovenian SMEs appeared to have experienced significant issues in accessing bank finance, with

just 13% of them reportedly having used it, compared to 23% during the same period one year earlier. The share of SMEs using subsidised debt-instruments increased only marginally, failing to compensate for the large decline in the use of traditional bank lending. Consequently, the share of SMEs that felt there were no financing obstacles declined from 33% to 21%.

For further elaboration on the results of the 2020 ESAF Index, readers are referred to Torfs (2021).

3.2 | SMEs' perspective on access to finance⁹

SME access to finance issues have increased sharply over the course of the pandemic. The share of SMEs that report access to finance to be a significant problem surged from 28% prior to the pandemic (HY1/2020), to 34% during the first semester of 2020, the largest increase recorded since the beginning of data collection (Figure 10, upper panel). The rise in access to finance issues was not unique to SMEs and was felt by large corporates as well, albeit to a lesser extent.

Access to finance conditions appeared to have improved slightly over the second half of 2020, most likely on account of the extensive public support efforts in Europe. Noteworthy is the more pronounced recovery for large corporates, indicating the persistent impact of the COVID-pandemic on Europe's smaller firms. By the end of 2020, one in three SMEs reported severe access to finance issues, compared to just one in four large firms. Recent evolutions have led to a renewed divergence in access to finance conditions between size segments, after several consecutive semester of convergence prior to the outbreak of the pandemic.

The SME Financing gap

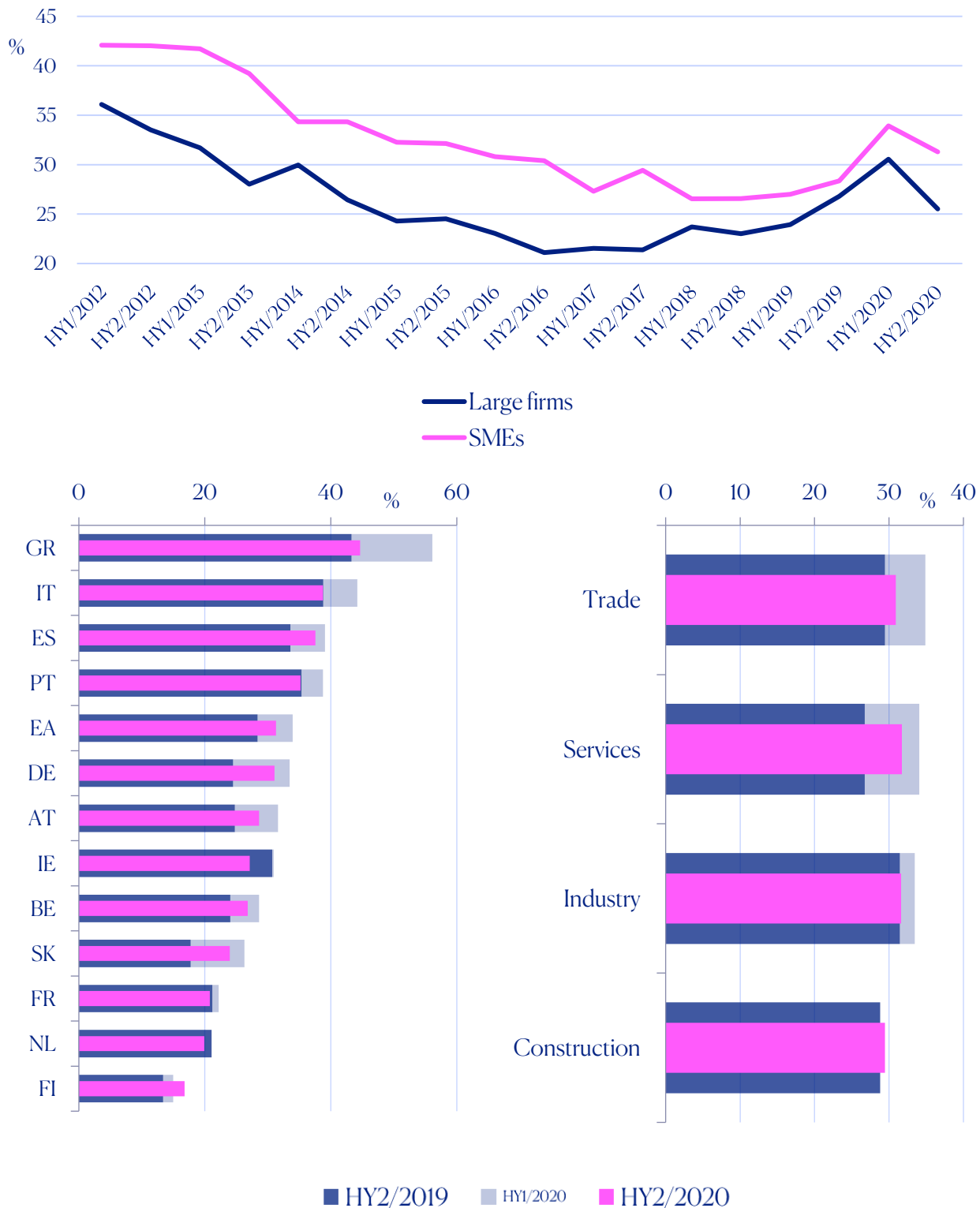
Access to finance is a structural problem for SMEs. Financial institutions are generally reluctant to extend uncollateralised credit to SMEs, even at high interest rates. As a result, many SMEs with economically viable projects cannot obtain the necessary financing from the regular system of financial intermediation.

This phenomenon is often referred to as the SME financing gap, a situation in which the market is not able to supply a sufficient amount of external financing to SMEs. This market failure, resulting in a sub-optimal equilibrium outcome, is rooted in the existence of information asymmetries, which lead to credit rationing either through adverse selection of low-quality borrowers or moral hazard issues (Akerlof, 1970; Jaffee and Russel, 1976; Stiglitz and Weiss, 1981).

This market failure warrants government intervention in SME capital markets, for example, through public support for the VC ecosystem (see Chapter 3 |) or credit guarantee schemes (see Chapter 5.1 |), among other policy measures aimed at vitalising the SME external financing ecosystem.

⁹ The discussion on SMEs' perspective on access to finance opportunities is based on the ECB's SAFE survey (ECB, 2021a). At the time of writing, the most recent wave of the survey covers the second semester of 2020.

Figure 10: Percentage of SMEs ranking access to finance as a highly important issue*



* Ranking it 7 or more on a scale of ten, after being asked how pressing of a problem access to finance was in the six preceding months. HY1/2020 values are only shown for countries where SMEs experienced higher access to finance issues in HY1/2020, compared to HY2/2020.

SME access to finance conditions deteriorated for most countries in the Euro area, but some countries were more affected than others were. Comparing the second semester of 2020 to the same semester one year earlier, Figure 10 reveals that SME access to finance issues increased most pronouncedly in Germany (+6.6%), Slovakia (+6.2%) and Spain (+4%). Dutch and especially Irish SMEs reported finance conditions to have improved since HY2/2019. These observations are in line with the relatively good economic performance of both countries in 2020.

The dynamics of the country-level access to finance statistics over the past three semesters also reflect the effectiveness of the pandemic support programs in alleviating the worst corporate liquidity issues. The initial, sharp rise in SME access to finance issues during HY1/2020 were alleviated significantly for most countries during the second semester of 2020. For some countries, such as Italy and Portugal, external finance conditions even reverted to pre-pandemic levels.

The external finance environment deteriorated most for SMEs active in the service and trade sector, while SMEs in construction were hardly impacted at all (Figure 10, bottom-left panel). This is a logical implication of the disproportionate impact of the lockdown measures on service sector SMEs. The construction sector, on the other hand, thrived in many countries, as people took advantage of their home confinement to initiate home renovation projects.

SMEs pointed at the negative general economic outlook as an important deterrent factor for the availability of external finance (Figure 11). While banks were considered relatively willing to provide credit, compared to historic trends, their willingness has declined somewhat in recent months, although this declining trend already started prior to the pandemic. Equity investors' willingness to invest, on the other hand, plummeted in 2020, and was since then considered to contribute negatively to the availability of external finance to SMEs. This reported unwillingness of investors to provide equity financing is somewhat surprising, given the relatively positive performance of this financing market throughout the pandemic (Kraemer-Eis et al., 2020).

Access to public financial support continues to be a positive driver of external financing, once again attesting to the effectiveness of the pandemic recovery initiatives. The most recent wave of the ECB's SAFE survey brought to light that the vast majority of European SMEs had access to government support schemes. These schemes mostly helped firms to finance working capital needs and meet their short- and medium-term obligations. For example, nearly half of SMEs used the financing received from those schemes to finance their wage bill (ECB, 2021a).

Unsurprisingly, in the wake of the pandemic, the general economic outlook was a negative driver for the availability of external financing for all countries considered (Figure 12). It is noteworthy, however, that this pessimism already existed prior to the pandemic. In a few countries, SMEs were even slightly more optimistic in HY2/2020 than they were during the second semester of 2019. However, for the majority of countries, the opposite holds true.

Also with respect to the availability of public financial support schemes, important country heterogeneity emerges (Figure 12). In particular, in Portugal, Belgium and Slovakia, SMEs considered access to public financial to be insufficient. In contrast, Austrian, Greek, French, Irish

and Dutch SMEs were reportedly pleased with the outreach of liquidity support programs in their countries.

Figure 11: Factors driving the availability of external financing to Euro area SMEs*

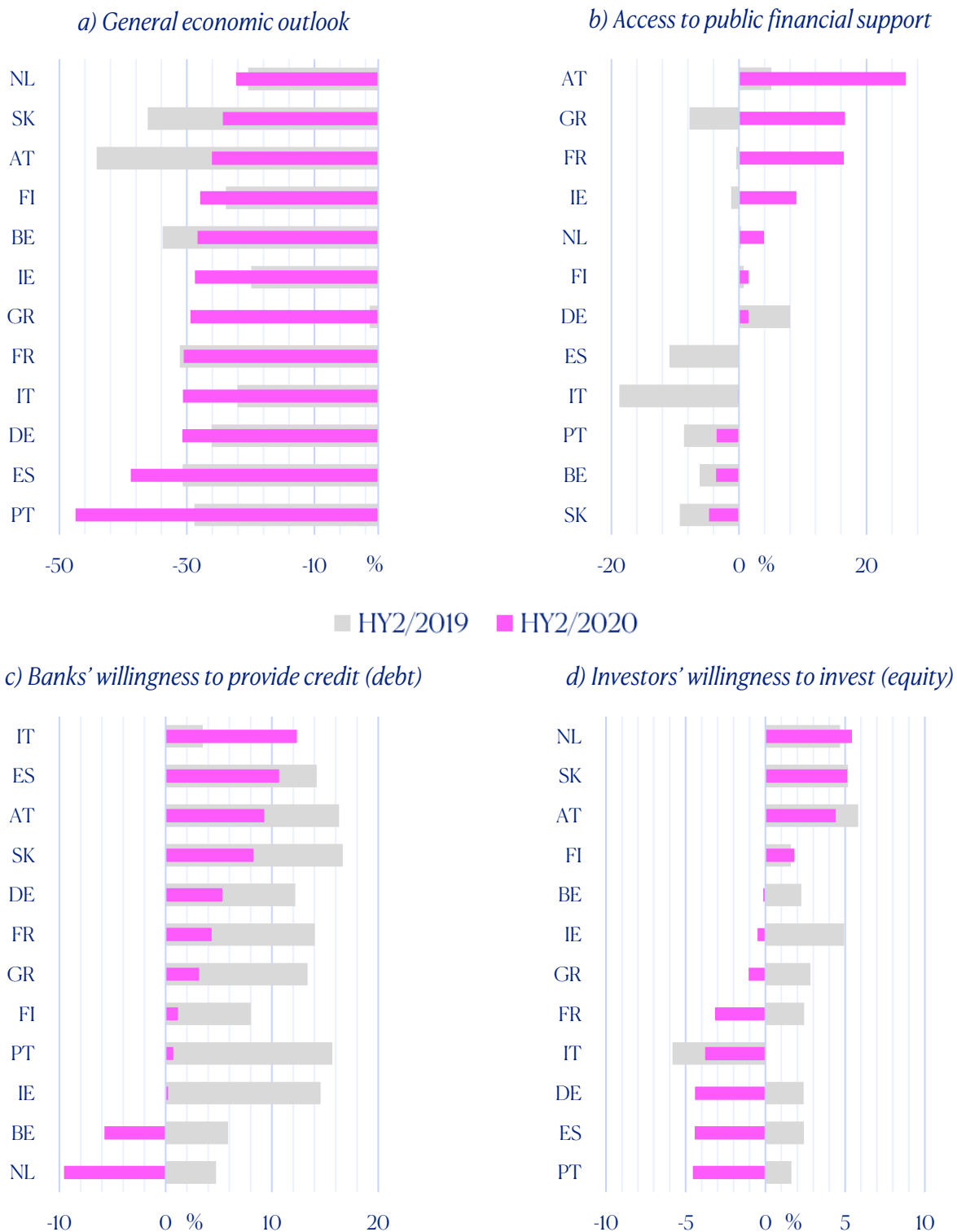


* Net-percentages, calculated as the difference between the share of positive vs negative respondents, based on the SAFE Survey question 11: For each of the following factors, would you say that they have improved, remained unchanged or deteriorated over the past six months? The outcome is to be interpreted as a rate of change, for example, a positive percentage implies that on aggregate, conditions related to that factor have improved during the considered time period.

Source: ECB SAFE (ECB, 2021a), authors' calculations

Only Belgian and Dutch SMEs experienced deteriorated access to bank financing during the second semester of 2020 (Figure 12, panel c). For all other countries, the availability of debt-based financing from banks appears to have improved. The rising trend in debt-financing conditions already started in HY2/2019 and decelerated in most countries over the course of the pandemic, apart from Italy, where a sharp jump in the rate of improvement occurred.

Figure 12: Factors driving the availability of external financing by Euro area Member State*



* Net-percentages, calculated as the difference between the share of positive vs negative respondents, based on the SAFE Survey question 11: For each of the following factors, would you say that they have improved, remained unchanged or deteriorated over the past six months? The outcome is to be interpreted as a rate of change, for example, a positive percentage implies that in the aggregate, conditions related to that factor have improved during the considered period.

On the equity side, a different picture emerges, with wider divergence among Euro area Member States. During 2020, the willingness of investors to provide capital declined sharply in Portugal, Spain, Germany, Italy and France, contrasting with a markedly improved investor willingness in some other countries, as registered in the Netherlands, Slovakia and Austria.

In sum, a mixed picture emerges from the recent wave of the ECB's survey on enterprise access to finance. On the one hand, the widespread availability of public finance supported seems to have sheltered European SMEs from the worst of the crisis, enabling them to meet their most urgent liquidity needs. On the other hand, divergent country fortunes indicate the need for ongoing vigilance for policy makers. Future waves of the ECB SAFE survey will shed light on whether the gradual recovery in SME access to finance conditions remains sustainable after the first government support measures will start to phase out.

3.3 | Bank lending activity & SME bank financing conditions

The bank-lending channel has traditionally been the most important source of external financing for SMEs, particularly in Europe, where SMEs rely disproportionately on bank-based debt instruments to finance working capital needs, as well as long-term investments. This reliance further intensified during the COVID-19 pandemic, as European SMEs relied heavily on public financial support, such as public guarantee schemes or subsidised lending, to meet with their urgent, short-term liquidity needs.

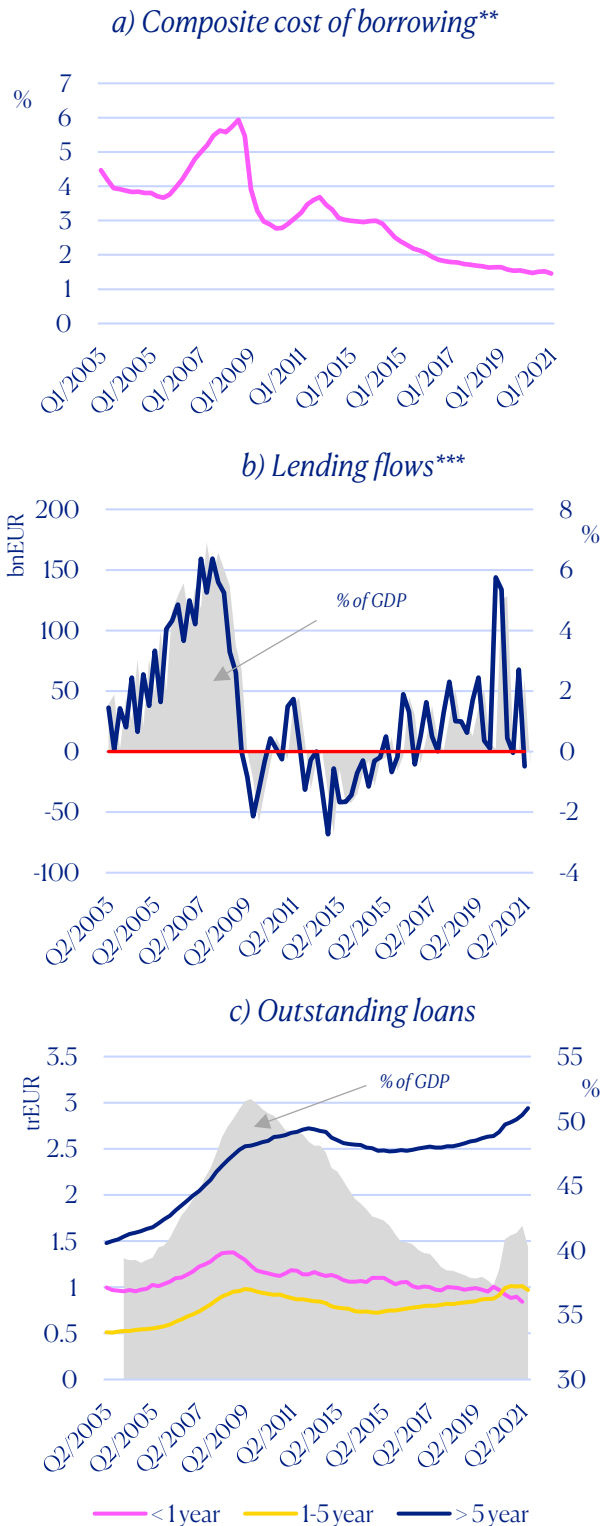
Aggregate corporate lending activity

Unsurprisingly, the COVID-19 pandemic had a significant impact on aggregate¹⁰ corporate lending activity in the Euro area (Figure 13). While net-lending flows (panel b) were already on the rise prior to 2020, driven by record low interest rates (panel a), lending activity spiked to its highest level since the run-up to the 2008 financial crisis, which caused the outstanding corporate loan amount to rise to exceed EUR 4.75tr. Especially in the immediate aftermath of the first wave of the pandemic, corporate debt issuance rose sharply, reflected in a marked rise in outstanding loans. Borrowing costs for Euro area corporates remain historically low, dipping below 1.5% (panel a) first the first time ever during Q1/2021.¹¹

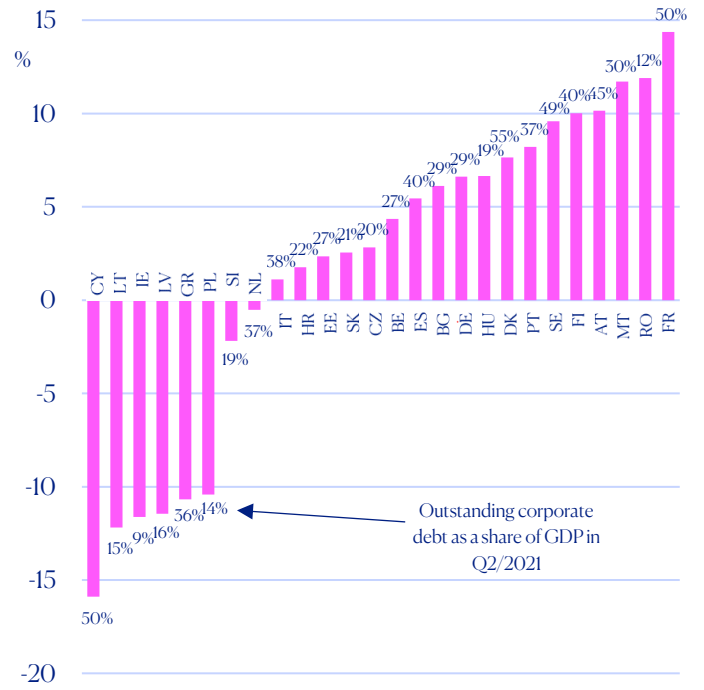
¹⁰ The analysis of bank lending activity begins with aggregate corporate lending activity, before preceding to SME specific statistics.

¹¹ As indicated by the ECB's composite cost of borrowing indicator, which calculates borrowing costs to Euro area corporates as a volume-weighted average across all maturity and loan size segments.

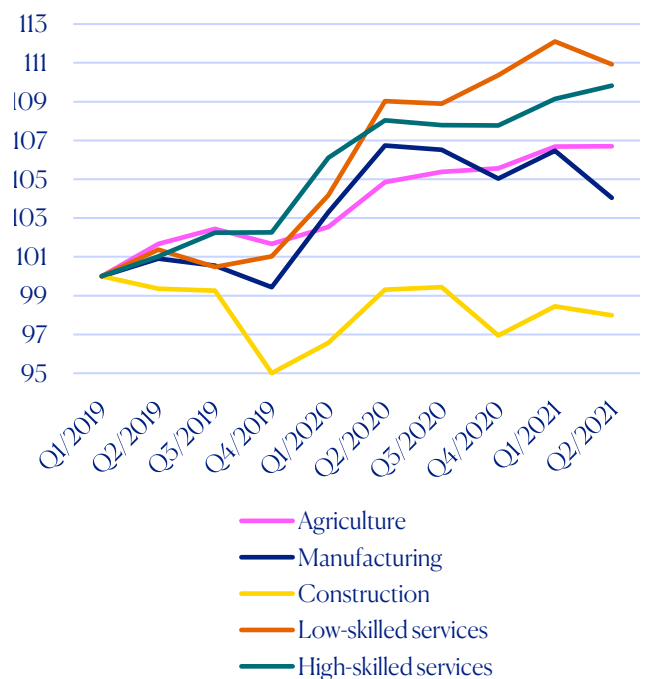
Figure 13: Lending activity of private lenders to non-financial corporations (Euro area)*



d) % change outstanding loans (Q2/2019 vs Q2/2021) and share of the corporate debt stock in national GDP



e) Outstanding loans by sector (Q1/2019=100)****



* Monetary financial institutions, credit institutions, other financial intermediaries and electric money institutions, excluding central banks. GDP normalisation proceeds with quarterly GDP data for quarterly lending flows, and with a 4-quarter moving-sum for quarterly data on outstanding loans. **To Euro area non-financial corporations. ***Lending flows are defined as the balance between new business volumes and repayments. ****Low-skilled service sector: NACE sections G to J; High-skilled service sector: NACE sections L, M and N.

Interestingly, the rise in corporate debt was mainly driven by an increase in long- and medium-term corporate lending (panel c). This contrasts with prior expectation, as acute capital needs, such as the ones experienced by many companies during the pandemic crisis, are typically associated with rising demand for short-term lending (ECB, 2021b).

Initially, corporate lending was mainly supported by the medium-term loan segment. This is in accordance with corporate finance needs at the time, typically applied to bridge a substantial period of revenue loss for which loans with a maturity of less than one year would be inadequate. As the crisis progressed, corporate lending was supported mostly by long-term loan products (> 5 year), with the outstanding stock of medium-, and in particular short-term loans on the decline. This is a positive signal in light of Europe's economic recovery, as long-term loans are typically used to finance larger investment projects, which are needed to support a sustainable economic recovery trend. By the end of the second quarter of 2021, long-term outstanding loans to NFCs stood approached EUR 3tr, exceeding pre-financial crisis levels.

Aggregated over all maturities and expressed as a share of GDP (grey area in panel c), corporate debt levels rose about 4 percentage points. The initial sharp rise was caused by a combination of a substantial drop in economic activity and a simultaneous rise in lending. While corporate outstanding debt will likely remain elevated above their pre-pandemic levels in the near future, it should also be noted they are still far below the heights of the financial crisis, when it peaked at over 50% of GDP.

The stock of corporate debt did not expand in the same way across all EU Member States (Figure 13, panel d). Moreover, for a handful of countries, the amount of outstanding corporate debt in Q2/2021 was significantly below pre-pandemic levels. In Lithuania, Ireland, Greece and Poland, corporate outstanding bank loans declined by more than 10%. For Greece, the decline is a continuation of a historic trend in corporate deleveraging, which followed a surge in corporate lending during the midst of the financial crisis. In accordance with European evolutions, Greek corporate medium-term lending did increase, indicative of the extensive use of short-term liquidity support measures. Long-term lending, however, continued to decline, going against the EU trend, which could pose a threat to the Greek economic recovery process.

The stock of corporate outstanding bank lending increased most strongly in France, which led total French outstanding corporate debt to exceed 50% of French GDP in Q2/2021, the second highest level among all EU countries. French outstanding corporate bank debt now matches the EU aggregate level at the onset of the Great Financial crisis in 2008. The Danish corporate debt stock, prior to the pandemic already among the highest of all EU countries, also expanded, exceeding 55% of GDP in Q2/2021. In Romania, outstanding debt increased strongly as well, however, at just 12% of GDP, corporate indebtedness was significantly below the EU average, leaving more leeway for a growing corporate loan stock.

Also other Scandinavian countries' corporate sectors are relatively indebted. This does not necessarily pose a problem, provided the corporate sector is sufficiently competitive to be able to meet the associated debt obligations. This is arguably the case for countries like Denmark, Sweden and Finland. The relatively high amount of outstanding corporate debt in vulnerable

economies like Italy and Spain, and to a lesser extent, France, could be a potential cause of concern in the long run.

From a sector-perspective, outstanding loans increased across the board (Figure 13, panel e). The rise in corporate debt was most pronounced for the service sectors. This is in accordance with the fact that services companies suffered most from the confinement measures. Outstanding loans also rose significantly for agricultural companies. While this sector was not hit particularly hard by the pandemic, this can be explained in the context of a historic trend that was initiated long before the pandemic started.

SME lending activity

Banks' new issuance of small loans to Euro area corporates (< EUR 0.25m, a common proxy for SME lending^{12,13}) rapidly expanded during the initial phase of the crisis, peaking at EUR 50bn worth of new loans in May 2020 (Figure 14). However, consistent with aggregate evolutions on the lending market, recent data reveals a sharp decline in new business volumes for this market segment. Historically speaking, the share of small loans in aggregate volumes remains high, coming in just below 17% in July 2021.

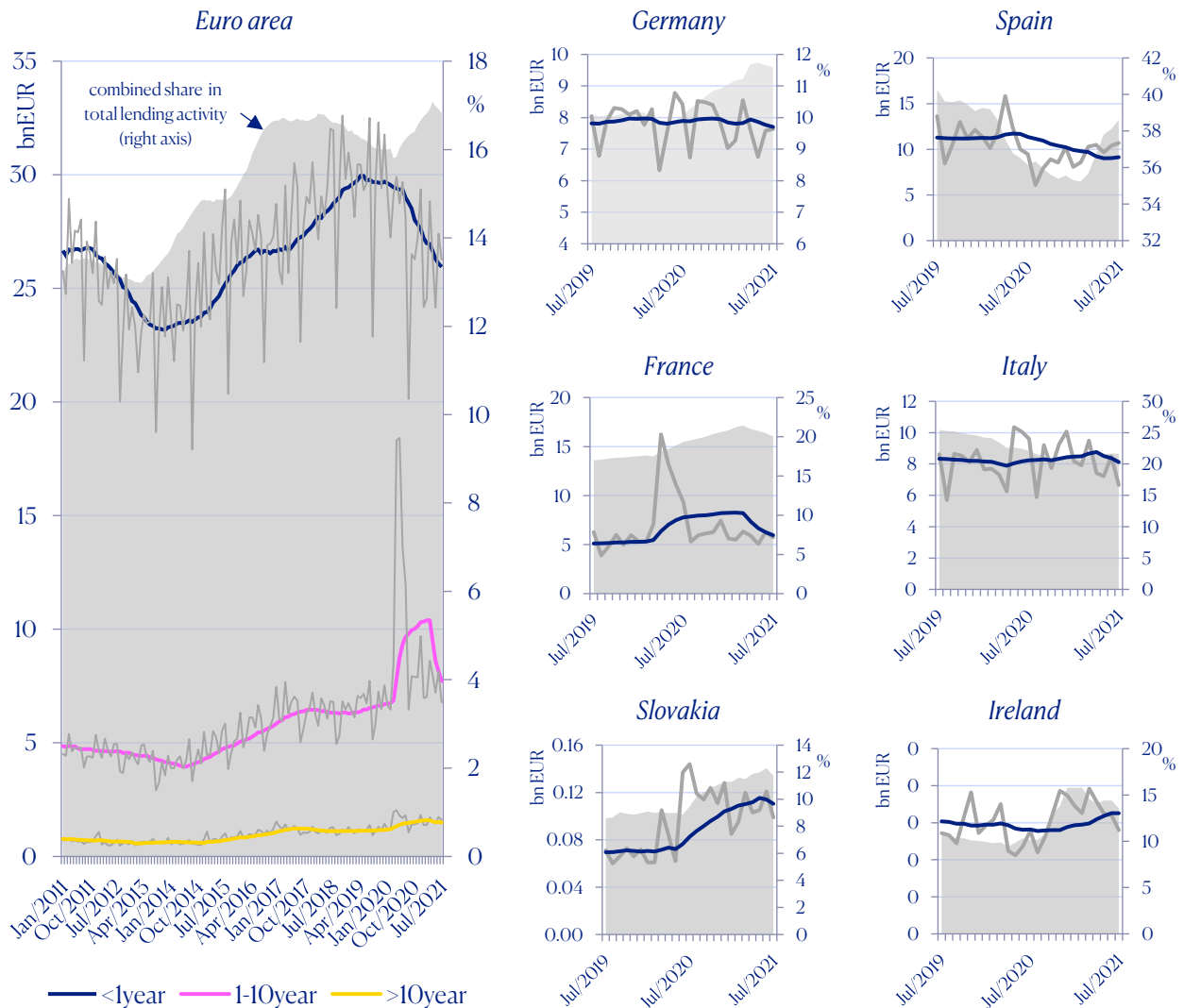
The spike in lending occurred uniquely in the segments of loans with a medium- and long-term maturity. At first glance, this appears to conflict with the fact that SMEs were in urgent need of short-term liquidity support. However, the average maturity of loans supported by a COVID-19 guarantee instrument was about five year (ECB, 2020). In fact, new business volumes of short-term small loans have followed a declining trend since the second half of 2019, which accelerated at the onset of the pandemic. The need for loans with a medium-term maturity is in accordance with the nature of the current crisis, characterised by longer spells of revenue-loss and persistent uncertainty on near-term recovery prospects, in particular for the segment of SMEs.

There is considerable country-level heterogeneity in both the evolution of new business volumes of small loans as well as its relative importance in the aggregate bank lending market (Figure 14, right panels). In Germany, small loans make up only a small fraction (12%) of the overall lending market. While this share increased a few percentage points in the wake of the pandemic, it is still below the Euro area average and well below the value of some other Member States. At the other extreme, consider Spain, where the small loan segment is an important driver of the overall lending market, with nearly 40% of new business volume consisting of loans below EUR 0.25m.

¹² Huerga et al. (2012) show that small loans are a good proxy for the SME lending market.

¹³ In order to reflect lending conditions to SMEs specifically, rather than small loans in general, the data excludes interest rates on revolving loans and overdraft, since these instruments are used independently of firm size.

Figure 14: Evolution of SME lending activity (new business volume, bn EUR)*



* As approximated by the evolution of small lending activity (<EUR 0.25m), new business volume of loans to NFCs, other than revolving loans and overdrafts, convenience and extended credit card debt. To extract medium term trends, the coloured lines plot 12-months backward moving averages of the raw new business volumes series, the latter being characterised by large monthly fluctuations.

Source: ECB, authors' calculations

Guaranteed lending activity¹⁴

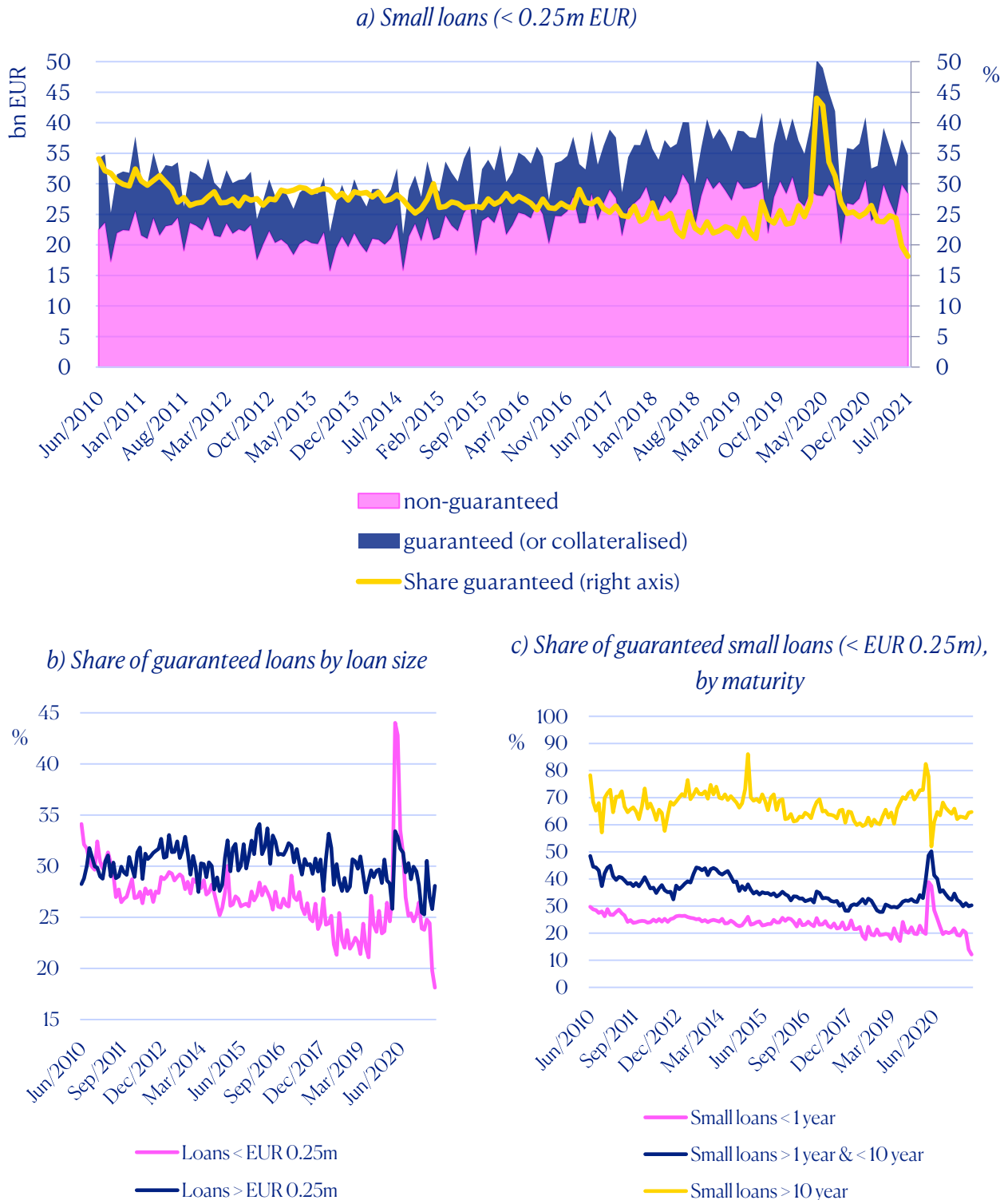
COVID-19-related government guarantees continued to contribute to liquidity support for corporate lending during the first half of 2021 (ECB, 2021b). However, the recent downward trend in SME lending could be driven by the gradual phase-out of government liquidity support (Figure 15). While the share of newly disbursed small loans that were covered by a guarantee initially spiked to nearly 45%, up from its historical trend level of about 25%, this share plunged in recent months to just 18% during July 2021, falling below its historical average.¹⁵ The bottom-

¹⁴ For an extensive overview of the European guarantee market, see Chapter 5.1 |

¹⁵ While the data unfortunately does not allow distinguishing between guaranteed and collateralised lending, it is unlikely that short-term trend reversals as the ones discussed here are driven by changes in banks' collateral requirements. Therefore, one could reasonably assume these reflect changes in the outreach of policy instruments (see for example ECB (2020)).

left panel of Figure 15 shows this trend is unique to the segment of small loans, as the spike and subsequent decline in the share of guaranteed loans does not appear on the market for loans in excess of EUR 0.25m.

Figure 15: Guaranteed (or collateralised) SME lending (new business volume) in the Euro area



During the first half of 2020, short-term liquidity support initiatives had led to a crowding out of guarantee support for long-term lending (Kraemer-Eis et al., 2020). This was evidenced by a clear trend-reversal in the share of long-term guaranteed (or collateralised) SME lending, which had plummeted to about 50% after having gradually risen from 60% to over 80% during 2019. In recent months, this share normalised again to its pre-pandemic trend level of about 65%. In contrast, the share of short-term SME loans covered by a guarantee (or collateral) declined sharply, below its historical trend path, to just over 10% in July 2021. The fact that policy support for long term lending seems to have normalised in recent months is a positive signal in favour of a sustainable, long-term recovery process, which is necessarily fuelled by durable investment projects.

Corporate borrowing costs

According to the ECB's composite cost of borrowing indicator (Figure 13, panel a), corporate lending has never been as inexpensive as it is today. However, the aggregate rate-indicator hides significant disparities across loan segments. During the twelve months leading up to July 2021, borrowing costs for non-financial corporations have undergone contrasting evolutions, depending on loan size and maturity (Figure 16).

In the immediate aftermath of the first pandemic wave until the end of 2020, interest rates have either declined, or stayed constant, over all considered submarkets. Borrowing costs declined most strongly for medium-term small loans (<EUR 0.25m), which is consistent with the available evidence on the average maturity of COVID-guaranteed lending programs, and the fact that such programs targeted to an important extent the SME loan segments.

Interestingly, as the crisis progressed, rates started to increase again. This increase was particularly pronounced in the medium-term small loan segment during the second and third quarter of 2021, which could indicate a normalisation process after the sharp decrease that occurred during 2020. The cost-increase of

Borrowing costs by maturity and size segment.

The ECB provides data on interest rates for lending activity by loan size and maturity. The interest rate on short-term loans serves as a proxy for short-term working expenditures, while interest rate on longer term maturities are a better proxy for the cost of durable investments. From the loan size distinction, one can derive the interest rate size spread, for each maturity class, defined as the excess interest rate charged on loans smaller than EUR 0.25m compared to loans with a value exceeding EUR 1m. Assuming lending below EUR 0.25m provides a good proxy from SME lending, a high size-spread indicates a disadvantaged competitive position for SMEs vis-à-vis larger borrowers.

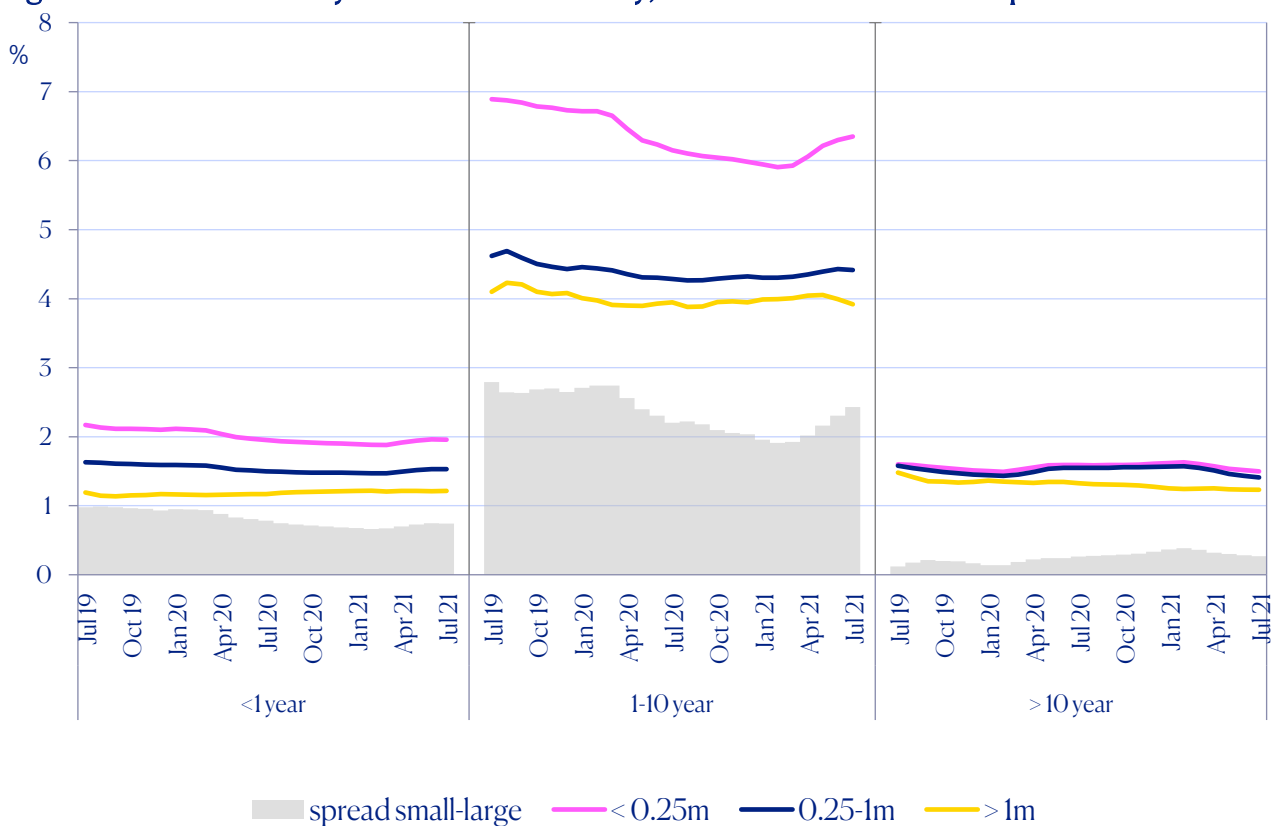
Regardless of maturity, small loans are burdened with higher interest rates. Such a size-spread conflicts with traditional finance theory, which suggests that the risk of default increases with loan size. The absence of this expected relationship could evidence the presence of fixed screening costs, which imply higher interest rates on small loans; or it could indicate that small loans are used for different, more risky purposes, such as financing working capital. The fact that the size spread is particularly high for short-term loans, provides some support for this argument. It is also possible that banks possess a higher degree of power in the small loan market segment, putting an upward pressure on the price of small loans, thereby increasing the cost of obtaining bank finance for SMEs.

There is also an anomaly in the maturity spread of small loans. As liquidity decreases with loan maturity, long-term loans should carry higher interest rates. This holds indeed true for medium-sized and large loans. For small loans, however, short-term lending is actually more expensive. This too can be interpreted as evidence for the presence of a fixed cost element related to screening.

medium-term lending for large loans was much less pronounced, leading to a marked hike in the medium-term size-spread.

Only the price for long-term lending did not increase during the first semester of 2021. For small and medium-sized loan, rates even dropped a few basis points. One potential explanatory factor is the recent rise in the share of guaranteed, longer term, small loans (as documented in Figure 15), which reduces lenders' risk warrants a lower interest rate. Another potential driver could be a lack of demand for long-term investment loans by SMEs, as SME business sentiment remains precarious in light of the ongoing uncertainty about the evolution of the pandemic and the lingering impact of the economic turmoil on SMEs' business.

Figure 16: Interest rates by loan size and maturity, and the interest rate size spread



Source: ECB, authors' calculations

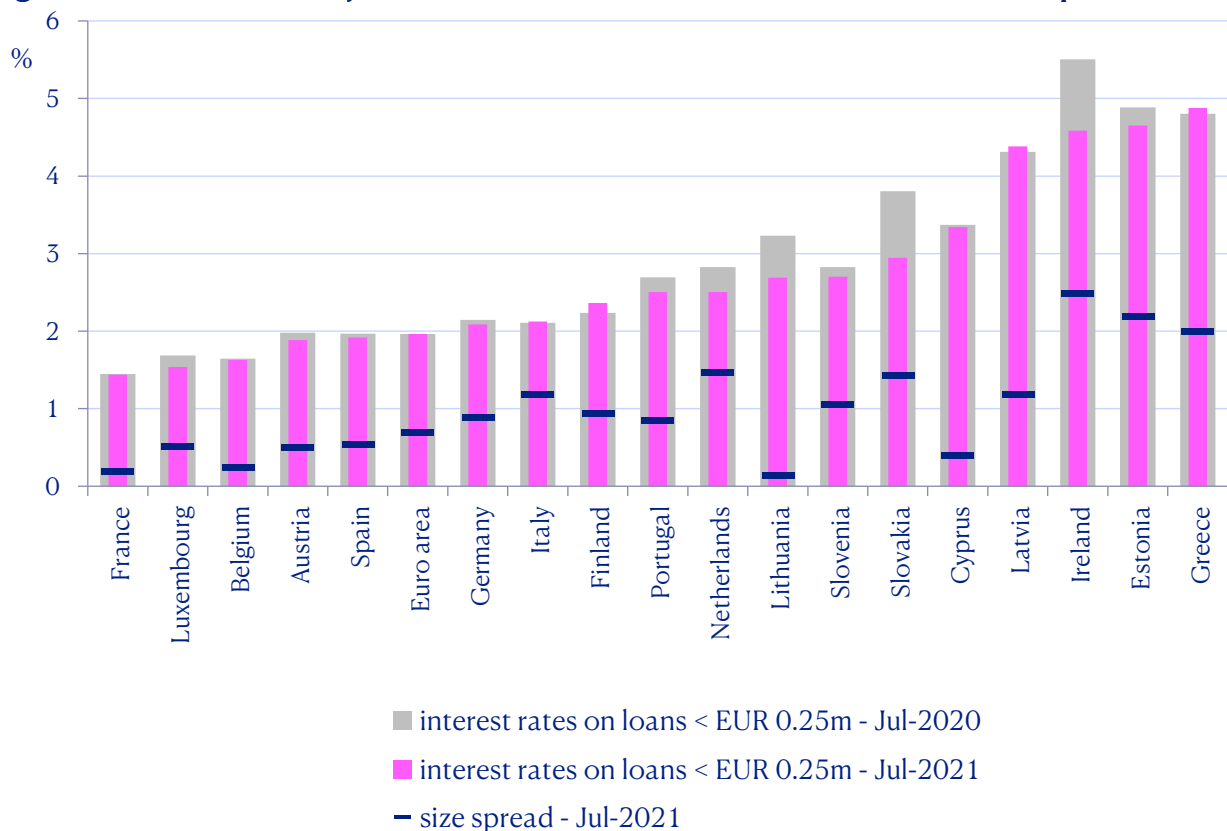
Borrowing costs for small loans are characterised by a significant degree of heterogeneity across the EU (Figure 17).¹⁶ SMEs face the most favourable lending conditions in Belgium, Luxembourg and France, where lending costs for small borrowers further declined over the 12 months preceding July 2021. Costs declined in most other countries as well, most notably so in Ireland and Slovakia, where the interest rate on small loans declined by about 100 basis points. Size spreads declined considerably in both countries, indicating the drop in loan costs occurred disproportionately on the market for small loans. Despite the recent decline in borrowing costs,

¹⁶ In this context, see Wagenvoort et al. (2011) who show that the European market integration for small loans, in particular with a short rate fixation, has not yet been achieved, explaining the non-uniformity of bank lending rates on small loans across Europe.

the Irish SME lending market remains one of the most expensive among Euro area Member States, exceeded only by Estonia and Greece. Small loan borrowing costs rose only in Latvia, Greece, Finland and Italy, be it to a limited extent.

While some might argue that cross-country heterogeneity in interest rates on small loans could be explained by differences in the risk-profile of local SMEs, a recent study found that such factors were only weak predictors of small loan rates (Caroll and McCann, 2016). Controlling for individual risk factors, the authors conclude that national differences in the costs of SME lending are associated with institutional characteristics, such as the recoverability of collateral and lack of competition in the banking sector, rather than firm-specific risk factors. Competitive pressure in the banking sector was found to be of particular relevance for explaining the interest rate size-spread documented in Figure 16 and Figure 17. Large firms, having greater bargaining power in the bank-client relationship, can still negotiate lower interest rates in non-competitive banking markets, whereas SMEs face higher borrowing costs, in absence of alternative outside options (Berger and Udell, 2006; see as well Affinito and Farabullini, 2009).

Figure 17: Euro area country-level interest rates on small loans and the loan size spread*

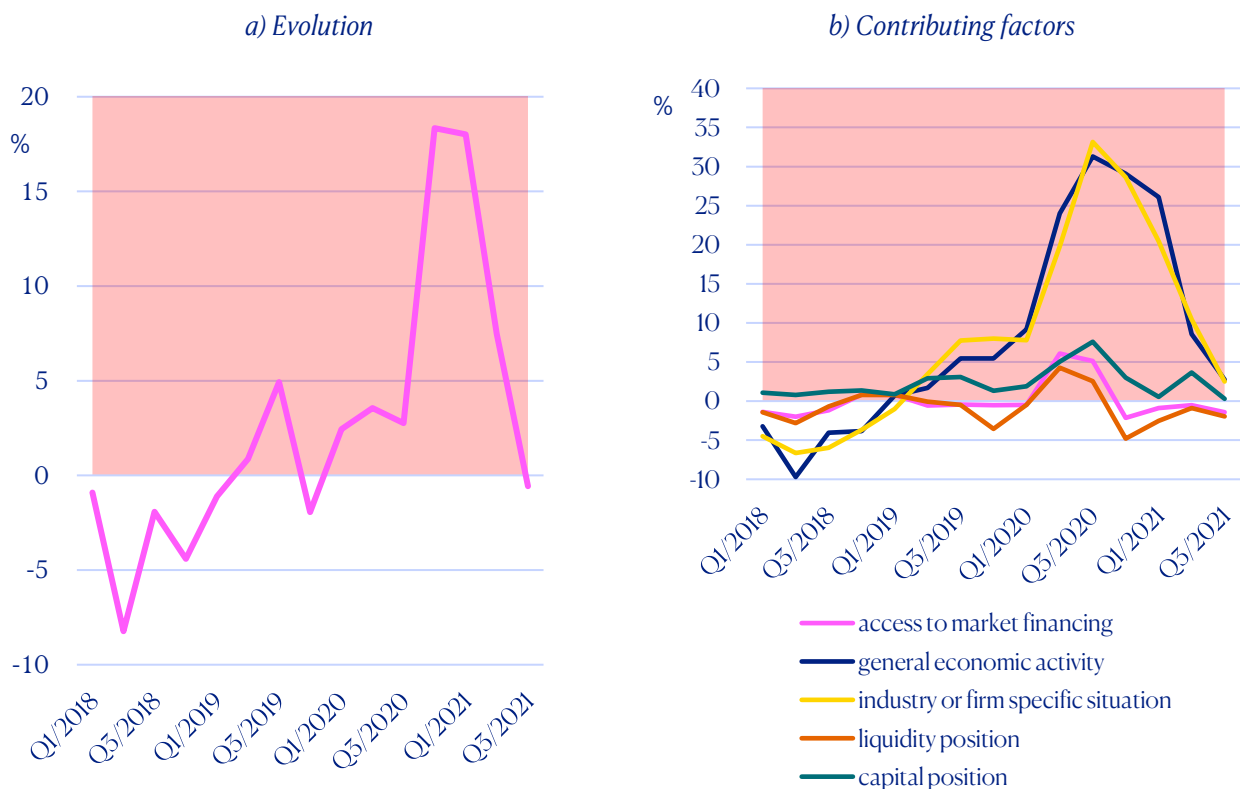


* The spread is calculated as the percentage point difference between loans exceeding EUR 1m and loans smaller than EUR 0.25m. Twelve month backward moving averages were used to eliminate the influence of monthly outliers as well as seasonal influences and focus on the underlying trend. Countries or data points for which no sufficient data was available are omitted.

Bank credit standards for SME lending

After two quarters of considerable tightening of credit standard, banks have kept borrowing conditions to SMEs constant in the third quarter of 2021 (Figure 18). After having tightened considerably during Q4/2020 and Q1/2021, the gradual return towards normalisation have stopped banks from tightening them further during the remainder of 2021, as indicated by the driving motives “general economic activity” and “industry specific environment”, in the right panel of Figure 18. None of the other factors considered played a role of significance in the evolution of banks’ lending decisions.

Figure 18: Bank credit standards applied to SME lending by Euro area banks*



* Net-percentages, calculated as the difference between the share of banks that tightened, minus the share of banks that loosened credit-standard. Positive values (red area) indicate a tightening of credit standards and hence imply worsening credit conditions.

Source: ECB SAFE (ECB, 2021a), authors’ calculations

In conclusion, in the aftermath of the COVID-19 pandemic the SME financing environment remains riddled with challenges. Even though government liquidity support programs seem to have sheltered European SMEs from the worst impact, they continue to experience significant issues accessing external financing, with conditions differing significantly between countries. Unsurprisingly, bank lending activity has been impacted strongly by the COVID-19 pandemic, as corporate indebtedness rose significantly. While subdued during the initial stages of the COVID-19 pandemic, long-term lending has somewhat recovered in recent months, indicating a revival of firms’ willingness to engage in durable investment projects.

4 | Private Equity

Private Equity (PE)/Venture Capital (VC)¹⁷ is an essential source for start-ups, young, and high growth companies to create value, often through innovation. External equity is not to be seen as a substitute for traditional, mainly bank-centred, SME financing instruments. Rather, it serves a specific and restricted group of SMEs and mid-caps (including start-ups), which, nevertheless, significantly contribute to the innovativeness, productivity and development of the overall economy.

However, there are impediments to the development of a vibrant European PE/VC market and the “[p]resence and accessibility of alternative funding avenues is underdeveloped for SMEs, *e.g.* venture capital & angel investing” (AFME and BCG, 2015; AFME, 2017). The justification for public intervention in the area of SME financing in general, and external equity financing in particular, is rooted in a number of factors, such as the presence of information asymmetries in the relationship between financier and recipient, the presence of fixed costs of investment and the existence of positive externalities originating from SMEs’ innovation activities.¹⁸ In the PE/VC market, the long investment cycles can also deter private investors, especially in early stage financing, while public agents can be considered as more “patient” investors.

Against this background, it is one of EIF’s aims to play a crucial role in establishing a sustainable VC ecosystem in Europe. We provide an overview of the European PE/VC market activity and prospects in this chapter.

4.1 | Investment activity

4.1.1 | Private equity funds

Over the past 20 years, the European PE activity exhibited booms and busts. The most famous peak periods were observed in 2000 and 2006, when the total amounts raised by PE funds located in Europe reached EUR 48bn and EUR 112bn, respectively, according to the statistics of Invest Europe (Figure 19; Box 3 provides more information on the Invest Europe data).

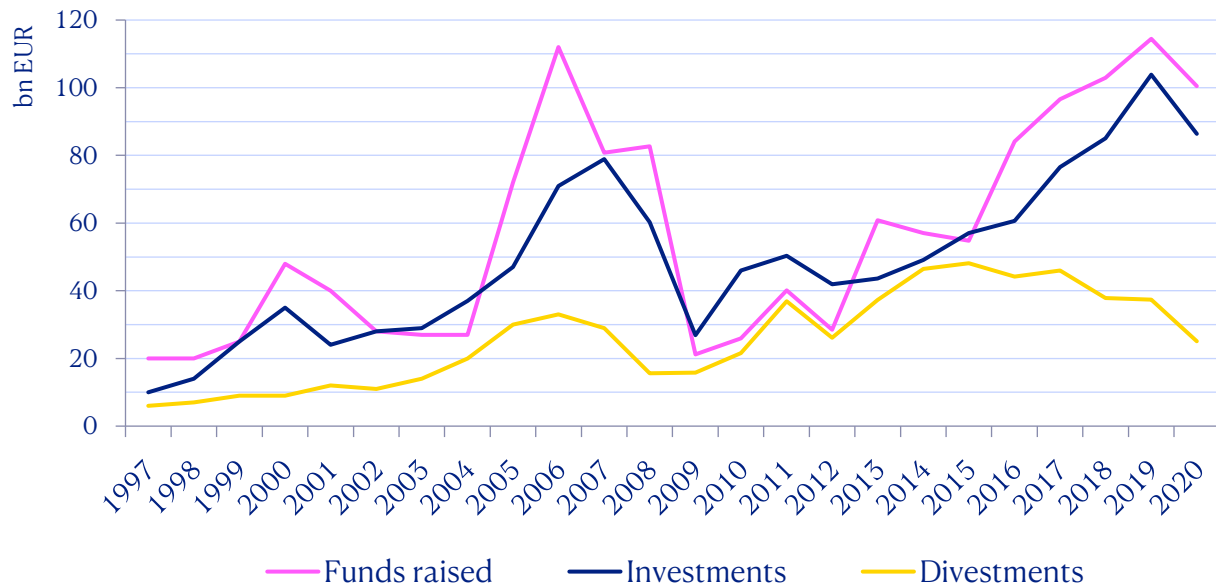
In the same years, the overall PE investment levels were at EUR 35bn and EUR 71bn (and even increased further to EUR 79bn in 2007). However, both booms were followed by significant downturns, *i.e.* the “dotcom crisis” in the early noughties and the financial and economic crisis from 2007 onwards. The severe crash of the European PE activity in 2008-2009 was followed

¹⁷ In this chapter, we follow the Invest Europe approach that includes VC as a subcategory of private equity.

¹⁸ See Section 5.1.1 | for an overview of the rationale for public intervention in SME financing.

by a rebound, and fundraising and investment reached new record levels at EUR 114bn and EUR 104bn, respectively, in 2019. However, in the COVID crisis, the market activity went down, and total fundraising was at EUR 101bn and investments at EUR 86bn in 2020.

Figure 19: Fundraising, investment and divestment amounts by PE firms located in Europe*



* In this diagram, investment and divestment data are based on the “industry approach” (or “office approach”), i.e. by PE firms located in Europe, in contrast to the “market approach”, which is based on the location of the portfolio companies.

Source: Invest Europe, authors’ calculations

Box 3: Introductory information on Invest Europe data

In this chapter, numbers, diagrams and statements are largely built on statistics from Invest Europe (formerly EVCA, the European Private Equity & Venture Capital Association), and we would like to thank our colleagues from the Invest Europe research team for their support.

Invest Europe monitors direct PE investment funds that primarily focus on investments in Europe. The funds included in the statistics are PE funds making direct PE investments, mezzanine PE funds, silent partnerships, corporate venture structures (CVC), PE arms of banks, clean tech (energy) funds, co-investment funds and rescue/turnaround funds.¹⁹ Please note that Invest Europe PE statistics do not include infrastructure funds, real estate funds, private debt funds, distressed debt funds, primary funds-of-funds, secondary funds-of-funds and PE/VC-type activities that are not conducted by PE funds. Also not included are activities of business angels and hedge funds as well as corporate acquisitions outside of dedicated corporate venture programmes.

¹⁹ Silent partnerships: Mezzanine funds, specific to Germany. PE arms of banks: PE/ VC arms/ divisions of banks. Even if they do not invest from a pool of capital (usually rather from the bank’s balance), they follow the classic PE model. Clean tech (energy) funds, as long as they invest in clean-tech/ energy related companies and not in projects.

Box 3 continued:

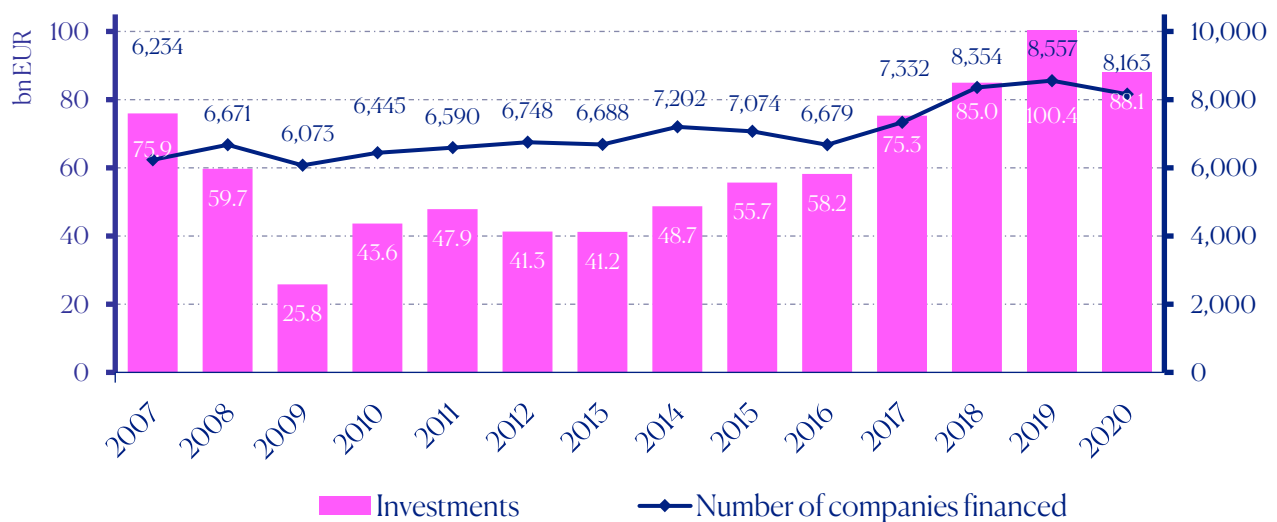
Invest Europe statistics can differ from the numbers reported by other data providers for the reason just mentioned and others, like differences in methodology, definitions and interpretations of the PE fund and investment stages and geographical definitions (e.g. of “Europe”).²⁰

With data on more than 1,600 European PE firms, the Invest Europe statistics released in May 2021 cover 89% of the EUR 708bn in capital under management in Europe (based on 2019 figures). Data since 2007 was restated and complemented with additional information. To a certain extent, this resulted in revised numbers in the Invest Europe statistics and this document.

See Invest Europe (2021) for more details.

In 2020, PE investments decreased considerably. PE funds located in Europe (statistics based on the “industry approach”; Figure 19) invested EUR 86.4bn, a decrease by 17% compared to the previous year. At the same time, investments by PE funds from all over the world (including Europe) in portfolio companies based in Europe (“market approach”) decreased by 12% to EUR 88.1bn (Figure 20). The number of European companies financed decreased by 5% to 8,163.

Figure 20: PE investment in European portfolio companies*



* Investment activity by PE firms in portfolio companies based in Europe (“market approach”). All investment figures are equity value, i.e. excluding leverage.

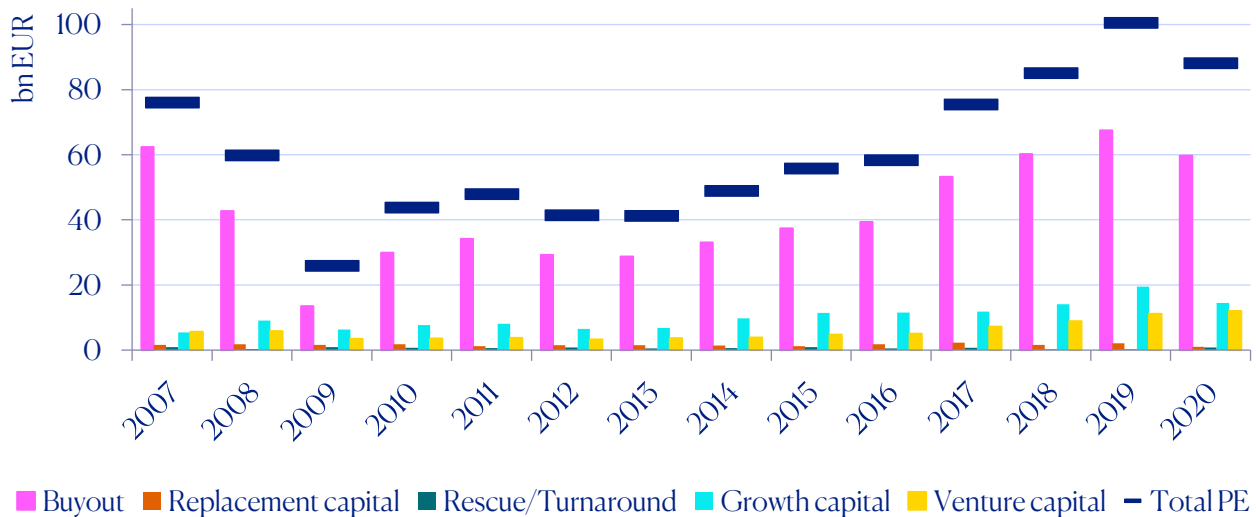
Source: Invest Europe, authors’ calculations

A differentiation by stage focus (Box 4 provides an overview of the Invest Europe investment stage definitions) reveals that investment dropped strongly in the largest part of the PE market, i.e. the buyout segment (by 11% to EUR 59.7bn), in 2020. Considerable decreases were also recorded for growth capital (–26% to EUR 14.5bn) and replacement capital (–51% to EUR 1.0bn),

²⁰ Data on the PE and VC market is scarce and sometimes inconsistent with one another when comparing different data bases. This is mainly due to a lack of data disclosure and different data collecting and compiling approaches. Therefore, it is “difficult to paint in definitive terms the level of investment activity and fund performance”, as stated by Kaplan and Lerner (2016). However, the authors also highlight that “the quality of information available has increased in recent years and can be expected to continue to do so going forward”.

while the smaller segment of rescue/turnaround capital (+223% to EUR 0.9bn) increased dramatically (Figure 21).

Figure 21: PE investments in European portfolio companies by stage focus



Source: Invest Europe, authors' calculations

Box 4: Invest Europe definition of investment stages for private equity

Venture Capital

Seed: Funding provided before the investee company has started mass production/distribution with the aim to complete research, product definition or product design, also including market tests and creating prototypes. This funding will not be used to start mass production/distribution.

Start-up: Funding provided to companies once the product or service is fully developed, to start mass production/distribution and to cover initial marketing. Companies may be in the process of being set up or may have been in business for a shorter time, but have not sold their product commercially yet. The destination of the capital would be mostly to cover capital expenditures and initial working capital. This stage contains also the investments reported as “**Other early stage**” which represents funding provided to companies that have initiated commercial manufacturing but require further funds to cover additional capital expenditures and working capital before they reach the break-even point. They will not be generating a profit yet.

Later-stage financing: Financing provided for an operating company, which may or may not be profitable. Late stage venture tends to be financing into companies already backed by VCs. Typically in C or D rounds.

Growth

A type of PE investment (often a minority investment) in relatively mature companies that are looking for primary capital to expand and improve operations or enter new markets to accelerate the growth of the business.

Box 4 continued:

Buyout

Financing provided to acquire a company. It may use a significant amount of borrowed capital to meet the cost of acquisition. Typically by purchasing majority or controlling stakes.

Rescue / Turnaround

Financing made available to an existing business, which has experienced financial distress, with a view to re-establish prosperity.

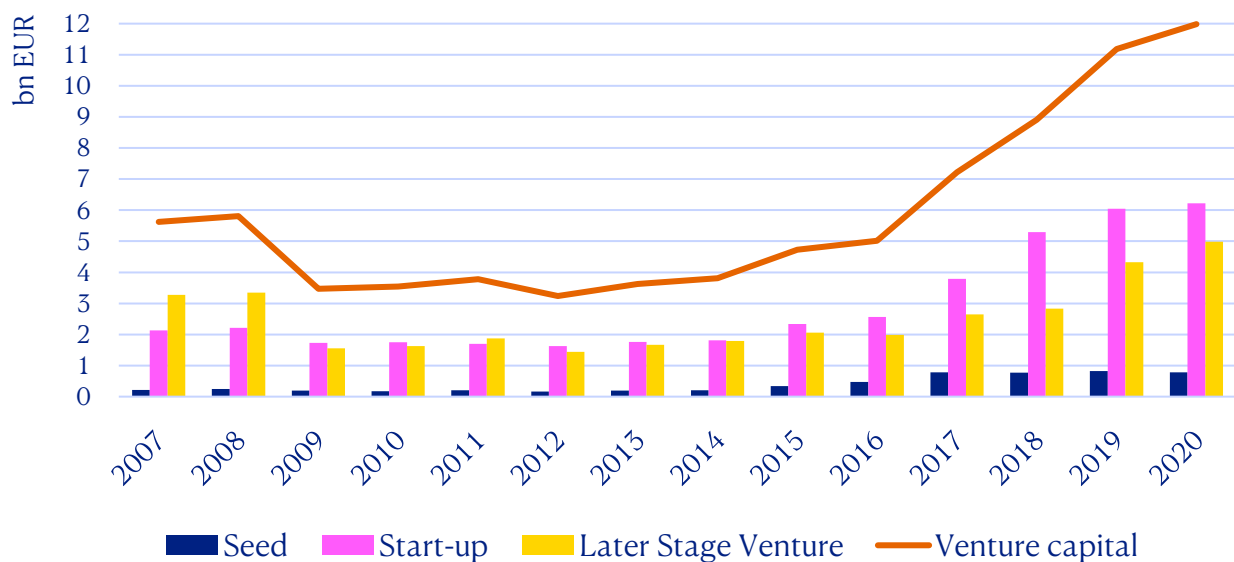
Replacement capital

Minority stake purchase from another PE investment organisation or from another shareholder or shareholders.

Source: Invest Europe (2021)

VC investments increased further by 7% to a new record level of EUR 12.0bn in 2020. In terms of number of companies financed, the VC segment accounted for the majority of PE investments (5,005 out of 8,163). Within the VC market segment, investments into start-ups (+3% to EUR 6.2bn) and later stage venture (+15% to EUR 5.0bn) increased (Figure 22), while seed stage investments (–5% to EUR 0.8bn) decreased; see Box 5 for a discussion of investments at the technology transfer stage.²¹

Figure 22: VC investment amounts by stage focus



Source: Invest Europe, authors' calculations

²¹ Please note that the investment activities of Business Angels are not included in the Invest Europe statistics, see Box 3. As business angel financing is important for the financing of SMEs and innovation, we present more information in Section 4.1.2.

Box 5: Financing technology transfer

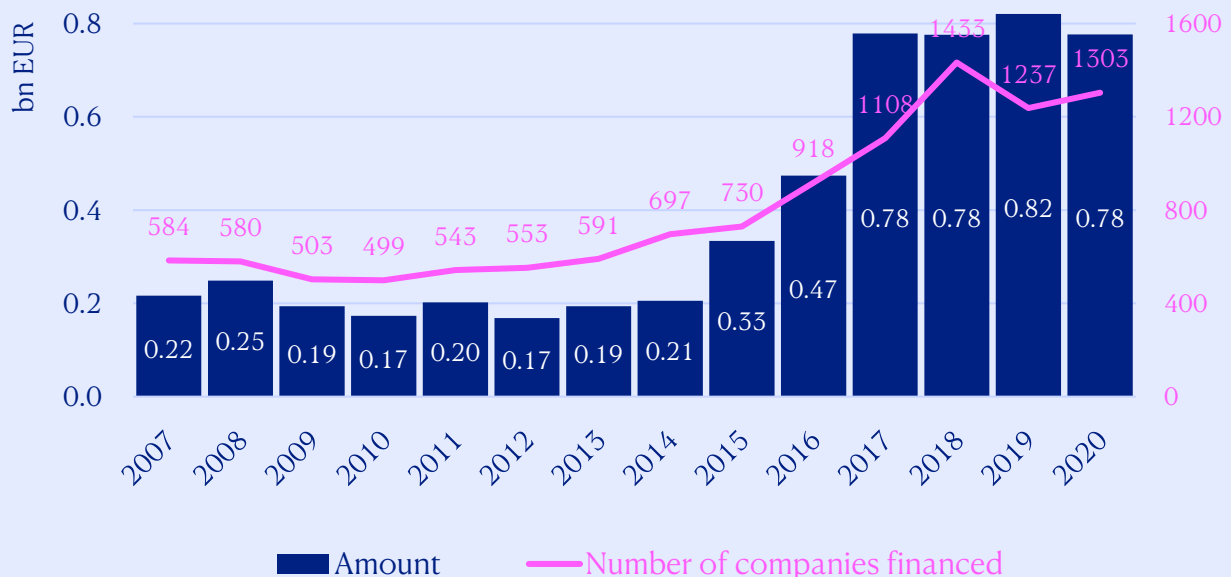
Technology transfer (TT) is the process of transforming the results of research and development into marketable products and services. It can take place through a number of means, in particular through the collaboration between research organisations and industry, the licensing of intellectual property rights, the creation of start-up businesses or university spin-out companies.

Although TT investments in Europe are in the radar of some investors, academic research is generally considered to be 'too new' or 'too high-risk' to be transferred out of the research laboratory and financed by the traditional investors. New discoveries and technologies may fail to realise their potential unless they become attractive to industry or downstream investors.

Equity investments in TT activities can contribute to reduce early-stage (pre-seed, seed and post-seed) funding gaps and sustain viable TT structures while generating financial returns for investors over time (EIF, 2016). Moreover, they contribute to ensure a strong and continuous deal flow in the VC market (EIF, 2017). In the field of TT and the commercialisation of research results, the EIF has undertaken a particular market development effort also in geographies with an emerging VC ecosystem, and EIF's investments in TT funds have encouraged private investors to look at the asset class.

Overall, annual seed stage VC investments²² in European enterprises have more than quadrupled since 2012 and reached a record level of EUR 821m in 2019, according to Invest Europe data. In 2020, seed investments declined by 5% to 777m, while the number of ventures financed increased by 5% to 1,303 (Figure B5.1).

Figure B5.1: Seed stage VC investments in European companies²²



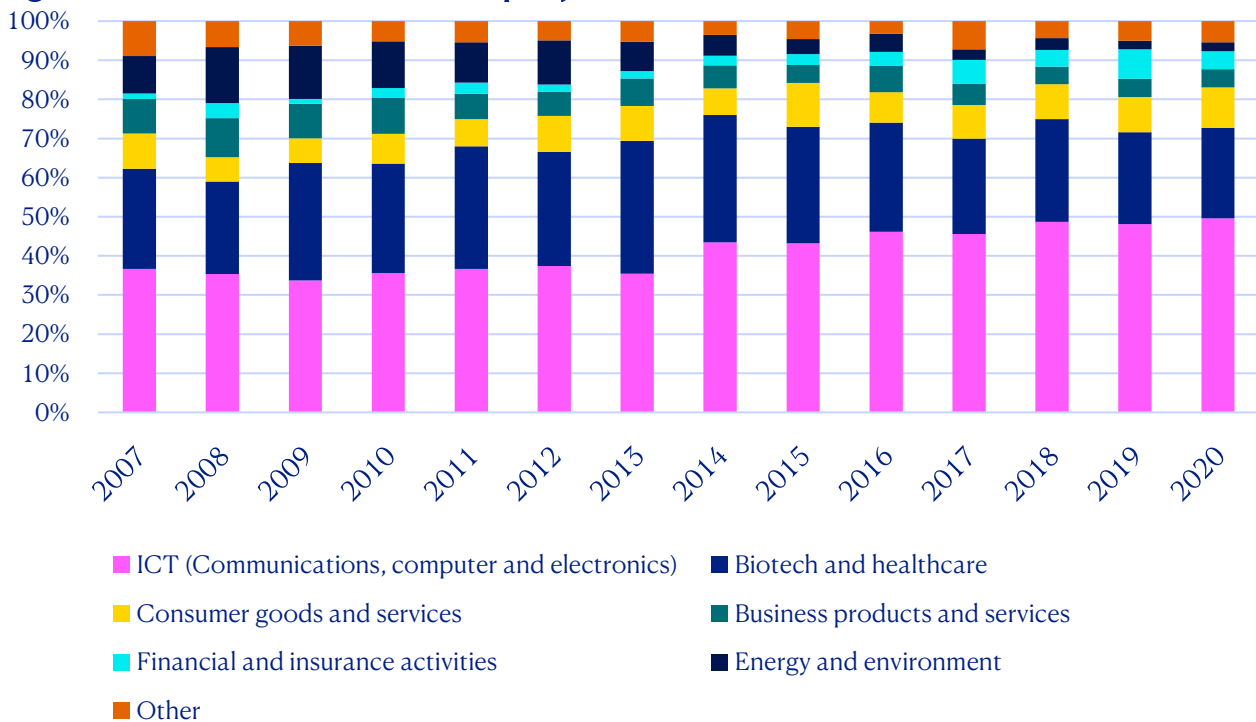
²² In the Invest Europe statistics, seed stage VC transactions are defined as “[f]unding provided before the investee company has started mass production/distribution with the aim to complete research, product definition or product design, also including market tests and creating prototypes. This funding will not be used to start mass production/distribution.” The seed stage goes beyond TT, but it is the earliest investment stage for which data is provided in Invest Europe statistics. Important additional tech transfer and seed stage investments that not only include equity instruments are, for example, grants, crowdfunding, but also equity deployed by non-VC/PE market participants. See, for example, Dealroom.co (2018) for an approach that differs from Invest Europe’s and results in higher amounts reported for seed stage investment.

Box 5 continued:

In the context of a cooperation with the University of Trier, EIF contributed to a research project on incubator business models in Europe; an overview is provided in a previous ESBFO issue (see Kraemer-Eis, Lang, Torfs, and Gvetadze, 2015).

Developments in venture investment by sector are shown in Figure 23. The relative importance of sectors has a certain stability over time: ICT (communications, computer and electronics) and biotech & healthcare have remained by far the most relevant industries for venture investment in Europe since 2007. Over the past decade, the share of ICT in total VC investment activity even increased, from 34% in 2009 to 50% in 2020. In contrast, the share of investments in the energy and environment sector decreased from 14% in 2008 to 2% on average in the past two years.²⁵ Moreover, the developments in the ICT sector had a substantial impact on structural changes in the VC market. Chapter 4.5.2 | provides a more detailed elaboration.

Figure 23: Venture investment in Europe by sector focus, 2007-2020*



* Our category “Other” contains the sectors Agriculture, Chemicals and materials, Construction, Transportation, Real estate, and “Other” from the Invest Europe statistics.

Source: Invest Europe, authors’ calculations

Furthermore, according to Invest Europe, market participants have observed a notable amount of growth stage investments as follow-on investments in venture-backed companies that are not registered in VC investment statistics (but in growth stage statistics). In 2020, about 32% of the total growth stage investment amount was received by venture-backed companies (Invest

²⁵ This development might be due to a re-positioning of traditional Cleantech VCs, who have stopped investing in capital-intensive companies to focus on digital solutions for energy and environment. This strand of investments are then typically classified under ICT.

Europe, 2021). Against the background of the scale up issue in Europe (see chapter 4.5 |) this is a positive sign. However, further flagship initiatives to support risk capital – covering various investment stages and sectors – will be necessary (AFME, 2017). This will also support the creation and growth of innovative enterprises in Europe. Signore and Torfs (2017) provide more insight into the value of innovation for EIF-backed start-ups (see also Kraemer-Eis, Botsari, Gvetadze, Lang and Torfs, 2017, for an overview).

Corporate venture capital

Corporate venture capital (CVC) has gained importance in recent years (Figure 24). CVC can serve both an investing corporation’s financial and strategic goals, e.g. to enhance its innovative capacity or to tap into new markets. CVC can take various forms. The most common practice is that a corporate invests through a VC fund, but the number of dedicated CVC units, accelerators and other CVC manifestations has also increased over the past years (see Mawson et al., 2017). In particular, large companies in innovation-intensive industries are active in this field, most prominently in the US (Brigl et al., 2016; Andonov, 2017). For example, companies like Google invest in start-ups in the fields of life science, healthcare, artificial intelligence, robotics, transportation, cybersecurity, and agriculture (Saunders-Calvert, 2017). The relatively low cost of capital has driven more corporates to become part of the game in the last years (Mankins et al., 2017).

Figure 24: VC fundraising amounts and corporate investors*



* Incremental amounts raised during year (in contrast to final closings only). “Total” represents classified and unclassified fundraising amounts. “Corporate, share” represents the percentage of corporate investors’ contributions to classified VC fundraising amounts. In the Invest Europe PE/VC fundraising statistics, the investor type “corporate investor” is defined as “corporations manufacturing products or delivering non-financial services” (Invest Europe, 2021).

In 2020, the number of global CVC-backed investment deals declined from a record high of 3,487 in 2019 to 3,457 in 2020, which was mainly due to a slowdown in the first half of the year. At the same time, CVC-backed funding reached a new all-time high at EUR 65bn. In the first half of 2021, CVC-backed funding soared to a half-year record of EUR 69bn (CBInsights, 2021). Google Ventures was the organisation that was most active overall in CVC in 2021 so far.

Corporates are also an important investor group in European VC funds. While they accounted for 3% of the total PE fundraising amounts in Europe in 2020, according to Invest Europe data, their share is much higher in VC funds. In 2020, corporates contributed EUR 1.2bn to VC funds in Europe. This represented 7% of total VC fundraising (EUR 15.5bn) or 10% of the total classified fundraising amounts (EUR 11.8bn) in 2020. However, corporate investors' share in European VC fundraising decreased, on average, since 2014.

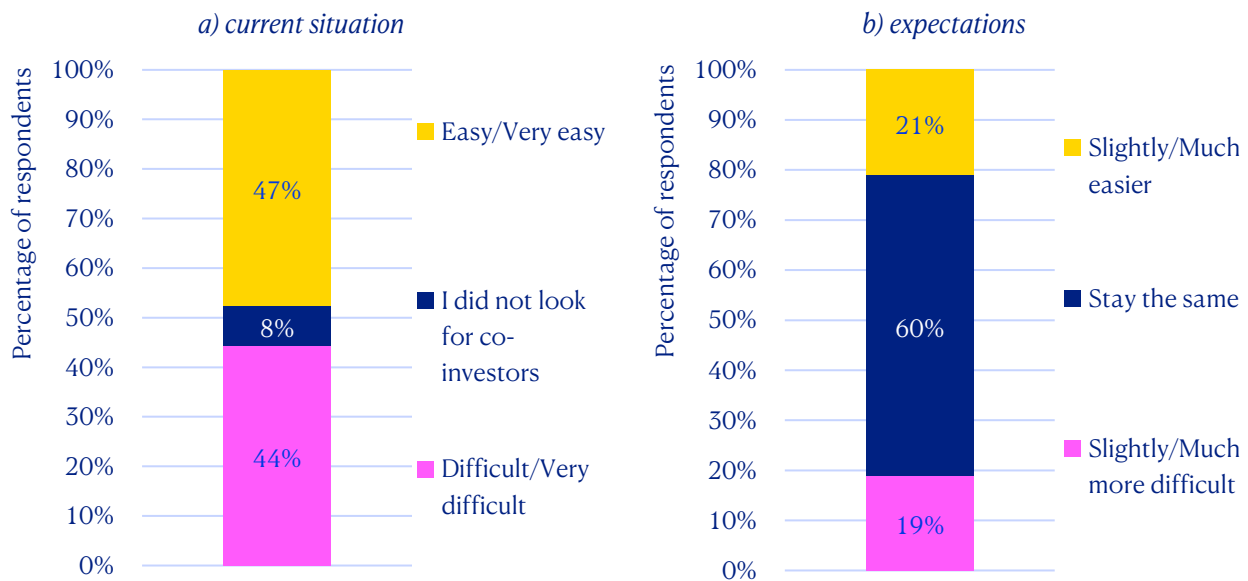
One of the segments not covered under the Invest Europe PE/VC activity statistics are corporate acquisitions outside of dedicated corporate venture programmes (i.e. corporate VC investments directly off the balance sheet). European tech companies are often acquired by non-EU buyers. Based on an analysis of 3,600 EIF-supported seed and start-up VC investments from 1996 to 2015, Prencipe (2017) finds that about 50% of the performing EIF-backed European investees were acquired by non-European corporations, particularly from the US. This “raises the issue of whether the missing scale-up phenomenon in Europe could be linked to the lack of serial tech buyers, that is, incumbents in highly innovative and competitive sectors” (Prencipe, 2017). However, there are differences by sector; while US buyers are more technology-focused and mostly active in the ICT space, European buyers seem generally more specialised in Life Sciences.

Co-investment

Co-investment can be a useful feature of the PE/VC market by strengthening investment capacities. The availability of stable providers of co-investment capacity can be a benefit for VC fund managers when addressing potential investment opportunities. In 2021, three quarters of LPs desired to allocate more capital to co-investments (Coller Capital, 2021).

The COVID crisis also had a considerable impact on co-investment. The *EIF VC Survey* shows that the share of European VC GPs that perceived “finding co-investors to syndicate” relatively easy declined from 73% in March 2020 to 47% in October 2020 (Figure 25). At the same time, 44% of the fund managers reported difficulties in finding co-investors (see Kraemer-Eis et al., 2021). Results of the *EIF VC Survey 2021* point to a moderate improvement of the situation (Botsari, Kiefer, Lang and Legnani, 2021).

Figure 25: Easiness to find co-investors to syndicate*



* Diagrams show the aggregated results for the EIF VC Survey 2020 questions “How easy/difficult is it currently to find co-investors to syndicate?” (left-hand side) and “Over the next 12 months, how do you expect finding co-investors to syndicate to become?” (right-hand side).

Source: EIF VC Survey, Autumn 2020

4.1.2 | Business angels

As already mentioned, the Invest Europe activity data cover fundraising, investment and divestment from PE and VC firms in Europe. It does not cover segments outside the definition that Invest Europe applies for the collection of its activity statistics, e.g. business angels’ activities although it has gained importance in recent years as a financing source for early-stage start-ups.

Business Angels (BAs) represent an important class of PE investors, primarily consisting of high net-worth individuals, usually with entrepreneurial or managerial experience. BAs tend to invest their own money, either individually or in formal or informal syndicates, in businesses which are not publicly traded, commonly in exchange for convertible debt or ownership equity (see for a general description of BA financing, Kraemer-Eis and Schillo, 2011; OECD, 2011; BAND, 2016; and OECD, 2020b). In a European Commission survey among European BAs, the large majority of respondents were male (89%) and the average age was 55 years (European Commission, 2017). In Central and Eastern Europe (CEE), BAs tend to be younger (average age of 43 years) and the share of female BAs is larger.

BAs differ from VC funds, which primarily invest third parties’ resources (e.g. institutional investors’). Angel-financed companies are typically in earlier stages of their development (Kraemer-Eis and Schillo, 2011). BAs’ transaction costs are relatively low, which allows them to invest on a smaller scale. They are geographically more dispersed than VCs and often invest in local markets. Moreover, BAs tend to be very ‘hands-on’ investors, providing also additional

value-adding support beyond financing (e.g. mentoring, business advice and access to networks), hence they can play a central role in the start-up ecosystem, in particular for innovative firms (OECD, 2016). Moreover, entrepreneurial investors not only form the nucleus of the BA ecosystem, but possibly also the VC ecosystem at a later point in time, i.e. there is a potential to catalyse new institutional players even in relatively underdeveloped VC markets.

According to several studies, BAs have a positive impact on the growth of the firms they invest in, their performance and survival (Lerner et al., 2015; OECD, 2016). The success of the investees seems to be strongly based on the support beyond financing that BAs provide (Kerr et al., 2011). There is evidence that BAs are relatively resilient to changing market cycles (OECD, 2016), and angel investments in early-stage high-growth companies tended to increase during and after the financial and economic crisis of the previous decade, as VC funds migrated to less risky investments (Kraemer-Eis, Lang and Gvetadze, 2013). In the COVID-19 crisis, preliminary evidence points to continued business angel investment in start-ups, albeit at a strongly decreased number of deals (Benedetti Fasil et al., 2021). At the same time, BAs tended to focus more on companies with an experienced management team, revenue generating capability, and recurring revenue business models. *EIF Business Angels Survey* results also point to a decrease in the total amount available for BA investing (Kraemer-Eis et al., 2021).

A large share of BAs co-invests with other early stage investors in order to diversify risks (OECD, 2016) and/or to improve their skillset and experience (Capizzi, 2015). Sourcing channels like crowdfunding platforms are also used by BAs – in particular by younger and less experienced ones – as tools to find investment opportunities, thereby allowing them to make investments in a wider geographical area (OECD, 2016).

However, there are difficulties in measuring the size of the business angel community, the main ones being identification and definition. BAs often stay anonymous and the details of their investments are rarely disclosed. Besides, there are “virgin” angels that have never actually invested but increase the number of BAs in the statistics. Others may have occasionally acted as angels but are no longer looking for investment opportunities. Still others may invest as entrepreneurs but do not consider themselves as being part of the “BA scene”. The so called “invisible market” makes a precise estimation of the angel market difficult. Some studies estimate that the invisible part of the market is up to seven times greater than the visible part (CSES, 2012), while others even estimate a multiplier of around ten (see, e.g., EBAN, 2014 and 2020). Such difficulties must be borne in mind when describing the market.

Currently there is no robust and consistent data available on the Business Angel market in Europe; published data can only be used as indication or very rough estimate (see also (Benedetti Fasil et al., 2021, as well as OECD, 2016 and 2020b). For the visible market segment, data is collected by angel associations from angel groups and networks. Ad-hoc surveys contribute to increase the available level of information on BAs in Europe (see European Commission, 2017). In the following, we use such statistics keeping in mind its shortcomings (see, for example, the related EBAN disclaimer that we show in Box 6). Information on angel investing in different European countries can also be found in BAE (2015). Several waves of the *EIF Business Angels Survey* have looked into angel financing on a regular basis (see Kraemer-Eis et al., 2021, for the results of the latest wave).

Box 6: Introductory information on EBAN data

Due to its nature, the early stage investment market and especially the BA segment is difficult to quantify. An important part of the total investments is informal and not publicly reported. The estimate of the percentage of the invisible market is based on a study commissioned by the European Commission to CSES about the BA market in Europe. In some countries, the deals done through the 'visible market' (BANs, Federations) are not published, so in some cases the estimates may not correspond to the exact amounts invested by BAs. However, EBAN matched information from different sources, to validate the estimates for each particular market in order to have a higher degree of confidence on the data that is published.

Knowing the underlying limitations, the main objective of the EBAN statistics is to provide a better understanding of the European early stage market. The latest EBAN statistics compendium comprises information collected through direct surveys from BA networks, national federations and other early stage investors. Additional data were collected from different sources incl. commercial and other third party databases, market reports, EC and national publications, press articles and research papers, as well as other early-stage actors in Europe.

Source: EBAN (2020)

At a European level, the European Business Angel Network (EBAN) reported an increase in BA investment by 8%, compared to the year before, to a record amount of EUR 8.0bn in 2019 (EBAN, 2020; more recent data is not yet available). However, this number is based on the assumption that the visible market, for which EBAN reports investments of EUR 804m, represents 10% of the whole market.²⁴ The estimated number of investments decreased by 3% to 36.0k. The number of BAs is estimated at 345.0k (similar to the year before). The number of BA networks (BANs) in Europe was at 404 in 2019. From 2003 to 2012 the number of BANs had grown at an average rate of 17%, but began to level off in 2013. Since 2013, the number has remained stable, growing only by 3% from 2013 till 2019, which demonstrates a certain consolidation in the market as smaller networks have merged (EBAN, 2020).

Most of the BA activity within the EU is happening in the UK, Germany, Spain, Finland, Sweden and France. When comparing BA investment amounts to GDP, the picture looks different, with Estonia, Finland and Denmark being on top of the ranking (EBAN, 2020). The majority of BAs target companies in their home country, but a considerable share of BAs stated that they would invest abroad if legal and fiscal legislations facilitated such activities (European Commission, 2017). In some countries BA co-investment funds, tax break or grant schemes do not support or even allow investment abroad (EBAN, 2018).

According to the results of the *EIF Business Angels Survey Autumn 2020*, ICT was the most important target industry for BA investment (stated by 27% of respondents), followed by Biotech and healthcare (15%). However, 13% of respondents indicated that they have no specific sector focus.

²⁴ The assumption that visible BA investments constitute a share of 10% of the whole (visible plus invisible) BA market is based on CSES (2012) and was also used in EBAN statistics for previous years. The visible market encompasses activity undertaken by investors gathered in BA networks and having a direct relation with EBAN or reporting through a federation. It also comprises networks from which access to information is limited but its existence and activity is known by other players of the industry; additionally, databases reporting start-up investments are used (EBAN, 2020).

BAs often invest in sectors linked to their own professional experience. With regard to the investee companies' development stages, pre-seed (39%) and seed (42%) investments were stated to be the most important ones, while a fifth of BAs stated early or later stages to be their main focus (see Kraemer-Eis et al., 2021).

While co-investments with other BAs are still the most common deal form, the relevance of investments alongside early-stage funds has increased (EBAN, 2020; European Commission, 2017). In some countries, governments created such funds for co-investments with BAs. On a pan-European level, the European Angel Fund (EAF), an initiative advised by the EIF, offers a co-investment scheme for BAs investing in innovative companies (i.e. 1:1 matching of BA funding by EAF without deal-by-deal approval).²⁵

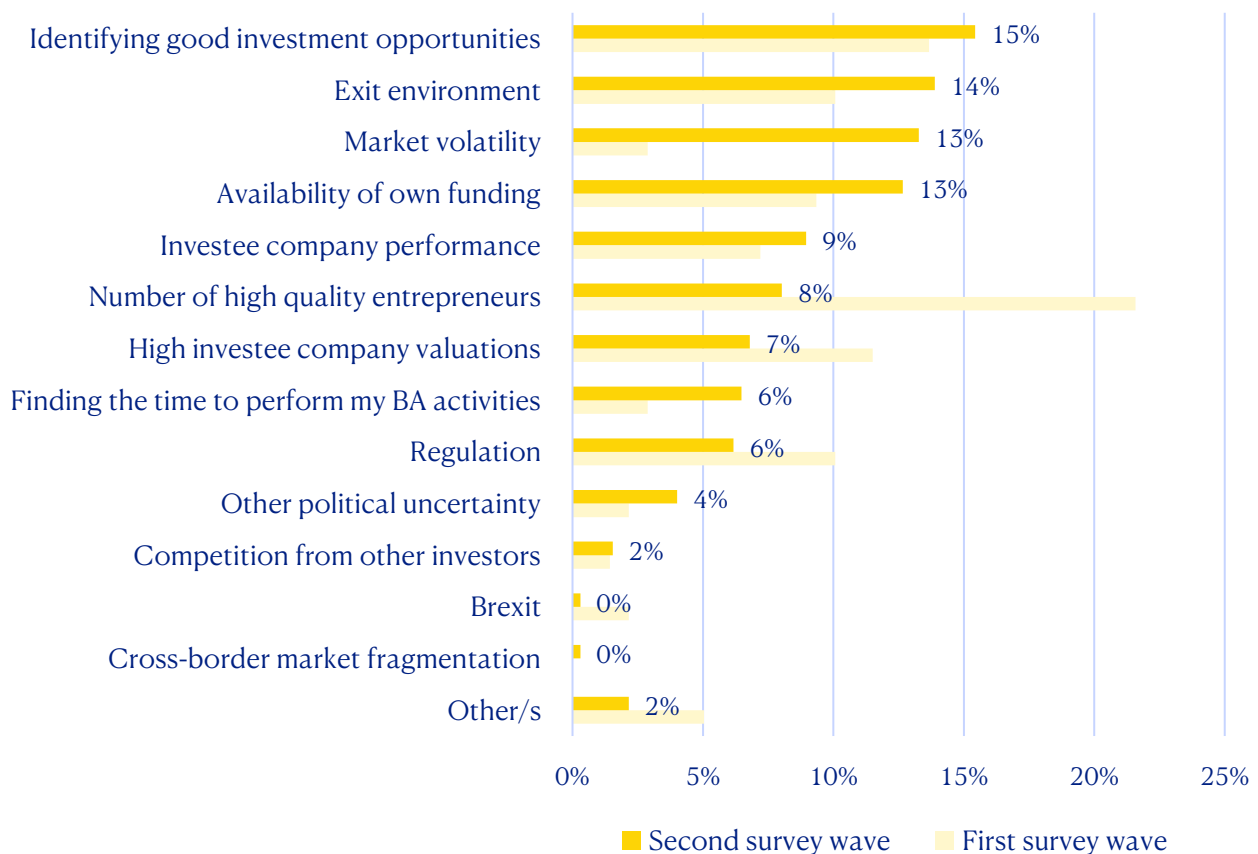
With regard to co-investor types, the patterns differ depending on whether it concerns initial or follow-on investment rounds. In initial rounds, other BAs are the most important co-investor type. In follow-on rounds, VCs are as important co-investors as other BAs. Public investors (other than EAF) are more prominent in follow-on rounds than in initial rounds (Kraemer-Eis et al., 2019). The relevance of co-investment with other BAs and VC funds has even increased during the pandemic. At the same time, finding such co-investors became more difficult (Kraemer-Eis et al., 2021).

Despite the opaqueness of this market, the available evidence indicates that business angels are of high economic importance for the financing of innovative early-stage companies. Government support of this market segment can therefore help to improve the availability of financing sources for young high-growth companies, in particular at the seed and early stages of their development (Benedetti Fasil et al., 2021; Mason and Harrison, 2013). However, policy measures have to be well targeted to the specific nature of BA investors. For example, based on the assumption that the supply of BA capital depends on investors who have already been successful entrepreneurs, Hellmann and Thiele (2017) identify a rationale for funding policies (a tax credit in their model) that allow entrepreneurs to retain a larger ownership fraction and create more entrepreneurial wealth in order to increase the future supply of capital and to create a long-term impact on entrepreneurial activity. Findings by Hellmann, Schure and Vo (2015) also suggest that public support for start-up financing should go beyond an exclusive support of formal VC, because additional policy measures for angel investors “would reach a different set of entrepreneurial companies that develop outside of the reach of venture capitalists”. Hence, “the central role of BAs is increasingly recognised by policy makers [...], and initiatives to support angel activities have expanded in recent years as part of a broader shift towards policies that aim to make equity-type instruments more widely available for start-ups and SMEs” (OECD, 2016). According to the OECD (2016), public-private co-investment schemes are able to catalyse the private market, “but only if the existing angel market is sufficiently well developed, so that a sufficient number of investor-ready deals can be financed and the government does not have to be overly engaged in matching supply and demand for early-stage equity”. In general, specific policy programmes related to business angel investment mainly consist of supply-side measures like direct public investments, co-investment between the private and public sector, tax incentives and government support to networks and associations (OECD, 2020b). However,

²⁵ See www.eif.org/eaf for more information about the EAF.

despite initiatives for more policy support and better framework conditions, including under the CMU action plan (Kraemer-Eis and Lang, 2017), the market is still underdeveloped. Moreover, the supply of entrepreneurial finance in Europe in general, but even more so as regards financing provided by BAs, is constrained by the geographical fragmentation of the European capital market. A recent study of BAs in Ireland identifies three constraints on cross-border investing: lack of information on cross-border investment opportunities, the preference of angels to invest locally, and tax incentives that are only available for investments in the BA’s own country (Mason et al., 2021). As a result of the differences between Europe and the US in terms of size and homogeneity of their respective capital markets, US BAs “invest in twice as many US companies as their EU counterparts in EU businesses” and “the size of US angels-backed transactions is approximately 1.7 times higher than EU transactions” (AFME, 2017). An overview of barriers to BA financing in Europe and recommendations how these could be mitigated are provided in AFME (2017). European angel activity is likely to increase with more successful exits observed in Europe; key actors of successfully exited companies can be expected to turn into future business angels and provide their expertise to start-ups.

Figure 26: Biggest challenges in BA activity in 2020*



* Diagram shows the items selected as first most important challenge by respondents in their in BA activity, based on the EIF Business Angels Survey question “Please select the biggest challenges you see in your BA activity in the current COVID-19 crisis, in order of importance”. “First survey wave” refers to the survey wave performed in February/March 2020, while “Second survey wave” refers to the survey wave performed in October 2020.

A favourable exit environment is therefore important. The recent *EIF Business Angels Survey* shows, inter alia, the biggest challenges for BA activities in Europe. In the wake of the COVID-19 crisis, “identifying good investment opportunities” (ranked by 15% of respondents of the October 2020 survey wave as the first most important challenge), the “exit environment” (14%), “market volatility” (13%) and the “availability of own funding” (13%) have all increased in importance as a challenge between the first 2020 survey wave performed in February/March and the second 2020 wave, performed in October (Figure 26). In contrast, the “number of high quality entrepreneurs” (8%), “high company valuations” (7%) and “regulation” (6%) have decreased in relative importance.

4.2 | Fundraising activity

In 2020, total funds raised by PE firms located in Europe further decreased by 12%, compared to the year before, to EUR 100.5bn (Figure 27 and Figure 28). This constitutes the first drop in annual PE fundraising since 2015. However, it has to be put into perspective, as PE fundraising had reached a historical record high at EUR 114bn in the year before. The decrease was mainly driven by a strong setback in the amounts raised by Buyout funds (–23% to EUR 62.3bn), which represent the largest part of the PE market. Mezzanine funds also decreased their total fundraising volumes (–27% to EUR 0.3bn). At the same time, Growth capital funds (+41% to EUR 15.4bn) and Generalist funds raised more capital (+28% to EUR 7.0bn).²⁶

Box 7: Invest Europe’s definitions of fund stage focus

Buyout fund: Funds acquiring companies by purchasing majority or controlling stakes, financing the transaction through a mix of equity and debt.

Generalist fund: Funds investing in all stages of PE.

Growth fund: Funds that make PE investments (often minority investments) in relatively mature companies that are looking for primary capital to expand and improve operations or enter new markets to accelerate the growth of the business.

Mezzanine fund: Funds using a hybrid of debt and equity financing, comprising of equity-based options (such as warrants) and lower-priority (subordinated) debt.

Venture Capital funds:

Early-stage fund: VC funds focused on investing in companies in the early stages of their lives.

Later-stage fund: VC funds providing capital for an operating company which may or may not be profitable. Typically in C or D rounds.

²⁶ Box 7 provides an overview of the Invest Europe fund stage focus definitions; Box 8, which has been contributed by Hendrik Meyer-Jürshof in the context of a master thesis project at the University of Trier in cooperation with the EIF, provides an overview of listed PE in Europe, a growing phenomenon within the PE sector.

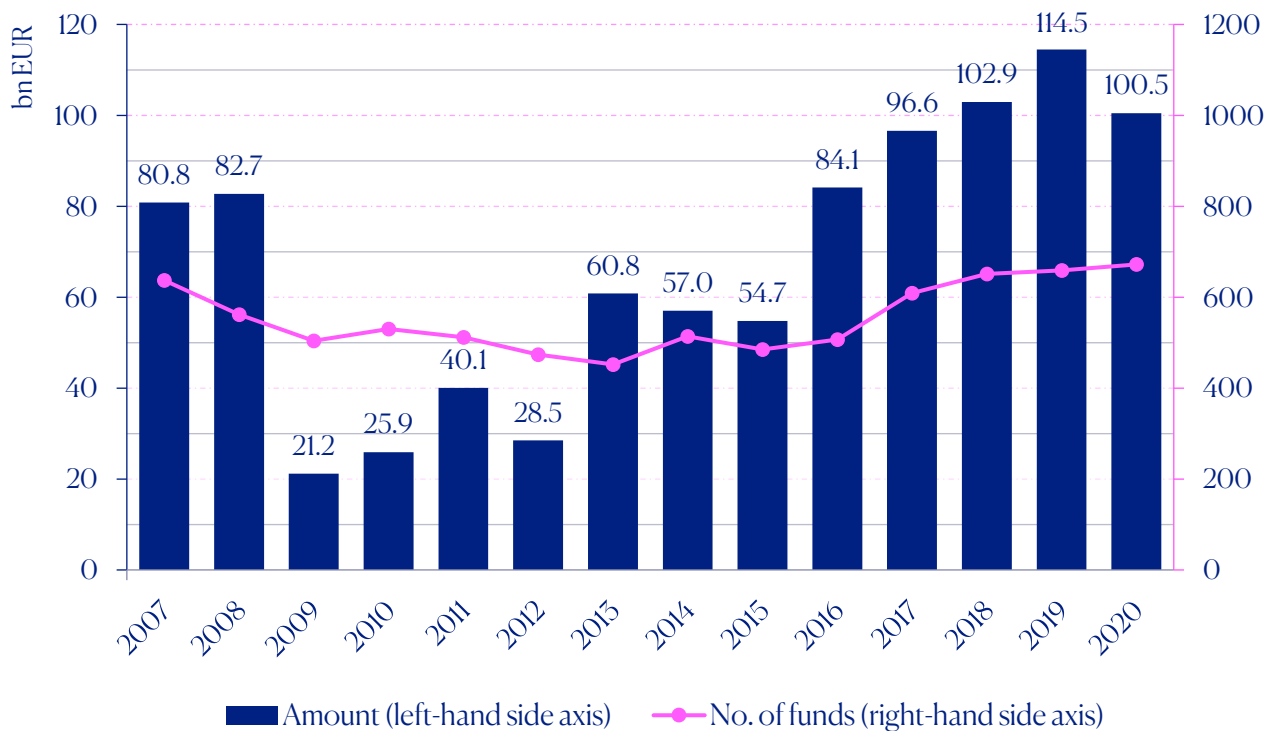
Box 7 continued:

Venture fund (all stages / dual focus): VC funds focused on both early and later stage investments.

Source: Invest Europe (2021)

In the VC segment, fundraising decreased by 7% to EUR 15.5bn (Figure 28). This follows the record year 2019 and constitutes the second highest European VC fundraising level ever reached.²⁷ While funds with a focus on the early stage (+28% to EUR 6.1bn) and later stage venture funds (+32% to EUR 2.2bn) raised considerably higher total volumes, venture funds with a focus on all stages (-30% to EUR 7.2bn) recorded a decrease. Fundraising linked to final closings (total venture, amounts raised since inception) was at EUR 10.6bn in 2020, falling only slightly behind the level of the previous year.

Figure 27: Private equity fundraising*



* Amount = Incremental amounts raised during period by PE funds located in Europe. No. of funds = Number of PE funds located in Europe and raising new capital during period.

Source: Invest Europe, authors' calculations

Box 8: Listed Private Equity in Europe: The rise of a new asset class

Listed private equity (LPE) has become a growing phenomenon within the PE sector. Since the listing of large PE vehicles, such as KKR in 2006 and Blackstone in 2007, the number of LPE vehicles (LPEVs) has risen continuously.

²⁷ Invest Europe started publishing fundraising by fund stage focus in 2007.

Box 8 continued:

Today, a number of over 300 LPEVs worldwide is estimated to exist (see Darolles and Tommar, 2017). More than 90 LPEVs can be identified that are listed on the European Stock Exchange and the majority (35) are listed on the London Stock Exchange (see Meyer-Jürshof, 2021). The role of LPE is expected to increase in the next years because of the rising demand of investors for listed supplements in their existing traditional PE portfolios. While the global market value of LPE was approximately GBP 41.5bn in 2010, the size of the global LPE market has more than tripled in the last decade to GBP 125.8bn in 2019. In continental Europe, the market value doubled from GBP 15.5bn in 2010 to GBP 30.7bn in 2019. In line with traditional PE investments, the listed counterpart surpassed global stock markets by more than a third by the end of 2019 (see LPeC, 2020).

The listing of PE companies on the stock exchange is changing the traditionally withdrawn PE sector sustainably. Thereby, both investors and PE vehicles can benefit from the new asset class. The benefits for investors are mainly related to the fungibility of PE shares on public stock markets. Due to a listing, PE assets are characterized by higher liquidity as they are traded like any other share and can therefore be bought and sold at any time. Furthermore, investors profit from the absence of minimum investment requirements and only have to spend the price of the share. This reduces transaction costs and expands the investor base beyond institutional and high net worth individuals, thus enabling retail investors to invest in PE as well. The advantages for PE vehicles are related to the evergreen structure of LPE. In contrast to the limited life of limited partnerships in traditional PE, LPEVs profit from permanent capital. In these „evergreen funds”, investment returns are no longer distributed to investors as in limited partnerships rather reinvested in the fund. By retaining the invested capital in the company and reinvesting the returns of liquidated investments, LPEVs benefit in two ways. First, they do not have to consider contractual holding periods in their engagements. This enhances the flexibility to hold or sell the investment at any time during the investment cycle. Second, resources for fundraising and reputation management are reduced due to the locked-in capital. In addition, LPEVs benefit from the absence of minimum investment requirements, as the investor base is expanded and new sources of permanent capital are established.

In the light of these advantages for investors and LPEVs, the question remains whether or to what extent the stock exchange listing of PE vehicles influences the performance of portfolio companies. Previous research provides evidence both for positive as well as negative effects of the listing of PEVs on their portfolio companies. First, the permanent capital structure offers portfolio companies the opportunity, to receive capital over a longer period. The PE investor is not contractually obliged to investments after a certain period of time, as is usual in PE, but can provide further financing depending on the development needs of the portfolio company. Thereby, portfolio companies backed by LPEVs may profit from longer financial stability, less short-term investor pressure, and consequently can achieve better performance.

Box 8 continued:

Empirical research supports the assumption by providing evidence for longer holding periods of LPE investments compared to traditional PE investments. Second, the listing of PE vehicles has a positive impact on the reporting infrastructure of LPE backed portfolio companies. LPE backed companies are characterized by lower total and abnormal accruals than traditional PE-backed portfolio companies. In addition, losses are recognized more quickly by LPE backed companies. Also, stock returns of LPE-backed companies are higher during the year after their IPOs reasoned due to greater transparency and smaller price correction after IPOs. Third, companies backed by LPEVs receive more capital and they receive a greater number of funding rounds. In consequence, the performance of these companies might be improved compared to companies without sufficient capital resources.

However, in theory, the listing of PE firms might have also negative effects on portfolio companies. The basis for the assumption is the finding that portfolio companies backed by LPEVs have a higher risk of going bankrupt than companies backed by unlisted limited partnerships. One reason for a negative performance impact is the tendency of opportunistic investment management enabled by the evergreen structure in LPE. The permanent capital can lead to weakness or loss of reputation incentives as managers of listed funds do not need to promote new funds in upcoming funding rounds. However, results of a recent empirical analysis (see further below) do not find significant differences in the performance of LPE-backed portfolio companies and traditional PE-backed portfolio companies.

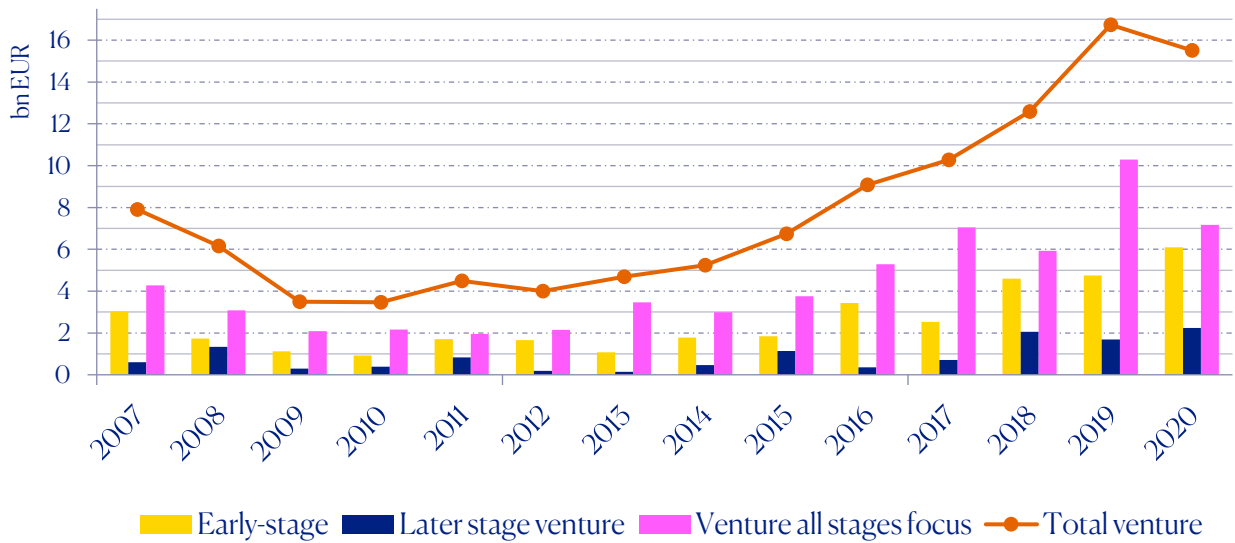
Furthermore, higher investment flexibility in LPE leads to a higher risk that investments are held longer than necessary in order to earn higher management fees. With the listing of PE vehicles, PE managers also face the pressure of the capital market in their daily business. Research findings support the assumption that managers of public limited companies tend to be myopic in order to present quarterly impressive results to shareholders. In consequence, managers follow rather short-term investment strategies, selling investments irregularly to help bolster profits during the period instead of striving for greater long-term returns. These negative factors also can have direct negative effects on the performance of portfolio companies.

Within the context of an empirical evaluation within a master thesis at the University of Trier in cooperation with the EIF, differences in the performance of LPE-backed portfolio companies and traditional PE-backed portfolio companies were examined. Thereby, the performance of 432 portfolio companies backed by listed and unlisted PE entities was analysed in the period between 2010 and 2019. As a result, no significant performance effect of LPE was found. This suggests that the listing of PEVs does not influence their portfolio companies' performance. There are several explanations for these results. First, there are contradictory arguments for the positive and negative impact of the listing of PEVs on their portfolio companies. Consequently, the effects could eradicate each other.

Second, this result can be explained by the nature of LPE. Although both forms differ significantly in their organizational structure, the two PE forms are more similar than expected. Besides the investment- and financing style, the main value drivers in PE to achieve higher valuations of portfolio companies remain even the same for LPEVs. In consequence, the performance development of portfolio companies in the two investor groups does not significantly differ.

For practice, one important implication can be derived from this. The listing status of PE vehicles does not have to be a prominent factor in the decision-making process of portfolio companies.

Figure 28: Amounts raised by VC funds located in Europe*

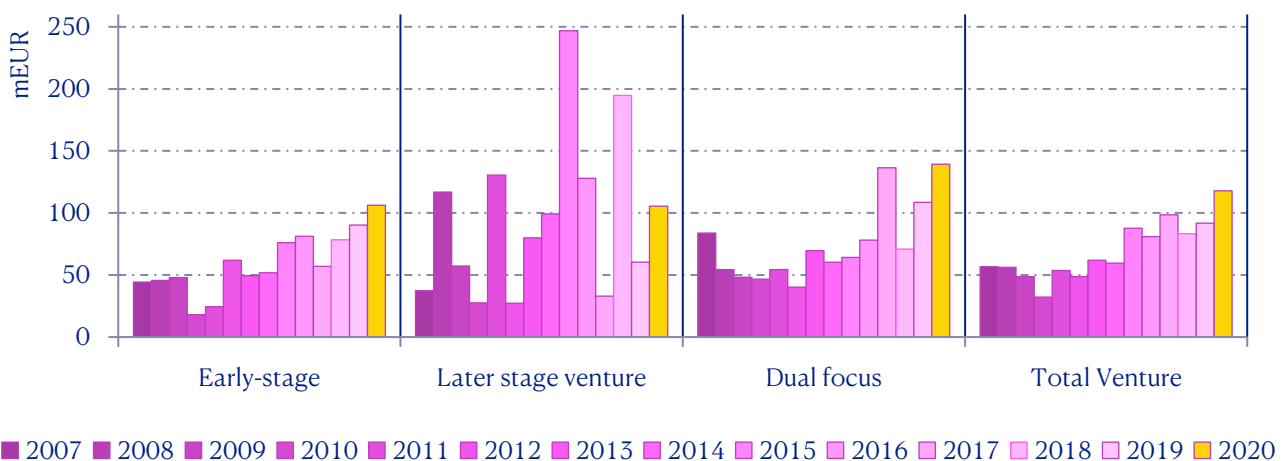


* Incremental amounts raised during period.

Source: Invest Europe, authors' calculations

In 2020, the average VC fund size increased considerably by 29% to EUR 118m (Figure 29). This amount constitutes the highest value ever registered in the Invest Europe statistics since 2007. For the first time, the average European VC fund size is above EUR 100m. The average fund sizes increased across all fund stage foci. At the same time, the number of final fund closings decreased from 120 to 90 in 2020, which is mainly due to substantial declines in the number of late stage fund closings (from 25 to 12) and dual stage fund closings (from 50 to 32). The number of early stage fund closings remained relatively stable at 46.

Figure 29: Average VC fund size (at final closing; cumulative amounts raised since inception)*



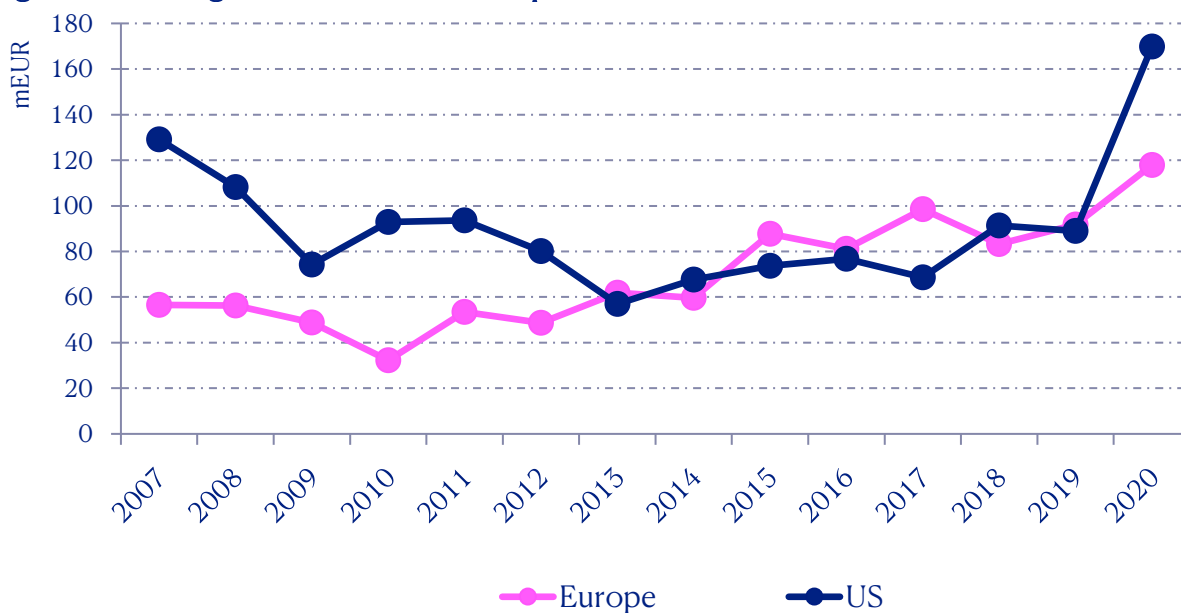
* The results for 2020 are based on 90 final VC fund closings (46 funds with an early-stage focus, 12 funds with a later stage focus and 32 venture funds with a focus on all stages).

Source: Invest Europe, authors' calculations

Given some evidence in previous studies, which indicated that small fund size was one of the reasons for poor European VC performance (Kelly, 2011), the increasing level of average VC fund sizes might mean positive news. However, while Europe had managed to catch up with the US in terms of the average venture fund size in the years 2013 to 2019, the average venture fund size in the US was considerably larger than in Europe in 2020 (Figure 30). This is mainly driven by a relatively large group of VC funds in the US that are considerably bigger than their peers in the set of “large funds” in Europe. While NVCA/Pitchbook fundraising figures for 2020 show 48 US venture funds that are larger than USD 500m, Invest Europe/EDC statistics show only 7 funds of a similar size that performed a final closing in 2020. While these figures can only be interpreted as an approximation of the “gap” between European and US funds, as underlying definitions for the collection of European and US data are not always identical, it is visible that Europe has a considerable lack of large venture funds.

Moreover, the decline in the number of European late stage venture fund closings is worrying with regard to the financing needs of innovative companies with high-growth potential. What is more, in contrast to early stage funds, the average size of later stage venture funds in Europe did not show an increasing trend over the last years.

Figure 30: Average VC fund sizes in Europe and the USA

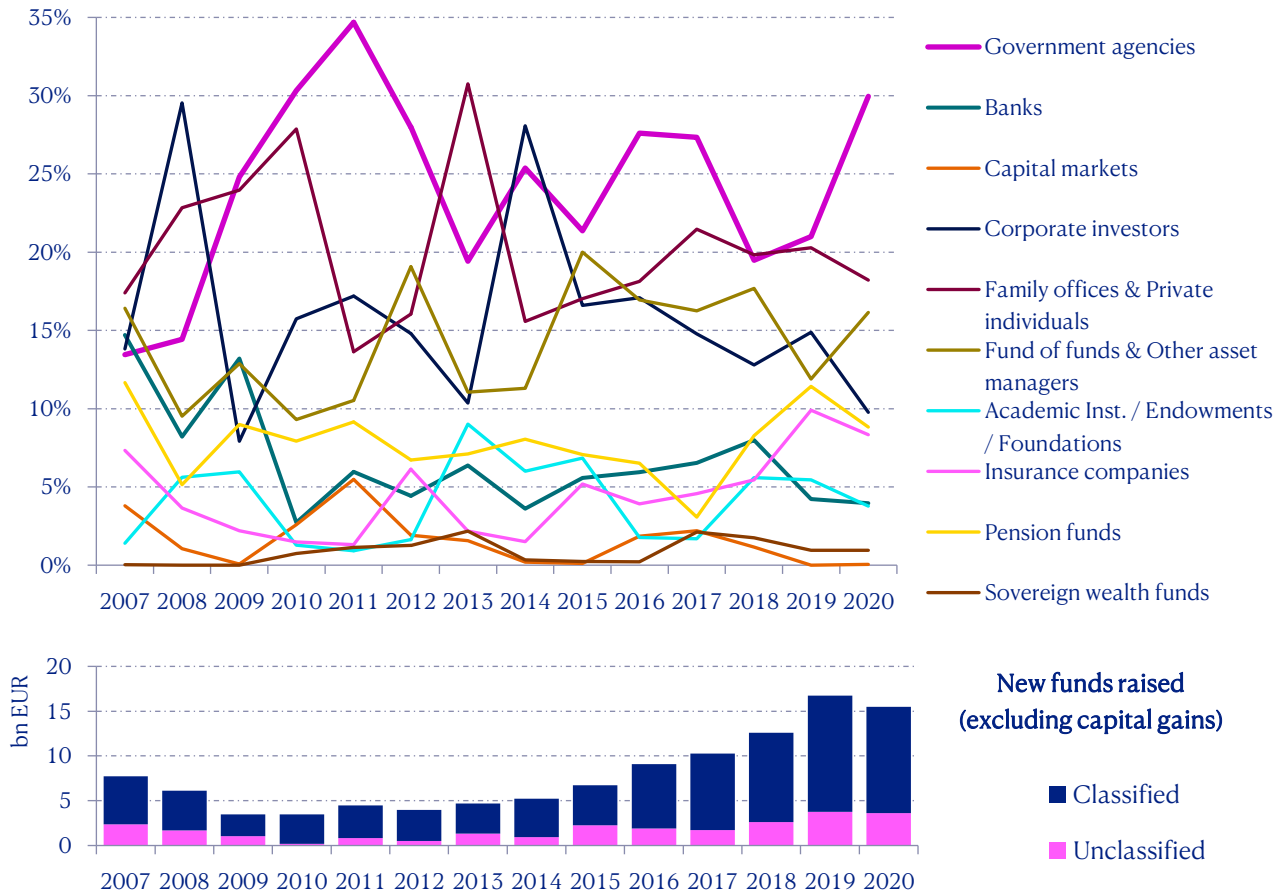


Source: Invest Europe, NVCA, authors' calculations

EIF's internal analysis suggests that larger funds are often managed by teams that previously had smaller funds that performed well. Invest Europe statistics also show a rising number of follow-on VC funds over the years. Thus, the size could be a consequence rather than a cause of a good performance. Larger fund size would be a sign of more successful GPs and more careful due diligence by LPs, which may indicate that achieving a larger fund size is associated with a certain market validation. Helping promising teams in demonstrating their investment skills and getting market validation in a smaller first time fund (as long as the fund size is not inefficiently small) is

consequently a way to help with the next fundraising of such manager, and hence the VC ecosystem.

Figure 31: Investor base: Share of government agencies in VC fundraising*



* Percentage of incremental amounts raised during year (in contrast to final closings only). Excludes capital gains. Unclassified sources of funds have been extrapolated.

Source: Invest Europe, authors' calculations

The European VC ecosystem benefitted substantially from market-stabilising public intervention during and after the Great Financial Crisis, when investors exhibited a cautious sentiment for risk capital. Since 2012, a normalisation has set in, although public support still plays an important role for further market development. However, even in the COVID-19 crisis, the share of government agencies investment in VC funds has not reached its record high anymore. These changes are visible in the variations of the investor base during the past years (Figure 31). According to Invest Europe figures, the share of government agencies' contribution to VC fundraising increased from 13% in 2007 to 35% in 2011, before it came down again in the subsequent years. In the exceptional year of 2020, the share of government agencies' investment in VC funds increased again. However, even if a very high importance of government agencies is unsatisfying for the long term, it is noteworthy that government agencies have played their role and supported the market in a counter-cyclical way, not only during the COVID-19 crisis, but even more so during the Great Financial Crisis, when total VC fundraising levels more than halved. This led almost "naturally" to an increased share of government agency fund investors. Moreover, the contributions of public investors to VC funds increased not only in relative but

also in absolute terms, i.e. from an average EUR 0.7bn p.a. in 2007-2009 to, on average, EUR 1.3bn in the years thereafter. In 2020, the total volume contributed by government agencies to VC fundraising amounted to EUR 3.6bn, which constitutes an increase by 30% compared to the year before. The share of government agencies' contribution to VC fundraising increased from 21% in 2019 to 30% in 2020. It remains to be seen, however, if the numbers will be confirmed in later issues of the Invest Europe statistics, i.e. when the yet unclassified fund investors will be more properly identified.

Theoretical evidence and EIF's own research suggests that public VC support is relatively well targeted and achieves positive effects in Europe. In a study of investment patterns of different VC investor types, Bertoni, Colombo and Quas (2015) find that governmental VC (GVC) investors in Europe specialise in investments that do not attract private investors due to high information asymmetries and high failure risk, i.e. in particular in young, small seed-stage companies, and in certain sectors such as biotechnology and pharmaceuticals, in which time to market are long and new product development is very costly. This indicates that "in Europe, GVC has filled the entrepreneurial financing gap left by private VC investors".

In order to put EIF's activity in context, some calculations can be taken into account that were performed by Kraemer-Eis, Signore and Prencipe (2016), which shed more light on the impact of EIF on the VC ecosystem. The authors estimate that the VC investment activity backed by EIF represented 41% of total VC investments in Europe in 2014 (29% in 2007). The share directly attributable to EIF amounts to 10% (5% in 2007), which shows the significant leverage that characterises EIF-backed investments. With regard to fundraising, the authors estimate that volumes backed by EIF in 2014 amount to 45% of the overall volumes collected by European VC investors (36% in 2007), against a share directly attributable to EIF totalling 12% (5% in 2007).

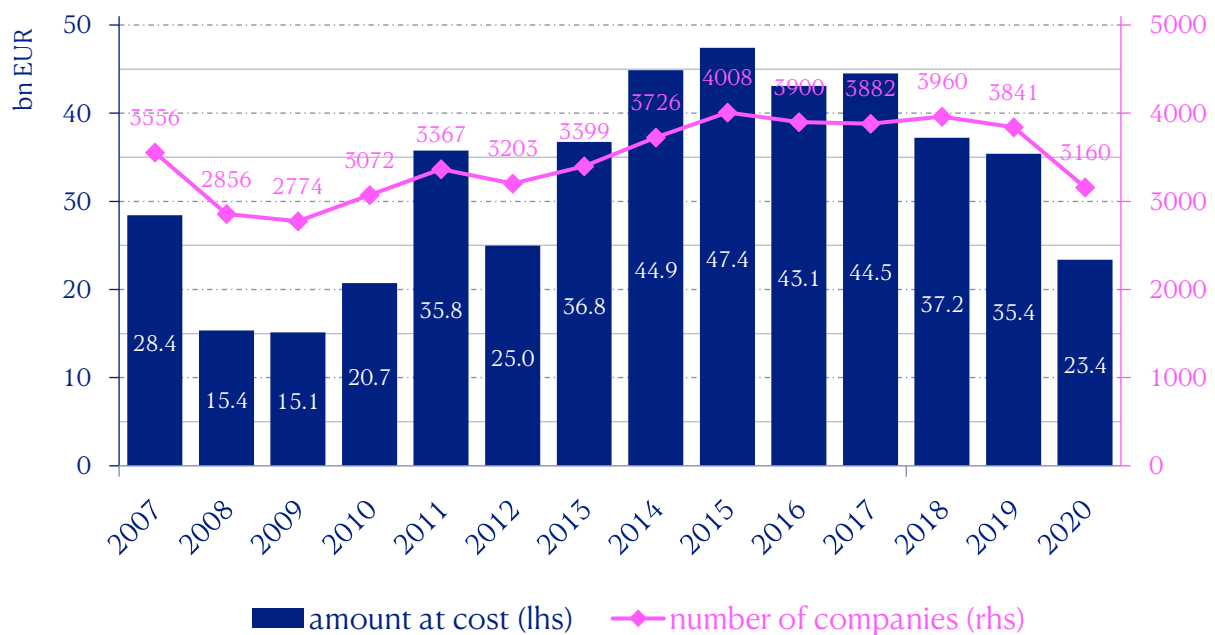
Moreover, EIF is supporting a relatively high number of first-time teams and many VC funds in which EIF invested successfully managed to close at their full target size. It is also important to see that many of the more established VC funds, pillars of Europe's VC market today, would not be there without having been kick-started by EIF. This clearly indicates EIF's catalytic role for European VC, rather than a crowding-out effect. This view was confirmed in the *EIF VC Survey*, which showed a high added-value of EIF's activities and a generally positive perception of public support in the European VC market (Kraemer-Eis, Botsari, Gvetadze, and Lang, 2018). Yet unpublished results of the recent *EIF Private Equity Mid-Market Survey* point into a similar direction for EIF's added value in the European PE mid-market. An Unquote Intelligence (2014) survey among General Partners (GPs) and Limited Partners (LPs) found that "the overriding benefit of [public funding bodies'] (PFB) money is the crucial role it plays in attracting other investors". Moreover, "[h]aving PFB money in a fund does not deter other LPs from committing".

4.3 | Divestment activity

In 2020, the exit market suffered a sharp setback, which even exacerbated the negative development of the past three years. This trend reversal in 2018 followed on several remarkably strong years. From 2013 to 2015, total PE divestments of European portfolio companies had risen to the largest amounts ever reached in the Invest Europe statistics (Figure 19), before levelling off in 2016 and 2017. In 2020, the total PE divestment value nosedived by 34% to EUR 23.4bn, the lowest level since 2010 (Figure 32).²⁸ The number of companies divested slumped by 18% to 3,160 in 2020.

The sharp decline in the total divestment amount in 2020 was mainly due to substantially lower activity in the buyout (-40% to EUR 15.6bn) segment of the market, but also divestments in the venture (-18% to EUR 2.3bn) and growth (-24% to EUR 4.4bn) capital segments decreased.²⁹

Figure 32: Total PE divestments (by amount at cost) of European portfolio companies



Source: Invest Europe, authors' calculations

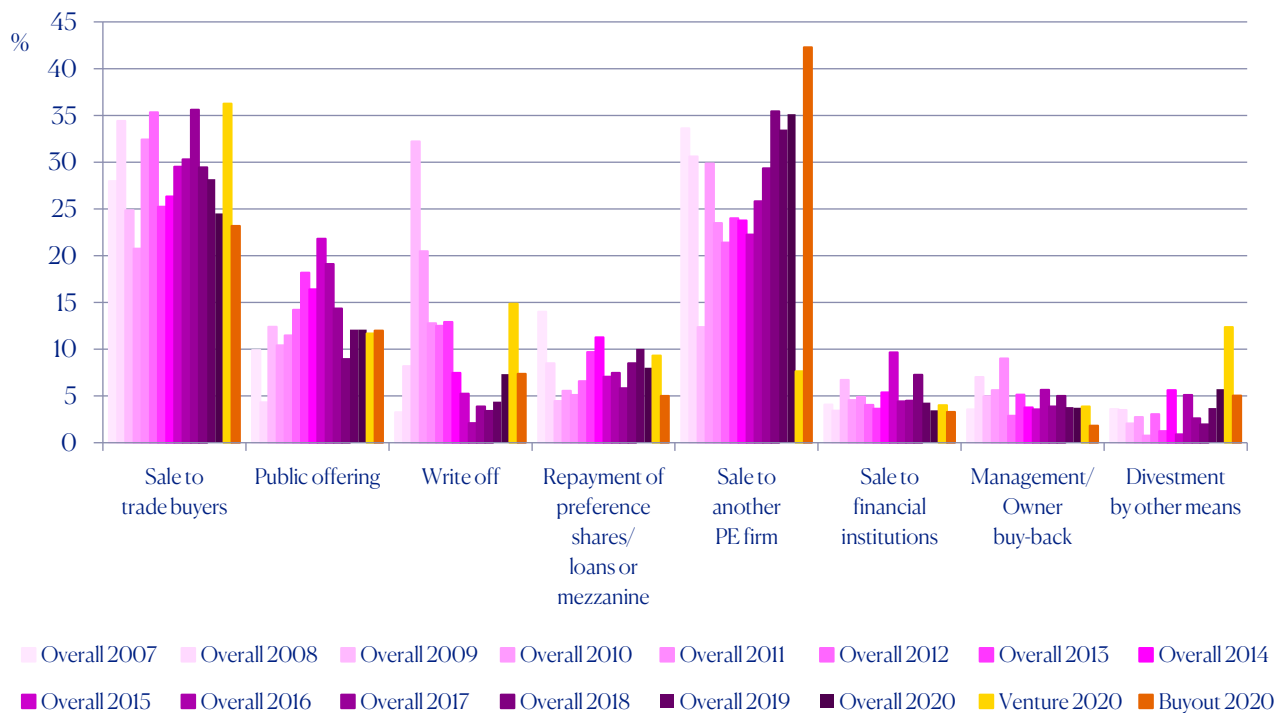
Despite the COVID-19 crisis, the relative importance of write-offs is still at comparatively low levels. As regards overall PE, the percentage of write-offs over total divestment amounts had strongly decreased between 2010 and 2016, before the trend reversed in 2017. Despite a jump in 2020, the figures are still far below the values reached in the aftermath of the Great Financial Crisis (Figure 33). Trade sales and sales to another PE house together account for almost three fifths of the total PE divestment amounts. The share of public offerings increased in 2019 and

²⁸ Invest Europe statistics show divestment amounts at cost, i.e. the total amount divested is shown as the total amount that had been previously invested, not including any profit on the investment.

²⁹ The numbers for venture, growth and buyout capital divestments do not sum up to total PE divestments, as total PE divestments also include the rescue/turnaround and replacement capital market segments.

stabilised in 2020.⁵⁰ In the VC market, the relative importance of write-offs was at a record low level in 2019. Despite an increase in 2020, the percentage of amounts written off over all divestments is still comparatively low in historical terms. During the COVID-19 crisis year 2020, the share of public offerings over total venture exits dropped substantially. In 2021, selected large-scale exits of European VC-backed companies included so different companies like Auto1 (an online portal for car buying and selling), Believe (offering label and artist solutions) or Sportradar (a sports technology company).

Figure 33: Divestment routes (amount divested at cost; percentage of total)*



* "Overall" figures are *not* the weighted average of the "buyout" and "venture" figures, as they also include the growth, rescue/turnaround and replacement capital market segments.

Source: Invest Europe, authors' calculations

Box 9: Invest Europe definition of exit routes

Management/ Owner buy-back: The buyer of the company is its management team.

Public offering:

First divestment following flotation (IPO): The sale or distribution of a private company's shares to the public for the first time by listing the company on the stock exchange.

Sale of quoted equity post flotation: It includes sale of quoted shares only if connected to a former PE investment, e.g. sale of quoted shares after a lock-up period.

⁵⁰ In the Invest Europe data, the category "Public Offerings" includes first divestment following flotation (IPO) and sale of quoted equity post flotation.

Box 9 continued:

Repayment of preference shares / loans or mezzanine: If the PE firm provided loans or bought preference shares in the company at the time of investment, then their repayment according to the amortisation schedule represents a decrease of the financial claim of the firm into the company, and hence a divestment.

Sale to another private equity firm: The buyer of the portfolio company is a PE firm.

Sale to financial institution: A financial institution is an entity that provides financial services for its clients:

Depository institutions: deposit-taking institutions that accept and manage deposits and make loans, including banks, building societies, credit unions, trust companies, and mortgage loan companies.

Contractual institutions: Insurance companies and pension funds.

Investment institutions other than direct PE firms.

Trade sale: The sale of a company's shares to industrial investors.

Write-off: The value of the investment is eliminated and the return to investors is zero or negative.

Note: Recapitalisations are not considered in the divestment statistics.

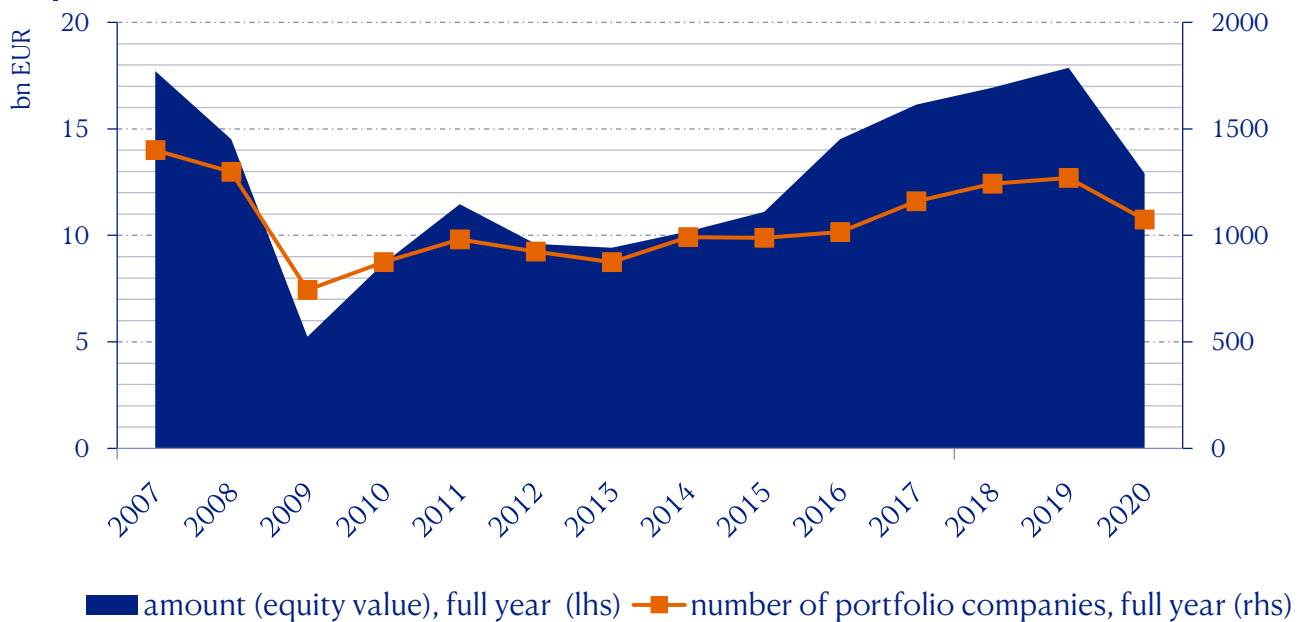
Source: Invest Europe (2021)

4.4 | Lower mid-market and hybrid debt/equity finance: an important market segment

Following EIF's definition (see EIF, 2019), the PE lower mid-market (LMM) covers fund strategies targeting equity and mezzanine investments at growth and buyout stages and with a particular focus on SMEs. EIF provides its core LMM products (equity, hybrid debt-equity³¹ and private debt) as alternative sources of long-term finance to established businesses and later-stage technology companies (see Box 10 for more information on private debt financing). In the current market context, a full range of equity products combined or not with a debt component continue to prove successful, particularly for shareholding reorganisation, organic and external growth, restructuring or expansion.

³¹ Hybrid debt-equity/mezzanine finance is a diverse asset class in between traditional senior debt and equity instruments. According to the OECD (2014), "this form of finance has not received as much public attention as VC or specialised exchanges for SMEs, but it holds potential to respond to [...] critical problems in SME finance."

Figure 34: Small and lower mid-market buyout equity investments in European portfolio companies*



* In the Invest Europe statistics, buyout investment sizes below EUR 15m are defined as small buyout investments. Buyout investment sizes between EUR 15m and EUR 50m are classified as lower mid-market.

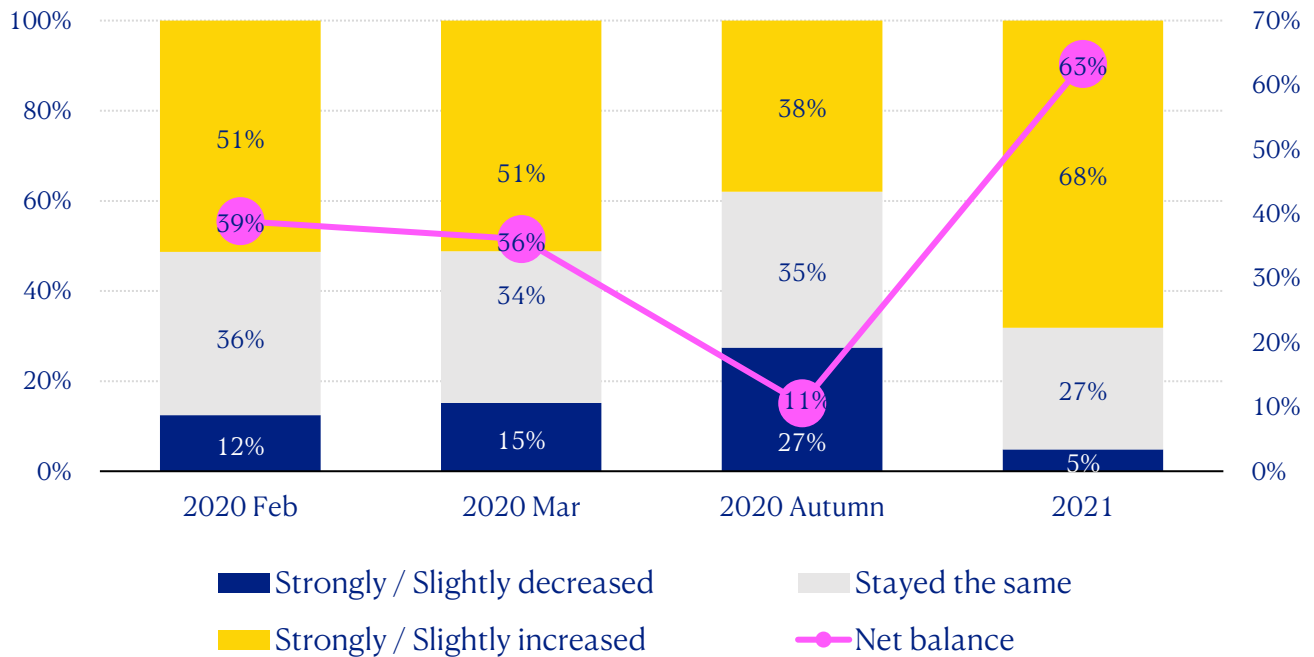
Source: Invest Europe, authors' calculations

The impact of the COVID-19 crisis, which arrived during times of a generally positive market environment, is also reflected by the developments of small and lower mid-market buyout investments in European portfolio companies. Investment amounts (equity value) decreased considerably by 28% to EUR 12.9m in 2020. Since 2014, investments followed an upward trend and peaked in 2019 at a record high of EUR 17.9bn (Figure 34).

More recent market insight, including from the *EIF Private Equity Mid-Market Survey*, provides evidence that the market recovered in 2021 from its COVID-19 crisis slump and investments have increased in 2021 for most survey respondents (Figure 35).³² However, the impact of COVID-19 on the current portfolio performance is still perceived on the negative side by a large share of PE mid-market fund managers, while expectations for the final fund performance are better. Despite a still attractive macroeconomic environment, the share of fund managers stating fundraising as a key challenge has increased compared to the results of the *EIF Private Equity Mid-Market Survey* performed before the crisis. First time teams, in particular, are still having difficulties in fundraising, leading to capital being more concentrated.

³² The results of the *EIF Private Equity Mid-Market Survey* are published in the EIF Working Paper series, which is edited by EIF's Research & Market Analysis and available online on the EIF website: [Research & Market Analysis \(eif.org\)](https://www.eif.org/research-market-analysis).

Figure 35: New PE mid-market investments over the past 12 months*



* The diagram shows the aggregated responses for the *EIF Private Equity Mid-Market Survey* question “Over the last 12 months, how has the number of your new venture investments developed?” The Net balance refers to the percentage of respondents stating that the number of their new investments has slightly/strongly increased minus the percentage of respondents stating that the number of their new investments has slightly/strongly decreased.

Source: *EIF Private Equity Mid-Market Survey*

Box 10: Private debt funds³³

Private debt, or direct lending, funds have gained importance as an alternative asset class for investors and a new financing source for SMEs and mid-caps in recent years. Similar to PE, private credit funds are operated by alternative investment fund managers, originating SME lending opportunities and providing funding in the form of debt, rather than equity. These managers or “alternative lenders” are a diverse and expanding group that includes established and emerging asset managers, subsidiaries of larger financial institutions, and even, more recently, marketplace or crowdfunding platforms. Private debt has similarities and differences with bank financing. Commercial banks tend to operate on the low risk (low yield) end of the spectrum, while alternative lenders cover the entire spectrum. Private debt markets are better placed to deal with liquidity risks than banks, due to the latter’s exposure to withdrawals of bank deposits in difficult market conditions. Private debt also deals better with funding risks, through the imposition of long-term funding commitments for investors or “lock-up periods” which restrict redemption of invested funds. However, firms tend to blend these two sources of finance to close their financing gaps, indicating that banks can utilise alternative lenders to meet customers’ financing needs, still remaining focused on less capital-intensive products and services, which is an added source of revenue, as well as to retain the primary customer relationship.

³³ The content of this text box is mainly based on OECD (2018), OECD (2019) and EIF market information.

Box 10 continued:

The private debt market which originally arose as an appendage of the PE market is now a stand-alone market section. The alternative lenders range from larger asset managers diversifying into alternative debt to smaller funds set up by ex-investment professionals (Deloitte, 2021). Several years after the start of the private debt raise, the market segmented into several main alternative asset classes: (i) Senior loans and unitranche, (ii) Mezzanine / Subordinated loans / Hybrid debt-equity, (iii) Venture Debt and (iv) Marketplace lending. Some already well established managers are also raising different funds offering products with different level of seniority (i.e., senior loans, unitranches, subordinated loans, etc.). Another product segmentation which appears more and more visible in the private debt market is the one between (i) managers targeting sponsored transactions (i.e. financing of a transaction with a financial or industrial equity sponsor) and (ii) managers targeting sponsor-less transactions (i.e. financing of a transaction without equity sponsor).

A large part of the private debt market still remains “sponsored”, which means that it is the leverage component of a PE operation containing both equity (provided by a PE fund) and debt (provided, among others, by a private debt provider). Nevertheless, the share of the European sponsor-less activity over total transactions stood at 22% since 2013, but decreased to 17%, on average, since the first quarter of 2020 (Deloitte, 2021).³⁴ Adopting a sponsor-less investment approach could create a competitive advantage especially for those smaller-sized funds targeting SMEs.

With regard to investors’ appetite to allocate capital to private debt, results of a recent survey, performed in Q2/2021 among 108 alternative investors across the world, show LPs’ growing interest in the asset class. According to the survey, over one third of the LPs were planning to increase their allocation to private credit in the second half of 2021 (PCFI, 2021).

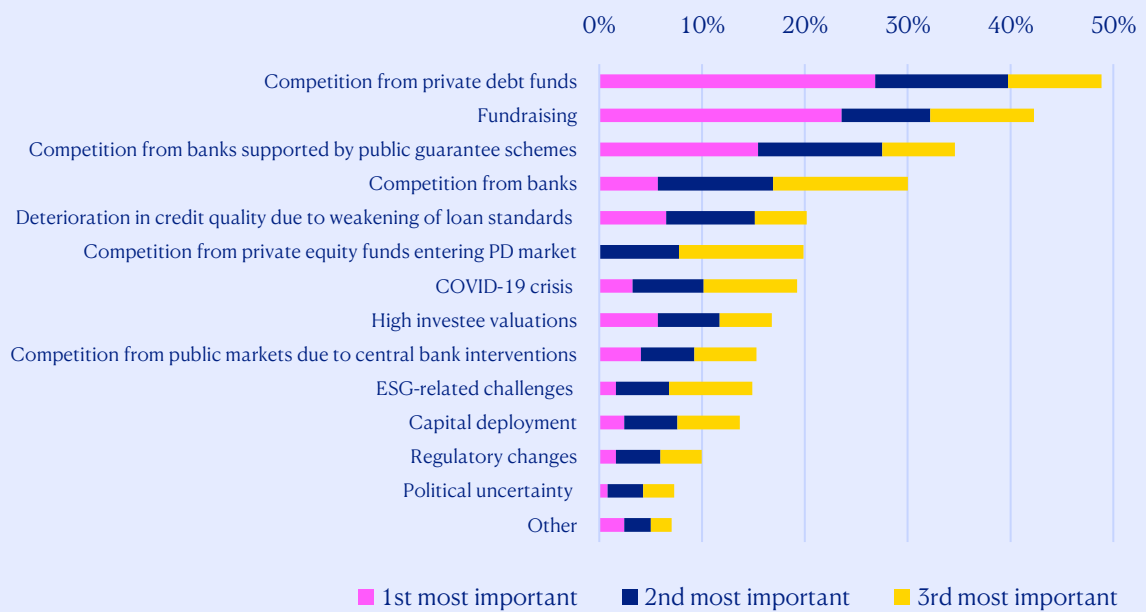
In Europe, the EIF aims at enhancing the access to finance of SMEs, inter alia through debt funds. See Kraemer-Eis (2014) and Box 2 in Kraemer-Eis, Lang, Torfs and Gvetadze (2016), as well as the EIF website, for more information on this topic. The new *EIF Private Debt Survey*, which was performed for the first time in 2021, will improve market insight gained by EIF. Preliminary survey results show that, among private debt fund managers, competition with other market players (mainly debt funds and banks), fundraising and concerns about deteriorating credit quality were the most frequently stated challenges in 2021 (Figure B10.1). Going forward, further survey results suggest that ESG-related challenges will become more important in the coming years.

Introducing an appropriate legal and regulatory environment and creating a level playing field for private debt activities as well as (regulatory and other) measures to enhance the investments of public and private investors (in particular large institutional investors) in alternative asset classes, incl. debt funds, could help to broaden the supply of funding sources, including private debt funds, that are available for SMEs.

³⁴ The percentages are calculated as unweighted averages of quarterly shares.

Box 10 continued:

Figure B10.1: Biggest challenges in private debt business



EIF Private Debt Survey 2021 question. Please select the biggest challenges you currently see in Private Debt business.*

* This question allowed for multiple selection; the Figure shows the responses for the items that respondents ranked as their first, second and third most important challenge.

Source: EIF Private Debt Survey 2021

4.5 | Private equity prospects

4.5.1 | Current situation, risks and market actors' concerns

Following the severe crisis of European PE and VC markets in the years 2008-2009 and beyond, remarkable positive developments have been observed in the recent past. Also during the COVID crisis, despite the measurable harm of the initial 2020 lockdowns, the VC industry did not suffer for a longer term. By the end of 2020, VC firms under strict lockdown had caught up in terms of activity rate (both in deals and volumes) with their no-lockdown benchmark. This is a part of the results of a recent joint EIF - Invest Europe study (Crisanti et al, 2021). See Box 11 for a detailed summary.

Box 11: The VC factor – Pandemic edition: Data driven insights into European VC and its resilience to the COVID-19 crisis³⁵

2020 was a challenging year for the VC industry in Europe. However, before the COVID-19 pandemic struck, the industry had been experiencing a period of significant and sustained growth. A new “The VC factor” report (Crisanti et al., 2021) analyses where most of this growth occurred, and how it has shaped the VC landscape in Europe.

The report finds that more than 50% of Europe-based VC firms operate in very large cities in comparison to 34% of European start-ups. As a result, a few important VC hubs tend to capture a significant share of the overall activity. Over the last 12 years investments from very large cities increased by 8 percentage points (pp). More geographically concentrated VC firms might partially explain the increasing concentration on the side of start-ups as well – up by around 12pp since 2007.

The report also looks at regions that are more specialised in either receiving or disbursing capital, which by nature must rely on other hubs to thrive. The authors underline that “communication” among VC hotspots is key for policymaking, because it relates to the interconnectedness of the European VC ecosystem. They suggest that a more interconnected VC ecosystem might provide one effective solution against the undesired effects of the rising geographical concentration of start-ups.

The report further looks at COVID-19’s impact on VC and shows that around a month into the pandemic, the VC industry saw a rapid 13.6% decline in the number of new investments. Exit rates decreased even more, by 43%, due to the heightened market uncertainty and the significant restrictions affecting travel and, broadly speaking, doing business during the first half of 2020.

However, a comparable fall in the total volume of new VC investments is not found. In fact, invested volumes up until the middle of 2020 were comparable to the 2018-2019 average. Even though VC firms undertook less deals, those that did invest provided, on average, 19.3% larger financing in the case of initial investments. With the exception of the healthcare sector, an obvious “winner” in terms of new deals, the authors do not find that the pandemic had disproportionate effects on specific categories of VC financing.

“The VC factor – Pandemic Edition” also exploits the uneven geographical implementation of lockdowns across Europe. The authors find that VC firms in regions under lockdown signed up to 20% fewer deals than investors located in regions with no restrictions to mobility between the eighth and the tenth post-lockdown week. The difference in volumes between the two groups is even larger: 143% on average. This sums up to about EUR 250m worth of VC activity lost due to lockdowns during those three weeks.

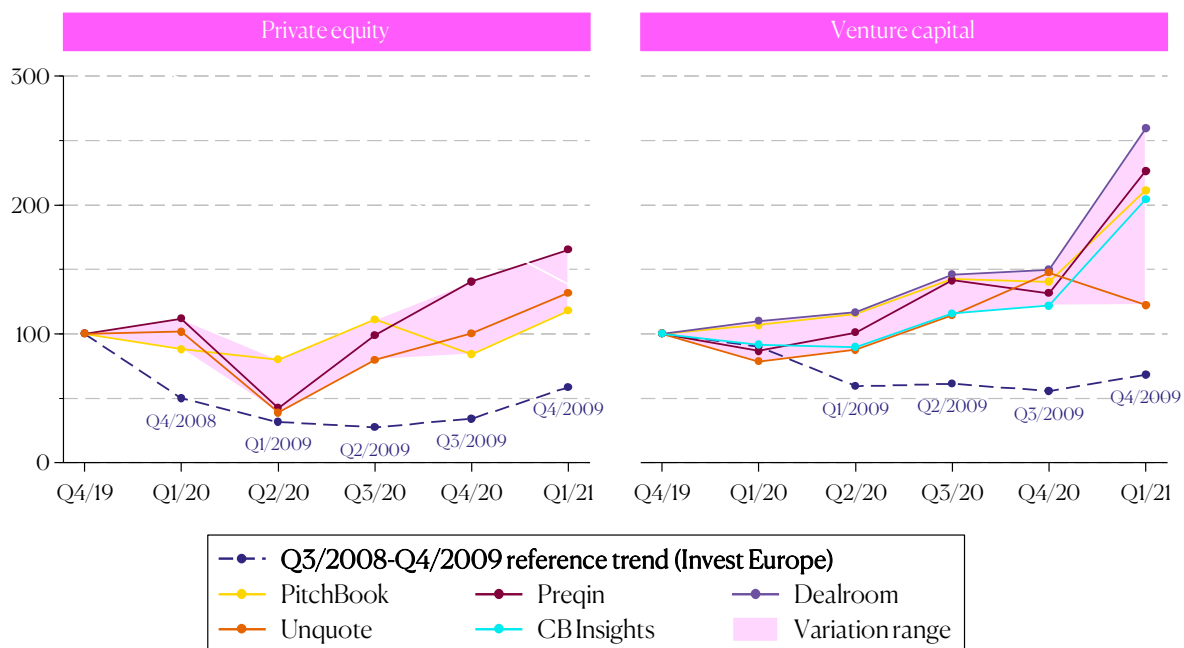
However, the analysis concludes that these effects did not last long. As the summer of 2020 began, the activity of VC firms in regions with mobility constraints was once again comparable to the no-lockdown benchmark. Despite the measurable harm of the initial 2020 lockdowns, the VC industry did not suffer from a case of long COVID. By the end of 2020, VC firms under strict lockdown had caught up in terms of activity rate (both in deals and volumes) with their no-lockdown benchmark.

Figure 36, which shows the European PE/VC activity during the COVID-19 recession vs the activity during the global financial crisis (GFC), confirms that the positive market trend has continued at the beginning of 2021. However, VC markets are still largely “opaque”, and no single data provider can be used as an “oracle”. Nevertheless, despite significant divergences in

³⁵ This text box was contributed by the authors of Crisanti et al. (2021).

reported trends across different data providers and even larger discrepancies in reported activity levels, it seems an (almost) common “message” that the European PE/VC activity during COVID-19 was not hit as hard as during the GFC. In fact, activity levels in 2021Q1 were higher than pre-crisis (2019-Q4). PE in particular was hit worse than VC, but performed an impressive recovery from Q3/2020 onwards. European VC did not fall significantly in Q2/2020, and had a significant increase in Q3/2020 onwards.

Figure 36: European PE/VC activity during the COVID-19 recession vs during the global financial crisis: Indexed real¹ growth of PE/VC investments in Europe (Q4/2019 = 100), by data provider*



* Real growth means growth of nominal activity values deflated with the gross fixed capital deflator for the EU.

Source: CB Insights, Dealroom, PitchBook, Preqin, Unquote, authors' calculations

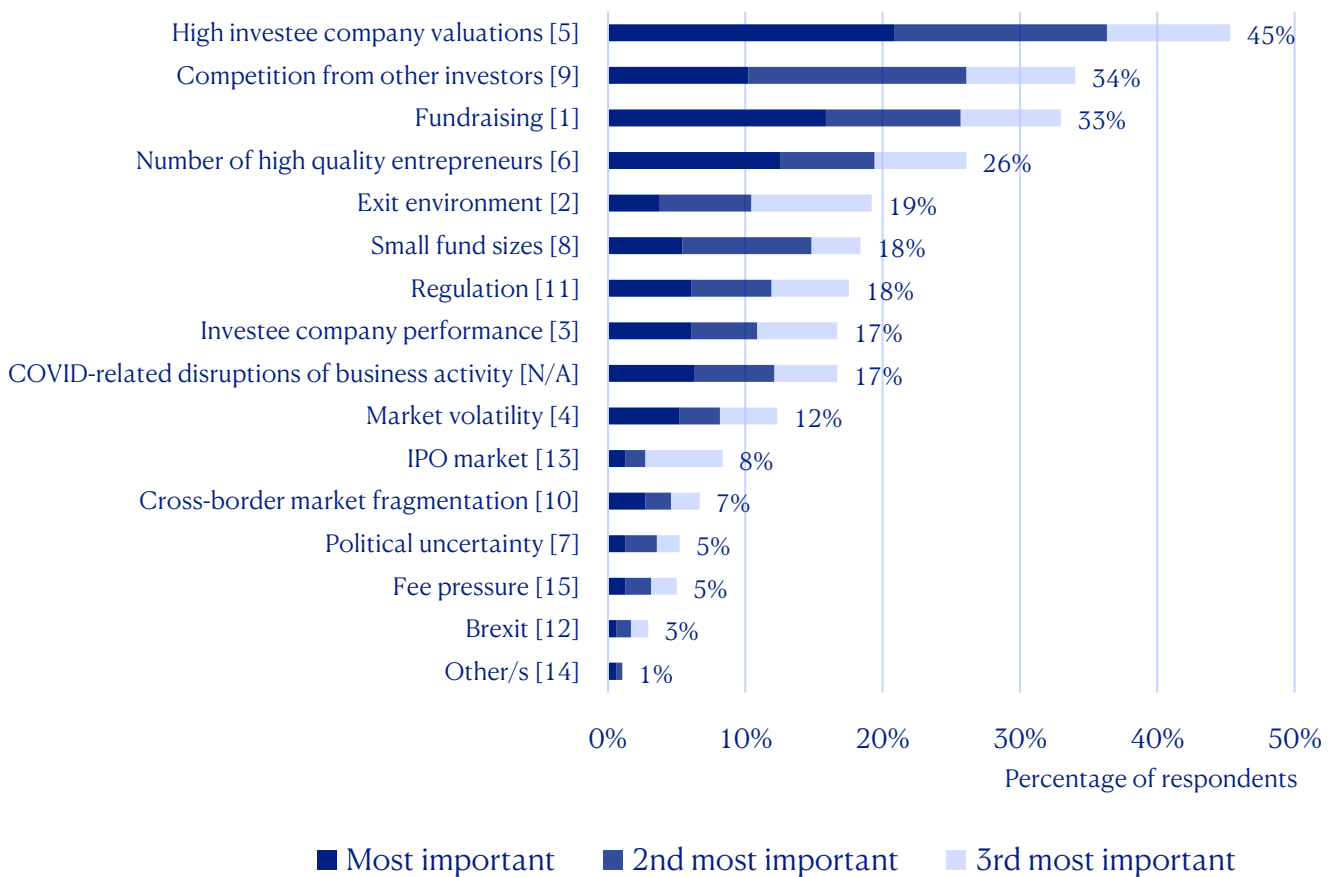
Despite these positive developments, the European PE and VC markets have still not completely caught up with their global peers. While in many cases the improvements in activity that have been achieved in recent years have indeed been driven by fundamental economic value, part of the upside performance may also be due to higher demand caused by the still ample liquidity in the markets. It is therefore important to support those companies in their continued growth that have well-developing economic fundamentals, and to also help, through the support of financial intermediaries, additional and complementary businesses to maintain and strengthen the backbone of the European VC market, i.e. a strong and continued supply of new innovative companies.

The VC ecosystem is developing, including the emergence of more and more successful incubators and accelerators. Should these trends continue, the potential returns of early-stage companies would have significantly positive impacts on the performance of VC investing. Moreover, Europe is perceived by international investment decision makers as a global leader in

several areas, in particular in its commitment to sustainability and the environment and transport infrastructure (Invest Europe, 2018). This perceived attractiveness of Europe as an investment destination has even increased, primarily due to increased innovation and returns on investment.

The recent favourable developments in the PE/VC market might, however, become contested by risks related to the economic, monetary and political environment. Warning voices of possible overheating are being uttered again, because of the still relatively expansive monetary policy stance that has led to ample global liquidity and low interest rates.

Figure 37: Biggest challenges in VC business*



* Diagram shows the results for the EIF VC Survey 2021 question “Please select the biggest challenges you currently see in the VC business.” The graph shows the total percentage of responses with respect to the items selected by each respondent as their three most important challenges (as far as applicable). The number in brackets [] corresponds to the ranking of the respective challenge in the EIF VC Autumn Survey 2020.

Source: Botsari, Kiefer, Lang, and Legnani (2021), based on EIF VC Survey 2021

According to results of the *EIF VC Survey*, fundraising, high investee company valuations and the number of high quality entrepreneurs have consistently been among the most important challenges in the VC business. In 2021, high investee company valuations has become the most important challenge currently seen in VC business (Botsari, Kiefer, Lang, and Legnani, 2021); see Figure 37. See Box 12 for an overview of the *EIF VC Survey 2021*. Results of the *EIF Private Equity Mid-Market Survey (EIF PE MM Survey)* also show high investee company valuations on top of the list of fund managers’ current challenges.

Box 12: The EIF VC Survey and the EIF Private Equity Mid-Market Survey

The *EIF Venture Capital Survey (EIF VC Survey)* and the *EIF Private Equity Mid-Market Survey (EIF PE MM Survey)* are surveys among VC and PE general partner (GP)/management companies targeting VC and PE mid-market investments in Europe. The surveyed population includes VC/PE firms in which EIF invested as well as firms in which EIF has not invested.

The first *EIF VC Survey* wave was conducted in November/December 2017. The *EIF PE MM Survey* was launched in 2020. The latest wave of both surveys were performed in July 2021. The main topics of the questionnaire covered the market sentiment and the impact of COVID-19, environment and climate, and gender diversity. The results of the market sentiment section of the *EIF VC Survey* are published in Botsari, Kiefer, Lang, and Legnani (2021). The results of the other survey topics will be published in due course, as well as the results of the recent *EIF PE MM Survey 2021*.

The *EIF VC Survey* and the *EIF PE MM Survey* projects, together with the *EIF Business Angels Survey (EIF BA Survey)*, complement both recent and future quantitative analyses of the economic impact of the EIF's equity operations in the market for VC, PE MM and BA financing.

The *EIF VC Survey*, the *EIF PE MM Survey*, and the *EIF BA Survey* provide the opportunity to retrieve unique market insight. To the best of our knowledge, the combined *EIF PE MM Survey* and *EIF VC Survey* currently represent the largest regular survey exercise among GPs in Europe.

The already large outreach of the EIF surveys, which are coordinated by EIF's Research & Market Analysis (RMA), and the high relevance of the questionnaire topics for both market participants and policy makers have further increased through cooperations with Invest Europe and the Joint Research Center (JRC) of the European Commission.

The EIF equity surveys are going to be repeated on a regular basis in order to derive robust results and implications. As such, future waves will include additional policy implications and improvements in the EIF's processes and products, as well as a comprehensive market overview of the VC landscape including a European VC Market Sentiment Index over time.

The EIF survey results are published in the EIF Working Paper series:

https://www.eif.org/news_centre/research/index.htm.

Source: EIF

4.5.2 | Structural challenges affecting European PE and VC

The PE and VC markets are challenged by economic developments of the last years, including several severe economic and financial market crises, which resulted in significant structural changes in the global and European economic landscape. The digitalisation of the economy, which has been further intensified by the COVID-19 crisis, has led to a differentiation of market segments. On the one hand, companies in research-intensive sectors continue to follow more traditional growth models with capital-intensive development stages at the beginning of their life. On the other hand, companies in the digital space are able to start their activities with very limited resources but are exposed to unprecedented needs for funding in globalisation of their

business models. As a result, depending on the sector and the business models of the companies, time-spans from start-up to global leader have shortened considerably and require companies to scale quickly to overcome the risk of seeing their business model being out-dated before they capture a significant market share. In Europe, too few start-ups survive beyond the critical phase of the first years. Compared to the US, a much larger share of firms remains static and fewer companies manage to grow into large firms (Bravo-Biosca, 2011; European Commission, 2016; Szczepáński, 2017). At the same time, innovative fast growing firms that are scaling up into larger companies contribute considerably to the overall economic activity, in particular during crises. Despite being disproportionately hit during crises, high growth enterprises, in particular the larger ones, still significantly contribute to economic activity. The economic significance of such firms for short-run growth is almost entirely based on large HGEs, both in phases of expansion but even more so during recoveries (Benedetti Fasil, 2021).

On a global level, the VC market has adapted to the new diversity of its target sectors. This has led to a bifurcation of the market between relatively small funds aiming at scouting emerging business models and a still relatively new class of giant VC funds that expanded globally from the US, providing large scale capital to businesses in their worldwide market expansion. In the large scale technology growth capital market, Europe has still too few established players.

In the shadow of companies driving or directly affected by the “digital revolution”, SMEs and mid-caps in traditional industries are reshaping their strategies for competing in a rapidly changing economic environment and are in need of flexible funding instruments with growth equity, mezzanine debt and hybrid debt to classical debt features. EIF market insight shows that growth-stage companies are experiencing a serious lack of growth funding in order to accelerate their international expansion and to strengthen their position against global competitors.

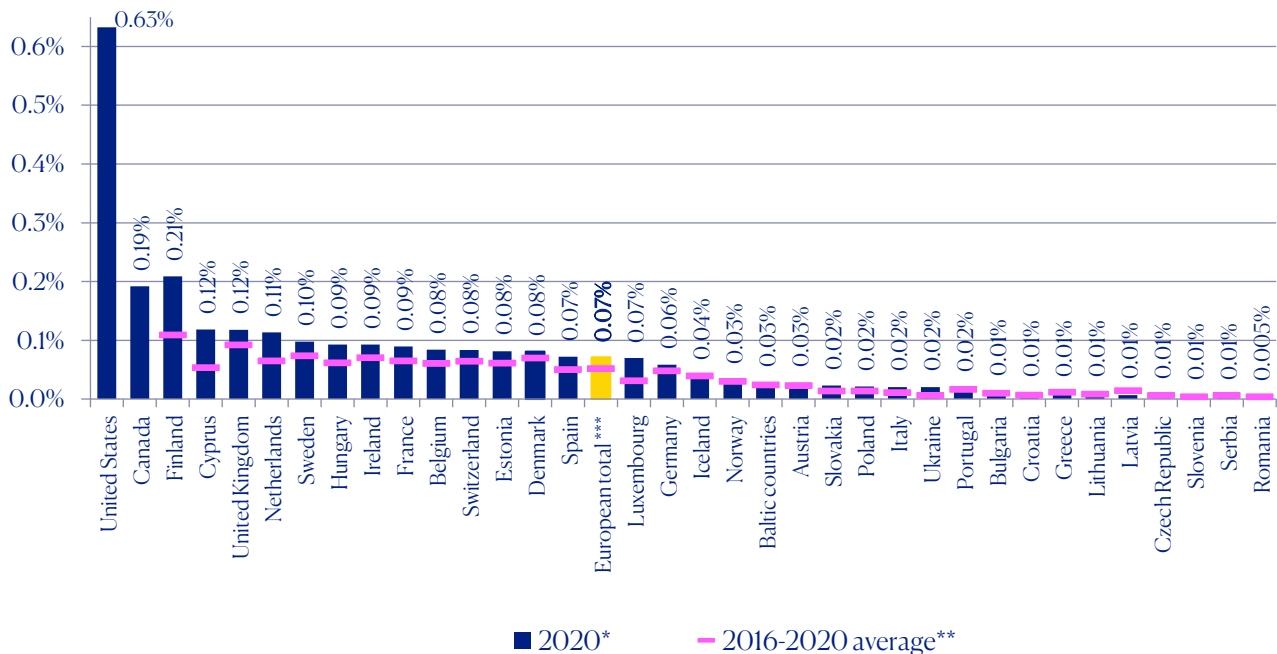
A comparison of PE/VC statistics confirms that the gap between the VC markets in the US and in Europe is particularly high at the later stage (AFME, 2017; Echiksone 2017; Benedetti Fasil, 2021). These differences are also reflected by substantial distinctions in fund and deal sizes: while at the start-up stage there is relatively little difference in terms of fund size (US vs Europe), US companies are funded by significantly larger funds at the scale-up stage. Furthermore, the average VC-backed US company typically receives higher amounts than its EU counterpart (details are provided in AFME, 2017, Kraemer-Eis and Lang, 2017, and Benedetti Fasil, 2021).

Durufflé, Hellmann and Wilson (2017) identify the main elements of a strategy to help Europe catch up to the US in terms of scale-up funding: creation of larger venture funds and an enhanced venture debt market, reinvigoration of tech IPOs, improved markets for secondary shares and avoiding to sell companies too early. The COVID-19 crisis even underlined the need for broader availability of scale-up financing sources during a period of difficult IPO markets and increased risk that investors needed to sell companies early (Botsari, Kiefer, Lang and Pal, 2021). The section “Annex 3: Financing Scale-ups: selected issues” in the Annex gives an overview of the scale-up financing gap.

The geographical fragmentation of the European VC market

The European VC market has remained fragmented. Whilst the traditional core markets in Europe (e.g., the UK and Scandinavia) still have a relatively high market activity after the crisis and others have recently caught up (e.g., Hungary and Spain), other countries continue to struggle with the size of their domestic VC market which is in no relation to their share in the aggregate GDP of the EU (e.g. Italy and Romania). Figure 38 provides an overview of VC investments as a share of GDP for European and selected OECD countries as well as a European average. Sizable differences in the development of the VC markets prevail and several markets not only suffer from subcritical size but from an institutional investor base that is not sufficiently ready to invest in this asset class (see Kraemer-Eis, Botsari, Gvetadze, and Lang, 2018).

Figure 38: VC investments by country of portfolio company, percentage of GDP, 2020



* 2020, or latest available year.

** 2016-2020 average, if available.

*** "Europe" as covered by Invest Europe (i.e. EU minus Cyprus and Malta, but plus Norway, Switzerland, Ukraine, and those Balkan countries that are not part of the EU). See OECD (2017) for an overview of the international comparability of VC data.

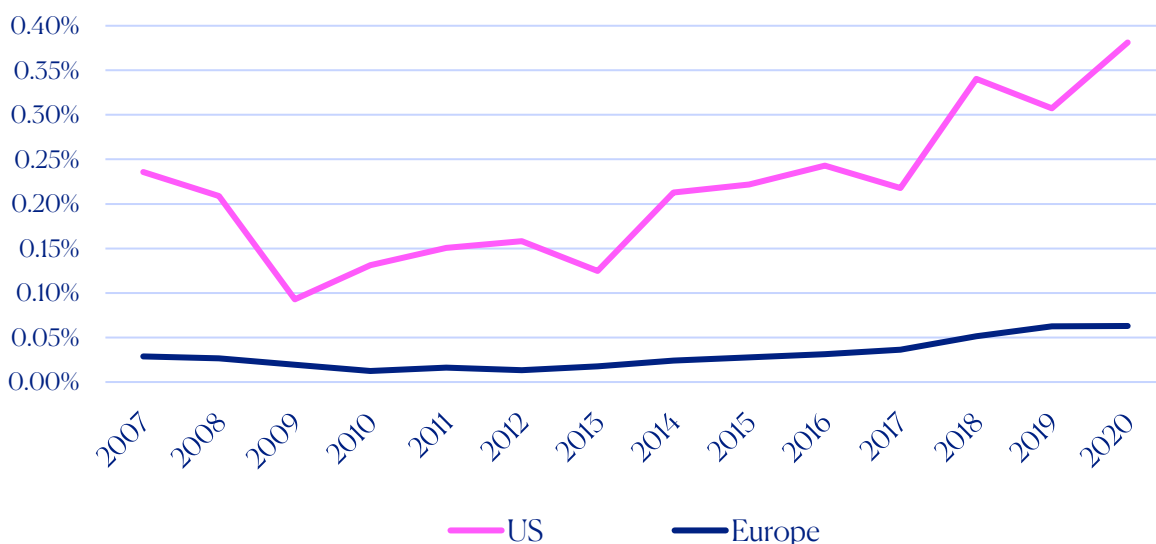
Sources: Invest Europe, OECD, authors' calculations

However, when looking into the geographic dispersion of European VC activity in more detail, the picture becomes more complex. It seems that VC investors tend to target tech "hubs" rather than certain regions, based on the expertise developed in those hubs. A start-up's location is likely to have a major influence on the amount of VC that the enterprise receives as well as the number of funding rounds it goes through (Nepelski et al., 2016, who provide a detailed overview of European VC-backed start-up hotspots). EIF research has shown that European hubs, and in particular those backed by EIF investments, act as the beating heart of a complex network of national and international investments. This claim is supported by data on investment amounts originated by hubs: 23% of these remains in the hub, 40% reaches out to other in-country

locations and the remaining 37% travels beyond the national frontier (Kraemer-Eis, Signore and Prencipe, 2016). Since higher cross-border investments can be interpreted as the signal of a deeper integration of the European VC market, EIF may hold a vantage point in fostering the consolidation of a European-wide VC ecosystem. In addition, cross-border VC investments have been facilitated to a certain extent by EU-wide overarching rules and regulations. Moreover, VC firms tend to cluster together much more than their investees. A recent EIF - Invest Europe study found that more than 50% of all VC firms operate in very large cities in comparison to 34% of all start-ups (Crisanti et al., 2021). However, there is still much disintegration in terms of company structure, legal system, regulation, taxations etc. Another reason for improved cross border investments is that the main hubs have attracted talents from different countries who retain links to their home countries and in turn attract additional human capital and/or companies to the various hubs. This provides insight for more cross border activities and fosters an international VC ecosystem for investment.

The comparison of VC investment data between Europe and the US or other countries outside Europe is not straightforward for several reasons (see OECD, 2017, for an overview). For example, data for the US often does not separate out what share of capital is invested by formal VC/PE funds, which leads to US investment figures being higher than the related fundraising. See Figure 39 for a comparison of VC fundraising as a share of GDP in Europe and the US from 2007 to 2018. Although VC fundraising is, on average, lower than VC investment in the US, its level is still substantially higher than in Europe and confirms the diagnosis of a comparatively small European VC market. Despite a booming European market, the gap – in absolute and relative terms (relative to GDP) has even grown.

Figure 39: VC fundraising Europe and US, percentage of GDP, 2007-2020*



* The underlying definitions (categorisations) for the collection of European / US data are not identical, hence differences can only be interpreted as approximation.

4.5.3 | Policy intervention in European PE and VC: findings from recent studies

Some of the challenges described in the preceding two chapters continue to weigh on the access to funding in the European VC market. This supports a view that public backing is needed in order to strengthen the market, which is particularly true for new funds that typically receive less private investment.

Besides the additional funding volumes, public investors' participation in a PE/VC fund can also have a positive signalling effect on private investors, e.g. due to perceived strong due diligence requirements and an assumed higher stability of public LPs' commitment to a fund (see, for example, Kraemer-Eis, Botsari, Gvetadze, and Lang, 2018). These advantages seem to outweigh the potential disadvantages of public investors' participation, like a supposed negative impact on speed and responsiveness or imposed restrictions in the investment strategy of the fund (which can be due to thorough and audit-proof due diligence processes, which are a necessary precondition for the above-mentioned signalling effect). Moreover, Bertoni, D'Adda and Grilli (2016) show that in "thin" VC markets with low supply, which might be a good characterisation for many continental European markets, governmental VCs can raise competition among investee companies by increasing the deal flow and thereby elevate expected profits of independent VCs³⁶ with purely financial investment objectives. This may attract additional investors and trigger "the virtuous cycle of VC market development".

For public policy intervention in the VC market, the relationship between private VC activities and governmental support is important. This was analysed in several empirical studies: according to Colombo, Cumming and Vismara (2014), the design of a public VC investment scheme is relevant for their impact. Governmental VC schemes seem to have been more successful when they acted alongside private investors, which would favour a governmental fund-of-funds set-up over direct public investments. Indeed, the focus of support instruments "has shifted from government equity funds investing directly to more indirect models such as co-investments funds and fund-of-funds" in OECD countries (Wilson, 2015b). Moreover, Brander, Du and Hellmann (2014), in a continuation of their 2010-study, find that enterprises funded by both governmental VC and private VC obtain more investment than enterprises funded purely by private VCs, and much more than those funded purely by governmental support. Similarly, Bai et al. (2021) find a positive relationship between government funding and private capital allocation to early-stage companies. Increased reliance on private capital markets enabled governments to mitigate investment frictions, improve capital allocation, and thereby increase local innovation.

There is also a positive association between mixed governmental/private funding and successful exits, as measured by initial public offerings and acquisitions, attributable largely to the additional investment.³⁷ Dubovik and Steegmans (2017) find evidence that public sponsoring of

³⁶ Independent VC fund managers act as general partner in a limited partnership in which the fund investors invest as limited partners. This is the most common legal structure for VC funds in Europe.

³⁷ Dubovik and Steegmans (2017) provide a brief overview.

privately managed VC funds creates better exit performance than public management of VC funds. Cumming, Grilli and Martinu (2017) show a higher likelihood of a positive exit for companies backed by independent and governmental VCs together than for companies that are backed by one of the two investor groups only, based on the underlying sample. Moreover, Bertoni and Tykvová (2012) conclude “that syndicates between private and governmental VC investors, in which the private investor takes the lead, are the most efficient form in terms of innovation production”. However, as said earlier, public policy in the area of VC should go beyond an exclusive support of VC funds (see Hellmann, Schure and Vo, 2015) and aim to attract equity financing to Europe from other sources, such as angel investors and crowdfunding (Aubrey et al., 2015; Wilson, 2015a). This is even more important, as the COVID-19 crisis seems to have had a particularly negative impact for the access to seed and (very) early stage financing (Bellavitis et al., 2021; Benedetti Fasil et al., 2021; Kraemer-Eis et al., 2021).

Box 13 provides a summary of a recent study to analyse the economic impact of VC on the exit and innovation outcomes of EIF-backed start-ups.

Box 13: The impact of VC on the exit and innovation outcomes of EIF-backed start-ups³⁸

In the study “The impact of VC on the exit and innovation outcomes of EIF-backed start-ups”, which forms Volume VI of the EIF Working Paper sub-series “The European Venture Capital Landscape: an EIF perspective”, Pavlova and Signore (2021) estimate the causal effects of VC investments supported by the EIF on the exit prospects and innovative capacity of start-ups. The authors analyse 782 early stage companies supported by the EIF in the years 2007 to 2014 – the treatment group – against a control group of non-VC-backed start-ups. Control start-ups mimic the trajectory of treated firms had they not received VC.

To find suitable controls, the authors carry out an extensive review of the literature to build a comprehensive model of VC contracting. They combine measures based on machine learning, network theory and satellite imagery analysis with multiple other predictors of VC financing to carry out matching between treatment and control firms. In order to examine the exit events of start-ups, the authors employ competing risks analysis, which provides a model for time until a certain exit event.

EIF VC-invested start-ups were found to be about three times more likely to participate in an M&A deal than their non-VC invested counterfactuals. In absolute terms, this entails a 10.3 percentage points (pp) higher probability of M&A for VC-backed start-ups, five and a half years after the investment date. EIF VC-invested start-ups were also about three times more likely to experience an IPO compared to their counterfactuals – entailing a 1.7 pp higher IPO rate by the fifth post-investment year. No significant effects are observed on bankruptcy, nor on other forms of buy-out.

Furthermore, Pavlova and Signore (2021) find that EIF VC had a strong and significant effect on the likelihood to experience both a horizontal and vertical integration, with a threefold and sixfold increase in the probability of each M&A outcome respectively. By contrast, the effect on diversifications was not apparent. EIF VC also brought an almost sixfold increase in the chance to experience international acquisitions, while it had a much more muted effect on the incidence of national M&As.

³⁸ This text box was contributed by Elitsa Pavlova and Simone Signore.

Box 13 continued:

The findings are consistent with the theory that the presence of VC investors opens up additional exit channels that would not otherwise be available to the entrepreneur, which translated into a disproportionately positive impact on horizontal and vertical integrations. Phillips and Zhdanov (2017) show that an active M&A market provides an incentive for VC firms to engage in more VC deals, supporting the hypothesis that the EIF fostered a virtuous cycle between VC activity and the exit environment.

The study also finds that EIF VC contributed to a doubling of the likelihood to patent, compared to counterfactuals. In absolute terms, this translates into 10 pp higher probability to patent for EIF VC-backed start-ups, already by the second post-investment year — further up to 13 pp six years after investment. These findings are consistent with the theory that VC alleviates the financial constraints of young innovative businesses and allows them to maintain high R&D expenditures and cover the direct and indirect costs of patenting (Bertoni et al., 2010).

4.5.4 | Policy intervention in European PE and VC: a practical approach

Taking into account the considerations of the previous chapters, Europe needs an integrated portfolio of funding instruments to support the various segments of its start-up, SME and mid-cap landscape, to unleash the full potential of EU companies' competitiveness and their contribution to Europe's economic growth and innovation. Instruments should be complementary to existing initiatives in terms of sector, stage or geographic focus. However, the dynamics of recent economic developments, e.g. in the area of the digital economy, has made the segmentation between early stage and late stage VC somewhat redundant. Policy instruments that create artificial boundaries of businesses' development stages could be prohibitive to an efficient VC market. Moreover, the EU's VC markets show different degrees of maturity and so require different policy instruments. In less developed markets, instruments may need to work strongly together with the actors of the informal VC markets (BAs, Incubators, TT Centres) and be complemented by flexible co-investment products to grow the domestic VC market. However, when it comes to companies with global ambitions, instruments investing in future industry leaders compete for investors who seek exposure to the best companies on a global scale, not with respect to a given geography. Therefore, giving flexibility to the geographic boundaries of policy instruments is not only key in retaining EU-based businesses in Europe but may attract non-EU based businesses to relocate to Europe. Based on these considerations, it appears vital to offer an array of instruments adapted to diverse market conditions in the various geographies of the EU.

However, large-scale venture initiatives need to include support that helps to grow businesses to larger scale in order to make an impact on the EU's competitiveness. The provision of more growth capital could help alleviate the challenges that later-stage VC firms face when it comes to follow-on financing, particularly in the absence of established, liquid public markets. Creating larger funds will also enable VCs to accompany investee companies for longer periods, minimising the risk that portfolio companies are taken public too early, without having reached a

sustainable size. Initiatives aimed at supporting VC firms even in the post-IPO process and at encouraging sophisticated, large crossover investors could contribute to a vibrant VC ecosystem in Europe, enabling European VCs to compete alongside giant, internationally-expanded VC funds.

Measures aiming at regulatory simplification, harmonisation and promoting cross-border investment are steps in the right direction, as intensive policy action is needed to overcome the fragmentation of the European VC market (Bertoni, Colombo and Quas, 2015; see also chapter 4.5.2 |; Kraemer-Eis and Lang (2017) provide an overview of related measures under the Capital Markets Union).

Europe needs a seamless funding infrastructure at large scale in order to support the full corporate financing escalator and to ensure a sizeable mass of home-grown risk capital finance with a long-term perspective. The issue is not only about the availability of funding; it is about the type of funding. The “growth stage trap” is very different in nature from the “early stage gap” and requires new tools and means to address it (see Kraemer-Eis and Lang, 2017). Public backing of the European VC market should aim at crowding-in private investors and catalysing private sector investments in order to support the development of an integrated European VC market, originated by venture capitalists and other market-oriented professionals, such as business angels (BAs).

In times of scarcity of private capital, the temptation grows to construct policy instruments that substitute the private sector. In fact, there is a need to use public sector resources primarily to mobilise private sector capital. One way to attract private investors to the VC market is a fund-of-funds approach or having government and private investors co-invest in VC funds (Acevedo et al., 2016). As a reference catalytic investor in European venture and growth capital funds, the EIF is providing financing solutions to boost entrepreneurship and innovation, acting as a cornerstone around whom private market players invest, taking comfort from EIF’s thorough diligence and investment and ongoing monitoring processes. In the coming years, EIF will continue to act as a cornerstone investor across the spectrum from technology transfer through VC to the lower mid-market and mezzanine financing. EIF’s activity in the equity sphere also includes the launch and extension of new initiatives.

5 | SME debt products

5.1 | SME guarantees

5.1.1 | Credit Guarantee Schemes as a policy response to market failures in the SME bank-lending market

Earlier chapters³⁹ highlighted the SME financing gap (OECD, 2006), whereby many SMEs with economically viable projects cannot obtain the necessary financing from the regular system of financial intermediation. This market failure, rooted in information asymmetries, is particularly prevalent in the market for lending to SMEs, for two reasons. The first reason relates to SMEs' lack of collateral, while the second reason relates to the relatively short credit history and operational track record of SMEs compared to their larger counterparts.

Given the strategic importance of SMEs as drivers of economic growth and innovation, it is of crucial importance to address the consequences of credit market failures in order to exploit the externalities from entrepreneurial dynamism (Honohan, 2010).

Credit Guarantee Schemes (CGSs) “are used widely across economies as important tools to ease financial constraints for SMEs and start-ups” (OECD, 2013). This is because guarantee mechanisms, “whereby should the borrower default the guarantor compensates a pre-defined share of the outstanding loan” (OECD, 2015), reduce the risk of lenders and favour the provision of financing to viable businesses that are constrained in their access to finance.

Credit guarantee programs expanded substantially in the years 2007-2011, as governments responded to the global financial crisis. Carefully designed guarantee schemes have positive macroeconomic effects, meaning that the costs for the tax payers due to default payments are outweighed by the positive stimulating effects of guarantees on the economy (e.g., fiscal income generated by the supported projects, positive impact on social benefits programs due to created or maintained jobs). Therefore, CGSs “remain the most wide-spread instrument in use across countries” to ease SMEs' access to finance (OECD, 2018). While CGSs do not alleviate information asymmetries directly, and hence do not address the root of the market failure, they can increase the incentives of lenders to supply credit to SMEs by providing a substitute for collateral, and if designed correctly, increase overall welfare.

Arping et al. (2010) examine the conditions under which CGSs are socially preferred over government co-funding, using a moral hazard model in the spirit of Holmstrom and Tirole (1997).

³⁹ See Chapter 3.2.

They conclude that provided entrepreneurs are not substituting public for private collateral, a welfare-maximising strategy prefers CGSs over government co-funding of investment projects. Government involvement in the establishment and funding of CGSs can also be motivated by resolving coordination failure between private-sector entities, which prevents them from pooling their resources. Anginer et al. (2014) argue that when lenders are risk averse, efficient provision of guarantees may not occur on a private-sector basis due to collective action problems, i.e. although the stakeholders are all aware of the problem, the lack of action comes from the misalignment of the private interests with those of the society. They also stress that the incentives for collective action are even weaker in economies with less developed financial systems. The state, on the contrary, is able to resolve the collective action frictions that get in the way of risk spreading. However, to achieve this objective, the state has to maintain the incentives for lenders to monitor projects efficiently, and to deter the borrower from excessive risk-taking. This can be done by pricing guarantees in a way that ensures the expected losses are covered by the fees charged, and promotes the risk being shared with the private sector.

In addition, CGSs hold other advantages. First, the final lending decision stays with a market-based, private-sector entity (rather than a public agency) – the bank –, which has the expertise and the necessary technology to evaluate credit applications and projects. This is likely to ensure a more efficient selection among borrowers than if the task is done by a public agency, since – given that the guarantee is partial – it leaves part of the risk with the privately operating lender. Second, compared to direct lending programs, CGSs have much lower initial cash flow needs, and as such, have a leverage component. As a consequence, they can also be used when fiscal constraints are tight.⁴⁰ Third, if CGSs are supranational, they can contribute to an efficient geographic distribution of credit. Results from a recent EIB and EIF survey on European CGSs (see Chatzouz et al., 2017; a summary is provided in Kraemer-Eis, Lang, Torfs and Gvetadze, 2016b) highlight that all but one existing CGSs choose to operate within the national borders of the country they are headquartered in. This can be explained by the existence of cross-border information frictions related to national legal frameworks that govern the functioning of CGSs, and obvious practical difficulties to assess risks in different cultural, linguistic and business contexts. Supranational CGSs can therefore contribute to an efficient cross-border allocation of credit.

The role of CGSs is not properly evaluated (Schich et al., 2017). In case some CGSs are assessed at all, they are often focused on financial and not on economic additionality. A toolkit for impact evaluation of public CGSs for SMEs was developed by the World Bank Group and First Initiative (2018).⁴¹

The EIF plays an important role in alleviating problems experienced by SMEs in accessing finance. Through a wide range of financial intermediaries, such as banks, leasing companies, guarantee funds, mutual guarantee institutions, promotional banks and other financial

⁴⁰ However, the small initial cash outlay of credit guarantee schemes also has disadvantages. Honohan (2010) notes that, as a large number of borrowers can be reached with only relatively small initial costs in the short-run, political incentives exist for the public sector to supply guarantees generously, while concealing the true long-term fiscal costs of a program behind the uncertainty around the expected long-term losses on the guarantee portfolio. This can result in unexpected fiscal costs further down the road.

⁴¹ EIF provided input to the project. A short summary of this methodological approach is provided in Kraemer-Eis, Botsari, Gvetadze, Lang and Torfs (2017).

intermediaries, the EIF effectively provides both financing to SMEs and guarantees for SME financing. Apart from EIF guarantees for securitised SME financing instruments, the EIF offers guarantees/counter-guarantees for portfolios of microcredits, SME loans or leases.⁴² In doing so, the EIF manages and implements several mandates on behalf of the European Commission, but also of national and regional Managing Authorities.

A number of recent studies have investigated the impact of some of the EU guarantee programmes on the beneficiary firms. Based on an analysis of the MAP (Multi-Annual Programme for enterprises and entrepreneurship) EU SME Guarantee Facility and focusing on Central, Eastern and South Eastern Europe (CESEE) countries, Asdrubali and Signore (2015) find significant positive effects of this EU guarantee program on the beneficiary firms. By breaking down the sample by country, signature year, size and age classes, the authors find that micro and young SMEs have benefited the most from MAP-guaranteed loans in terms of economic additionality. More recently, Bertoni et al. (2019) contribute to this body of research by focusing on the population of SMEs located in Italy, Benelux and the Nordics and benefiting from the guaranteed loans provided under the CIP (Competitiveness and Innovation framework Programme) and MAP programmes. They find that, after receiving a guaranteed loan, beneficiaries grew more rapidly than comparable non-beneficiaries in terms of assets, sales and employment (similar results are also reported by Bertoni et al. (2018) in their analysis of French SMEs). Brault and Signore (2019) review past research from the EIF Working Paper Series and produce the first pan-European assessment of EU credit guarantees to SMEs. This meta-analysis covers over 360,000 loans guaranteed by the SMEG facility under MAP and CIP from 2002 to 2016. The results show that guaranteed loans provided by the EIF under the CIP and MAP programmes effectively boosted firm growth and increased survival chances of beneficiaries.

5.1.2 | Credit guarantees as a policy response to the COVID-19 crisis

In 2020, as COVID-19 started to spread across Europe, European governments rolled out a host of initiatives and support measures in an attempt to mitigate the economic impact of the pandemic. The imposed lockdowns meant loss of revenue and cash flow constraints for businesses, particularly for SMEs. Even for an equal revenue shock, SMEs were more vulnerable and in greater need for government support compared to their larger counterparts, given that SMEs typically have thinner equity cushions, lower liquidity buffers, fewer financing options and less-diversified revenue sources (IMF, 2020). Among the credit-support programmes aimed at mitigating the effects of the crisis on SMEs, guarantees on loans emerged as the preferred credit-support instrument, accounting for the vast majority of the announced government support volumes.

Brault and Signore (2020) report on the prevalence of credit guarantees among the coronavirus-related fiscal pledges to provide liquidity to affected businesses in a broad range of countries. The authors highlight three factors that influence the economic effectiveness of national

⁴² See for more information the EIF website www.eif.org.

guarantee programmes to address the COVID-19 crisis: first, the diverging magnitude of the deployed credit guarantee volumes across countries; second, the features of the national industrial landscapes; and third, the varying capacity of European countries to withstand the fiscal consequences of potential future defaults of these guaranteed loans. The increase in government guarantees to the non-financial corporate sector indeed intensifies the interdependency between sovereign states, banks and firms – creating a so-called “sovereign-bank-corporate” nexus (Scope, 2021). The stronger the interdependencies within this nexus, the stronger the incentives for the sovereign to honour its guarantees, given that the high potential contagion risks and macroeconomic costs could lead to further deterioration in economic and fiscal outlooks.

Anderson et al. (2020) investigated (some of) these concerns, i.e. the extent to which unequal support through national coronavirus aid schemes could distort competition in the EU single market, providing an unfair advantage to businesses in better-endowed countries. However, their preliminary findings based on granular level research in France, Germany, Italy, Spain, and the United Kingdom suggest that businesses in richer or less indebted countries did not seem to benefit disproportionately from these schemes, and that the announced headline numbers in relation to guarantee programmes were not necessarily correlated with actual commitments to individual businesses. If anything, a positive correlation between credit-support usage and government debt was documented, while the size of the guarantee envelopes did not account for the variation in the level of usage across Europe’s largest economies (Anderson et al., 2021).

Since the beginning of the crisis, public guarantee policies did indeed differ greatly across countries and jurisdictions, in terms of both the funds available and the credit support usage, reflecting the unequal economic shocks experienced. Demand factors, namely differences in the demand for liquidity support by firms, more than the characteristics of the programmes themselves, helped explain to a large extent the differences in the usage of the offered facilities across countries (Anderson et al., 2021). The demand for credit by firms was in turn determined by the extent of the GDP loss linked to the severity of the lockdowns, the structure of national economies and the quality of governance (Sapir, 2020).

Budnik et al. (2021) also highlight that the proportion of drawn funds depends on the demand for guaranteed loans in relation to the conditionality of guarantees in a certain country. At the same time, credit supply constraints, i.e. how much lending banks could intermediate and the ability of the banks to supply these loans – as reflected in their profitability and funding costs, should also be taken into consideration.

By contrast, low interest rates did not appear to have driven levels of lending beyond what could be expected in response to GDP loss (Anderson et al., 2021). Indeed, after an initial surge in demand for public guarantees, the usage of credit-support programmes in most countries⁴³ began to slow down in mid-2020 and gradually levelled off in the second half of the year.⁴⁴ As a result, the largest guarantee envelopes are unlikely to be fully used (Budnik et al., 2021) and much of the guaranteed funds may serve as liquidity buffers.

⁴³ Italy being a notable exception.

⁴⁴ This is consistent with the evidence presented in earlier chapters; see Chapter 3.3 |, Figure 15.

A European-level policy response can help alleviate the concerns raised in some of the aforementioned studies. This is because a European-wide deployment of credit guarantee programs to address the effects of the COVID-19 crisis can at least partially offset the heterogeneous fiscal response across European countries and direct liquidity to the most credit-constrained businesses and hardest-hit regions. Furthermore, European credit guarantees can help harmonise the costs arising from potential future defaults at the European level, and can therefore play an important role along other existing or debated European mutualisation schemes.

The numerous research studies discussed in section 5.1.1 | confirm the effectiveness of the EIF's policy response in the past and support the view that the EIF's activities can represent viable policy instruments to mitigate the impact of the COVID-19 crisis. Through the European Investment Bank Group, a EUR 25bn COVID-19 guarantee fund aims at delivering up to EUR 200bn for the European economy, with a focus on European SMEs. As discussed earlier, the structural challenges facing SMEs and preventing their access to finance made SMEs more vulnerable to the current crisis. The EIF will manage a significant share of this Pan-European Guarantee Fund, implemented via SME credit guarantees.

5.1.3 | Market size and activity in 2020

Market information concerning CGSs in Europe is gathered by AECM, the European Association of Guarantee Institutions.⁴⁵ In the following, based on data from the latest AECM Scoreboard,⁴⁶ we provide information about the use of guarantees in countries with at least one AECM member to show the state and development of this important market segment.

According to the OECD (2013), guarantees are particularly relevant “in those countries where a network of local or sectoral guarantee institutions is well established”. Key figures based on *outstanding guarantees* on SME loan portfolios (as at 31 December 2020) are presented in Table 3.

As a result of the unprecedented support measures implemented by guarantee institutions in the context of the COVID-19 crisis, the outstanding guarantee volume with regard to guarantees originated from and implemented by AECM members over 2020 reached an all-time high, at almost EUR 331bn – a three-fold increase compared to the year before (also surpassing by a very large margin the increase in guarantee activity documented during the financial crisis). Almost half of this increase is attributed to France (in the context of Bpifrance implementing the French government's PGE (Prêt Garanti par l'Etat) programme), while almost one-fifth is attributed to the United Kingdom (with British Business Bank being the implementing institution of Her Majesty's Treasury (HMT) extensive support programme).

⁴⁵ We thank our colleagues from AECM for their support. AECM currently has 48 members in 23 EU Member States plus Azerbaijan, Bosnia and Herzegovina, Kosovo, Russia, Serbia, Switzerland, Turkey and the United Kingdom. In the AECM member countries, the AECM members cover all or almost all SME guarantee activity. Some AECM members are national associations or networks and thus have their own member organisations. AECM has purely private, mutual, public, and public-private mixed members; 36 out of its 48 members are NPBI. *Source:* AECM. The EIF is active in all AECM member countries with the exception of Azerbaijan and Russia.

⁴⁶ See AECM Statistical Yearbook 2020; <https://www.flipsnack.com/aecmeurope/aecm-statistical-yearbook-2020/full-view.html>.

Consequently, the core countries in terms of total *volumes* of guarantee activities⁴⁷ are France (EUR 151.5bn), the United Kingdom (EUR 57.6bn), Turkey (EUR 40.6bn) and Italy (EUR 26.9bn). The United Kingdom, Turkey and France also have the highest total *number* of outstanding guarantees (1,494,181, 1,447,529 and 1,354,769, respectively), followed by Italy (905,830). Overall, at the end of 2020, AECM members had almost 6 million guarantees in their portfolio.

Apart from the United Kingdom (+8,392.3%) and France (+596.9%), the outstanding guarantee value compared to 2019 increased the most in Greece (+478.3%), Austria (+240.9%), Ireland (+175.1%) and Portugal (+165.4%). There were only two countries in which a decrease in the value of outstanding guarantees was documented, namely Bulgaria (-24.9%) and Serbia (-12.3%).

The total number of *supported SMEs* in the portfolios of the AECM members skyrocketed to reach 5.1m (an increase of more than 80% relatively to 2019), with half of these located in France and the United Kingdom. This impressive increase is in line with the arguments raised in section 5.1.2, whereby SMEs, being at the epicentre of the current crisis, face increased liquidity needs and are in greater need of support. The increased number of SME beneficiaries at times of crisis also highlights the anti-cyclical role of guarantee institutions.

The *average size* of outstanding guarantee in portfolio picked up significantly to reach a level of around EUR 55k. The highest average size was documented in Malta (EUR 323.7k), followed by Croatia (EUR 217.0k), Austria (EUR 187.4k), Latvia (EUR 144.2k) and Germany (EUR 141.1k). Interestingly, while the United Kingdom, Italy and Turkey feature at the top of the list regarding outstanding guarantee volumes, they exhibit relatively small average sizes of guarantees (EUR 38.5k, EUR 29.7k and EUR 28.0k, respectively), reflecting the presence of large populations of SMEs borrowing small loans in their portfolios.

The *relative importance of guarantees* compared to the value of economic activity in each country is approximated by the share of outstanding guarantee volume (respectively, new guarantee volume) over GDP (Figure 40). In 2020, as the GDP of most countries decreased as a result of the recession inflicted by the pandemic, while guarantee volumes were largely increasing, the reported shares are substantially higher compared to those in prior years. The share of the overall AECM members' outstanding (new) guarantee volume in the GDP of AECM countries under consideration increased from 0.7% (0.2%) in 2019 to 2.1% (1.8%) in 2020.

France leads the ranking (outstanding guarantees at 6.6% of GDP), while Turkey (6.5%) and Portugal (5.0%) complete the top three. Relative to GDP, these three countries also recorded the highest amount of *new guarantees* in 2020 (5.9%, 3.9% and 3.6%, respectively).

⁴⁷ In the first semester of 2019, AECM introduced a clearer definition of the outstanding guarantee volume and asked its members to indicate whether the latter includes guarantees until the moment of the calling of the guarantee or until the moment of the disbursement of the guarantee. However, given that a common understanding on this matter could not be reached, the data presented in subsequent tables do not take into account this differentiation in the definition of outstanding guarantee volume.

Table 3: Outstanding guarantees and number of supported SMEs in portfolio as at 31 December 2020, AECM members by country

Country	Volume [k EUR]	% change from 2019	Number	Implied average guarantee size [k EUR]	Number of SME beneficiaries
Austria	4,424,754	240.9%	23,607	187.4	19,975
Belgium	1,206,020	13.5%	12,243	98.5	10,115
Bosnia-Herzegovina	10,460	86.7%	88	118.9	56
Bulgaria	175,070	-24.9%	3,409	51.4	10,741
Croatia	312,661	26.0%	1,441	217.0	1,441
Czechia	1,667,287	76.4%	18,718	89.1	14,690
Estonia	166,212	64.2%	1,326	125.3	833
Finland	1,916,943	47.3%	18,177	105.5	26,263
France	151,480,030	596.9%	1,354,769	111.8	1,147,959
Germany	5,992,642	8.5%	42,468	141.1	34,995
Greece	5,447,367	478.3%	112,704	48.3	26,345
Hungary	4,420,086	45.7%	75,077	58.9	58,739
Ireland	286,100	175.1%	4,254	67.3	6,543
Italy	26,896,305	9.1%	905,830	29.7	923,111
Kosovo	55,948	27.5%	4,249	13.2	5,075
Latvia	208,068	16.1%	1,443	144.2	964
Lithuania	406,752	52.6%	4,394	92.6	3,141
Luxembourg	242,122	8.4%	2,526	95.9	833
Malta	189,500	n/a	579	327.3	534
Netherlands	2,232,958	18.1%	21,973	101.6	21,973
Poland	6,046,356	88.0%	117,837	51.3	117,837
Portugal	9,974,346	165.4%	155,751	64.0	89,155
Romania	2,799,908	513.2%	30,002	93.3	28,994
Serbia	4,695	-12.3%	276	17.0	60
Slovenia	321,317	7.4%	3,182	101.0	2,457
Spain	5,883,847	36.2%	99,071	59.4	154,053
Turkey	40,573,507	21.3%	1,447,529	28.0	987,851
UK	57,596,288	8392.3%	1,494,181	38.5	1,442,908
Total	330,937,549	200.9%	5,957,104	55.6	5,137,641

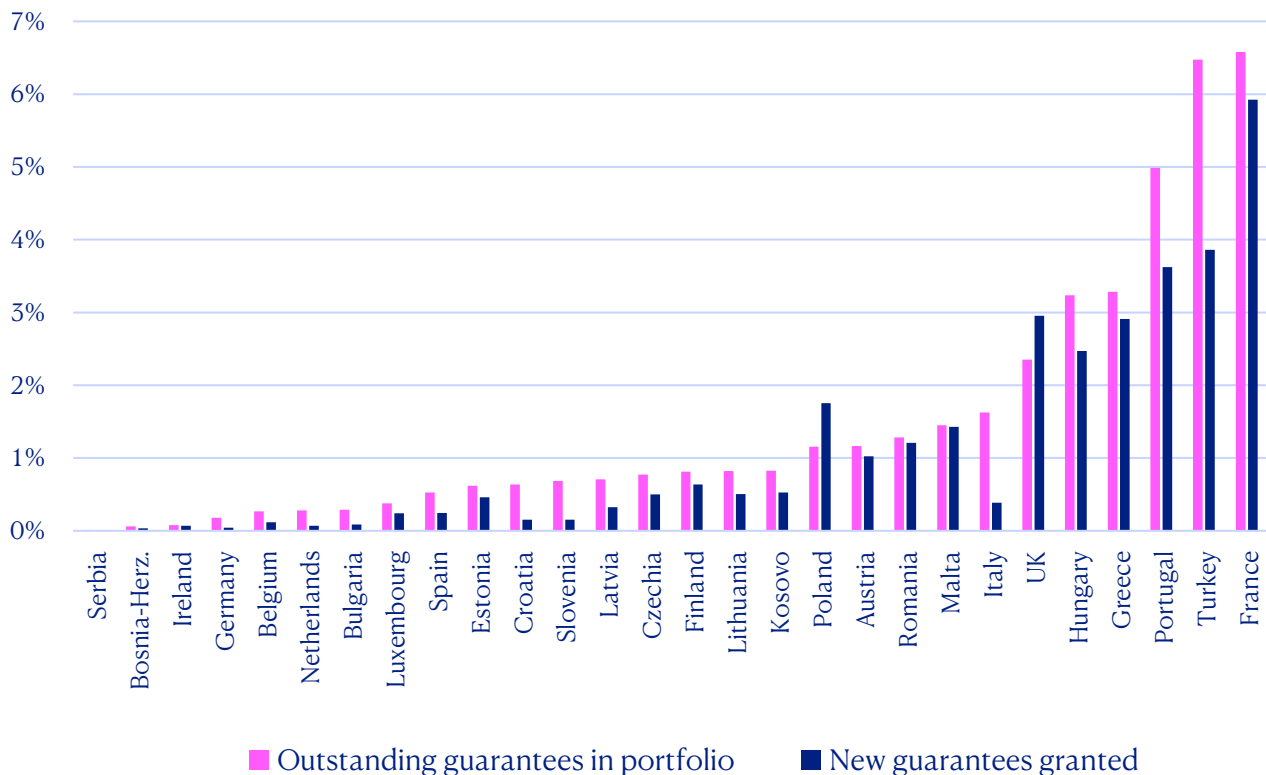
* The statistics do not include the business figures of one Hungarian AECM member and of one Romanian AECM member that only have a Counter Guarantee activity.

* In the case of Bulgaria, Finland, Ireland, Italy, Kosovo and Spain, the number of SME beneficiaries is reported to be higher than the number of guarantees. This is due to different reporting approaches (e.g., the number of SMEs refers to a member count, instead of the actual beneficiaries of guarantees in that particular year).

* The fact that some AECM member organisations may include former 'inactive' SME beneficiaries in their portfolio even though the guarantee scheme already reached its maturity could distort the total number of SME beneficiaries. Therefore, for the purpose of computing the implied average guarantee size, the 'Total Number of Guarantees Outstanding' rather than the 'Total Number of SME Beneficiaries' is taken into consideration.

Source: AECM, authors' calculations

Figure 40: Volumes of outstanding guarantees in portfolio and of new guarantee volumes granted in the full-year 2020 scaled by GDP*



* At 31 December 2020 or latest available data.

Sources: AECM, Eurostat, World Bank, authors' calculations

The impressive rise in the outstanding guarantee volume was driven by an immense increase of the volume of newly-granted guarantees. Newly-granted guarantees in the full-year 2020 showed a seven-fold increase compared to 2019 and amounted to almost EUR 280bn (Table 4). This is the highest ever registered level of new production of guarantees, reflecting once again the enormous roll-out of supporting measures for SMEs affected by the pandemic. Sixty one percent of the new production was generated during the first semester immediately after the outbreak of the COVID-19 crisis. As was also the case for the volume of outstanding guarantees, France and the United Kingdom account for half and one-quarter, respectively, of this total new guarantee volume.

New guarantee activity increased in most countries, with the highest percentages documented in France (+2,409.4%), Romania (+1,325.0%), Greece (+1,051.7%) and Austria (+800.7%). As also noted earlier, new guarantees decreased mainly in Serbia (-65.5%) and in Bulgaria (-44.8%).

At the same time, in the full-year 2020, the share of newly-granted guarantees in the overall portfolio reached almost 85% of the total volume of outstanding guarantees for the same period. This share is usually around one-third of the outstanding volume. Hence, also in the case of this metric, 2020 saw the highest ever registered ratio of new over outstanding guarantee volume.

Table 4: Newly granted guarantees in the full-year 2020, AECM members by country*

Country	Total 2020	% change from 2019	Percentage of outstanding
Austria	3,878,717	800.7%	87.7%
Belgium	525,568	14.1%	43.6%
Bosnia-Herzegovina	5,573	545.8%	53.3%
Bulgaria	52,540	-44.8%	30.0%
Croatia	75,758	-12.1%	24.2%
Czechia	1,078,055	98.1%	64.7%
Estonia	123,528	66.5%	74.3%
Finland	1,500,130	102.1%	78.3%
France	136,446,324	2409.4%	90.1%
Germany	1,406,557	29.7%	23.5%
Greece	4,826,824	1051.7%	88.6%
Hungary	3,376,342	39.3%	76.4%
Ireland	253,807	373.8%	88.7%
Italy	6,359,873	20.4%	23.6%
Kosovo	35,585	6.1%	63.6%
Latvia	95,173	50.9%	45.7%
Lithuania	250,571	173.3%	61.6%
Luxembourg	155,486	183.2%	64.2%
Malta	186,500	n/a	98.4%
Netherlands	553,042	0.0%	24.8%
Poland	9,191,672	179.8%	152.0%**
Portugal	7,246,491	425.4%	72.7%
Romania	2,636,103	1325.0%	94.1%
Serbia	844	-65.5%	18.0%
Slovenia	71,977	-0.3%	22.4%
Spain	2,728,848	92.8%	46.4%
Turkey	24,183,302	71.5%	59.6%
UK	72,395,394	50.9%	125.7%**
Total	279,640,584	624.4%	84.5%

* The statistics do not include the business figures of one Hungarian AECM member and of one Romanian AECM member that only have a Counter Guarantee activity.

** For the Polish and the UK AECM members, the total new guarantee activity in the full-year 2020 exceeded the total volume of outstanding guarantees for the same period. As a result, new guarantees in Poland and in the UK are in excess of 100% of outstanding guarantees in portfolio. If the Polish and the UK AECM members in question mostly offer short-term guarantees and if the duration of the latter is less than one year, then it is reasonable to assume that many of the newly-granted guarantees are reported in the related statistics on new guarantee volumes, but are not subsequently reflected in the statistics on outstanding guarantees.

Source: AECM, authors' calculations

5.2 | Leasing

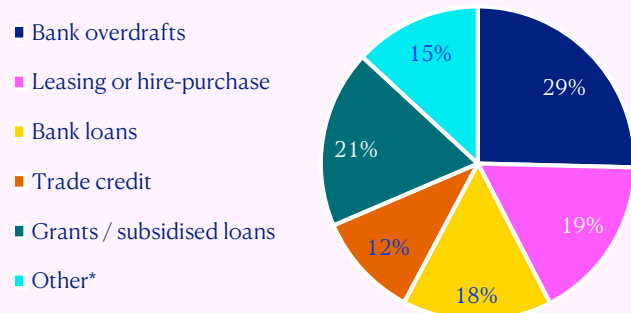
According to the latest ECB SAFE survey wave (October 2020 – March 2021), Euro area SMEs state that the current availability of leasing or hire-purchase has improved (net balance) the most over the past six months compared to other external financing sources (Figure 41). Moreover, survey respondents expect that the availability of leasing will slightly improve, on balance, over the next six months, unlike the availability of most other external financing sources which is expected to deteriorate.

Leasing is mainly used for investments in property, plant and equipment or for inventory and other working capital (Figure 42). Moreover, the percentage of SMEs who use leasing for fixed-asset investments is the highest among SMEs who use other sources of financing for the same type of investment.

There is a wide heterogeneity in the use of leasing, across countries, industries and firm-sizes (Figure 43). A country-by-country analysis (panel a) reveals that, similarly to prior years, Finland, Germany and Austria are the countries with the highest proportion of SMEs using leasing or hire-purchase, while SMEs in the south of Europe use leasing less frequently. Compared across industries (panel b), leasing as a financing source is more prevalent among industrial and construction firms, contrary to Euro area SMEs that state “trade” as their main activity. Finally, the use of leasing or hire-purchase grows with firm-size (panel c).

Leasing, an integral part of the SME financing tool set

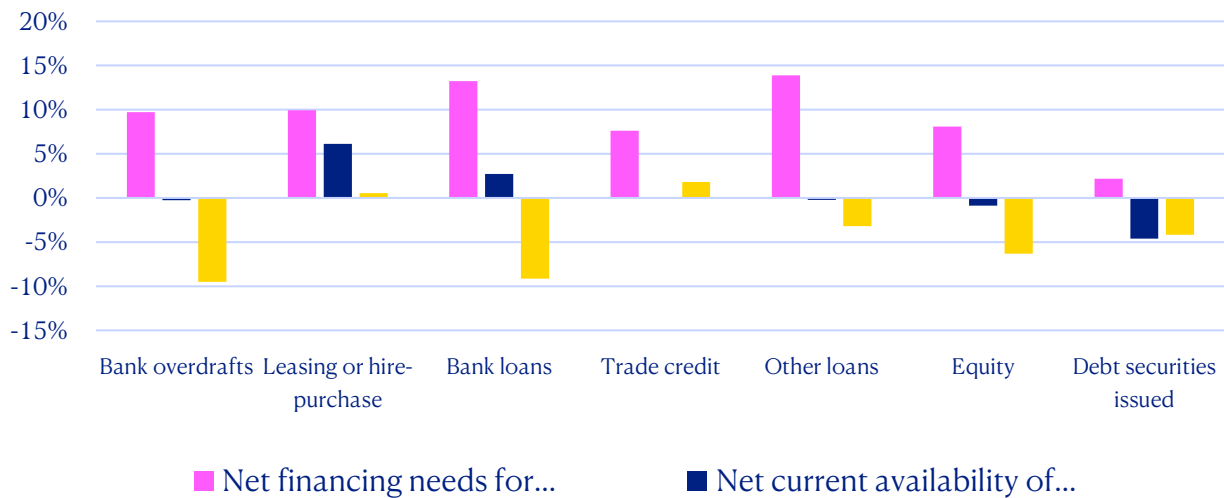
Leasing is an important element of SME finance. Unlike traditional loans, leasing services are not always directly provided by banks, but rather by leasing or factoring companies. It is an additional instrument that facilitates access to short- and medium-term financing, thereby mitigating market weaknesses in SME lending.



** includes other loans, factoring, equity, etc.*

Up until the onset of the COVID-19 crisis, leasing was the second (following bank overdrafts) most used financing instrument among SMEs. While it still remains more popular than traditional bank loans, leasing features in the third place among the financing instruments most used by SMEs (ECB, 2021a) due to the significant increase (almost two-fold) documented for grants and subsidised bank loans amid the crisis.

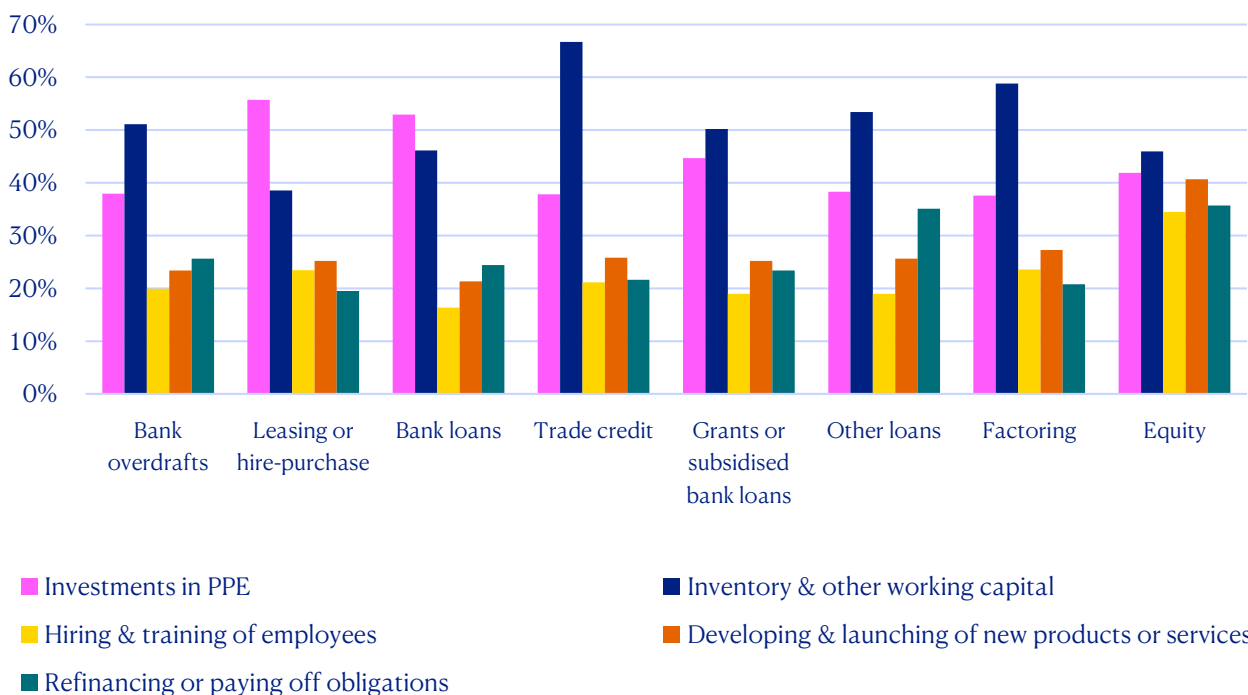
Figure 41: Evolution of financing needs and availability of financing sources for Euro area SMEs (HY2/2020)*



* "Net financing needs" reflects the percentage of respondents stating that their needs for the respective financing source have increased over the past six months minus the percentage of those stating a decrease; "Net current (future) availability" reflects the percentage of respondents stating (expecting) an improvement in the availability of the respective financing source over the past (next) six months minus the percentage of those stating (expecting) a deterioration; all percentages reflect weighted results and have been calculated on the basis of the number of respondents who consider the respective financing source to be relevant for their enterprise.

Source: ECB SAFE (ECB, 2021a), authors' calculations

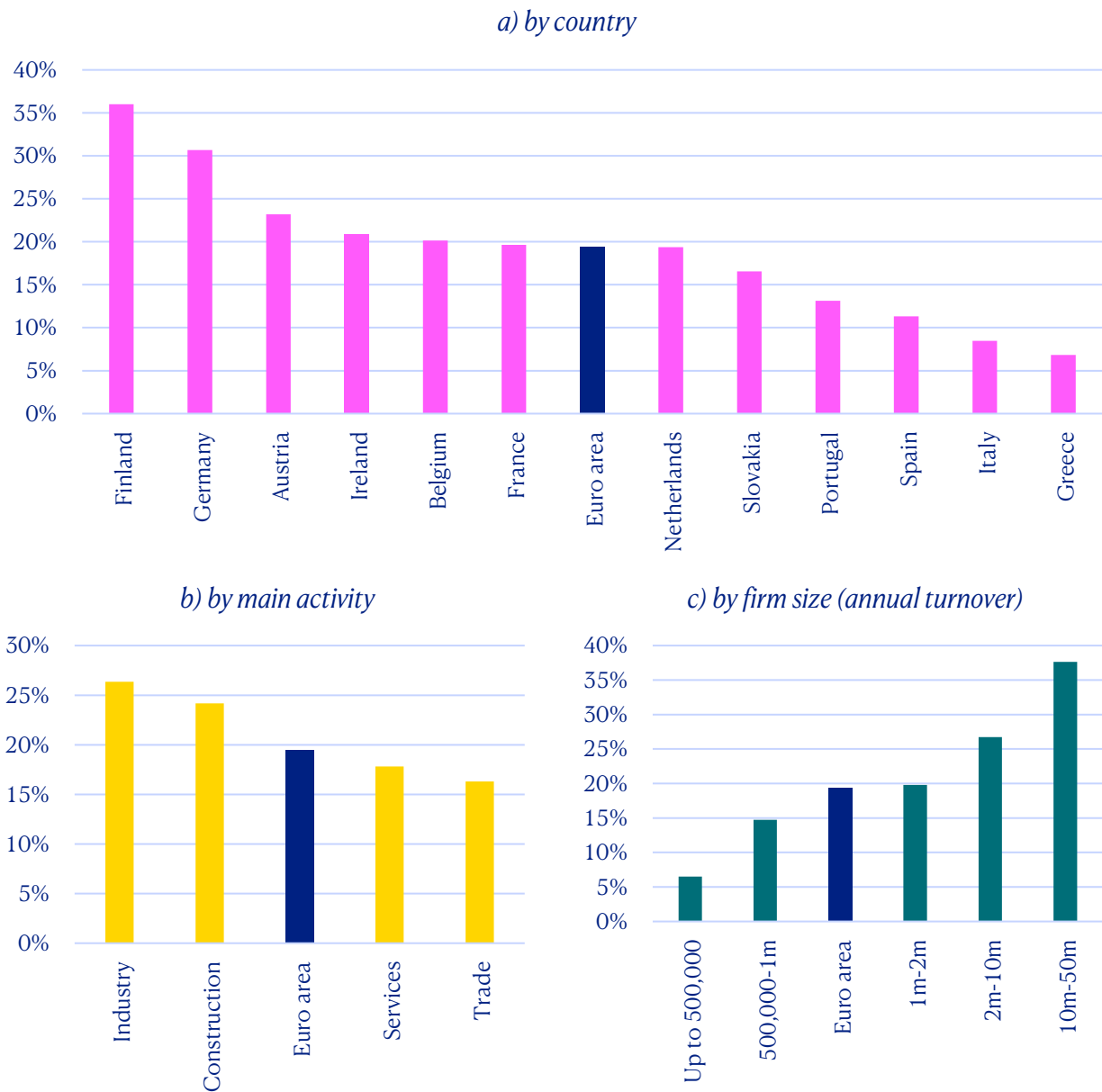
Figure 42: Purpose of financing by source of financing used, Euro area SMEs (HY2/2020)*



* Percentage of respondents (weighted results) stating that they have used the respective financing source for the various investment purposes over the past six months.

Source: ECB SAFE (ECB, 2021a), authors' calculations

Figure 43: Use of leasing or hire-purchase by Euro area SMEs – across countries, industries and firm-sizes (HY2/2020)*



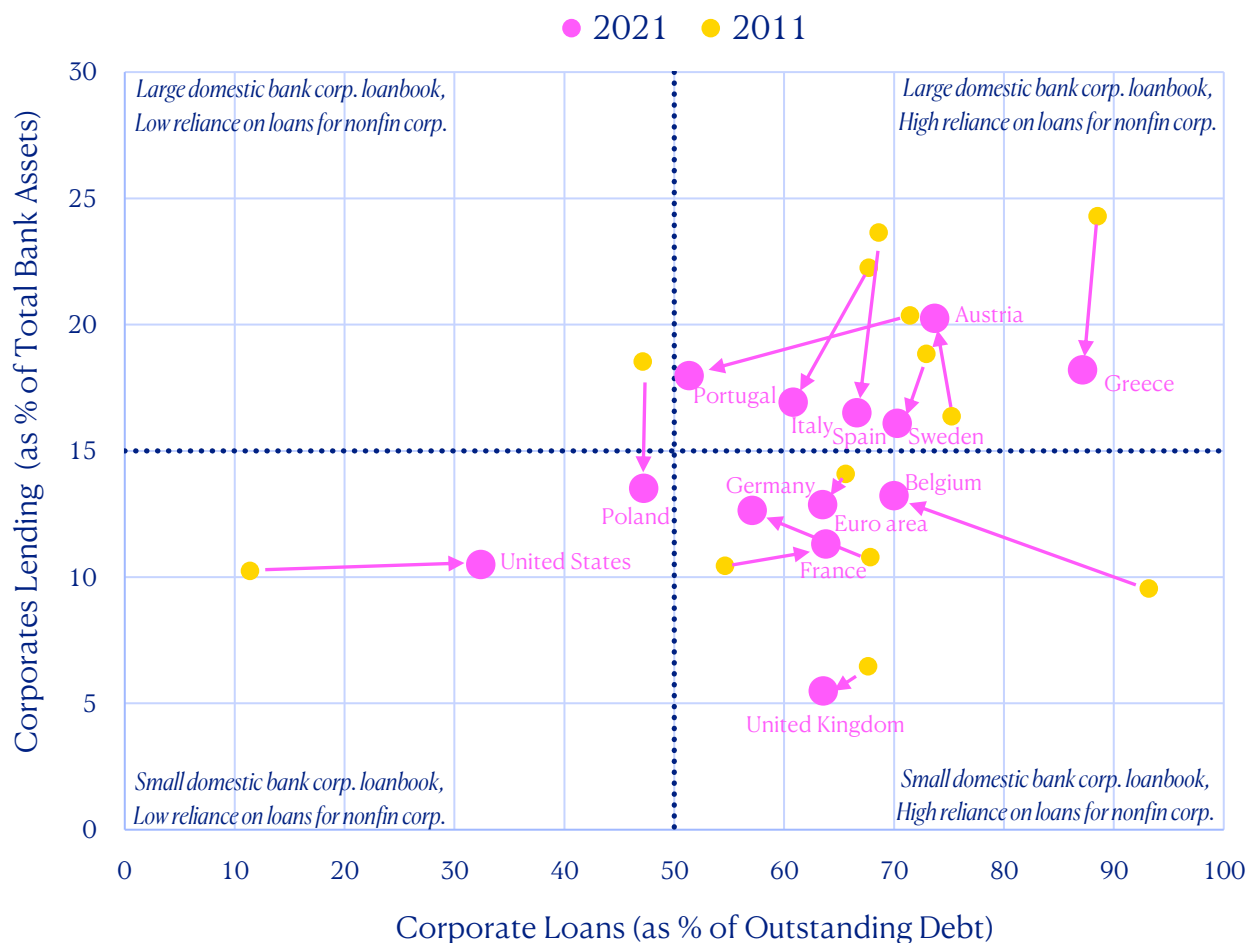
* Percentage of respondents (weighted results) stating that they have used leasing or hire-purchase over the past six months; "Industry" includes manufacturing, mining & electricity, gas and water supply.

Source: ECB SAFE (ECB, 2021a), authors' calculations

5.3 | SME Securitisation⁴⁸

European SMEs rely heavily on bank lending. Figure 44 provides an indication of the different levels of bank reliance for various countries.⁴⁹ The ratio is moving towards more capital market action. For SMEs, the possibility to substitute bank lending with other sources of finance exists only to a limited extent.

Figure 44: Reliance on bank financing by non-financial corporations (in percent)



Source: IMF (2012), authors' calculations

Capital market funding in the Euro area has been increasing since the financial crisis (Figure 45). However, this is primarily possible for large corporations. Given that SMEs have only limited *direct* access to capital markets, a well-functioning securitisation market can provide an *indirect* access by transforming illiquid loans to SMEs into an asset class with adequate market liquidity.

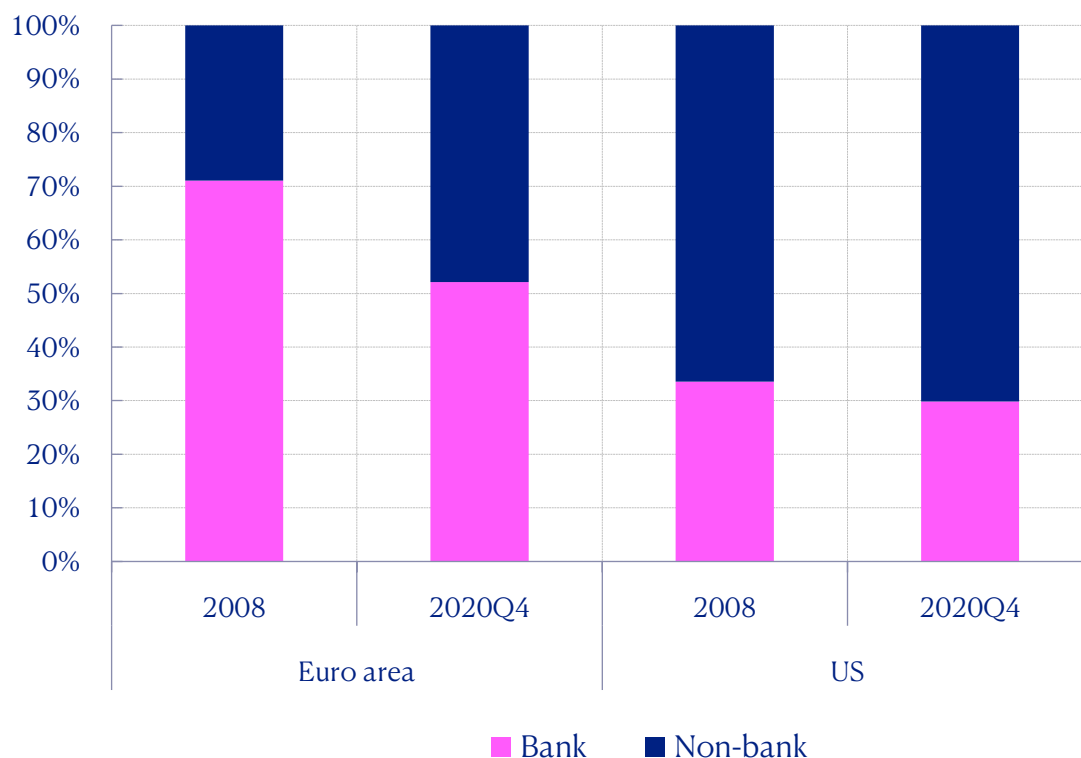
⁴⁸ The term SME Securitisation (SMESec) comprises transactions backed by SME loans, leases, etc. It is important not only to look at banks/lending when analysing SMESec, but equally at leasing companies, which form part of the securitisation market. In particular, securitisation can help smaller originators to make use of the capital market (Moody's, 2017). For more information on the importance of leasing for SME finance, see Kraemer-Eis and Lang (2012 and 2014).

⁴⁹ The figure is related to non-financial corporations, not only SMEs.

Securitisation can strengthen the capacity of banks to supply new loans. It can mitigate credit supply frictions and has the potential of having positive real effects on investment, sales, and employment (Berg et al., 2015). If properly done, securitisation can be a promising tool to enhance funding options for SMEs (Lagarde, 2019).

For example, Kaya and Masetti (2018) analysed the impact of securitisation on access to finance for SMEs in the Euro area, based on firm-level survey data on SME financing conditions. They found that an increase in securitisation issuance reduces the probability of SMEs facing credit constraints and decreases the cost of bank financing for non-constrained firms.

Figure 45: Bank/non-bank debt financing of non-financial corporations in the Euro area and the US



Source: ECB, authors' calculations

It is sometimes stated that securitisation might lead to higher risk-taking by banks (or lower lending standards). This is neither confirmed by performance data, nor by research. Kara et al. (2015) analysed data from the euro-denominated syndicated loan market. They found that, in the run up to the financial crisis, banks relying on securitisation did not lower their lending standards more than other institutions. Albertazzi et al. (2017) used credit register data for loans to Italian SMEs and tested for the presence of asymmetric information in the securitisation market by looking at the correlation between securitisation and default probability. They found that, despite the presence of asymmetric information, securitisation did not lead to lax credit standards, but rather that the quality of securitised loans is better than the one of non-securitised loans, i.e. a positive selection effect takes place.

Loans to SMEs are a key driver for the functioning of the economy and, properly applied, securitisation is a replicable tool that can enhance access to finance for SMEs. By using this instrument in developed capital markets, public sector support for SMEs (e.g. guaranteeing mezzanine tranches) can create multiplier effects - and hence it is an efficient use of public resources, which is especially important against the background of scarce financial resources for public support and a high public debt burden in many key countries: "[...] strengthening SME securitisation may be one of the most effective ways to facilitate the flow of funds to the real economy, while not creating too much distortion" (Kaya, 2014). Integrated EU capital markets (and their need for transparency and standardisation) and the relative complexity of securitisation techniques require considerable know-how and show the necessity for specialised institutions. As an established and respected player in the European securitisation market, the EIF, in close cooperation with the EIB, plays an important role via market presence, reputation building, and signalling.⁵⁰

Also the ECB is interested in securitisation, including SMESec, for three main reasons (Mersch, 2017): Firstly, the ABS (Asset Backed Securities) market acts as one of the transmission channels of the ECB monetary policy (facilitating the provision of credit to the real economy). Secondly, ABS form an important part of the collateral framework in the Euro system, and thirdly, this technique can transfer risk away from the banking sector, which may support monetary policy.⁵¹

Already before the COVID-19 crisis, according to the European Banking Authority (EBA), the coming implementation of the Basel capital requirements would have required European banks to raise their capital by 25% on average and by 28.5% for systemically important institutions. This means an additional capital need for European banks of EUR 100bn. According to the EBA, European banks are expected to suffer a hit of up to EUR 380bn to their capital due to the economic disruption from COVID-19 (EBA, 2020b; Arnold et. al., 2020). Also the IMF (Aiyar et al., 2021) expects a significant pandemic-induced fall in capital ratios of European banks; however, aggregate capital shortfall is not anticipated. Considerable cross-country variation will depend on the size of the macroeconomic shock and the pre-pandemic condition of profitability and bank balance sheets. Such limitations on the banks' side clash with increasing lending needs (e.g. in the recovery from the COVID-19-crisis, greening the economy, digitisation, etc.). As a reaction, banks can raise additional capital, or alternatively they can use securitisation and remove risks from their balance sheets so that more capital is free for new lending (Bell, 2020).

⁵⁰ EIF's involvement in the SME securitisation market is twofold: 1) guaranteeing tranches of ABS transactions issued by banks in order to obtain funding, and 2) by guaranteeing tranches of synthetic securitisations which allow banks to release regulatory capital. For more information on the use of securitisation at EIF: <https://youtu.be/liDM-KPjScE>. The widely recognised role of EIF in the synthetic market, led to the securitisation division of EIF winning the award as "best SRT investor". The respective pitch to the competition can be found here: https://www.eif.org/news_centre/publications/eif-submission-to-the-sci-capital-relief-trades-awards-2019.htm

⁵¹ In November 2014, the ECB started its Asset Backed Purchase Programme (ABSPP). The overall objective was to enhance the transmission of the monetary policy, support the provision of credit to the Euro area economy and, as a result, to provide further monetary policy accommodation. The ECB's support of the ABS market was a positive step. However, the programme has almost no direct impact on the SME segment of the market. On 14 June 2018 the ECB announced to reduce the asset purchases from October 2018 onwards, and then to stop the ABSPP by the end of 2018. In November 2019, the ECB restarted the purchase programme. End June 2021 a portfolio of EUR 28.2bn was reported under the ABSPP. The detailed breakdown for Q1/2021, reveals a focus on residential mortgages and auto loans, and that SME transactions did not play a role so far ([ECB website](#)).

Securitisation, a value-laden term

Securitisation per se is neither good nor bad - it is a toolbox, an instrument, a technique. As such it is value-free. However, its aggressive, opaque, and overly complex use by some market participants has negative consequences for both, issuers and investors. Negative repercussions are also created by an overly simplified discussion where everything related to structured finance is lumped together and sometimes dismissed or branded as “toxic”. The instrument is neither “toxic” nor is the underlying asset (in the case of SMESec: SME loans/leases) “toxic waste”.

The reputation of the SME securitisation market segment is continuously improving and a de-stigmatisation is happening. In the context of the COVID-19 crisis one can even now read that “[...] the market is rehabilitated just in time to save Europe’s small and medium sized enterprises (SMEs). [...] The same financing blamed for destabilising the European economy in the last crisis may now be used to rescue it” (Brown, 2020). In relation to greening the economy, or even in the wider ESG context, securitisation is more and more often referenced as supporting tool.

Despite the benefits of the SME securitisation market outlined above, SMESec placed with investors currently represents only a very small portion of the total issuance and there is for the time being only a very limited primary market. The SMESec market in Europe is still underdeveloped despite SMESec having many advantages for banks, for investors, and – most importantly - for the SMEs. A real recovery and development of the primary securitisation markets could play a role in ensuring sufficient credit supply for SMEs during the crisis and the recovery process. Moreover, in addition to the direct effects of the SMESec markets, there are indirect benefits to SMEs from the development of other securitisation segments that free up space on bank balance sheets to allow for further SME lending (AFME et al., 2016). However, this will only be to the benefit of SMEs if the freed-up capital / fresh liquidity is going to be used to finance the real economy (i.e. for new SME lending).⁵²

Securitisation data

The AFME data used here classifies only lending-based transactions in the SME basket. Most leasing-based transactions, classified in AFME’s data under ABS Leases in the overall ABS basket, are de-facto SME transactions. Moreover, in the securitisation market, there are often (synthetic) transactions on a private/bilateral or club basis that are not visible in the official statistics. Over the recent years there was a significant rise in number and volume of synthetic SME transactions, driven by risk transfer, asset liability management aspects, and regulatory capital considerations. These transactions do not appear in the statistics and can only be estimated via surveys of market participants. Based on such assessment, for example, EBA (2020a) estimates for 2018 a volume of around EUR 105bn, out of which 19.6bn SMESec (see EBA (2020a) for an analysis of the synthetic market). Issuer appetite for synthetic risk transfer remains strong (Kang, 2021). Therefore, the numbers, shown here, are an underestimation of the real market size and can be seen as a lower bound.

⁵² See for a detailed discussion of SMESec: Kraemer-Eis, Schaber, and Tappi (2010), Kraemer-Eis, Passaris, and Tappi (2013), Kraemer-Eis, Passaris, Tappi, and Inglisa (2015), Aiyar et al. (2015), or the joint statement of eight leading trade associations: AFME et al. (2016).

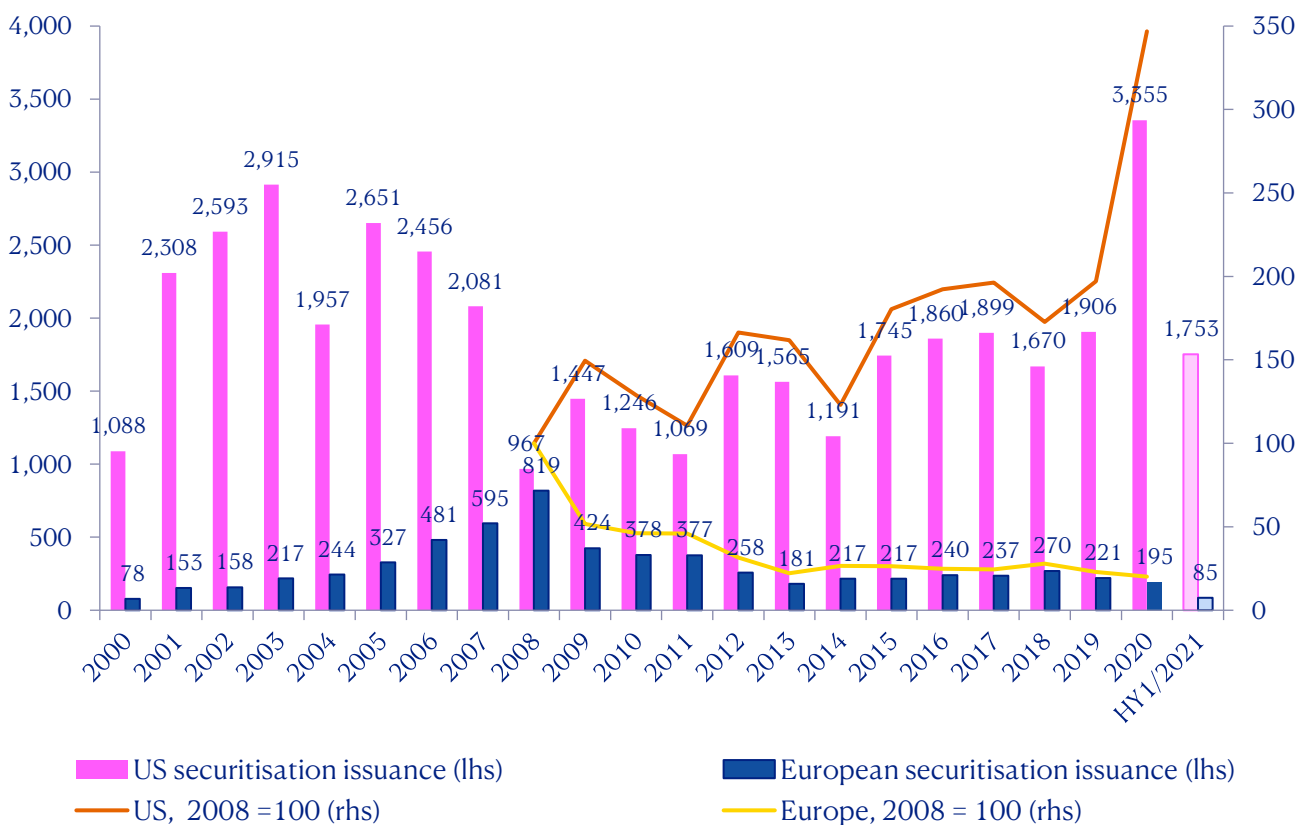
5.3.1 | SME Sec market activity⁵³

The European securitisation market has grown steadily from the beginning of the previous decade until the outbreak of the GFC. However, it is much smaller than its US peer (Figure 46). During the financial crisis, issuance remained initially at high levels in Europe, but these volumes were almost exclusively driven by the eligibility of ABS as collateral for ECB liquidity operations;⁵⁴ then the overall market activity decreased to the levels seen in 2003/2004.

Issuance

European *total securitisation issuance* in 2020 was with EUR 195bn (EUR 81.4bn placed vs. EUR 113.3bn retained) the lowest since 2003. In HY1/2021 a volume of EUR 85.3bn was issued (34% thereof retained), the lowest half-year European securitisation issuance on record.

Figure 46: Securitisation issuance Europe vs US (annual issuance 2000 – HY1/2021, bnEUR)



Source: AFME, authors' calculations

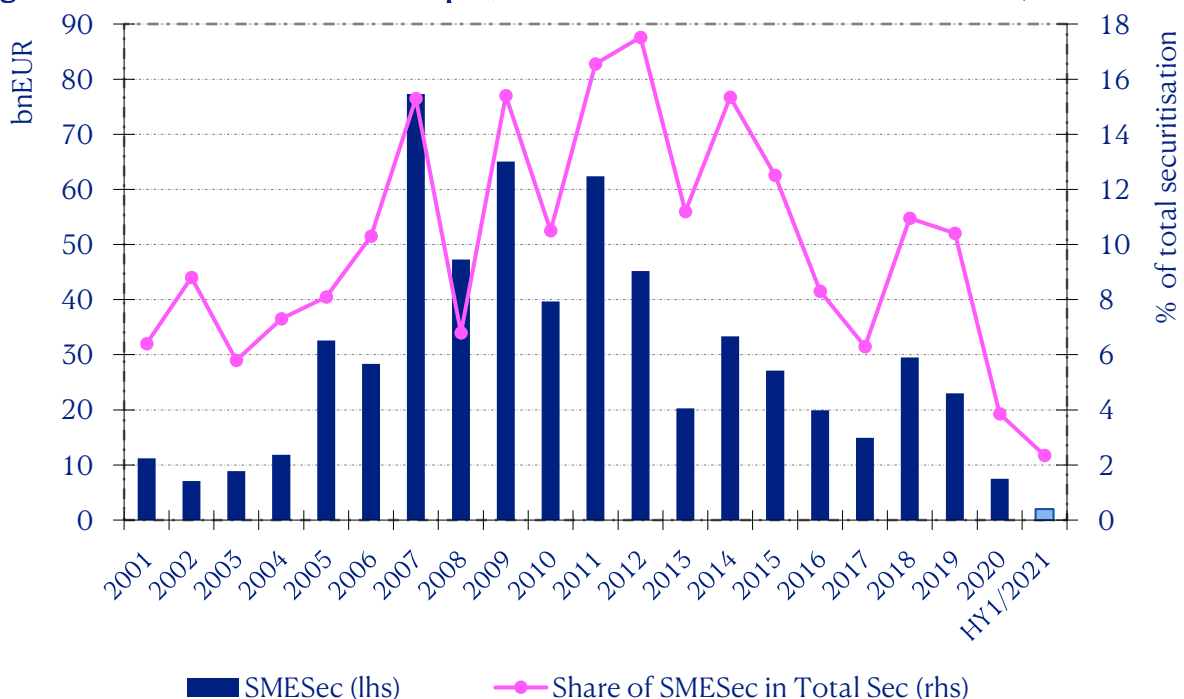
⁵³ If not flagged otherwise, the data source is AFME, the Association for Financial Markets in Europe. Please note, AFME changed sources of securitisation data. Historical data (i.e. data reported prior to Q1/2020) might be not comparable with current data. Moreover, collateral type categorisations have been subject to changes.

⁵⁴ The ECB's asset repurchase or "repo" facility allows (among other assets) Asset Backed Securities to be used as collateral for funding.

Before the outbreak of COVID-19, *SMESec issuance* was still suffering from the after-effects of the financial crisis – and is now negatively affected again. The overall issued (and visible) volume of SME deals in 2020 was only EUR 7.5bn (Figure 47). The market share of SMESec in overall securitisation issuance rose (with some volatility) from 6% in 2001 to 18% (of total yearly issuance) in 2012, the highest value ever registered in Europe. This, however, was due to the base effect, as the overall activity went down (while SMESec activity decreased slightly less). From 2014 to 2017 the share of SME issuance in the overall activity went down from 15% to 6.3%, based on shrinking SMESec volumes; in 2020 the share was only 4%. In HY1/2021 there was a visible SMESec issuance of EUR 2bn.

Typical originators of SMESec - also often active as repeat originators - are large banks or banking groups – some of them are active as originators in several countries, but also mid-sized banks. Moreover, in particular in the field of leasing, non-bank asset finance providers are active as originators. Typical originators of synthetic securitisation are credit institutions, in particular large/systemically important banks using internal rating-based models for calculating capital requirements. However, recently also some standardised banks have entered into synthetic transactions, based on support given by the EIB/EIF and in response to the introduction of the SEC-SA (Standardised Approach) risk weight approach under the new EU securitisation framework (EBA, 2020a).

Figure 47: SMESec issuance in Europe (volume and share of total securitisation, bnEUR and %)

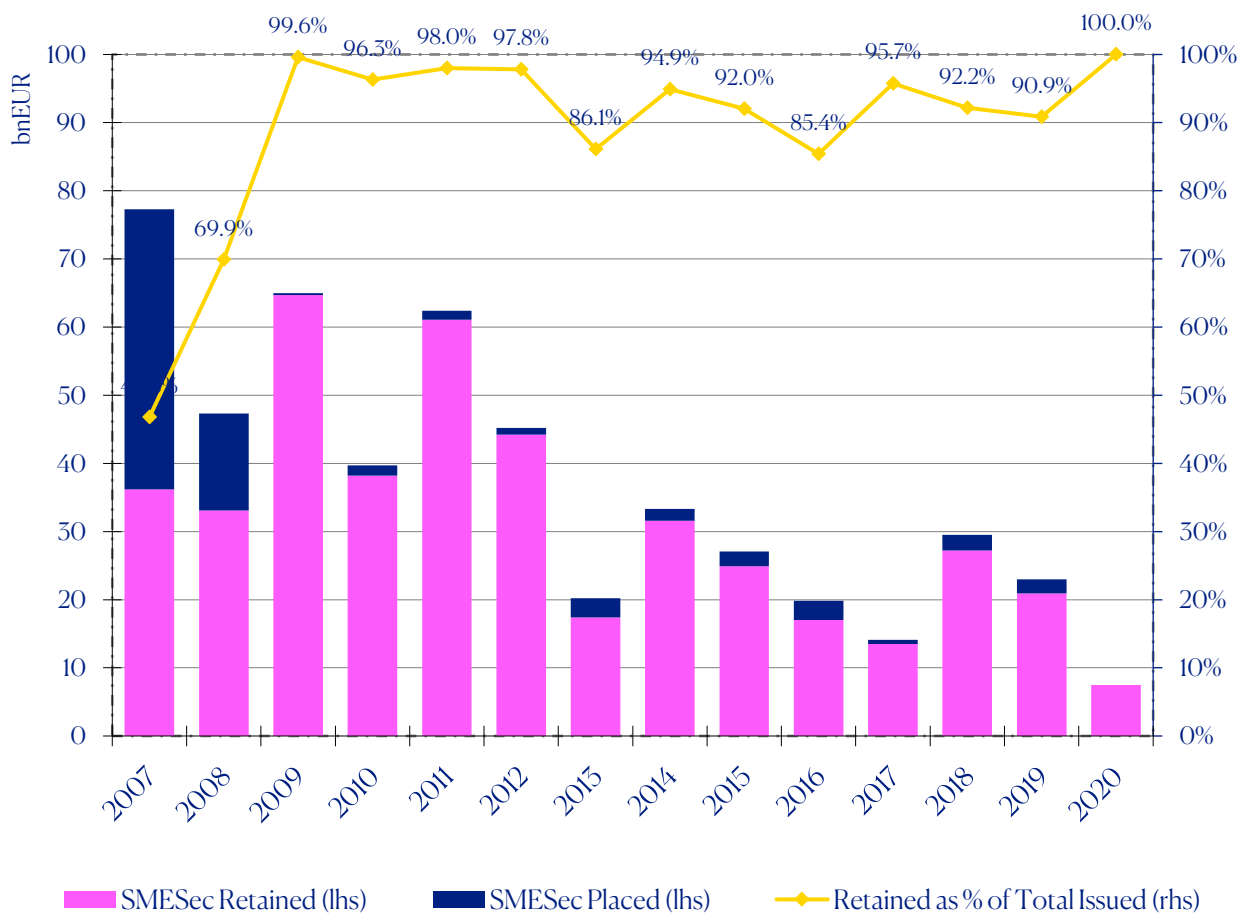


Source: AFME, authors' calculations

As already mentioned, it is important to note that only a very small fraction of the issuance has been placed with investors – the investor base has not yet recovered. The nature of the SMESec market changed from a developing market (pre-crisis, with most transactions placed in the primary market) to a purely retained/ECB repo-driven market during the crisis (with almost no

placement on the primary market). This shift led to liquidity drying up and originators accepting higher all-in costs as, in addition to the credit enhancement, the repos envisage considerable haircuts to the face value of the notes. In 2020, AFME registered no placed SMESec at all (Figure 48).

Figure 48: European SMESec by retention



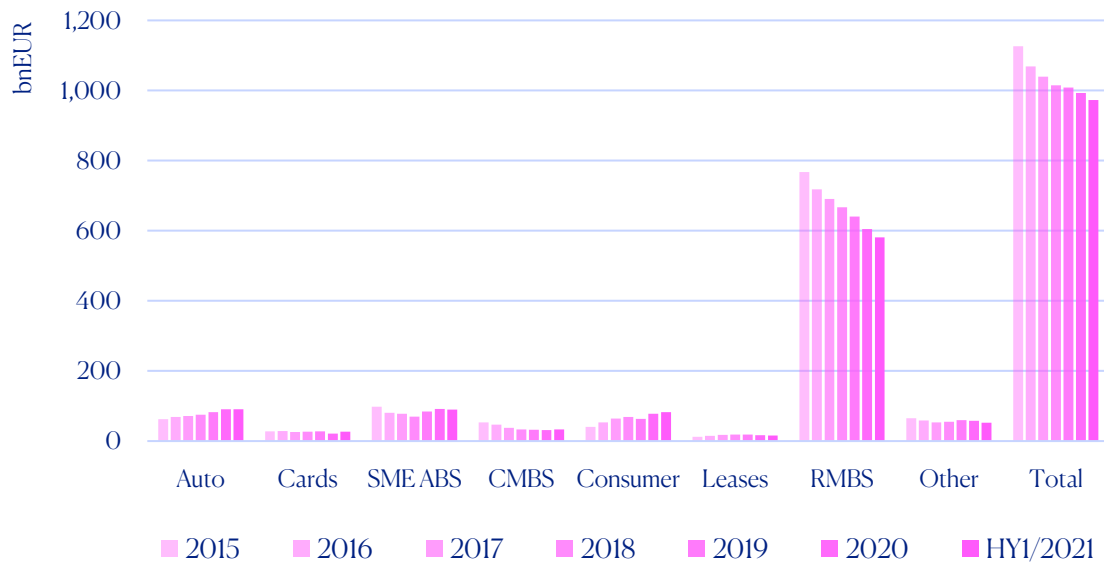
Source: AFME, authors' calculations

Outstanding

Due to low new activity levels, the volume of *total outstanding securitisation transactions* (Figure 49) is on a downward trend (negative net supply). RMBS continues to be the most dominant securitisation type (by collateral).

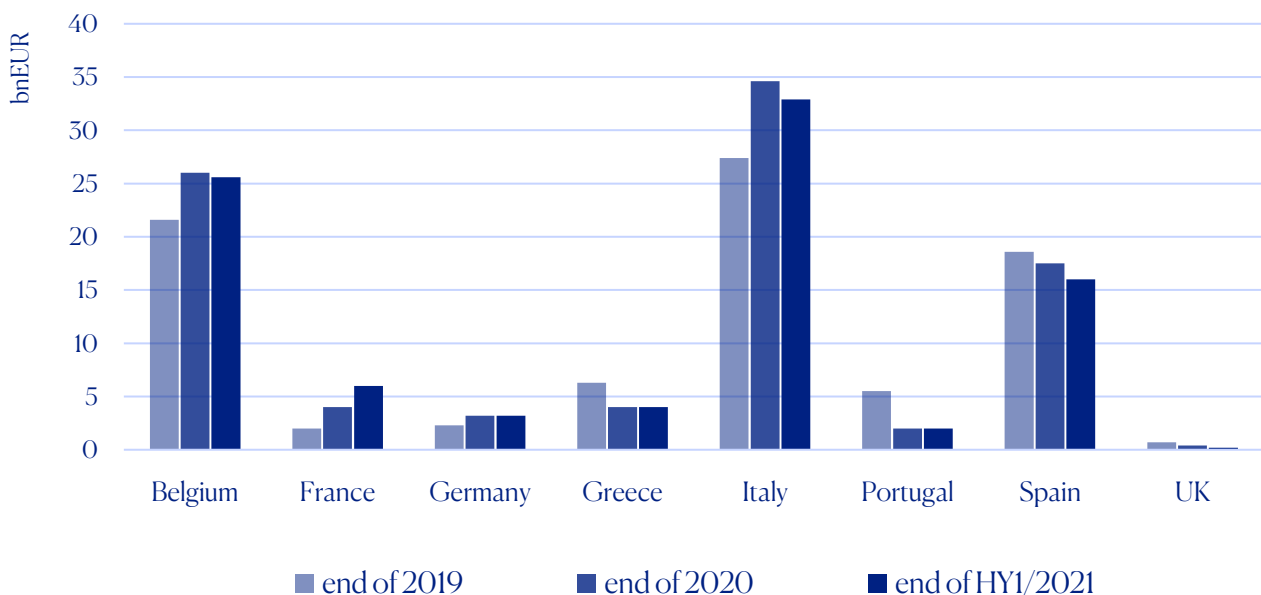
Breaking down SMESec volumes per end of HY1/2021 by country shows that the main three countries together represent 81% in terms of outstanding: Italy (EUR 32.9bn/36%), Belgium (EUR 25.6bn, 28%), and Spain (EUR 16bn, 17%), see Figure 50.

Figure 49: European outstanding securitisation by collateral (by end of period, bnEUR)



Source: AFME, authors' calculations

Figure 50: European SMESec outstanding volume by country (by end of period, bnEUR)



Source: AFME, authors' calculations

STS activity

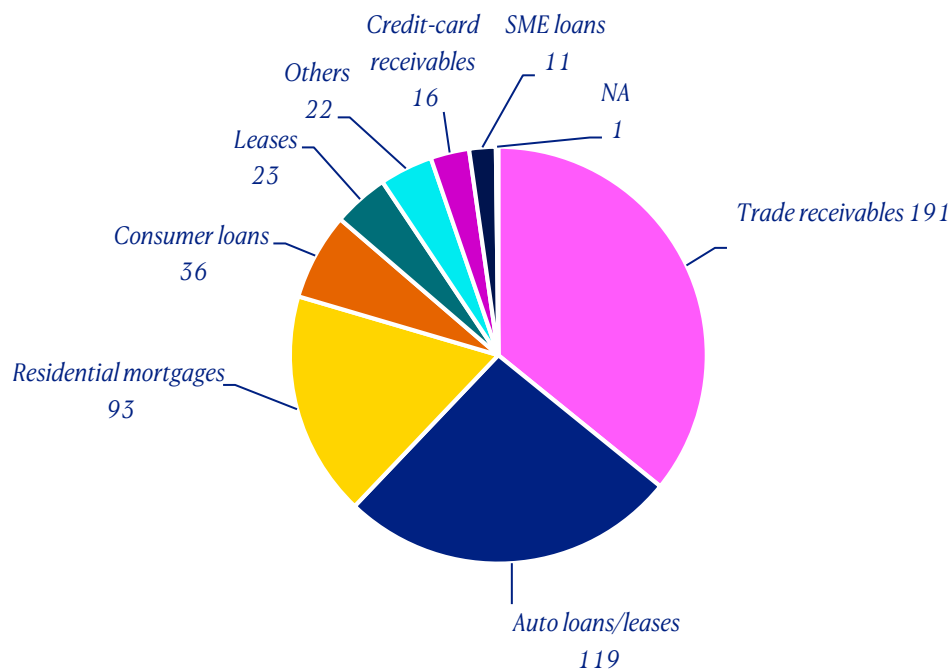
As outlined in detail in previous versions of our ESBF, the new securitisation regulation, originally triggered by the GFC, entered into force on 17 January 2018 and is applicable for securitisation transactions since 01.01.2019 in all Member States; some grandfathering provisions are valid. The signalling approach via simple, transparent, and standardised (STS)-labelled securitisations

(incl. SMESec) - which receive preferential regulatory treatment – is an important step and forms a building block of the CMU.⁵⁵

These regulations do not only cover European issuers and investors. Any securitisation anywhere in the world must meet the general requirements of the regulation (e.g. related to due diligence, transparency, risk retention) for securitisation to be investible by EU institutional investors or by non-EU based investors, acting on behalf of EU institutional investors. For such a compliant securitisation to qualify as STS, it must satisfy a number of additional criteria and its originator, sponsor and Securitisation Special Purpose Entity must be established in the EU (see for more details BoA/ML, 2018). The transition to the new regime poses many types of challenges (legal, structural, informational, IT) to market participants, i.e. issuers and investors (PCS, 2018a and b). Activity volumes - for securitisation in general, but in particular for STS transactions - will be dependent on the market players’ ability to meet the new requirements.

In March 2019, the first STS compliant transaction came to the market.⁵⁶ In 2020, a total volume of EUR 77.3bn was notified as STS by ESMA, representing 39.7% of the total issued volume. The cumulative number of STS notification (as of August 2021) was 533, out of which 11 (2%) had SME loans as collateral (Figure 51).

Figure 51: Cumulative number of STS notifications by collateral type (as of February 2021)



Source: AFME, authors’ calculations

⁵⁵ Under the new regulations, the new risk weights for STS result in increased capital requirements for IRB banks compared to the past. Moreover, another perspective regarding STS - mentioned by some market participants - is that it can even circumvent a proper securitisation market recovery if “everything but STS” is seen as being toxic. It remains to be seen if the new regime is going to be a success, but it has potential to significantly support the revival of the market in Europe.

⁵⁶ For a detailed chronology concerning the introduction of STS securitisations please visit Kraemer-Eis, Botsari, Lang, and Torfs (2019).

Longer term SMESec performance trends

SMESec market activity in Europe started towards the end of the 1990s. At the time, this segment was relatively unknown to investors and rating agencies (based on the novelty of the applied tools, as well as on the heterogeneity of SMEs/SME loans), and the securitisation technique was also new to most of the originators with many banks not in a position to securitise SME loans (a typical hurdle is the IT infrastructure that has to be able to adequately support the securitisation transactions).

The performance of SMESec transactions depends on a number of parameters, like the structure of a transaction (including embedded protection like, e.g., excess spread⁵⁷), SME credit risk (including recovery rates), portfolio structure (e.g. rating distribution, obligor concentration, industry concentration, etc.) and also macroeconomic parameters. Despite the financial and sovereign crisis and the prolonged negative economic cycle, the European securitisation market in general has performed relatively well with comparatively low default rates (for true sale and public synthetic balance sheet transactions). On the one hand, before the financial crisis started, SMESec volumes were small compared to the overall securitisation market – and the market had not had much time to develop. On the other hand, the limited track record was one of the reasons for the relatively conservative SMESec structures which can partially explain the good SMESec performance in Europe compared to other segments of the European securitisation market and to the US.

After the financial crisis, the positive SMESec performance continued, despite worsening economic framework conditions - inter alia driven by political event risk – and the performance remained stable. The low losses are not only due to the typically high granularity, diversification and seasoning of these transactions, but also to the structural features (such as large credit enhancement) that helped counterbalance the negative effects of the deteriorating European economy (i.e. increased SME default rates). This leads to the effect that the performance of most senior SMESec tranches in Europe have been on par with prime RMBS, although typically prime residential mortgage loans tend to perform better than SME loans in the same country (Moody's, 2018).

Rating agencies report strong long term structured finance performance for Europe (see e.g. Moody's 2019, 2021b, S&P 2019). FitchRatings (2019a) expects the total losses on EMEA structured finance transactions, rated by Fitch and issued during the period 2000 to 2018 (volume EUR 3.5tr), to amount to only 0.5%. Losses in the SME segment are mainly caused by German SME loans, originated through an “originate-to-distribute” business model (non-granular hybrid transactions / German Mezzanine CDOs⁵⁸), or by Spanish SME loans. This strong performance has been recently confirmed by Fitch (2021a) in a global comparison. The study analysed the realised losses of rated structured finance tranches issued between 2000 and 2020. The analysis therefore includes structured finance notes issued before the global financial crisis as well as more recent vintages, including at the start of the pandemic. According to this update, total expected losses have further declined, to only 0.42% for EMEA. Strong pre-

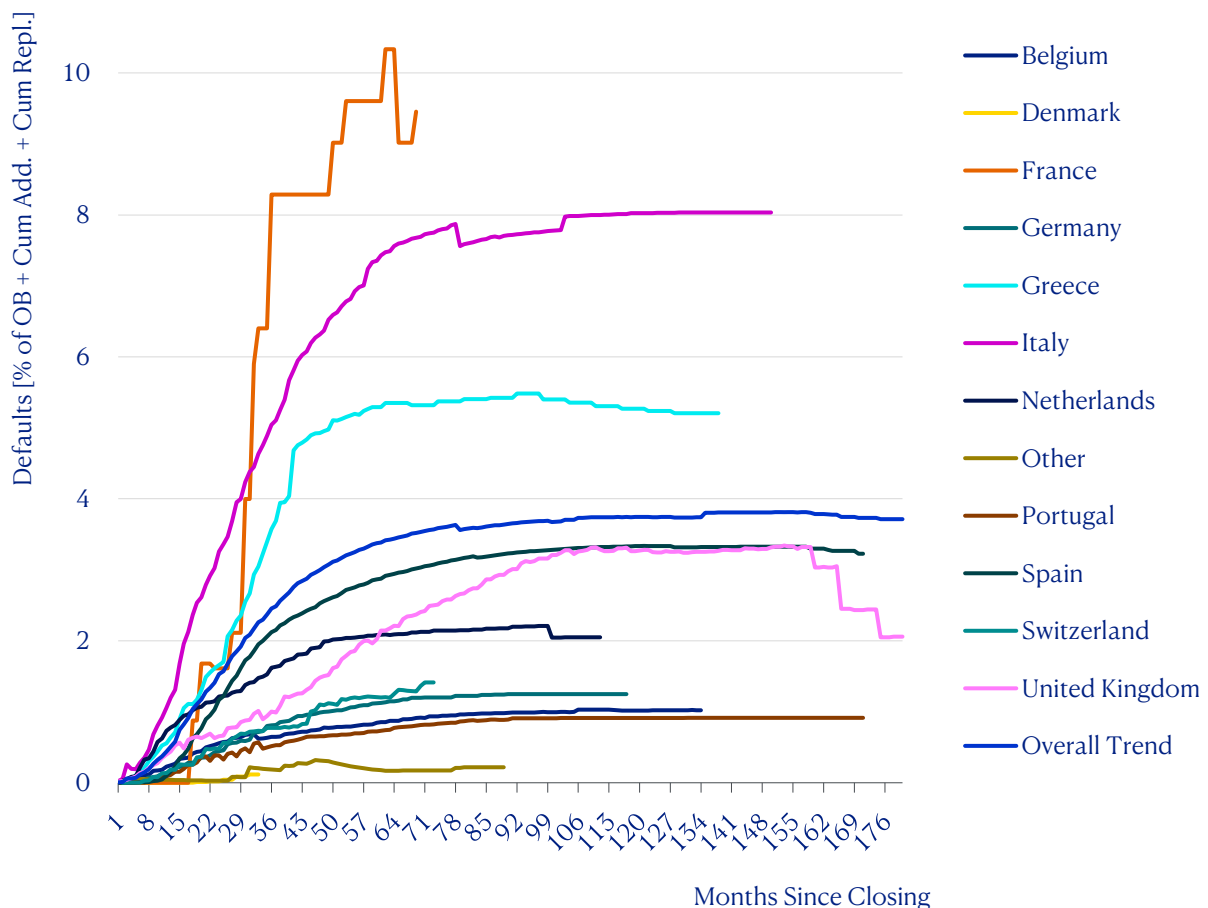
⁵⁷ See Papadopoulos (2021) for a discussion about excess spread in the context of Significant Risk Transfer (SRT) transactions.

⁵⁸ For more details see Kraemer-Eis, Passaris and Tappi (2013).

pandemic performance and structural mitigants have supported the structured finance ratings, although asset performance has recently deteriorated (Fitch, 2021a).

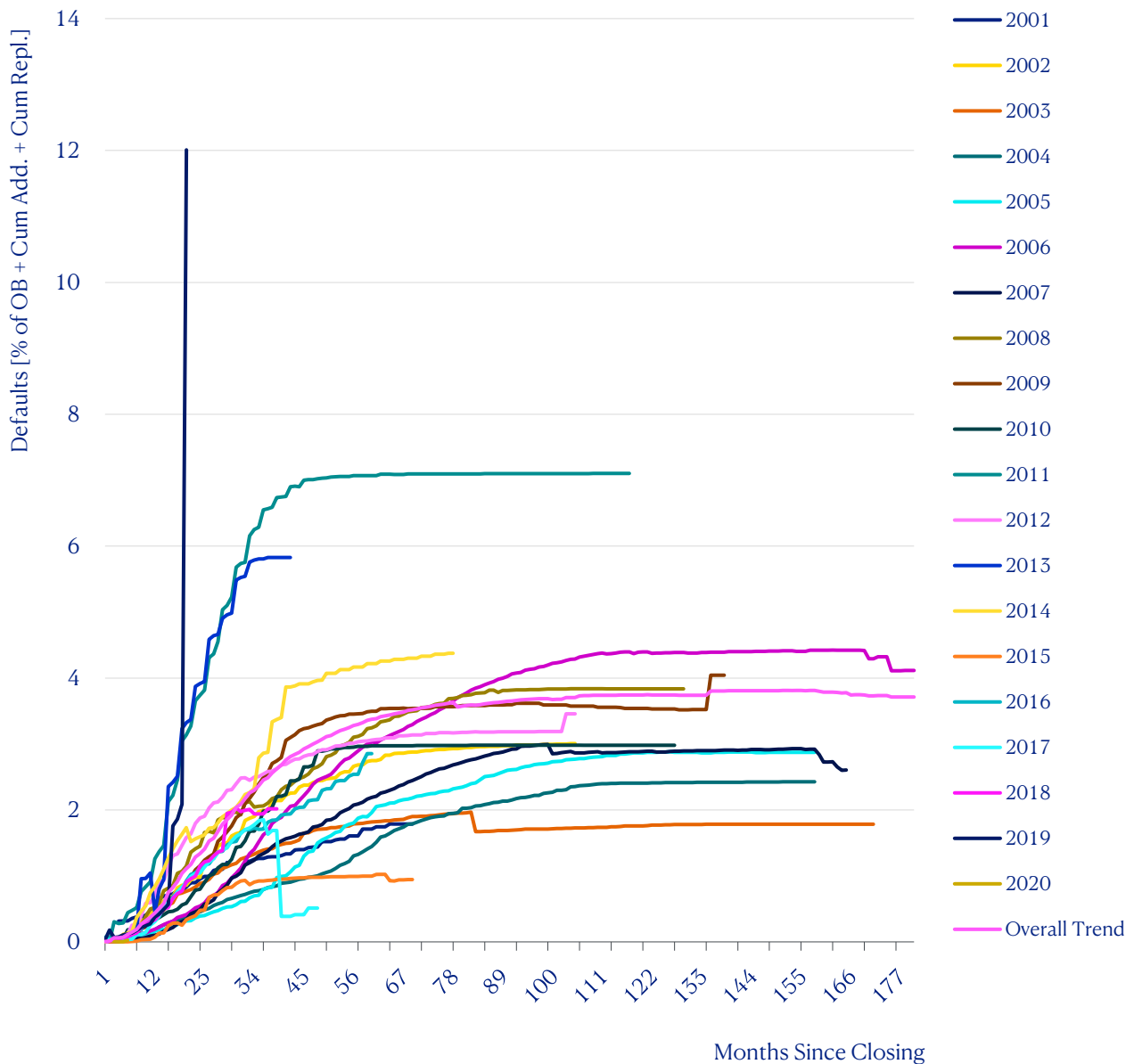
“European securitisations in the basic and simplest asset classes displayed spectacularly good credit performance through the severe economic downturn triggered by both GFC and the subsequent Eurozone crisis. [...] This includes securitisations in what became at times highly stressed economies such as Spain, Greece and Italy. It became clear that properly structured transparent securitisations, such as Europe had been issuing, were a safe and resilient financing tool” (Bell, 2020). Figure 52 and Figure 53 show the cumulative credit events or defaults on original balance by country and by vintage of the SME transactions in the EMEA region rated by Moody’s. COVID-19 is expected to have a negative impact on SMESec performance, varying by region, and depending on - inter alia - the speed of the economic recovery, the withdrawal of support/restrictive measures, and the success of vaccinations (see also below comments related to the SMESec prospects).

Figure 52: SME loan and lease ABS - Cumulative credit events or defaults on original balance (seasoning by country)*



* Terminated transactions are included in the index calculation; hence, here “cumulative” curves can also show a drop. Additionally, Moody’s notes show that vintage seasoning charts might move unexpectedly for the last few data points, because transactions start at different points in time within a vintage, and, hence, some transactions may be more seasoned than others. The index includes only the transactions rated by Moody’s.

Figure 53: SME loan and lease ABS - Cumulative credit events or defaults on original balance (seasoning by vintage)



Source: Moody's (2021a), authors' calculations

Rating transition data confirms the good performance; the example below (Table 5) shows the rating migration of SME Collateralised Loan Obligation (CLO) transactions (rated by Fitch, migration since transaction closing). For example, of all the tranches currently tracked by Fitch and initially rated AAA, 36% (by number⁵⁹) have paid in full (pif), 64% are still AAA, etc.

⁵⁹ Relative to the number of tranches in a given initial rating category.

Table 5: Fitch European SMEs rating transition matrix (April 2021)*

% of tranches		Current rating									
		PIF	AAAsf	AAsf	Asf	BBBsf	BBsf	Bsf	CCCsf	CCsf	Csf
Initial Ratings	AAAsf	56%	64%	0%	0%	0%	0%	0%	0%	0%	0%
	AAsf	53%	0%	67%	0%	0%	0%	0%	0%	0%	0%
	Asf	10%	10%	50%	50%	0%	0%	0%	0%	0%	0%
	BBBsf	9%	0%	9%	9%	73%	0%	0%	0%	0%	0%
	BBsf	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
	Bsf	0%	0%	0%	17%	17%	0%	67%	0%	0%	0%
	CCCsf	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
	CCsf	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%
	Csf	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

* sf indicates Structured Finance

Source: FitchRatings (2021b), authors' calculations

5.3.2 | SMESec prospects

COVID-19 impact

Today, the SMESec market, like other financial markets, is suffering from the COVID-19 crisis. It remains to be seen if the second half of the year - which is traditionally stronger than the first half - is going to show a recovery. With the start of this new crisis, transaction parties focused more on amending deal documentation than on deal origination (Moody's, 2020a). Also the impact on SMESec asset quality and deal performance remains still to be seen - the level of uncertainty continues to be very high. The COVID-19 impact on SMESec performance will vary by region, depending on many parameters like structure and flexibility of the economy (and the SMEs), shape and speed of the economic recovery (which is related to the previous point), the withdrawal of support/restrictive measures, and also the success of vaccine rollouts (some of these elements have been discussed at the beginning of this report).

On the one hand, SME default rates are expected to increase in general - with related impact on SMESec portfolios. Also, payment moratoria will affect SMESec portfolios. Moreover, SMEs' leverage increases with potential long-term debt affordability issues, especially in case economies experience a slow recovery from current disruptions. Moody's (2021b) expects the performance of SME ABS to weaken as support measures expire. Delinquencies increased first half of 2020 for many regions, but levelled off later-on. The situation is expected to worsen again, when payment moratoria come to an end. Moody's (2021b) estimates that, e.g., 45% of Italian SME ABS collateral is under payment moratorium (as per May 2021), compared to only 3% in Spain.

On the other hand, also at the beginning of the 2008 crisis there was fear that the SMESec market would suffer in terms of defaults, which was finally not the case (as seen above) - however, the market suffered in terms of activity volumes. Like in the past, structural protection such as subordination levels, reserve funds, or liquidity facilities might limit idiosyncratic and

recession risks (Moody's, 2020b). Moreover, often, SMESec exposure is partially secured by real estate properties. Public loan guarantee schemes (on pan-European, national and sub-national levels) are playing an even more important role during the pandemic (see previous chapter) and often aim to support SMEs, bolstering their ability to remain current on debt obligations over the coming years. Hence, such schemes can have a positive impact on the future performance of securitisation transactions. However, diverging terms and conditions between schemes across different European jurisdictions exacerbate comparability of the schemes and their role for SMESec (Moody's, 2020b).

Regulatory adjustments

As described, even years after the financial crisis, the European SMESec market had not recovered – and it is now negatively affected by the COVID-19 crisis. Several direct and indirect support measures are aiming at a market revival, amongst which are important regulatory adjustments.

In the preceding ESBFOs we presented the different steps as regards the regulatory development post financial crisis (Kraemer-Eis et al., 2019). Moreover, we addressed the important Capital Markets Union (CMU) initiative, as well as the output of the related High Level Forum and its recommendations for the further development of the securitisation market (Kraemer-Eis et al., 2020). Hence, here, we provide only a brief update concerning selected recent developments.

In relation to the COVID-19 crisis, on 24 July 2020 the EC adopted a Capital Markets Recovery Package (CMRP) to facilitate bank lending. The package includes adjustments of the securitisation rules, including the extension of the framework for simple, transparent, and standardised securitisations to synthetic transactions and the amendment of the regulation of capital requirements, including the removal of regulatory obstacles to the securitisation of non-performing exposures (European Commission, 2020c). On 25 March 2021 the European Parliament voted the new securitisation rules, which came into force on 09 April 2021.

We discussed the increasing role of synthetic securitisations and the forthcoming regulatory framework for STS synthetic balance-sheet securitisations in detail in our previous ESBFO (Kraemer-Eis et al., 2020). Given the important role of this securitisation type, potential STS eligibility (which was previously only available for "true sale" securitisations) under the new rules is to be seen as a very positive development. Furthermore, on 16 August 2021 the European Commission gave the green light to a new synthetic securitisation product under the European Guarantee Fund (EGF), see Box 14.

Box 14 : New synthetic securitisation product under EGF⁶⁰

In April 2020, the European Council endorsed the establishment of a European Guarantee Fund (EGF) under the management of the EIB Group, as part of the overall EU response to the coronavirus outbreak. It is one of the three safety nets agreed by the European Council to mitigate the economic impact on workers, businesses and countries. On 16 August 2021, the European Commission approved, under EU State aid rules, the introduction of a new product in the form of guarantees on synthetic securitisation tranches under the EGF to support companies affected by the coronavirus outbreak in the 22 participating Member States.

With an envisaged dedicated budget of EUR 1.4bn, the new product is expected to mobilise at least EUR 13bn of new lending to SMEs affected by the outbreak. This is a significant contribution to the overall target for the EGF to mobilise up to EUR 200bn of additional financing in the 22 participating countries. Under the new instrument, the EIB Group, acting as a protection seller, will provide a financial intermediary with protection in the form of a guarantee on a specific risk tranche for a portfolio of existing assets, under the condition that the portfolio in question fulfils certain requirements in terms of maximum size and contains only performing exposures. In exchange for providing the guarantee, the EIB Group will charge the financial intermediary with a subsidised guarantee fee.

The financial intermediary will have to pass on the financial advantage stemming from the transaction (fixed in basis points) to the ultimate beneficiaries of the new instrument, i.e. to SMEs that will receive new loans. The financial intermediary will be obliged to use a portion of the regulatory capital freed up thanks to the guarantee to build up a new pool of assets (e.g. a portfolio of loans) to meet the liquidity needs of SMEs, while complying with certain conditions in terms of riskiness, volume and maturity of the new loans. On top of this obligation, the terms of each transaction will also provide incentives to the financial intermediary to generate new lending.

The purpose of the new product (which also includes the possibility for the EIF to provide First Loss Protection) is to help originate new, riskier lending by financial intermediaries to SMEs. The aim is to free up lending capacity of financial intermediaries and prevent that their resources are shifted towards lower-risk assets instead of loans to SMEs. The risk of such a shift exists given the economic crisis caused by the coronavirus pandemic, which is expected to lead to downgrades in the financial intermediaries' existing loan books and therefore to increasing demands for those intermediaries' regulatory capital.

Following the significant regulatory changes for the securitization markets, on 17 May 2021, the Joint Committee of the European Supervisory Authorities (EBA, ESMA and EIOPA) issued a report on the implementation and functioning of the securitization regulation (Joint Committee of the European Supervisory Authorities, 2021). A summary of the findings can be found in Box 15 below.

By 1 January 2022 the European Commission is required, pursuant to Art. 46 of the new EU Securitization Regulation, to present a report on the functioning of this regulation accompanied (if appropriate) by a legislative proposal.⁶¹

⁶⁰ Source: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_4204.

⁶¹ See for details: <https://www.eba.europa.eu/regulation-and-policy/single-rulebook/interactive-single-rulebook/8544>

In order to deliver on its commitment in the CMU action plan and in order to prepare the above mentioned report of the *Securitisation Regulation*, the EC initiated a targeted consultation (23 July to 17 September 2021)⁶² to seek stakeholders' feedback on a broad range of issues. It covers:

- the effects of the regulation
- private securitisations
- the need for an equivalence regime in the area of STS securitisations
- disclosure of information on environmental performance and sustainability, and
- the need for establishing a system of limited licensed banks performing the functions of securitisation special purpose entities (SSPEs).

In addition, the questionnaire seeks feedback on a number of additional issues that have been identified and raised by stakeholders and by the Joint Committee of the ESAs as having an impact on the functioning of the securitisation framework.

Box 15: Joint Committee Report on securitisation regulation⁶⁵

The report was mandated in the Securitisation Regulation of 2017 and had to provide a perspective of how the regulation was functioning and whether it was achieving its objectives. Based on a survey and the analysis of market data, the Committee derived recommendations on how to further develop the European securitisation market and how to address inconsistencies which may affect the efficiency of the new regime. This is also to be seen in the context of the post Pandemic recovery, in which securitisation could play a role. The report provides guidance to the European Commission in the context of its review of the EU Securitisation regulation (SECR).

The report concludes that the SECR, which became applicable in January 2019, has been useful in increasing the soundness and reducing the stigma of European securitisations. However, the report highlights potential adjustments in order to improve the consistency of the framework, in particular:

Transparency requirements: given the trend in increasing issuance of private transactions, a more precise legal definition for such private securitisations should be specified. Data reported for such transactions should also be made available in securitisation repositories in order to ensure quality and transparency (and to facilitate the supervision).

Due diligence requirements: regulatory guidance should be provided to specify how proportionality could be implemented in the area of due diligence to facilitate market entrance of new securitisation investors.

Criteria for STS securitisation: the report proposes adjustments in the STS criteria to facilitate the use of the label for ABCP programmes. Moreover it recommends further analyses by the European Commission (with support from the European Supervisory Authorities) concerning the simplification of STS criteria (without reducing the quality of the standard).

⁶² See for details: [Targeted consultation on the functioning of the EU securitisation framework | European Commission \(europa.eu\)](https://ec.europa.eu/info/consultations/finance-2021-eu-securitisation-framework_en)
https://ec.europa.eu/info/consultations/finance-2021-eu-securitisation-framework_en

⁶⁵ Joint Committee of the European Supervisory Authorities, 2021.

Box 15 continued:

Supervision of securitisation requirements: to enhance the supervision of securitisation requirements, the report proposes to explore i) how to develop common EU supervisory tools, ii) potential alternatives to the current STS framework (in particular for those jurisdictions with limited STS securitisation issuances) and iii) the relevance of a common EU approach to the ongoing supervision of authorisation conditions for third-party verifiers.

Securitisation and sustainability

Driven in particular by investors’ demand but also by risk aspects, the perspective of “sustainability” is gaining importance in securitisation - and in structured finance in general. The market for sustainable bonds has grown and is further rapidly growing. The sustainable securitisation market, however, is still in its early days and is not yet keeping pace with this development (for a brief comparison see Box 16). There seems to be plenty of investor interest, but the supply side is constrained (Deutsche Bank, 2021). Although hard to measure, Raebel (2021) recorded for 2020 indicatively a total volume of EUR 3bn in sustainable securitisation in Europe, only 1.4% of the total issued ABS volume⁶⁴.

Box 16: Green securitisations versus green bonds⁶⁵

Green securitisation notes are debt instruments with the first source of repayment being cash flows from a pool of assets or projects that are either green themselves or proceeds from this pool are earmarked to finance green projects. Typically, they include covered bonds, asset-backed securities and other structures. Green bonds (also referred to as climate bonds) are debt instruments issued by companies, municipalities, states, and sovereign governments to finance projects and operations with environmental benefits and that can mitigate risks associated with climate change.⁶⁶

	Green Bond	Green securitisation
Recourse	To the issuer or to the project’s assets in case of a project bond.	To the collateral or full recourse to the borrower in the case of unsecured loans.
Use of proceeds	Earmarked for green projects: with or without specification of the project.	Refinance portfolios of green assets or projects, or proceeds are earmarked for green projects.

⁶⁴ However, within Q1/2021 this value was already well exceeded. Investors’ appetite might further increase with developing regulations that will require investment funds to disclose the extent to which their funds or products invest in sustainable and environmental assets, such as under the EU’s Sustainable Finance Disclosure Regulation (SFDR), (FitchRatings, 2021c).

⁶⁵ FitchRatings (2021c).

⁶⁶ On 06 July 2021 the European Commission published, together with its *Strategy for financing the transition to a sustainable economy* a proposal for a *European Green Bond Standard* with the ambition to create a high-quality voluntary standard for bonds financing sustainable investments.

Specific barriers are - in addition to the general issues of the securitisation market - a lack of generally accepted market practices, principles, definitions, and disclosure/reporting rules. This relates not only to the securitisation transactions, but also to the assets to be securitised, which leads to a lack of such specific assets. Issues are also linked to the absence of a regulatory framework for sustainable securitisations. A generally accepted system of rules, combined with labelling/certification will be necessary (like for STS), in order to reduce asymmetric information and to consider the classical economic solutions of signaling and screening. However, material progress is under way.

The consideration of sustainability in this context can follow different approaches: for example there are transactions that are specifically designed to support sustainable development or - more widely - transactions designed to the consideration of sustainability aspects in the context of “normal” operations. “Green securitisations”, e.g., securitisations that are designed as a means of green financing, exist in different forms. Often, three types are distinguished (James & Parker, 2019): green collateral securitisation (the issuer issues bonds backed by portfolios of “green” assets), green proceeds securitisation (the proceeds of bonds are ring-fenced for investment in green projects), and green capital securitisation (originator uses freed-up capital or leverage from capital relief to invest in green securitisation). Type two and three are of broader nature and the transactions can be backed by non-green assets (i.e. the use of non-green assets to support “greening”).

In line with increasing demand for “green” investment opportunities, AFME proposed principles for developing a green securitisation market in Europe (AFME, 2019). In the discussion paper AFME highlights key voluntary principles that policymakers and market participants should support to help promote green securitisations. The new securitisation framework, along with the Green Bond Principles⁶⁷, set the context for the green securitisation principles.

A wider perspective is given by the consideration of ESG (environment, social, governance) criteria. The EU’s transition to a climate neutral economy requires significant investment which in turn creates assets for securitization, but also the “S” and “G” components can play a role. ESG related opportunities can appear in many areas of the securitization market with a variety of underlying assets, for example (Deutsche Bank, 2021):

- Environmental: electric and hybrid vehicle loans, solar ABS/renewable energy, green buildings (energy efficiency, PACE financing (property assessed clean energy financing))⁶⁸, etc.
- Social: affordable housing, lending to underserved borrowers (consumer ABS, subprime Auto ABS, RMBS), etc.
- Governance: originator lending and servicing, as well as general practices, can play a role.

⁶⁷ <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

⁶⁸ The US PACE model is a tool for financing energy-efficiency and renewable energy improvements. PACE loans fund the upfront cost of energy improvements on residential and commercial properties, and are paid back over time through property tax bills. The PACE lien stays with the property through possibly changing ownership. Sponsoring states implement legislation to collect loan repayments through property tax bills and redistribute them to lending agencies. The funding and credit risk are passed on to ABS investors through the securitisation of the loans. Each ABS frees up lending capacity for new loans (FitchRatings, 2021c).

Also here, negative selection can be applied: in an ESG CLO, for example, the CLO manager may avoid assets from borrowers that are not in line with set ESG criteria (Moeglich, 2019).

More generally, an ESG assessment can form part of a broader analysis, for example by rating agencies. FitchRatings, e.g., introduced ESG relevance scores for structured finance and covered bonds to augment market transparency as well as to satisfy investor demand for more thorough and robust reporting on how ESG affects credit risk (FitchRatings, 2019b, c).

These aspects are going to further increase in importance for originators, issuers, and investors, starting already with the lending process: the EBA guidelines on loan origination and monitoring, issued in May 2020, state, e.g., that “Institutions should incorporate ESG factors and associated risks in their credit risk appetite and risk management policies, credit risk policies and procedures, adopting a holistic approach” (EBA, 2020).

Another important step, in general, was the introduction of the EU Taxonomy for sustainable economic activities; it entered into force on 12 July 2020. The Taxonomy is effectively a unified classification system for sustainable finance. Among many other things, it defines what assets and activities would be eligible for green bonds (incl. green securitisations). To qualify, the activities/ assets must contribute substantively to at least one of the environmental objectives or activities (BoA/ML, 2021).

Under the Capital Markets Recovery Package the EBA has also been mandated to publish, by 1 November 2021, a report on developing a specific sustainable securitisation framework for the purpose of integrating sustainability-related transparency requirements into the EU Securitisation Regulation. That report shall duly assess in particular the implementation of proportionate disclosure and due diligence requirements relating to sustainability factors, as well as methodologies and presentation of information in respect of sustainability factors (AFME, 2021a)⁶⁹.

Public support can play a role in driving the growth of sustainable securitisations, and as such not only support the post-COVID recovery, but also the green transition. As a recognized securitization specialist within the EIB Group (see e.g. Kraemer-Eis et al. (2015)) the EIF can for example guarantee junior and mezzanine tranches of sustainable securitisations, leading to higher credit protection for senior tranches, and making them more attractive to institutional investors. Moreover, it can leverage its well-established position in the securitisation market to coordinate with market associations and regulators for common definitions, market standards and practices. Given its good reputation in the market, it can as well coordinate with financial institutions, including National Promotional Institutions, such market practices moving towards standards. Furthermore, based on the technical expertise in securitisation, the EIF can develop methodologies to assess the riskiness of new transaction types in line with standard securitisation techniques.

⁶⁹ Regarding a regular regulatory/supervisory update in relation to sustainable finance, we refer to AFME’s quarterly ESG finance reports (e.g. AFME (2021c)).

6 | Microfinance

6.1 | Microfinance and social inclusion

6.1.1 | What is Microfinance?

Microfinance is traditionally defined as the provision of basic financial services to low-income people who lack access to banking and related services⁷⁰. However, more and more often, the definition is used in a wider sense, also to include financial services to existing microenterprises and self-employed (EMN, 2012; EMN, 2017).

The main achievement of microfinance is to reach unbanked⁷¹ clients, however, in some European countries, bankability is no longer a stressing issue. Introducing the concept of Inclusive Finance in Europe, therefore, became a logical continuation of Microfinance. Inclusive finance complements Microfinance and means not only directly providing finance to vulnerable groups but providing financial and non-financial products to enterprises who employ or serve those vulnerable groups.

Inclusive Finance is the range of financial and non-financial products and services provided to unemployed people or clients from other vulnerable groups who are facing difficulties in accessing the conventional banking services, due to their socioeconomic status, and more broadly to social enterprises who provide work-integration opportunities or services to groups deemed vulnerable from a socioeconomic standpoint. Inclusive finance promotes entrepreneurship and social inclusion, by providing support to micro-enterprises and social enterprises.

In Europe, microfinance consists mainly of small loans (less than EUR 25,000) tailored to microenterprises and people who aspire to be self-employed but face difficulties in accessing the traditional banking system, while inclusive finance also serves social enterprises and provide loans up to EUR 500,000 (more on social enterprises, see Torfs and Lupoli, 2017). There are many overlaps between the target groups of microfinance and inclusive finance, therefore, both groups are combined in this chapter.

⁷⁰ CGAP Definition, Consultative Group to Assist the Poor.

⁷¹ In the context of Microfinance unbanked people are considered those who have limited access to financial services: people who do not have an account with a financial institution due to insufficient funds, cost, distance and lack of necessary documentation.

6.1.2 | A support tool for necessity-driven business creation

Mapping target groups for microfinance and inclusive finance is a challenging task. To grasp the magnitude of the market, we look at some important indicators related to unemployment, poverty and social exclusion, entrepreneurial motivation and intentions. These indicators are particularly important to analyse the market for potential entrepreneurs, as a combination of poor labour market prospects and poverty drives people to start new businesses.

In the context of the Europe 2020 social inclusion targets, Eurostat published the “people at risk of poverty or social exclusion” indicator, depicted in Figure 54. The indicator corresponds to the sum of individuals who are at risk of poverty, are severely materially deprived, or are living in households with very low work intensity.⁷² In 2019, more than one fifth of EU-27 citizens were at risk of poverty and social exclusion, with the highest rates recorded in some Eastern and Southern European countries (Bulgaria, Romania, Greece). The geographical fragmentation in poverty risk becomes clear when considering the mostly Nordic and Western but also some Central European countries on the other side of the spectrum (Czechia, Slovenia, Finland, Denmark).

Europe 2020 aimed at ‘lifting at least 20 million people out of the risk of poverty or social exclusion’ by 2020 compared to the

Definitions for Microfinance and inclusive finance

A microenterprise: an enterprise with fewer than 10 employees and a turnover below EUR 2m (as defined in the Commission Recommendation 2003/361/EC of 6 May 2003, as amended).

A social enterprise: an operator in the social economy whose main objective is to have a social impact rather than make a profit for its owners or shareholders, while operating in a market-driven environment (as defined by European Commission, 2011).

A microfinance institution (MFI): an organisation/financial intermediary that provides microfinance services. There is a wide spectrum of different MFI business models in Europe.

Microcredit in general is defined by the European Commission as a loan or lease under EUR 25,000 to support the development of self-employment and microenterprises. It has a double impact: (1) an economic impact, as it allows the creation of income generating activities, and (2) a social impact, as it contributes to the financial inclusion and, thus, to the social inclusion of individuals.

Microenterprise lending: micro-lending to existing enterprises. MFIs focus on the upper end market of microfinance, providing loans to bankable or nearly bankable microenterprises that have difficulties accessing loans up to 25,000 EUR from commercial banks due to risk aversion or lacking liabilities.

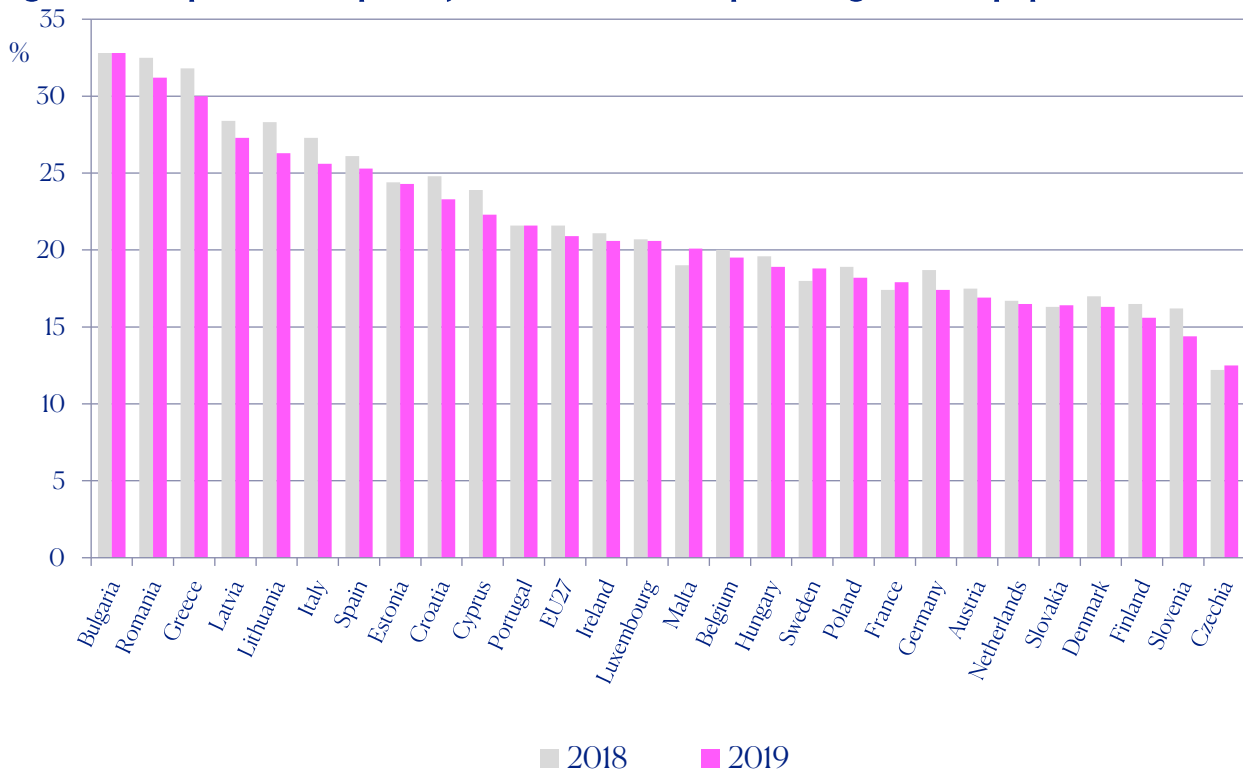
Social inclusion lending: lending to self-employed individuals that are excluded from banking services, due to their socioeconomic status of being socially excluded or (long-term) unemployed and/or belonging to financially excluded population groups like ethnic minorities or young people. The average loan sizes are relatively low, meant to support basic income creating activities.

⁷² At risk-of-poverty are persons with a normalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median normalised disposable income (after social transfers). For more information please see:

http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=t2020_50

year 2008.⁷⁵ From 2019's estimations, no more than 12 million managed to escape the risk of poverty and social inclusion since 2008 (Eurostat). Some countries managed to reach their national targets and therefore progressed on their ways to more equality. The most distinct improvements were made by Poland, Romania and Bulgaria, mainly due to falls in material deprivation. On the other hand, Spain and Italy, but also Sweden and the Netherlands regressed compared to 2008. In 2020, the social situation has become much more severe due to the COVID-19 crisis, which made achieving the target impossible.

Figure 54: People at risk of poverty or social exclusion (percentage of total population)

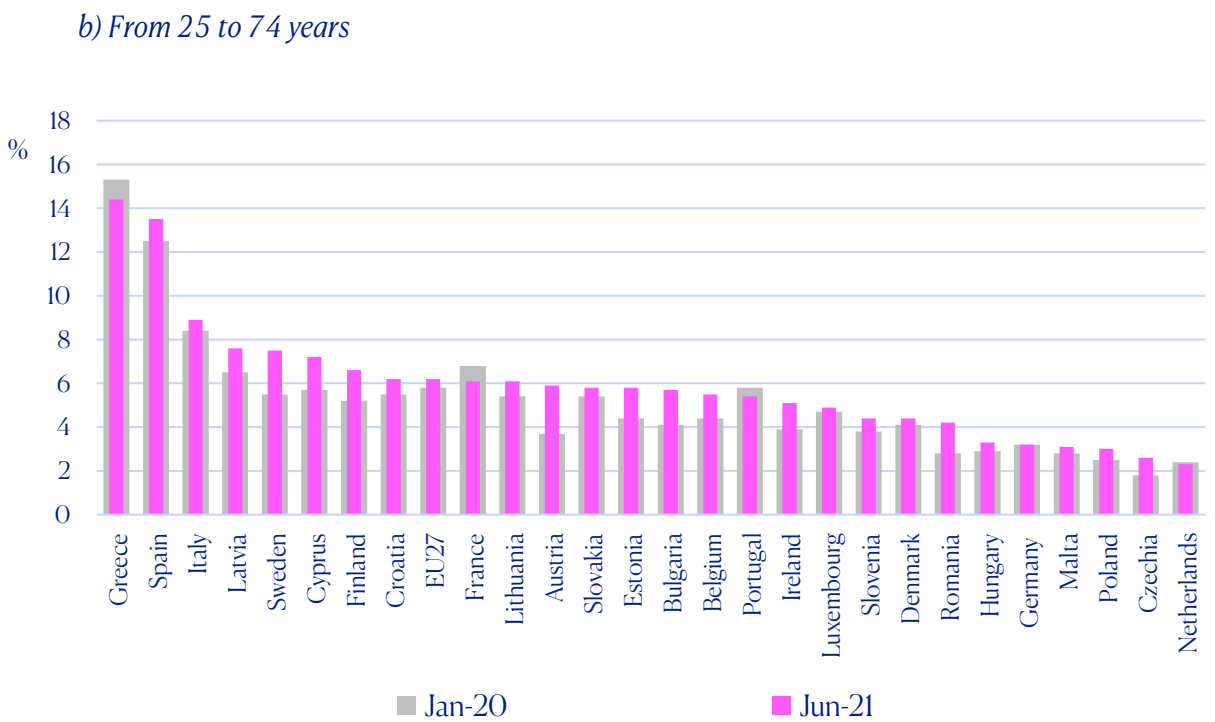
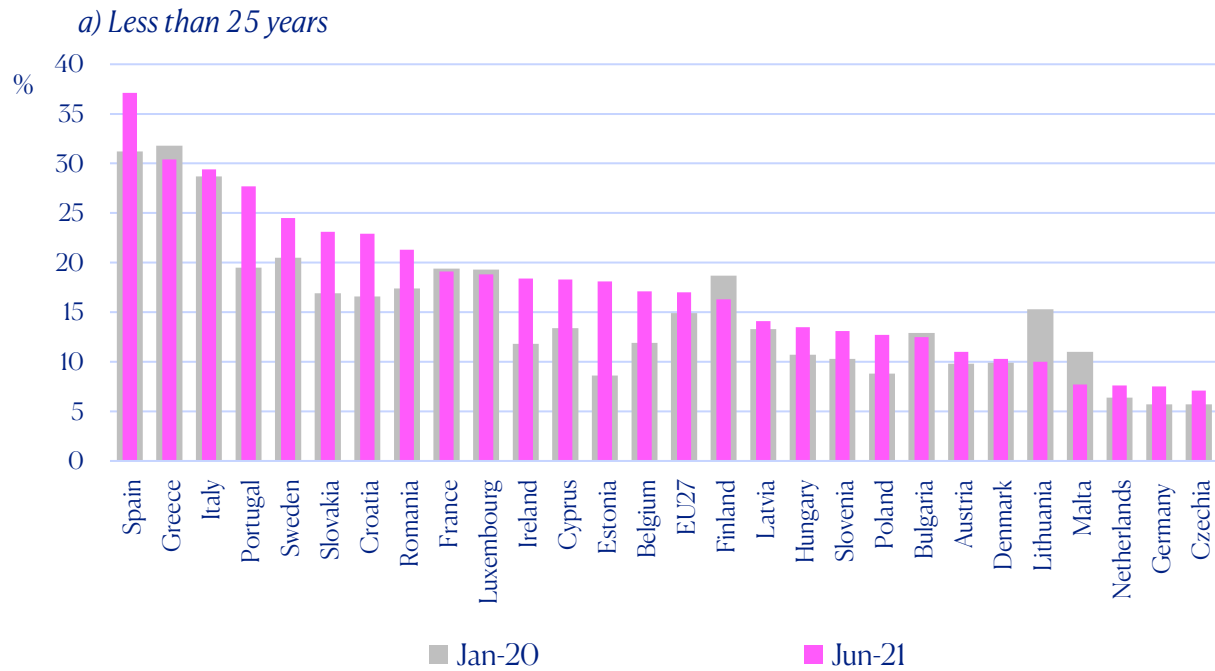


Source: Eurostat, authors' calculations

Unemployment also remains high in some European countries, in particular youth unemployment. Figure 55 plots the unemployment rate for a number of European countries. While unemployment in Europe in general was declining until the beginning of 2020, since then it increased in most countries due to the COVID-19 crisis. Labor market conditions are improving thanks to policy support, however overcoming the damage fully will be difficult particularly in those Member States where unemployment was already relatively high before the crisis (European Commission, 2021b).

⁷⁵ Furthermore, the indicator is part of the impact indicators of the Strategic plan 2016-2020, referring to the 10 Commission priorities, and included as main indicator in the Social Scoreboard for the European Pillar of Social Rights. It can be considered similar to the global SDG indicator 1.2.2 "Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions".

Figure 55: Unemployment rate by age groups (2020)*



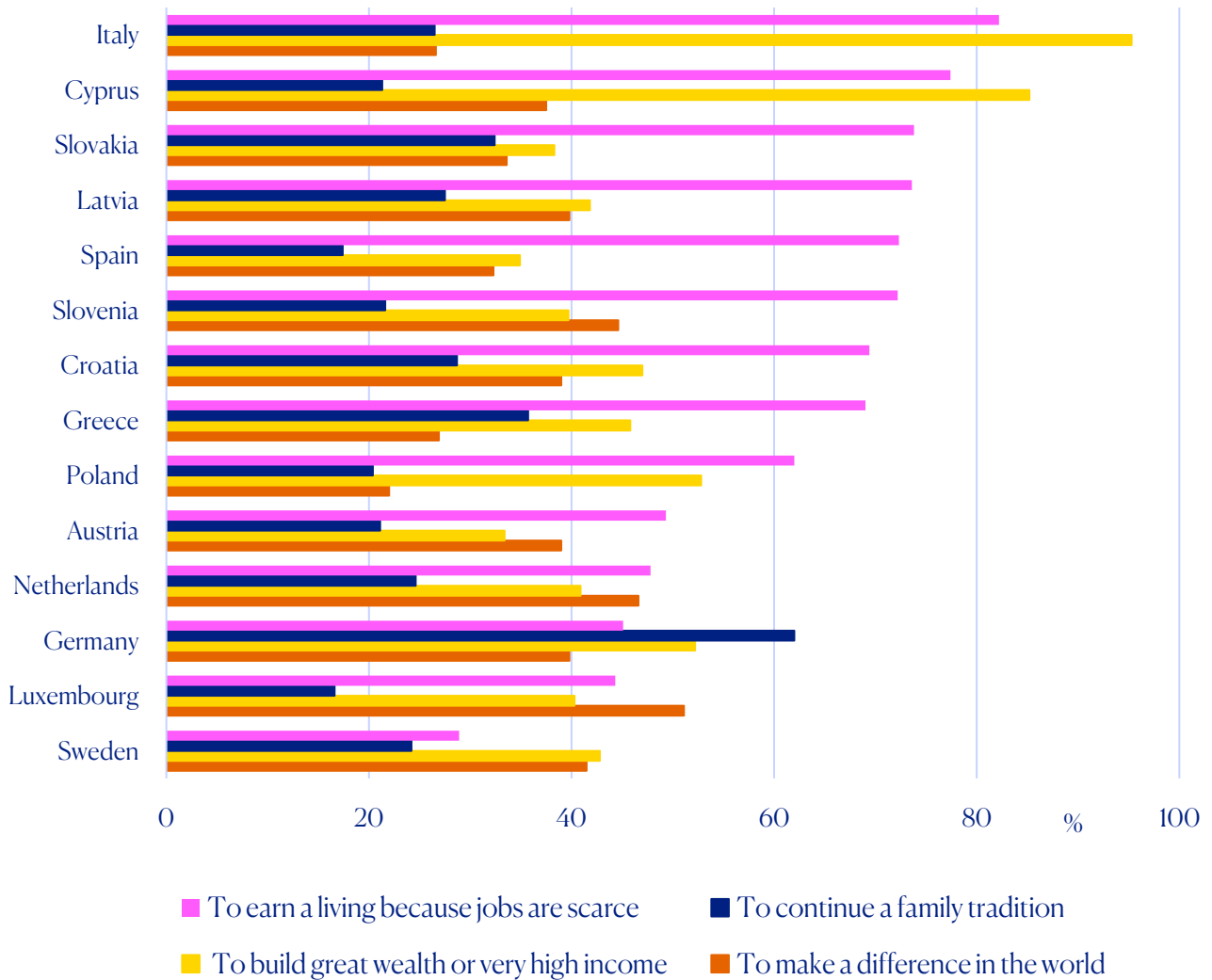
* No recent unemployment data was available for Romania.

Source: Eurostat, authors' calculations

People at risk of poverty and unemployed people are a potentially important group of business creators, since a decision to start a business often arises out of necessity especially in low-income countries. Indeed, the Global Entrepreneurship Monitor (GEM) reports that entrepreneurs often start businesses out of necessity, because jobs are scarce (Figure 56). To

build great wealth or very high income is another common motivation to start a business especially in low-income countries. The pandemic strongly affected those motivations and further increased the proportion of those starting or running a new business and agreeing with the motivation “to build great wealth or very high income” and “to earn a living because jobs are scarce”. Significant changes in terms of business starters escaping unemployment was observed in Poland (16% in 2019-, to 62% in 2020) and in Spain (42% in 2019-, to 72% in 2020).

Figure 56: The motivation to start a business, selected countries (2020)*



* Somewhat/strongly agree as % Total [early-stage] Entrepreneurial Activity (TEA), multiple answers are possible.

Source: GEM (2021), authors' calculations

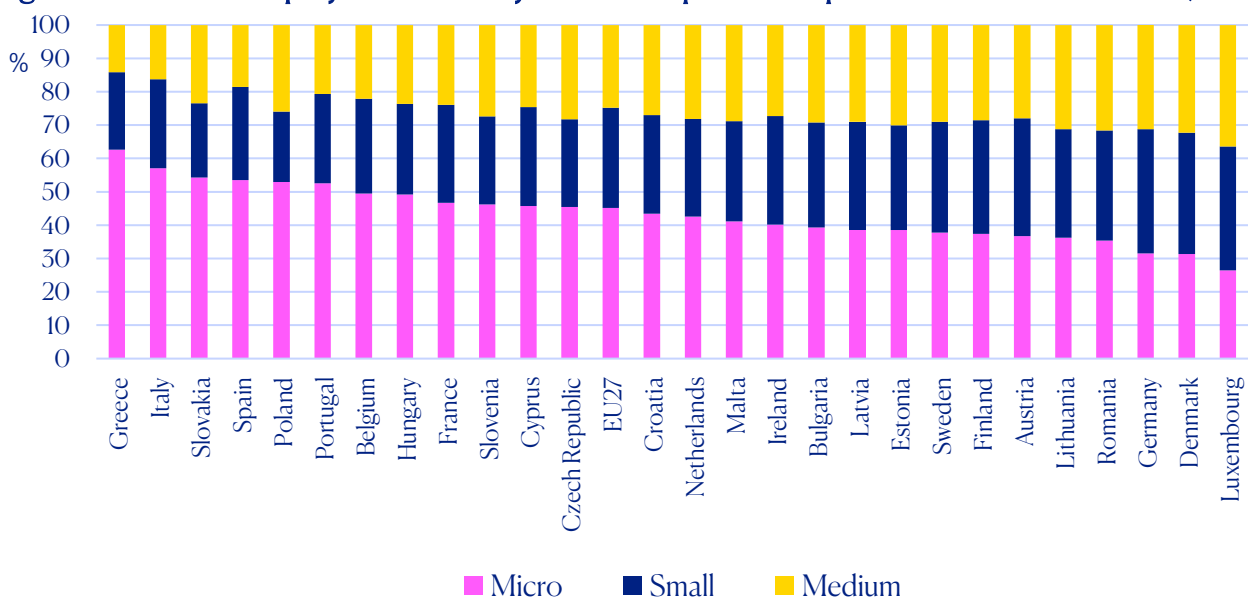
Unemployment is one of the main challenges in Europe. Especially devastating is unemployment among young people, for whom time spent in unemployment increases the risk to be socially excluded and decreases not only current but also lifetime earnings. For many of them, self-employment can be a solution – and microfinance can be a tool to support such business creation.

The COVID-19 crisis affected the most vulnerable segment of the labour market. Persons having relatively unstable, low-paid, and part time jobs were hit first. Young people, especially new graduates, had difficulties finding jobs. Self-employed persons and free-lancers (especially from the cultural and creative sector) have also suffered massively and their activities have declined due to the lockdowns (European Commission, 2020a, European Commission, 2021b). Social enterprises, typically supporting this segment, especially when the social situation worsened as a consequence of the crisis, have suffered themselves. Their activities have been strongly affected by the crisis, since they could not reach their beneficiary target groups physically and faced difficulties to digitalize their offers (Dupain et al, 2020).

6.2 | The demand for microfinance: microenterprises and their finance decisions

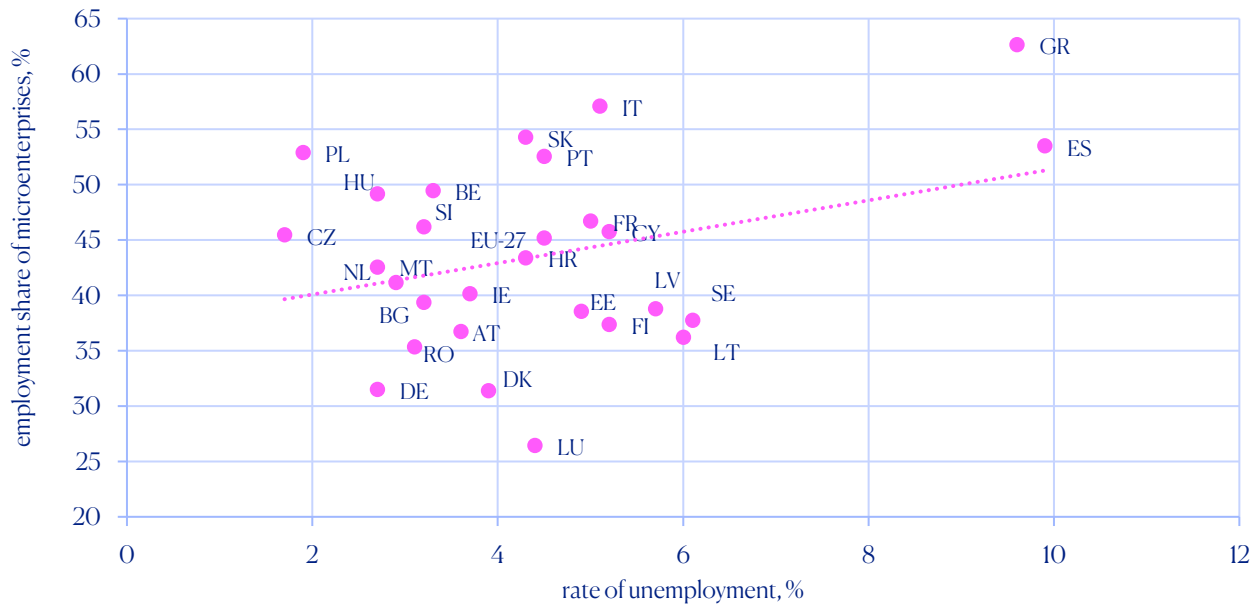
Microenterprises, making up 93% of all European businesses, are important contributors to employment as they account for more than 30% of total employment. In Greece, Italy, Slovakia, Spain and Poland employment by microenterprises accounts for more than half of total SME employment (Figure 57). Countries with high proportions of micro-businesses seem to show relatively higher levels of unemployment (Figure 58).

Figure 57: Relative employment share by microenterprises compared to other size classes (2020)



Source: European Commission SBA, authors' calculations

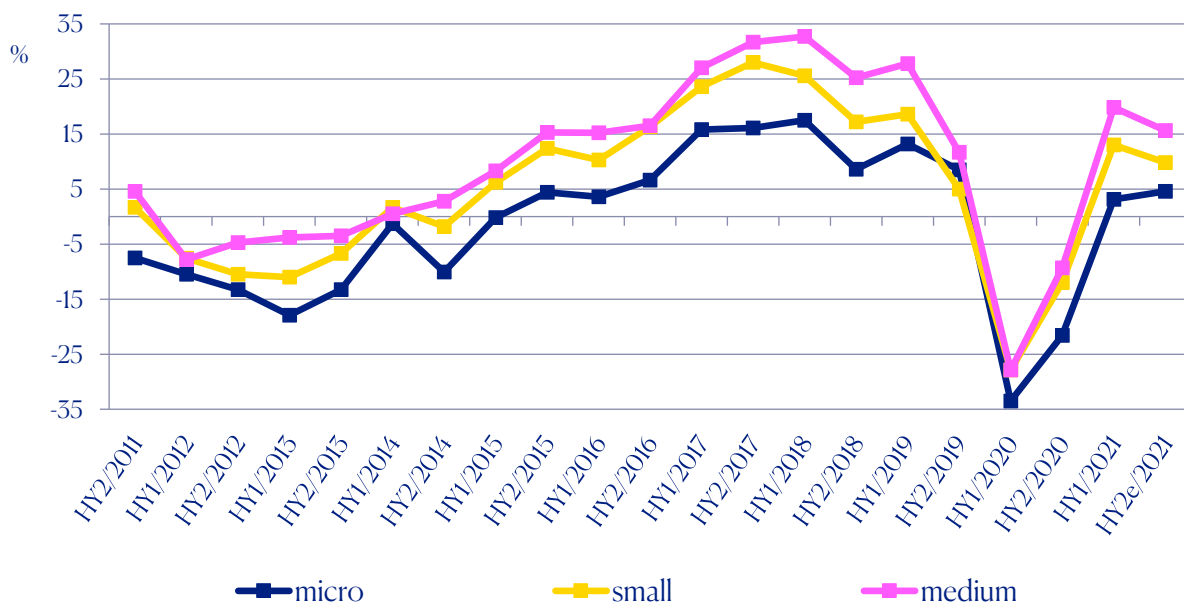
Figure 58: Employment share of microenterprises vs unemployment rate, 2020



Source: European Commission SBA, Eurostat, authors' calculations

While microenterprises are important for the European economic fabric, they generally face more challenging conditions compared to their larger counterparts. This is evidenced by Figure 59, which illustrates microenterprises' perception about the current economic climate and compares it to larger firms' perception.

Figure 59: Overall situation of European microenterprises compared to other size classes*



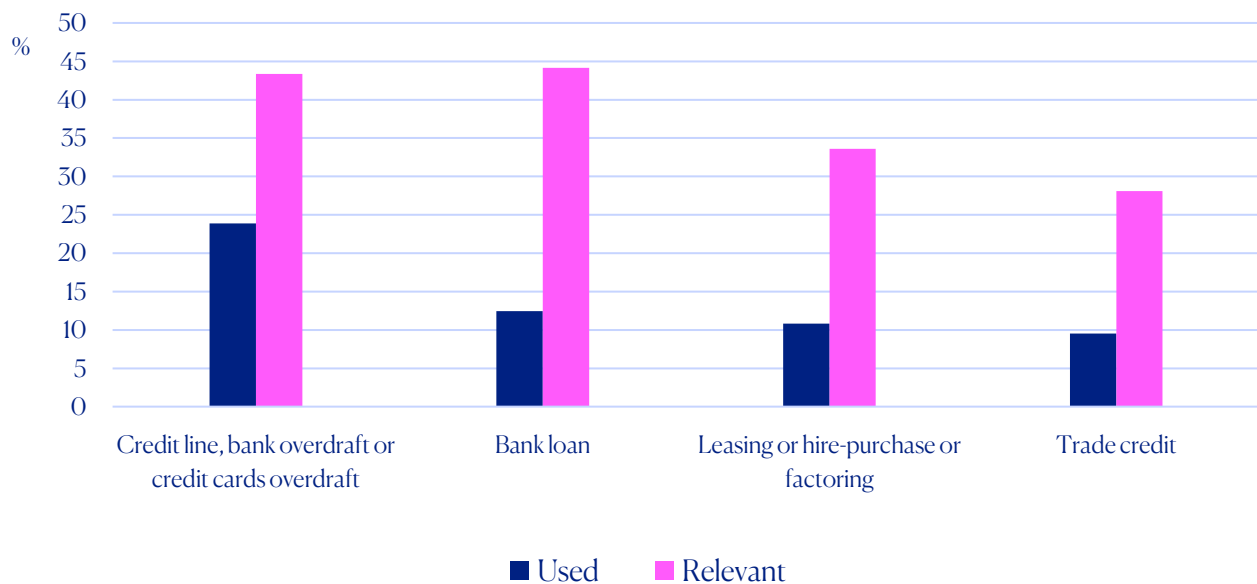
* The figure plots net responses, which are calculated as the share of positive minus negative responses.

Source: SMEunited (2021a), authors' calculations

Until the second half of 2019, microenterprises were on balance more pessimistic than their larger counterparts. Since the pandemic, the situation has worsened for all SMEs, especially for microenterprises, who reported a record high negative change (-33.5%) in their overall situation in the first half of 2020. However, the SMEUnited survey reveals that microenterprises expect a slight improvement in the overall situation in the second half of 2021 (SMEUnited, 2021a).

Microenterprises use less external financing instruments than their larger peers, presumably due to difficulties in accessing finance (Figure 60). For example, bank loans are used by 18.5% of small companies and 25.9% of medium companies, while only 12.4% of microenterprises used bank loans. Interestingly, almost half of the microenterprises indicated that bank loans are relevant sources of financing, far exceeding the rate at which they use it.

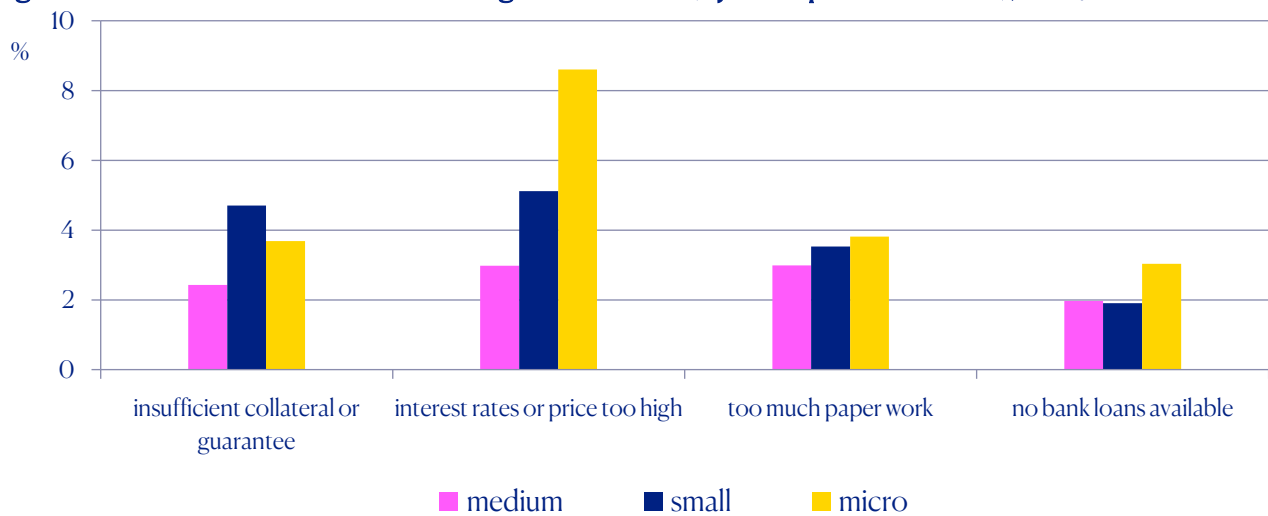
Figure 60: Relevance and use of different financing sources for microenterprises (HY2/2020)



Source: ECB SAFE (ECB, 2021a), authors' calculations

The same survey states that the bank loan rejection rate is still the highest for microenterprises (7.8%, increased from 6.7%), compared to 3.9% for small firms and 1.3 % for medium-sized firms (Figure 61). Consequently, the share of microenterprises that did not apply for a loan due to fear of rejection (discouraged borrowers) remains high at 6.5%. Fifty-three percent of the microenterprises did not use bank loans because it was not a relevant source of financing. Microenterprises indicated that too high interest rates or price was the most important reason for bank loan not being relevant.

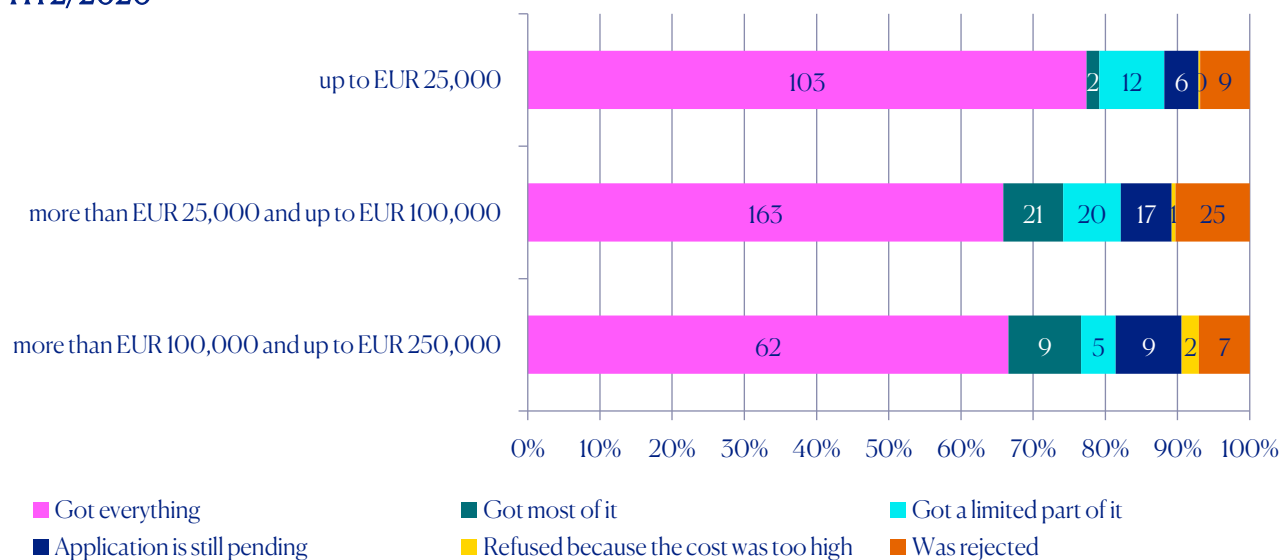
Figure 61: Reasons for bank loans being not relevant (by enterprise size class), HY2/2020



Source: ECB SAFE (ECB, 2021a), authors' calculations

Unsurprisingly, microenterprises tend to apply for smaller loans more often than for bigger loans. When they apply for bigger loans, they are more likely to be rejected or to refuse because the cost was too high. This implies that microenterprises with high funding needs face persistent barriers to growth (Figure 62). Barriers for scaling up businesses are especially prominent for those from disadvantaged groups, as in addition to difficulties accessing finance, they face other barriers, including lack of entrepreneurship skills and smaller entrepreneurship networks (OECD, 2019b).

Figure 62: Application status of bank loans requested by microenterprises (by loan size), HY2/2020*



* The figure is based on responses from 586 European microenterprises who applied for bank loans in the past six month. The numbers inside the bars refer to the number of respondents per category

Source: ECB SAFE (ECB, 2021a), authors' calculations

Because microenterprises do not frequently use bank loans due to insufficient collateral, high interest rates and excessive paper work, rejected or discouraged customers often turn to an alternative solution: microcredit from Microfinance institutions (MFI). MFIs do not always charge lower interest rates than banks, but they are less demanding in terms of collateral and guarantee requirement. Clients find MFIs more personal, tailor-made and simple; MFIs “know their customers”.

6.3 | The supply of microfinance: the diversity of European MFIs

The microfinance market in Europe is highly fragmented and diverse, with no common business model (see for example, Kraemer-Eis and Conforti (2009) and Bruhn-Leon, Eriksson and Kraemer-Eis (2012)). Part of this fragmentation has geographical roots, as the role of microfinance is seen very differently across Europe. In Western Europe, microfinance is considered to be a social policy tool, as it serves businesses that are not commercially attractive for the mainstream financing providers, but nevertheless are able to create social value. On the other hand, in Eastern Europe, microfinance is seen more as a business activity which targets viable microenterprises that are financially excluded because the traditional credit market remains underdeveloped.

European microfinance providers

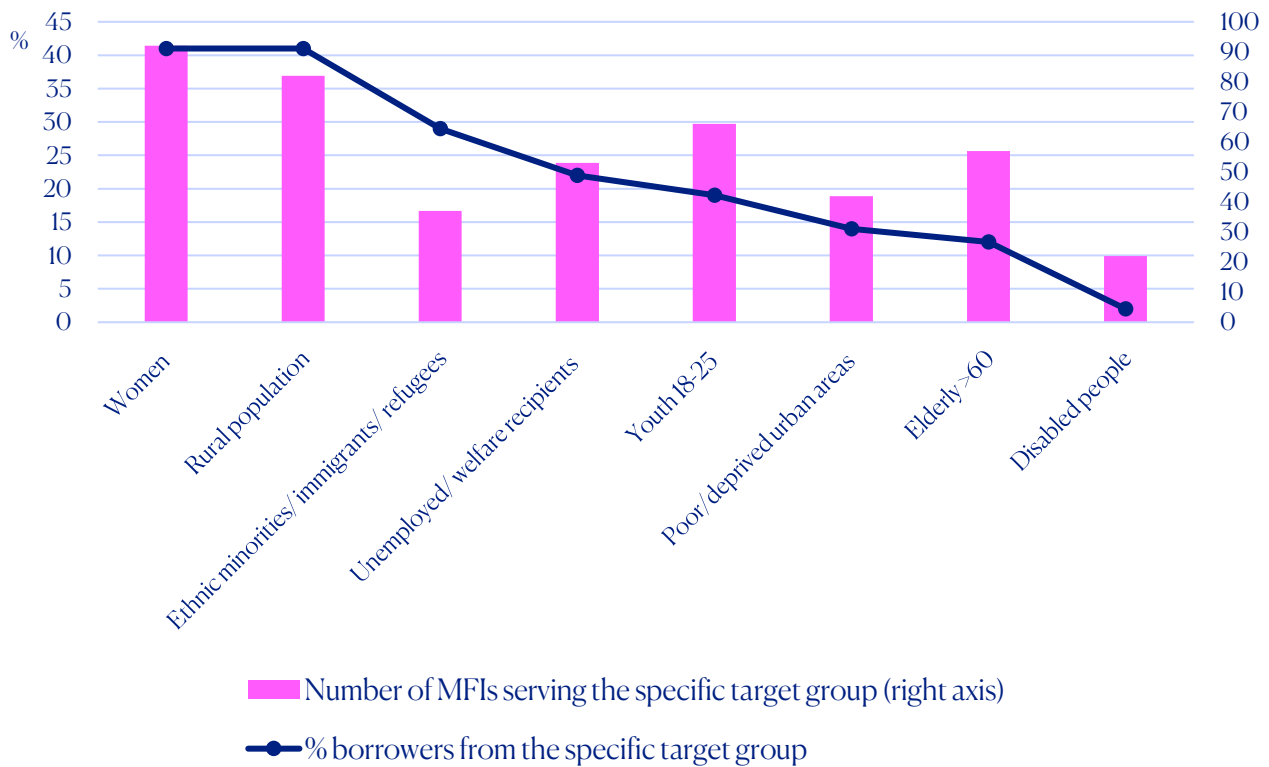
European microfinance providers are very diverse across Europe. In addition to commercial banks that target microenterprises as part of their general SME lending activity, the spectrum of European microcredit developers includes many profit-oriented and non-profit associations: banks (both private and state-owned), non-bank financial institutions (NBFIs), microfinance associations, credit unions, cooperatives, government bodies, religious institutions and Non-Governmental Organisations (NGOs).

Financial Inclusion is the most common primary development objective of MFIs, followed by job creation and rural development (EMN-MFC, 2020). Figure 63 outlines MFIs’ outreach to different target groups. These aggregate figures suggest that considerable outreach to females was achieved. Rural population was the second most frequently targeted group, followed by ethnic minorities, refugees, immigrants and unemployed people in terms of their share in the targeted clients among the borrowers.

The European microfinance market is growing. The latest EMN market survey data show that, in 2019, more than one million microenterprises and start-ups received support by the surveyed organisations. Over the same period, total microloan portfolio outstanding also increased and reached EUR 3.3bn reported from 138 MFIs (EMN-MFC, 2020)⁷⁴.

⁷⁴ The survey figures presented in this chapter are preliminary results from EMN-MFC Microfinance Survey 2018-2019.

Figure 63: MFIs' outreach to target groups, 2019



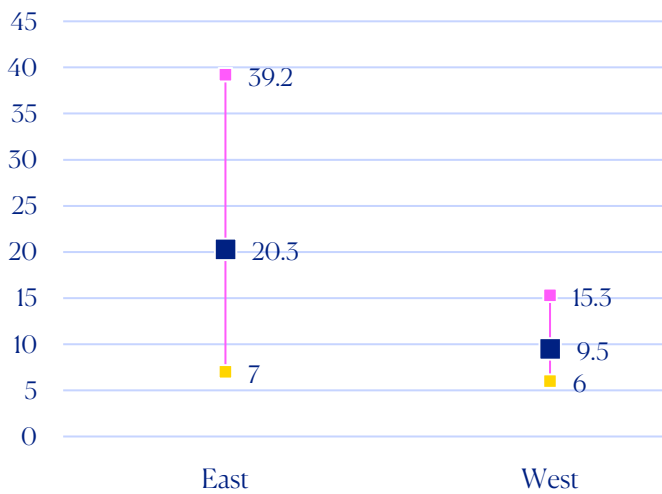
Source: EMN-MFC (2020), authors' calculations

MFIs mainly offer business loans to microenterprises (74% of MFIs), however many of them also offer personal loans (59%) or agricultural loans (42%). There is a large interest among MFIs in supporting green finance. Green loans are offered by 21% of MFIs, specifically designed either for finance energy efficiency, renewable energies and/or for environmentally friendly activities. More than one third of responding MFIs have no specific green loans in place, however they do finance environmentally friendly activities or technologies under their usual micro lending. Almost half of MFIs (23%) do not offer any specific green microloans, however many of them are planning to offer such loans in the next years.

The interest rates, charged on microloans for business purposes, differ strongly between Eastern and Western Europe⁷⁵. On average, MFIs in Eastern Europe charge higher interest rates and have a larger range between the highest and lowest rates (Figure 64). The differences in average interest rates are typically related to differences in the legal framework, MFI business models,

⁷⁵ Countries are aggregated as follows: Western Europe: AT, CH, DE, SE, BE, FR, LU, NL, GR, ES, IT, MT, PT; IE, UK; Eastern Europe: BG, PL, RO, HU, SI, HR, SK, TR, ME, MK, AL, RS, XK, BA, MD.

Figure 64: Average annual interest rate (2020)*

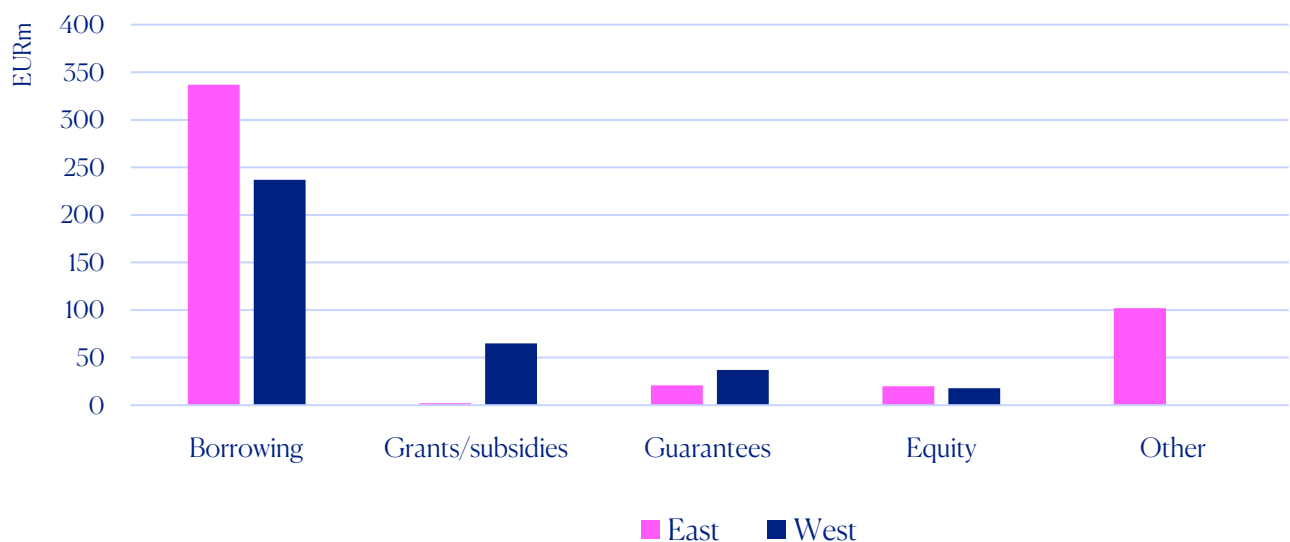


* Diagrams show lowest, average and highest AIRs charged on business loans of NBFIs by region

Source: EMN-MFC (2020), authors' calculations

pricing policies, refinancing cost, cost structure and the subsidy levels. The level of the interest rate charged by MFIs also depends on their funding structure. For example, in Western Europe where the average interest rate is lower, MFIs seek for more grants and guarantees. While MFIs in Eastern Europe charge higher interest rates (“high” compared to “standard” lending business) resulting presumably from the non-subsidised, cost covering business models. The highest funding demand in both Eastern and Western Europe remains for debt amounting to EUR 838m. The average amount sought was EUR 18m (Figure 65). Four in five MFIs face challenges when seeking for finance. Unavailability of funding is the most common issue MFIs face but funding price is an important obstacle.

Figure 65: MFI funding needs in the next two years, 2019



Source: EMN-MFC (2020), authors' calculations

Other key challenges MFIs face are income volatility and financial capability of clients, but the key challenge relates to the digital capability of clients. This was of particular concern during the COVID-19 lockdowns, as imposed social distance regulations inhibited face-to-face interactions, which are traditionally of crucial importance for relationship management in the microfinance sector. MFIs themselves are only partially digitalised and the only digital solution they offer is “online loan application”. Some MFIs do not offer any digital solution to their clients and do not

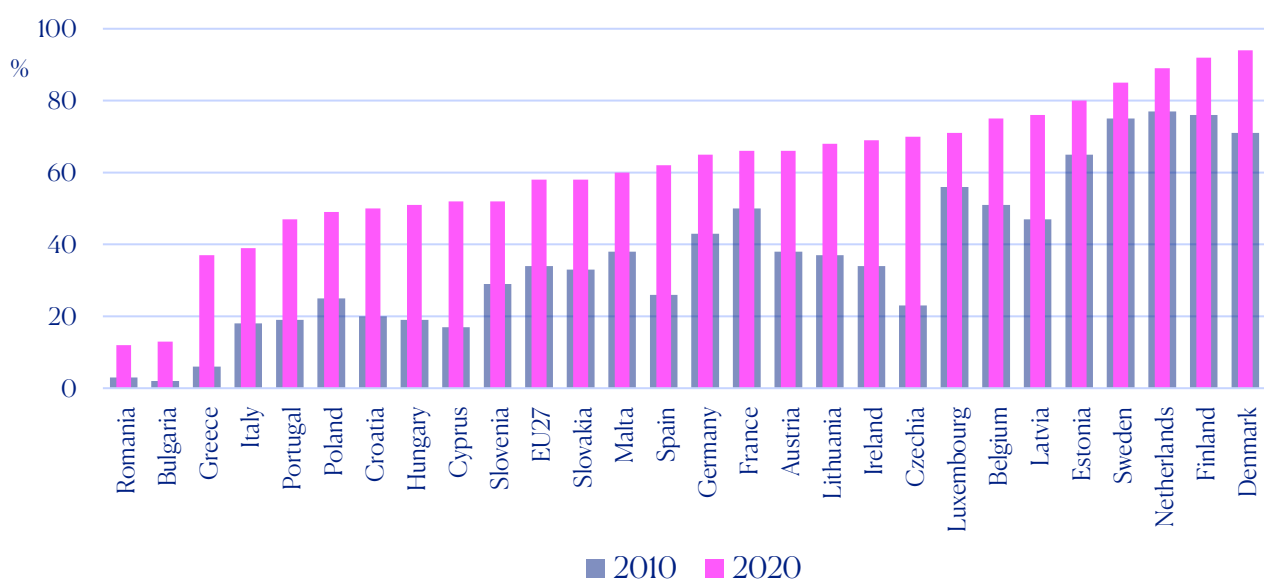
use any digital tools to interact with their clients. Only a few MFIs reported to deliver non-financial services (for example, coaching, mentoring and consulting) online to their clients. Most of them deliver non-financial products and services through one-on-one support in person.

6.4 | The challenges for microenterprises to access to finance

The challenges for microenterprises to access external financing are even greater than for other (bigger) types of SMEs. These are typically young firms without prior track record or formal reporting obligations. In addition, necessity-driven entrepreneurs, again by definition, are highly unlikely to meet the required collateral requirements often demanded by traditional finance market players (OECD/ European Commission, 2014). This implies that credit rationing becomes particularly relevant for this sub segment of the market. This section presents some indicators that illustrate how access to finance often is restricted for vulnerable labour market segments and microenterprises.

At its most basic level, financial inclusion starts by having access to a simple bank account. However, while the European population with banking accounts keeps growing, a large share of adult population is still left behind by the mainstream banking system (Global Findex database). Digital technology increases financial inclusion. However, in many countries (especially in countries with high unemployment rates), digital payments seem equally inaccessible as financial accounts (Figure 66).

Figure 66: Percentage of individuals using the internet for internet banking

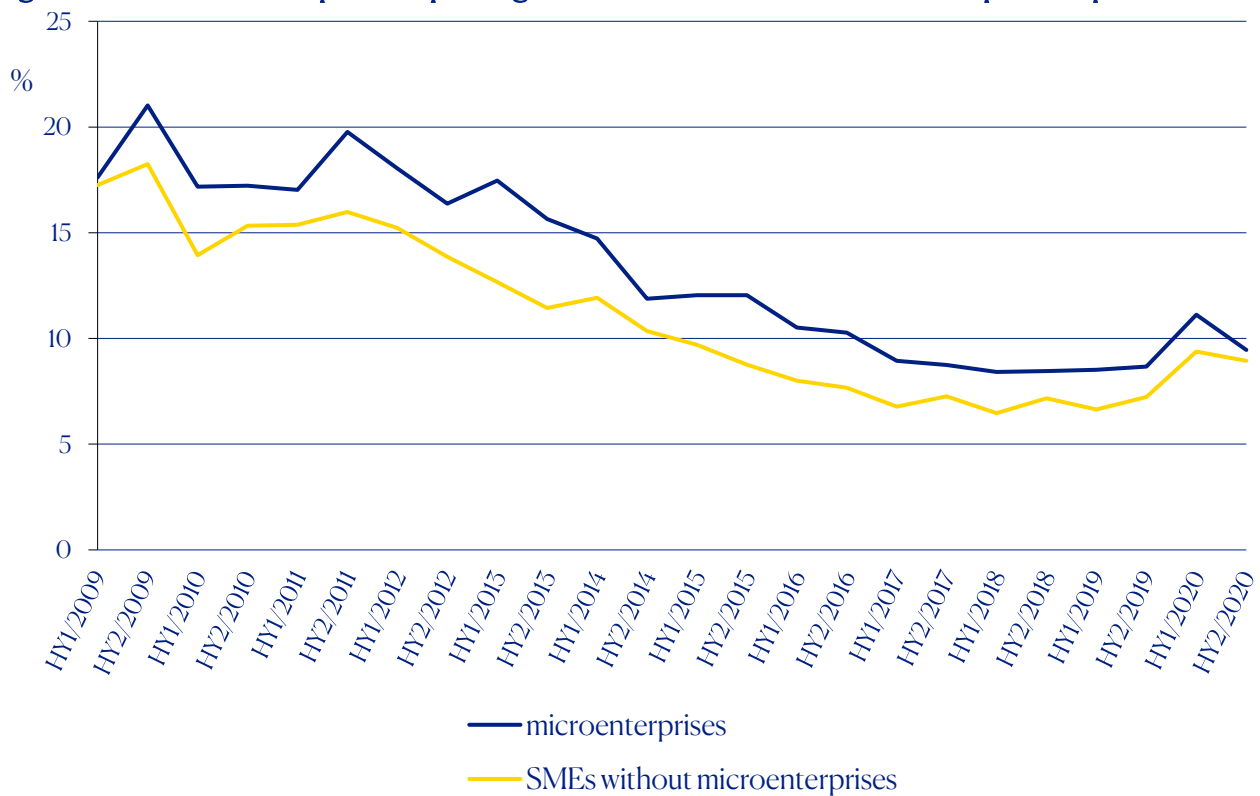


Source: Eurostat, authors' calculations

Not being digitally well equipped is particularly problematic in light of current events, since usage of financial technology has become critical during the office closures and social distancing due to COVID-19.

The ECB SAFE survey in the Euro area (ECB, 2021a) provides additional insights in the financing situation of European microenterprises. According to the latest SAFE survey, the share of microenterprises which see “access to finance” as their most important problem slightly decreased but still exceeds the share of bigger SMEs facing the same problem (Figure 67).

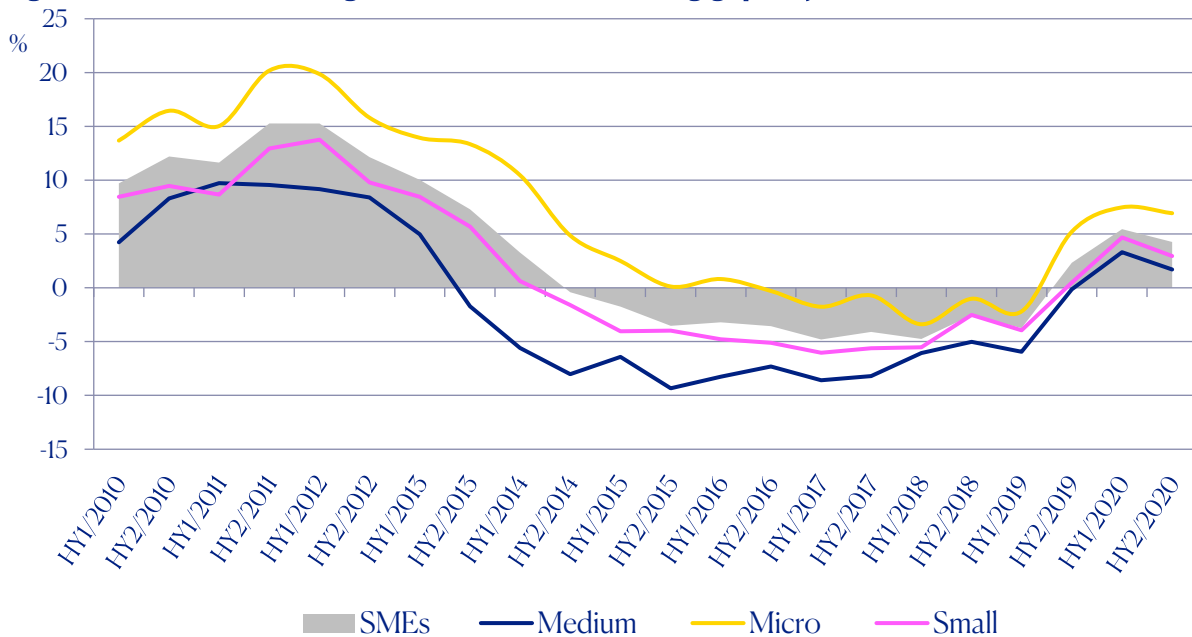
Figure 67: Share of enterprises reporting access to finance as their most important problem



Source: ECB SAFE (ECB, 2021a), authors' calculations

Figure 68 shows how microenterprises report changes in their perceived financing gap and compares this to other SME size classes. Here also, it becomes apparent that microenterprises believe they operate in a more challenging environment than larger SMEs, as they are consistently less optimistic about their financing situation.

Figure 68: Perceived change in the external financing gap* (by firm size)



* The financing gap indicator combines both financing needs and availability of bank loans, credit lines, trade credit, and equity and debt securities at firm level. A positive value of the indicator suggests an increasing financing gap. Values are multiplied by 100 to obtain weighted net balances in percentages. A negative financing gap indicates that the increase in the need for external financing is smaller than the improvement in the access to external financing.

Source: ECB SAFE (ECB, 2021a), authors' calculations

6.5 | Microfinance prospects

Microenterprises in general, and workers from vulnerable labour market segments that cherish entrepreneurial ambitions, have particularly been hit by the COVID-19 crisis. As discussed below, both microenterprises and microfinance providers in Europe are facing challenges.

Affordable finance: For borrowers, especially for microenterprises, not only accessibility of finance is important, but also its affordability. Microenterprises often find interest rates on bank loans too high, so they turn to an alternative solution: microcredit from MFIs. However, some MFIs may also charge high interest rates, especially in Eastern Europe. Lending rate ceilings are often discussed as a potential solution to alleviate borrowers' repayment burden. However, such ceilings would have to be chosen very cautiously. In fact, introducing interest rate caps can harm the poorest: disadvantaged groups, such as long-term unemployed, or workers with a migrant background are perceived as risky borrowers and lenders charge these borrowers higher interest rates. If the interest rate restrictions are too tight, those lenders are less willing and perhaps even obliged to eliminate those most deprived from their target portfolio (Zetsche & Dewi, 2018). Moreover, intruding interest rate caps may also lead to a significant increase in non-interest fees charged on new loans (Heng et.al. 2021). A less harmful but perhaps challenging solution is to reduce their fixed costs related to lending activities, for example, via digitalisation.

Growth potential: Microenterprises with growth potential are important for job creation. However, barriers for scaling up businesses are especially prominent for those from disadvantaged groups. In addition to difficulties in accessing finance, they face other barriers including lack of entrepreneurship skills and smaller entrepreneurship networks.

Skills: In addition to financial support, unemployed people or clients from other vulnerable groups are often in need of acquiring the necessary skills for success through coaching and mentoring. Technical assistance is crucial for entrepreneurs to succeed and decrease the risk of default. Nevertheless, the technical assistance provided during the loan term is often limited. In addition to financial products and services, many European MFIs also provide non-financial services (EMN-MFC, 2020). As such services are often free for clients (or not cost covering), it becomes a burden for MFIs without public support. That explains why state-owned banks, credit unions and NGOs provide non-financial services more often than NBFIs or private banks.

Digitalisation: Digitalisation helps to reduce time spend on communicating with the borrowers, loan processing and monitoring. Digitalisation also increases outreach: borrowers, mainly in remote areas with limited access to physical branches, may find it more efficient and time saving accessing their accounts digitally. Digital solutions can also elevate the burden of “too much paper work” discussed in the previous chapter. In addition to financial products offered digitally, MFIs could also train and mentor their clients remotely. However, we should not forget about one success factor MFIs have in small business lending, which is the direct contact between lenders and borrowers (“know your customer”). Digitalisation should not replace such relationships, but make them more efficient. Digitalisation gained urgency in the microfinance sector, as the consequences of the COVID-19 lockdown requiring both MFIs and microenterprises to become digitally equipped to maintain communication, which before had mostly been person-to-person.

MFI funding needs: Non-bank MFIs are competing with traditional banks and new entrants, Fintechs. They need to scale up, offer more diversified products and introduce digital technologies to their operations. MFIs, especially non-bank MFIs, face challenges in securing funding to support growth. They are also in need of additional investment in technologies in order to stay competitive with Fintechs. If MFIs do not catch up with Fintechs, they may end up serving not only unbanked but also undigitalised clients, who typically are the poorest. Moreover, adverse selection might leave MFIs with the riskiest ones, as Fintechs are more equipped with their screening tools to select the most successful projects.

Given the current difficult conditions, support on a European level has become of central importance – via funding, guarantees and technical assistance to a broad range of financial intermediaries, from small non-bank financial institutions to banks well-established in the microfinance or social enterprise finance market– in order to build a full spectrum of the European inclusive finance sector. The EIF currently supports microfinance and social entrepreneurship under The European Commission’s Programme for Employment and Social Innovation (EaSI). EaSI offers the following three instruments: (i) the EaSI Guarantee Instrument to increase access to finance for microenterprises, social enterprises and vulnerable groups, (ii) the EaSI Capacity Building Investments Window to help build up the market via investments (e.g. scaling up or developing IT infrastructure (mobile banking), recruitment and training of staff,

strengthening operational and institutional capabilities or seed financing support of newly created intermediaries with a strong social focus) and (iii) the EaSI Funded Instrument launched in the fourth quarter of 2019. Through the investment fund, the EIF provides senior and subordinated loans to financial intermediaries for on-lending to micro-borrowers and social enterprises.

In addition to the instruments listed above, the EIF and the European Commission have recently launched new COVID-19 support measures under the EaSI Guarantee Instrument (EaSI) to enhance access to finance for micro-borrowers, micro- and social enterprises.

The new measures will support micro- and social enterprises as well as individual micro-borrowers hit by the socio-economic consequences of the coronavirus pandemic. The objective of the new COVID-19 measures is to further incentivise financial intermediaries to lend money to small businesses, mitigating the sudden increase in perceived risk triggered by the coronavirus pandemic, and alleviating working capital and liquidity constraints of final beneficiaries targeted by the EaSI programme. Key features of these new measures include higher risk coverage, broadening of certain parameters, such as an increase of the maximum exposure for micro and social enterprises, and more flexible terms.

7 | Fintechs

The Basel Committee on Banking Supervision defines Fintech as “technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services”. The term Fintechs can also refer to companies that pursue a business model of digital financial innovation. Through efficiency improvements in the processing of hard information, Fintechs, often SMEs, are able to compete with much larger market players.

Fintech is not an isolated phenomenon, as it is becoming increasingly intertwined with the structures of the traditional finance sector. For example, established financiers, such as microfinance institutions, business angels and venture capitalists have recognised the power of the crowd and have all been observed to co-invest with retail investors through CF platforms. Mainstream banks also entered the Fintechs space, by incorporating the services of digital payment processor companies into their own product offering, or using marketplace lenders as distribution channels and acting as counterparts in SMESec transactions.

Innovations in financial technology occur in a variety of financial subsectors or business processes, such as the payments/transactions industry (digital payments and distributed ledger technology), insurance (Insurtech), corporate lending (peer-to-peer platforms, robo-advisors), compliance mechanisms (Regtech) or data processing technologies with financial applications (big data).

Recent years also saw the entry of Bigtech companies, such as Amazon, Facebook and Alibaba, into the Fintech market. Unlike smaller Fintechs, these giants can compete with incumbents at a much larger scale, by exploiting network effects stemming from their existing business models. Recently, the share of Bigtech in total global Fintech credit increased dramatically, from less than 5% in 2016 to over 30% in 2017, although this increase is driven mainly by evolutions in Asia (BIS, 2019). While their entry into financial services can lead to efficiency gains and improved financial inclusion, it also gives rise to serious challenges surrounding the concentration of market power and data governance, calling for new regulatory approaches, for example, through a shift from activity-based to entity-based regulation (BIS, 2021; Bossay et al., 2021).

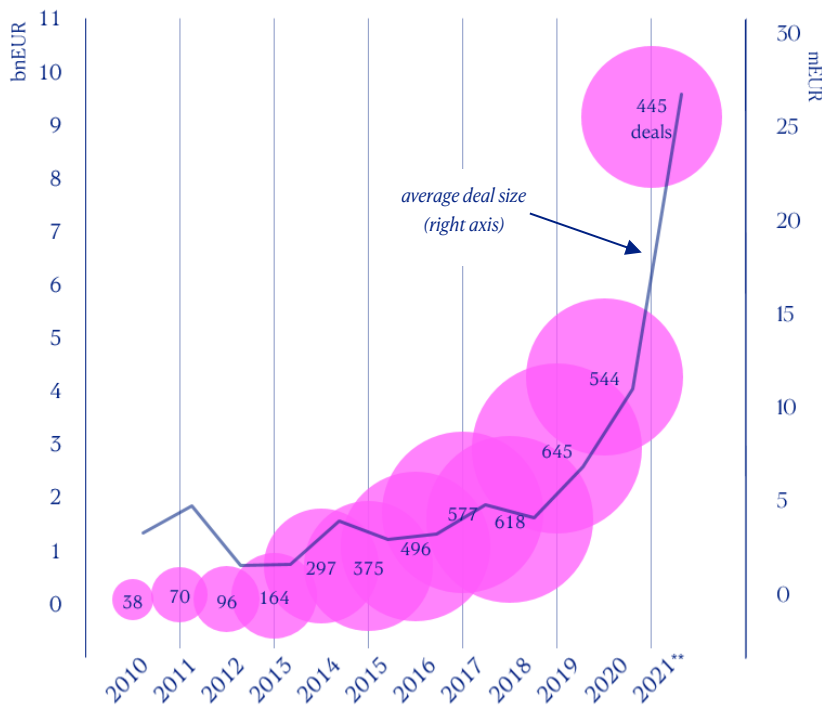
It is clear that technological innovations are becoming an integral part of the SME financing landscape. Financial digital innovations help to reduce the pronounced asymmetric information problem in small business lending, for example, through technological advances in information processing. Revolutionary financial business processes, such as payment or data-processing technologies allow Fintechs to compete on equal footing with larger players in the financial sector. Fintech market actors are therefore of crucial importance in enhancing access to finance for SMEs.

7.1 | VC and scale-up financing in EU Fintechs

Investments in European Fintechs companies increased exponentially in recent years. Figure 69 illustrates the steady growth of the sector. To narrow the focus on start-up and scale-up financing, the market segment most relevant to EIF, it considers combined VC and the PE growth finance into Fintechs companies that are headquartered in the EU.⁷⁶

Recent trends confirm that the COVID-19 pandemic has created significant growth opportunities for European Fintechs. While the sector was already growing steadily between 2010 and 2018, growth accelerated significantly from 2019 onwards. It is already clear now that 2021 is shaping up to be a record year for investments into Fintechs, with financing volumes exceeding EUR 9bn by the end of Q3/2021, already more than twice the amount of the full year 2019.

Figure 69: Innovation finance for European Fintech companies (VC + PE scale-up), (EU-27)*



* The bubble surface area indicates annual number of deals.
 ** Incomplete yearly total at the time of data extraction (05/10/2021).

Source: Pitchbook, authors' calculations

600. The implied steady increase in average deal size⁷⁷ is indicative of a maturing market, a scaling up process that accelerated in the wake of the COVID-outbreak, when confinement

2010 and 2018, growth accelerated significantly from 2019 onwards. It is already clear now that 2021 is shaping up to be a record year for investments into Fintechs, with financing volumes exceeding EUR 9bn by the end of Q3/2021, already more than twice the amount of the full year 2019.

Globally, the European Fintech market is gaining market share. The share of global innovation finance that flowed to European Fintech companies rose to 11.6% in 2021, continuing a decade-long increasing trend.

While volumes have increased exponentially, the number of deals in the Fintech innovation space stagnated over the past five year, hovering between 500 and

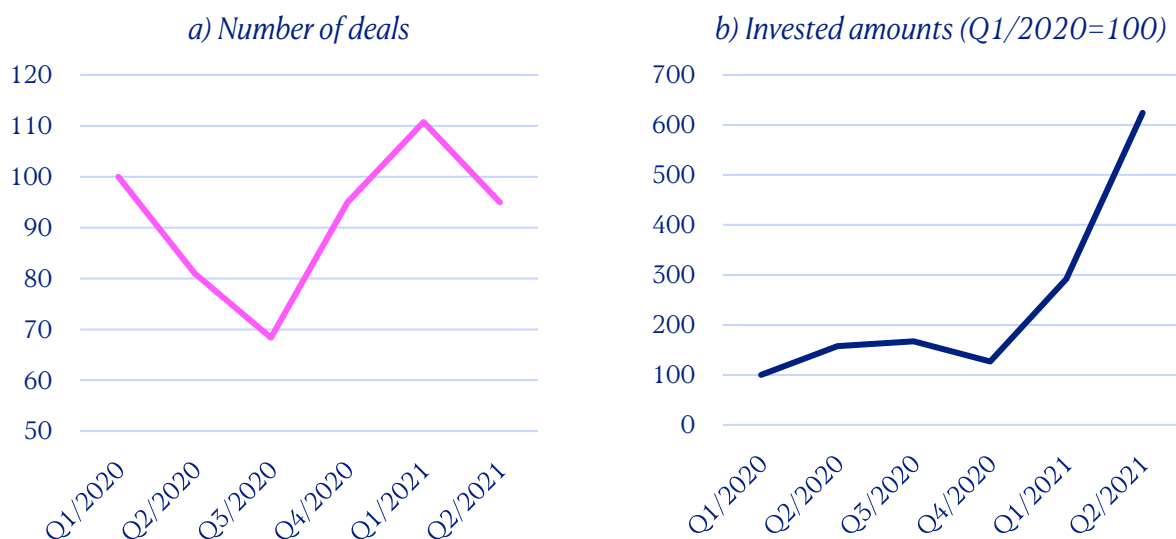
⁷⁶ For an elaborate overview of the wider market, including buy-out and M&A activity, see KPMG (2021).
⁷⁷ Average deal size is calculated based on the part of the sample with non-missing deal values and hence deviates from the ratio of total deal value over number of deals reported in Figure 70.

measures created momentum for growth in the Fintech sector, in particular for online and digital payment technologies.

Particularly during the first three quarters of 2021, a number of very large, high-profile deals resulted in a strong increase in average deal size, for example, a EUR 1.1bn funding round for the Swedish payment processor, Klarna and a EUR 750m funding round for the Berlin-based online broker Trade Republic. Other notable recent deals in the EU Fintechs growth and scale-up finance space include a EUR 665m investment in the digital payment processor Mollie (Amsterdam) and a EUR 535m funding round for the insurance comparison portal Wefox.

While the COVID-19 pandemic had an overall positive effect on Fintechs start-up and scale up financing in the EU, initially, financing activity declined slightly during Q2 and Q3 of 2020 (Figure 70) as total deal count dropped in the EU dropped by more than 30 percent. Total deal volume, however, continued to grow, although the exponential increase in investment volume followed only in 2021, after a minor dip in the final quarter of 2020.

Figure 70: Post-COVID dynamics in start-up/scale-up financing for the EU Fintechs sector



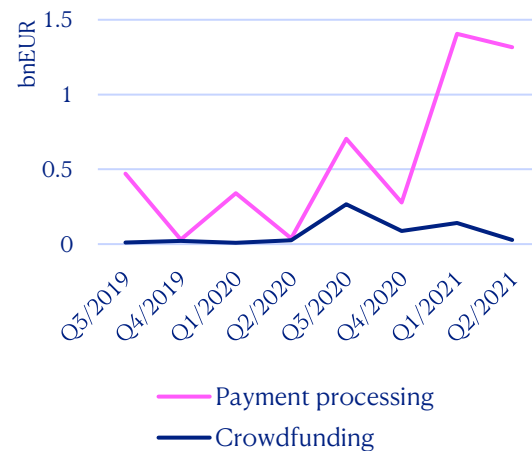
Source: Pitchbook, authors' calculations

Not all segments of the Fintech market were impacted equally by the pandemic. The lockdown and social distance measures brought about opportunities for Fintechs focussing on payment technologies, but the impact on Fintechs focussing on alternative financing was ambiguous. For example, in the immediate aftermath of the first pandemic outbreak, P2P lending platforms provided a convenient alternative for traditional bank lending channels, which typically rely on face-to-face interactions for loan evaluations.

However, as the economic fall-out of the confinement measures unfolded, the risks for P2P platform increased. Risk factors include potential deteriorations of P2P loan portfolios and liquidity issues arising from increased withdrawal rate of investors, in particular for P2P platforms allowing for secondary market trading.

Accordingly, while investments into companies focussing on digital payment technologies rose sharply during the second semester of 2020 and the first semester of 2021, investments into crowdfunding platforms stagnated (Figure 71), which parallels the ambiguous impact of the pandemic on different Fintechs business models.

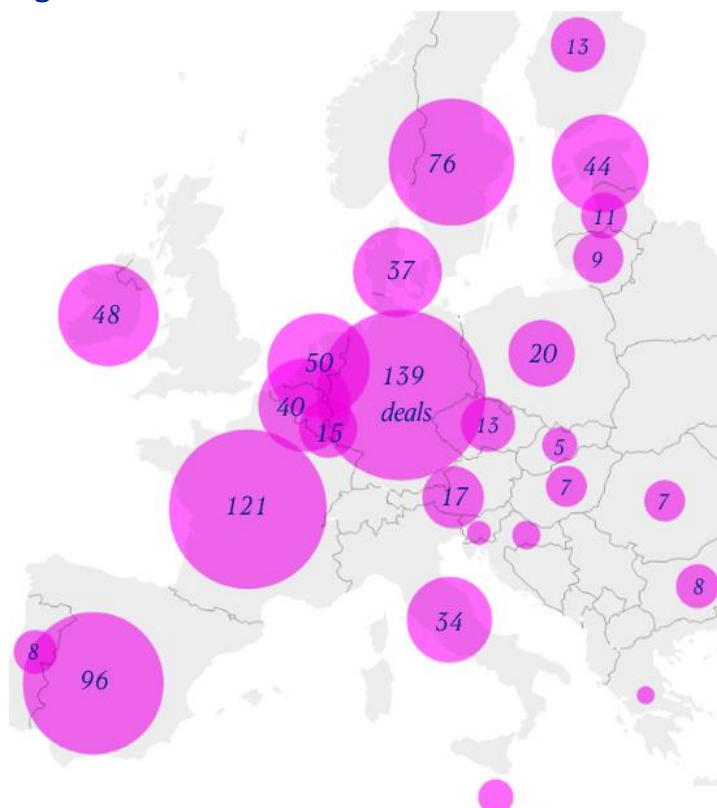
Figure 71: COVID-19 impact on investment in Fintech business models (EU-27)*



* VC + PE scale-up investment amounts

Source: Pitchbook, authors' calculations

Figure 72: Post-COVID EU-27 Fintech deals*



* Venture Capital and growth financing from Q2/2020 onwards.

Source: Pitchbook, authors' calculations

The increasing use of digital finance solution, together with the rise of cryptocurrency trading and the growing need for financial compliance solutions, also provided a fertile growth environment for the segment of Regtechs, particularly in Europe and the US, where the sector is continuing its steady trajectory towards maturing (KPMG, 2021).

Post-COVID⁷⁸ investment activity in EU Fintech companies remains concentrated around a few central hubs (Figure 72). Germany (139), France (121), Spain (96), Sweden (76) and the Netherlands (50) together accounted for nearly 60% of EU deals and 80% of total deal value. Relative to size, Luxembourg, traditionally known for its well-developed financial sector, ranks at the top of the EU country list, with 15 Fintechs deals totalling EUR 175m,

⁷⁸ From Q2/2020 onwards.

although the Nordic countries and Baltic States also punched above their weight.

Noteworthy, at least one Fintechs deal was registered in each of the 27 EU countries, further evidencing the growing importance of the sector for the EU financial system.

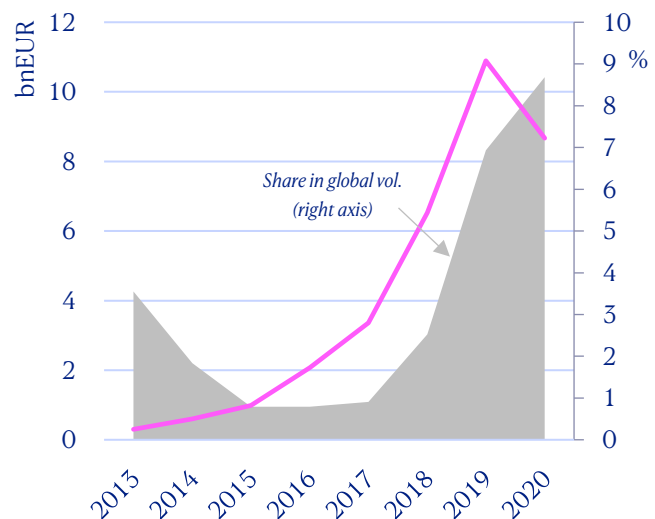
7.2 | European alternative financing market⁷⁹

Aggregate alternative financing volumes

The total amount of transactions on continental Europe's⁸⁰ alternative financing platforms, combined over all platform types, decreased by 20% in 2020, following a strong increase (+58%) one year earlier (Figure 73). While COVID-19 was a challenging year, also for alternative financing, the 2020 decline is largely due to a respondent, a large lending-based platform located in the Netherlands, dropping from the survey sample. Three out of the five largest European alternative financing markets did manage to grow in 2020, despite of the challenges posed by the pandemic (Figure 74).

Globally, transaction volumes decreased at a slightly faster rate (-36%) in 2020, resulting in a 9% market share of European platforms in total global transaction volume. The global decline in alternative finance volumes was mainly driven by a sharp drop in activity on Chinese platforms. The collapse of the Chinese alternative financing market is a direct consequence of a government crackdown on the sector, which resulted in a decline in volume from EUR 360bn in 2017, to just EUR 1.2bn in 2020 (CCAF, 2021). After excluding China from the equation, the global alternative finance market continued to register positive growth numbers.

Figure 73: European alternative financing volumes

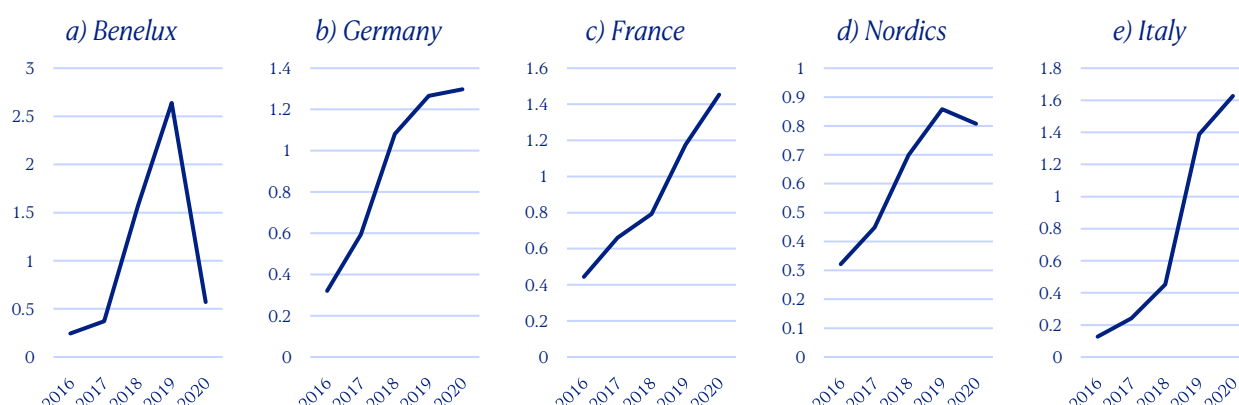


Source: CCAF (2021), authors' calculations

⁷⁹ This section relies heavily on the Global Alternative Financing Report, an annual publication detailing the global alternative financing sector. The report is published by the Cambridge Centre for Alternative Finance (CCAF, 2021) and is based on a global survey of alternative financing platforms.

⁸⁰ Continental Europe, excluding the UK. While available data for Europe includes countries that are not a member of the Union, their volumes are limited, therefore, all trends presented here are driven by evolutions on the EU-27 market.

Figure 74: Alternative financing volumes by geography (bnEUR)



Source: CCAF (2021) data, authors' calculations

European (ex-UK) business-focussed volumes

Alternative financing channels are a promising new tool for enhancing SME access to finance. Business-focused alternative financing platforms exist in a variety of forms, operating both debt- as well as equity-based business models. European business-focused platforms have grown strongly in recent years (Figure 75, panel a), including 2020, during which financed volumes expanded by 17.5%, to EUR 4.5bn.⁸¹ While these are still double-digit growth numbers, the COVID-crisis seemed to have led to a deceleration of the rate of expansion, as 2019 growth was significantly higher (73%).

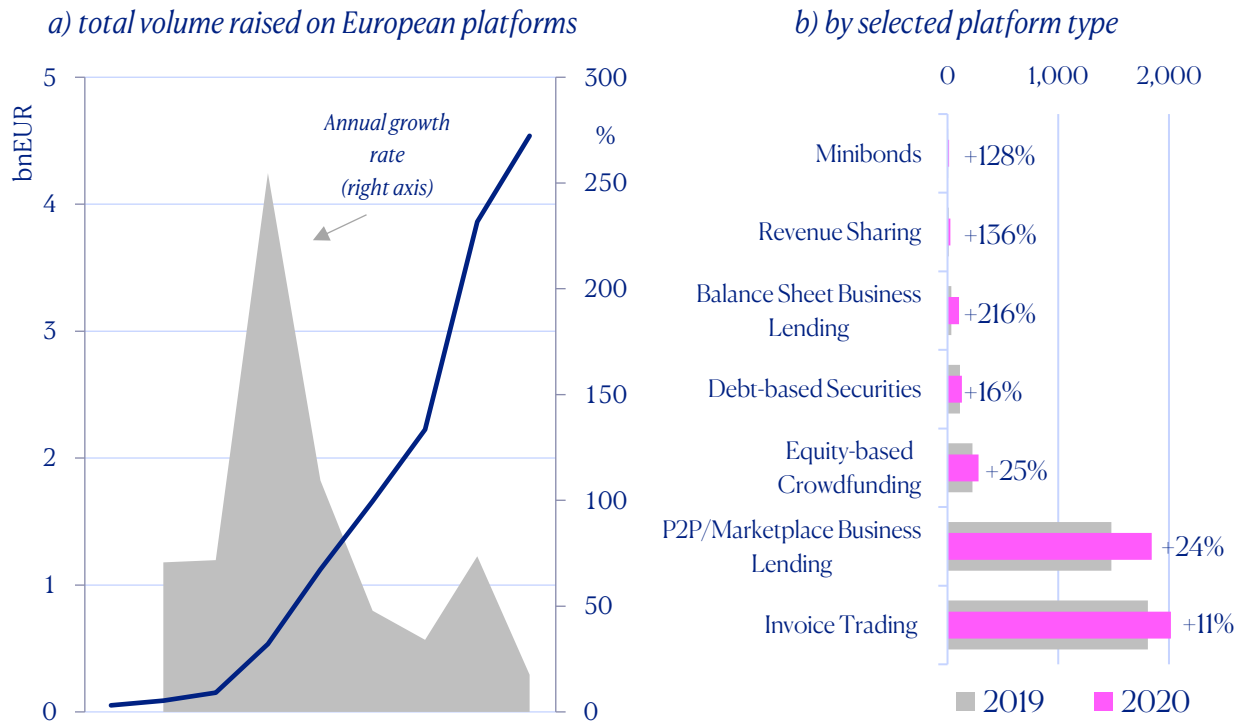
Some platform types grew faster than others (Figure 75, panel b) during 2020. Unsurprisingly, as the COVID pandemic significantly affected day-to-day operations of small businesses, invoice trading grew only modestly. However, prior to the pandemic, volumes on invoice trading platform more than doubled, thereby still making it the most used business model to date. The second most popular platform type in 2020 was P2P business lending, with a total funded volume of EUR 1.6bn, up by 24% from 2019. The fastest growth rate was registered for balance sheet business lending.⁸²

The use of equity-based crowdfunding platforms increased as well in 2020, with funded volumes rising by 25%. However, such year-on-year fluctuations are common and when considering the long-term trend, equity transactions on CF platform in continental Europe have been stagnant for a while, fluctuating around EUR 250m since 2016. Hence, debt-based platforms continue to dominate the European business-focused CF sphere.

⁸¹ To put this number into perspective, the total amount of small lending by banks to Euro area non-financial corporations in 2020 amounted to EUR 55bn and the total amount of VC and scale-up investments in European companies amounted to EUR 26.5bn.

⁸² With balance sheet lending, the platform retains the loan on its balance sheet, which contrasts with P2P lending, where the platform functions as a point of contact and the borrower-lender relationship is one between the firm and the investor directly. The risk of loss upon default of individual borrowers therefore lies with the platform.

Figure 75: European (ex-UK) business-focused alternative financing



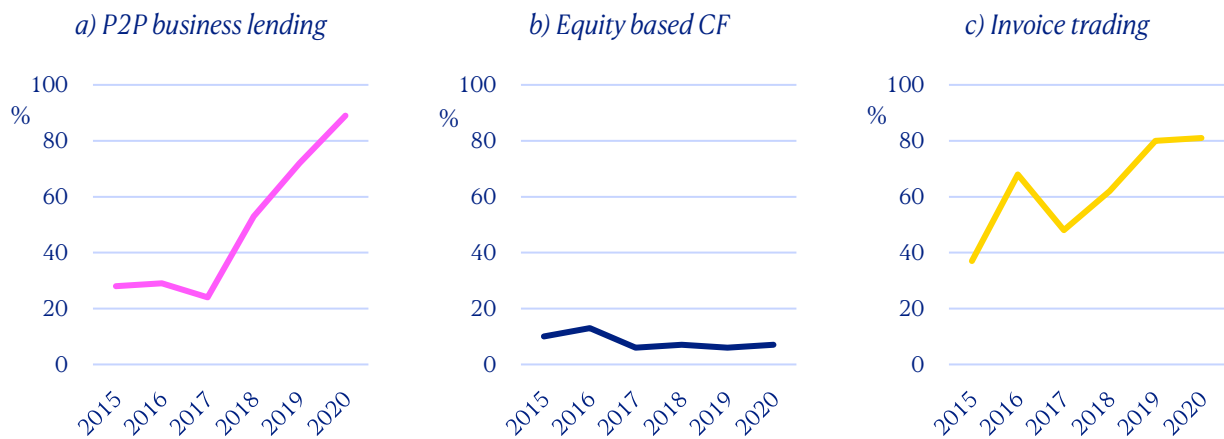
Source: CCAF (2021), authors' calculations

Institutionalisation

Recent years have seen a surge in the institutionalisation of the CF ecosystem, as evidenced by the rising share of funded volumes that are sourced from institutional investors (Figure 76). The institutionalisation of the CF sector is seen by some as a drift away from the essence of the CF concept, where large institutions crowd out retail investors. However, institutional involvement could contribute to the stability and continuity of the CF sector, ensure sufficient liquidity for retail investors.

Institutional involvement in alternative financing depends strongly on the platform under consideration and typically is much higher in debt-based financing forms. In 2020, just 6% of total financed volumes on equity-based CF platforms were derived from institutional sources. The institutionalisation of equity CF has remained roughly constant since 2017. In contrast, the rate of institutional involvement in P2P business lending and invoice trading has risen sharply in recent years. Out of every EUR 10 of 'crowd'-funded business loans, EUR 9 stems from institutional investors. Also invoice trading has drifted further away from the principle of crowd-funded financing, with 80% of funded volumes provided by institutions.

Figure 76: Institutionalisation rates for selected CF platform type (Continental Europe)



Source: CCAF (2021), authors' calculations

Institutional investors, sometimes also referred to as ‘the smart money’, can serve as a signal for quality, thereby attracting other investors and increasing a project’s chances to get fully funded (Lin et al., 2015). On the other hand, if institutional investors are better (and faster) at “picking winners”, they could crowd out retail investors from quality projects, leaving the crowd only with the remaining lemons. The evidence whether institutional investor portfolios outperform the crowd is mixed. While some studies have shown that institutional portfolios do not consistently outperform those of retail investors (Lin et al., 2015), others come to the opposite conclusion. Mohammadi and Shafi (2017) showed that institutions significantly outperformed the crowd. This performance gap grew larger for risky and small loans, implying that the general crowd seems to lack the investment expertise that institutions bring to the table.

It is clear that, in particular for the debt-based segments of business focused alternative finance, institutions have been the driving force for growth in recent years, in particular during the COVID-19 crisis. For P2P business lending and invoice trading, the two most popular business-focused platform who are responsible for nearly 90% of European business-focused alternative finance volumes, crowd-funded volumes have decline by 25% in 2020, after having stagnated between 2017 and 2019, fluctuating around EUR 750m.

Crowdfunding prospects

The European crowdfunding sector seems to have emerged from the crisis relatively well, although this was mostly due to institutional support, while the crowd took a step back, in particular from lending-based business models, which were almost entirely supported by institutional funds in 2020. Developments in the near future will shed light on whether this evolution constitutes a structural break and a trend reversal in the alternative lending landscape, or rather a temporary disturbance. If the institutionalisation trend in business-focused volumes continues, this risks redefining the concept of crowdfunding, from a digital meeting point between retail investors and European corporates, towards a digital infrastructure where institutional investors compete for clients.

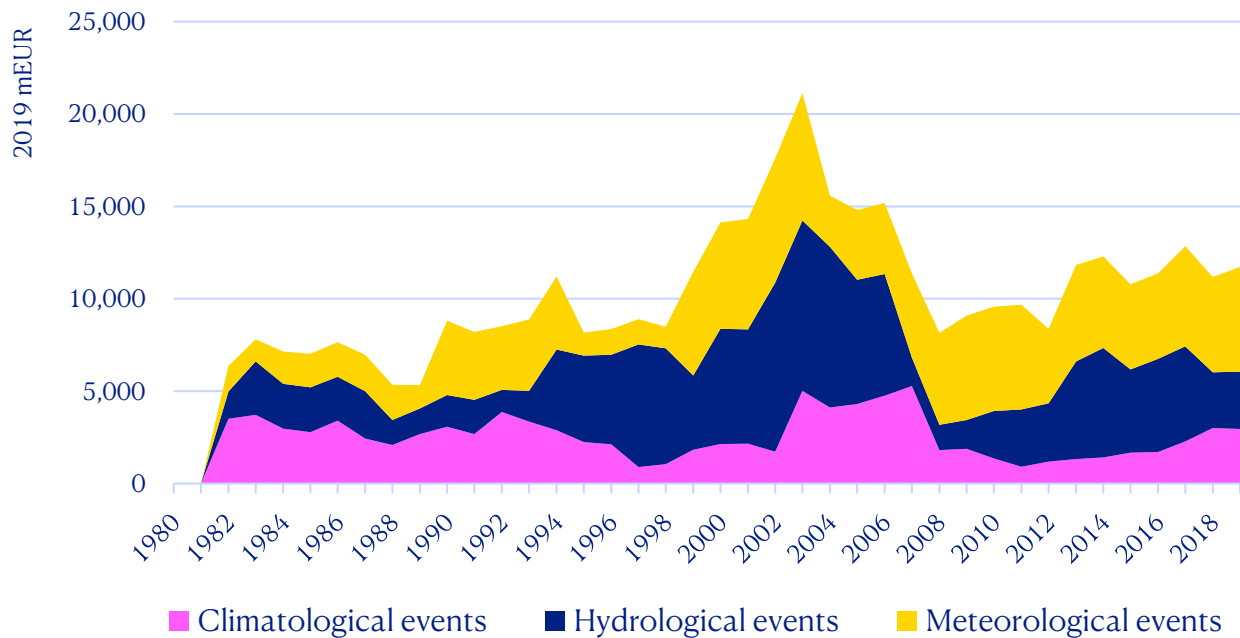
8 | Green finance & investment

8.1 | SMEs, climate change and the EU Green Deal

The impact of climate change on the European economy and SMEs

Climate change results in increasing global temperatures, rising sea levels and other extreme weather conditions. Even though the full extent of the impact of climate change will only materialise from 2050 onwards, the economic impact of changing weather patterns is already substantial. Combined over the period 1980-2019, the total economic losses caused by weather and climate-related extremes in Europe alone amounted to approximately EUR 420bn (Figure 77)⁸⁵(EEA, 2021).

Figure 77: Climate related economic losses by type of event*



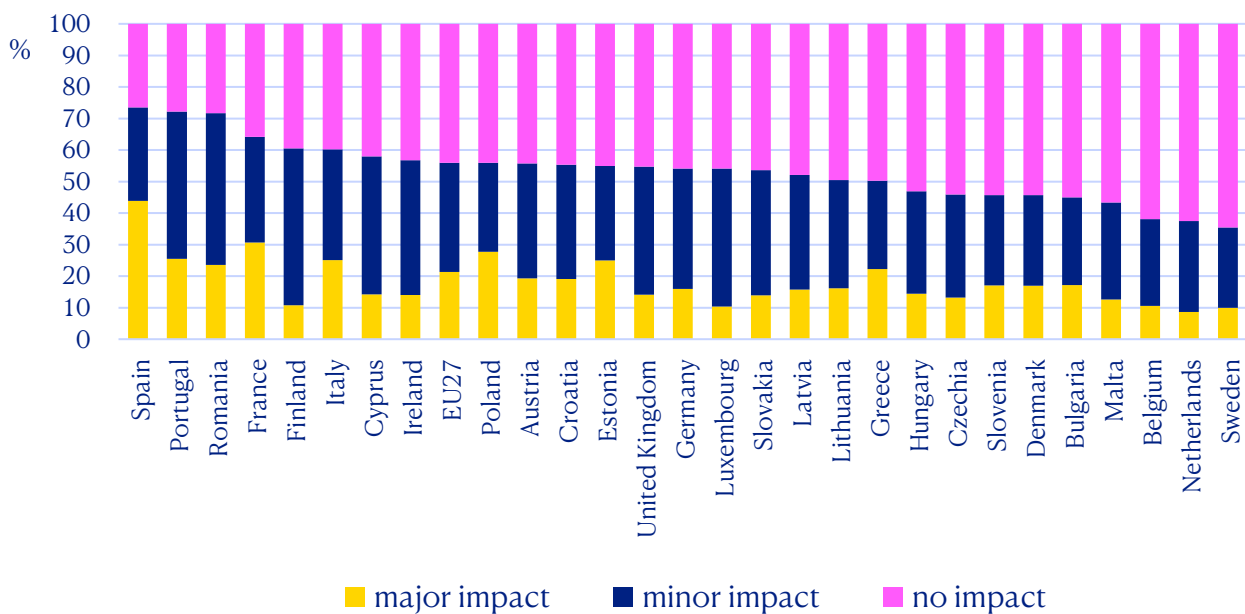
* 5 year backward moving averages

Source: Eurostat

⁸⁵ These loss numbers constitute a lower bound of the true monetary impact of climate change. The reported economic losses capture only financial value of damaged or destroyed capital. The economic losses resulting from business interruption are not typically captured, even though most of economies are somewhat impacted by climate change and the related weather patterns.

The EU corporate sector in general, and SMEs in particular, will inevitably have to bear the consequence of a changing environment as well. According to a recent survey, 56% of EU SMEs responded that climate change has already impacted their business in recent years, 40% of which reported this impact to be major (Figure 78). The impact of climate change differs significantly between EU states and impacts are typically most severe in southern countries. SME business disruptions occur most frequently in Spain, Portugal, Romania and France, presumably due to an increased number of droughts and forest fires. The vulnerable nature of some of these economies can hamper efficient policy action, further complicating the issue. Firms operating in the infrastructure sector are reportedly most vulnerable to the effects of climate change (EIB, 2021).

Figure 78: Impact of climate change on the SME business



Source: EIB (2021), authors' calculations

SMEs and the EU Green deal

By endorsing the Paris Agreement on climate change, the European Union has committed itself to follow a path of sustainable economic growth. In the EU Green Deal communication, the European Commission presented its vision on how to transform the European Union to reach climate neutrality by 2050, protect bio-diversity and promote a circular economy. The EU Green Deal will prove to be vastly consequential for all segments of the EU economy and will have significant repercussions on European SMEs investment behaviour and finance needs.

With the recently released 'Fit For 55'-package (FF55), the Commission has announced the legislative framework through which it aims to deliver on the Green Deal's environmental targets (European Commission, 2021d). As part of the first EU Climate Law, it comprises a comprehensive and interconnected set of proposals, which aims to decarbonise the EU Economy through increased use of renewable energy and faster progress in energy efficiency. The Commission plans to use a variety of policy tools to accomplish the climate targets, most

importantly through an extension of the EU Emission Trading Scheme (EU ETS) and a reform of the Effort Sharing Regulation (ESR). The wide-reaching nature of the regulation contained in the FF55 package will be of significant relevance to European SMEs.

The FF55 package proposes to put in place an emission trading scheme to cover emissions arising from energy consumption in buildings and transport, initially through a dedicated emission-trading scheme, which is scheduled to be merged with the EU ETS at a later stage. The EU ETS is the EU's emission trading scheme, covering 40% of total EU emissions from power generation and large industrial operations. Similar to the EU ETS, the new trading scheme will use a cap-and-trade principle, ensuring cost-efficiency in the allocation of emission reduction efforts. Under the new system, emission allowance will be allocated among fuel suppliers, the cap of which will decrease each year,⁸⁴ thus providing increasing incentives to decarbonise fuel products used for transport and building energy consumption. The new system will be implemented starting 2026, by monitoring fuel sales (and related emissions) from fuel suppliers on the European market.

Although SMEs are not covered directly by the EU ETS, nor by the decision to extend the trading scheme to residential and transport emissions,⁸⁵ they will be impacted indirectly through price increases of fuel and electricity. Rising energy prices will shorten the payback period for energy-related investment projects, such as investment in energy efficiency and renewable energy production, which will positively impact replacement rates of existing building and transport capital stocks, resulting in an increase in SME investment demand. Unfortunately, due to the absence of harmonised reporting frameworks, comprehensive information on SME specific emission amount is currently lacking, as are detailed records on SMEs' activities in the Green Finance sphere. However, making up more than 99% of EU enterprises, it is undisputable that SMEs are responsible for a significant share of EU emissions. By means of a brief emission accounting exercise for the EU economy, section 8.2 provides some suggestive evidence as to where SME investment demand might arise.

Although the price mechanisms that are at the heart of emission trading schemes ensure cost-efficiency in the allocation of abatement efforts, they also render them a blunt policy tool. Emission trading schemes operate according to a polluter-pays principle and therefore are blind for social equality considerations, given all energy-consuming actors will necessarily feel the impact of rising fuel prices to the same extent. This includes the most vulnerable of EU SMEs, which might not always have the means to meet with the significant upfront capital requirements associated with green investment projects that are necessary to meet with rising fuel prices and stricter environmental regulation. Acknowledging these important challenges, the FF55 package also contains proposals to redistribute part of the revenue generated through the emission-trading scheme to SMEs.

While rising energy and compliance costs are most certainly a concern, the EU Green Deal will also bring about a wave of opportunities for European SMEs. Rising demand for green products and services present unprecedented growth opportunities for the European Greentech sector. By supporting the development of a healthy ecosystem of innovation finance, European policy

⁸⁴ A decreasing cap will lead to a higher market value of the traded emission allowance and will inevitably lead to higher fuel prices.

⁸⁵ As fuel suppliers for heating and transport fuel are typically not SMEs.

makers can position the EU as a global market leader in the field of Greentech technology. Moreover, those same Greentech companies will ensure the EU can transition to climate-neutrality in a cost-efficient manner. In this context, section 8.3 | discusses some recent trends in the European Greentech financing space.

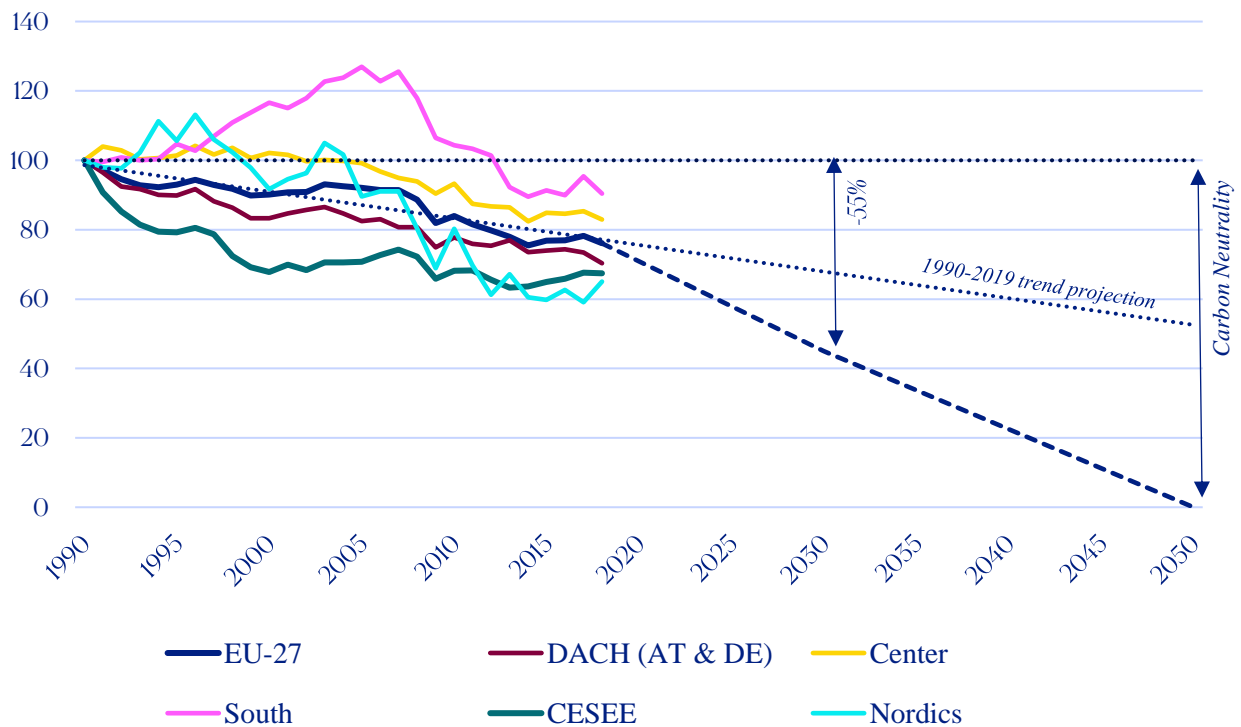
8.2 | SME mitigation efforts

Emissions in the EU-27

Climate change mitigation, the act of reducing greenhouse gas emissions to limit global warming, lies at the heart of the European Green Deal. The European Green deal aims to reduce the EU’s net emissions to zero by 2050, by decoupling economic growth from resource use (Figure 79). A discussion of emissions in the EU-27 can provide guidance as to where SMEs’ green investment demand might arise in the decades ahead.

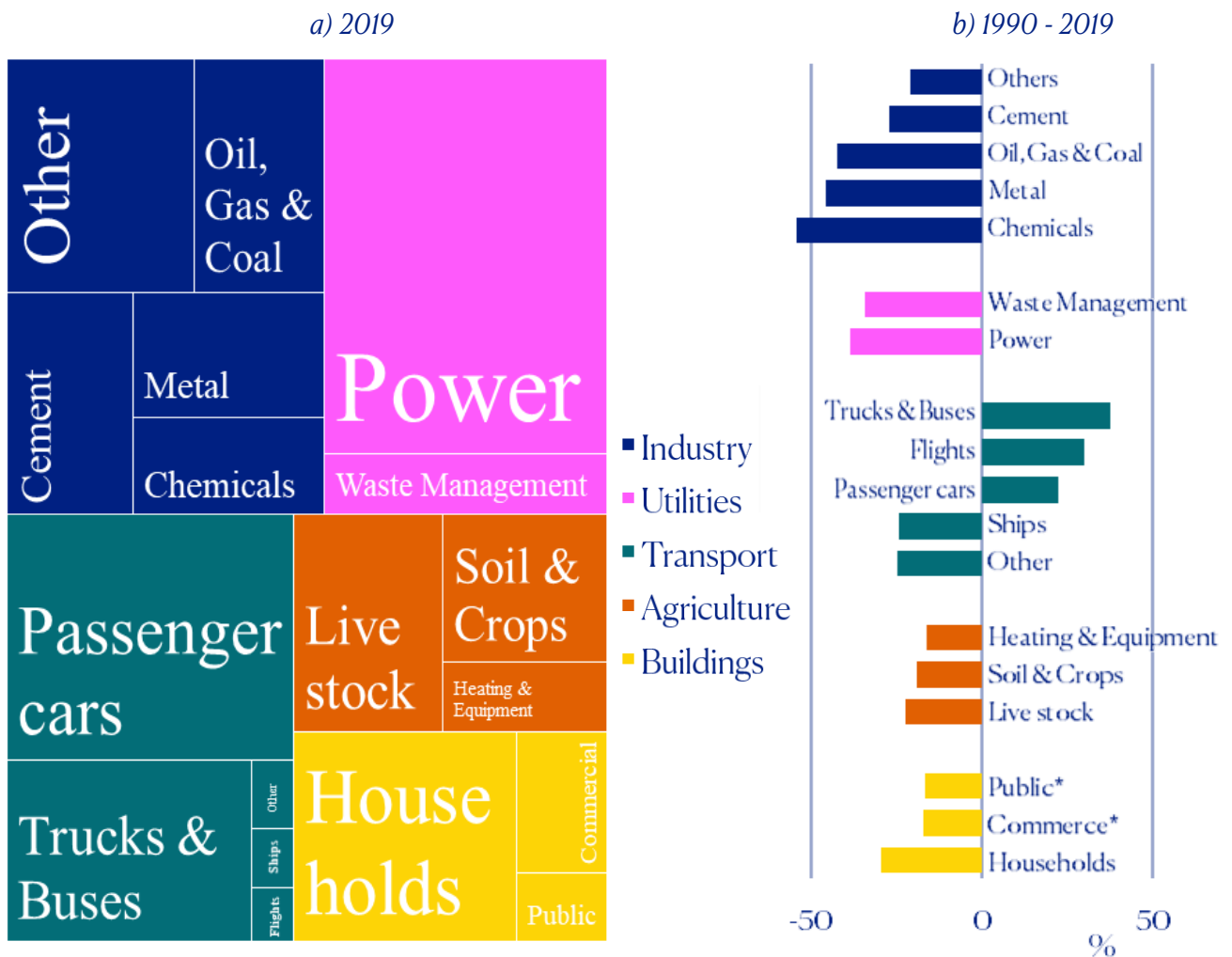
The current declining trend in EU emissions over the past three decades will fall short of achieving the 2030 (-55%) and 2050 target (net-zero) contained in the EU Green Deal. While significant progress has been made since 1990, recent years saw a stagnation of emissions across the European continent, in particular in the NORDICS and CESEE regions.

Figure 79: Emission trend and target in the EU-27 (1990 = 100)



The 2030 national emission targets differ substantially between countries, reflecting differences in national financial capacities to implement costly mitigation measures in the short- to medium-term, as well as differences in the expected steady state growth path of Member States. Compared to 2005-levels, Sweden and Luxembourg are expected to reduce emissions by 40%, while Bulgaria only has a 0% reduction target.⁸⁶ The economy of Bulgaria, and most other CESEE countries by extension, grow at a much faster pace than their Western counterparts. Requiring them to achieve comparable reduction targets would threaten their competitive position vis-à-vis other Member States and deepen the economic and social divide within Europe. In addition, low reduction targets do not imply mitigation efforts in said countries will be absent. On the contrary, keeping constant greenhouse gas emissions in a fast-growing economy will require significant abatement investments.

Figure 80: EU-27 emissions according to a source perspective



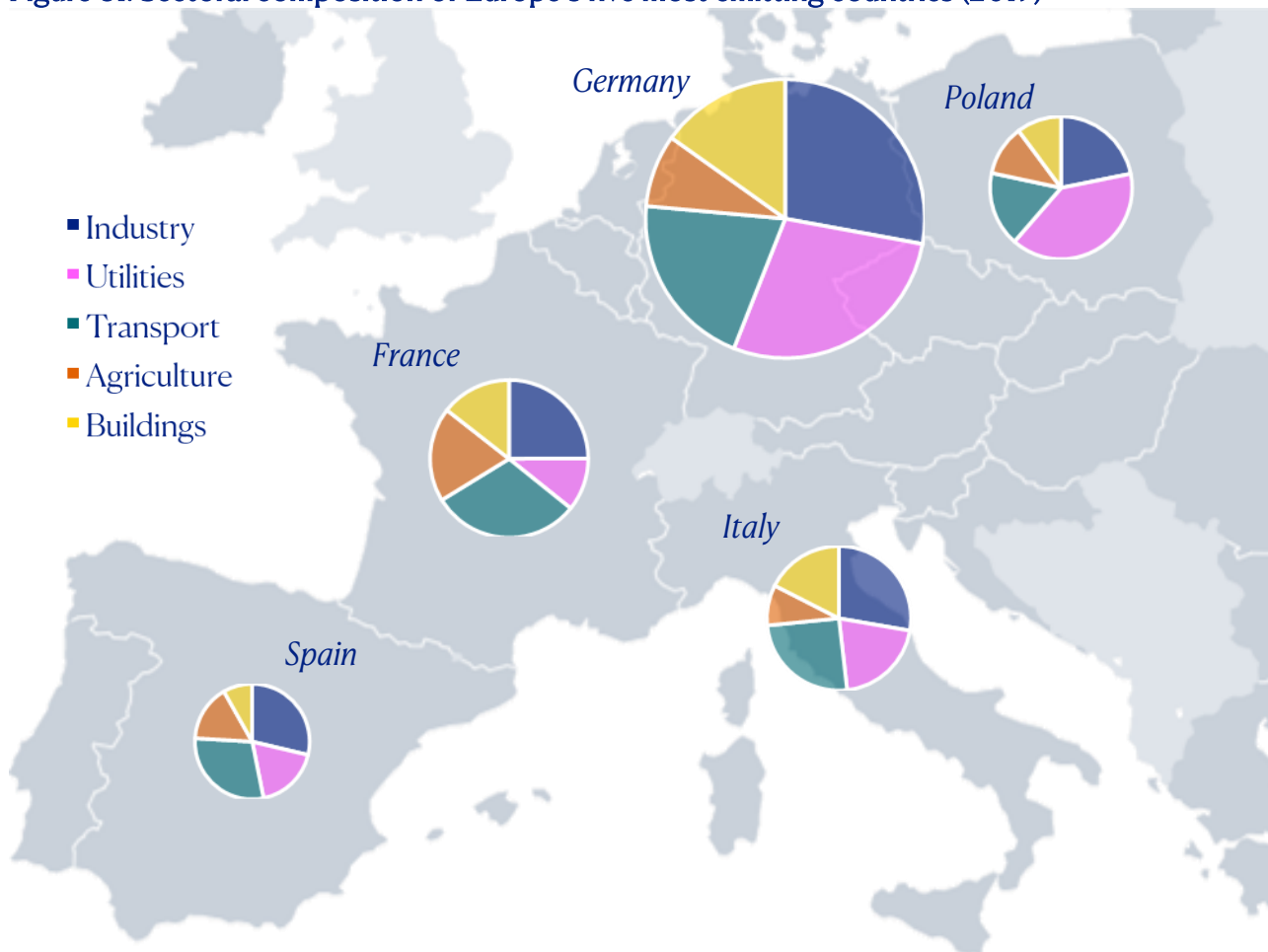
* Evolution of Public and Commerce categories since 2008
 ** Excluding memo items, such as international transport, and LULUCF

Source: EEA, Eurostat, authors' calculations

⁸⁶ See Annex 5 for an overview of country specific emission reduction targets contained in the EU Green Deal.

The production of greenhouse gas emissions is concentrated in a few key sectors of the economy. By allocating emissions to five different source sectors (industry, utilities, transport, agriculture and buildings, Figure 80), it is possible to identify the economic activities that lie at the root of emission production. This source perspective contrasts with a consumption perspective, which assigns emissions to consumption activities, which occur at the very end of a product or service's life cycle. For example, it allocates emissions stemming from the generation of electricity to the power generation sector, even though such emissions are largely determined by the demand for electricity, and therefore, the decisions of final consumers of energy, such as SMEs.

Figure 81: Sectoral composition of Europe's five most emitting countries (2019)*



* The surface of the charts represents relative national GHG emission amounts (2019) of the five largest European emitters. Together, the mapped countries are responsible for 65% of total EU emissions.

Source: EEA, Eurostat, authors' calculations

The sectoral distribution of greenhouse gas emissions differs vastly between Member States, as illustrated in Figure 81 for Europe's five largest emitters.⁸⁷ The relative contribution of utilities (driven almost entirely by differences in power generation emissions), ranges from just 11% in France, to nearly 40% in Poland. This is explained by the fact that the majority of Poland's

⁸⁷ Utilities also include waste management, which makes up only a negligible amount of utility emissions.

electricity generation is fossil fuel based, while France relies for more than 70% on nuclear energy production. Also for agriculture, significant country heterogeneity in sectoral emission profiles emerge. The share of agricultural emissions is more than twice as high in France (19.4%) than it is in Germany (8.4%) and Italy (9.1%).

While in some sectors, investment efforts will be substantially larger than in others, reaching Europe's net-zero target will require significant abatement efforts across the entire economy. How SMEs will be affected depends on the sector under consideration and is best illustrated by means of a few examples.

Power Generation

About half of EU emissions stem from the industrial and utility sectors (Figure 80), power generation being by far the largest single largest contributor (21% of total EU-27 emissions in 2019). While electricity production increased significantly since 1990, the associated emissions decreased significantly over that same period, driven by a strong decline in the emission intensity of power generation, which declined by 50% from 524 to 255g CO₂e/kWh. Since 2010, the decrease in the emission intensity is almost entirely explained by a shift from fossil fuels to renewables.

The relevance of emission reductions in the power generation sector for SME investment demand is mostly indirect, as emissions from large-scale electricity power generation are regulated through the EU ETS (see section 8.1 | for a discussion). In this context, emission reductions will likely have an impact through SMEs' rising electricity expenditures. These will increase SMEs' incentives to invest in alternative energy sources, such as small-scaled, local, electricity production, increasing finance demand to invest in photovoltaic (PV) panels, for example. In addition, SMEs will be incentivised to invest in energy efficiency improvement of their electrical appliances and machinery used in their building infrastructure or production processes.

Industry

Industrial emissions, accounting for 27% of total EU-27 emissions, have steadily decreased since 1990, in part due to the decarbonisation of heavy industry through the EU ETS. In particular, emissions from the chemical and metal production sectors declined significantly since 1990, by up to 55%. Emissions related to cement production also declined, although less pronounced, and hence gained in relative importance.

SMEs are responsible for a significant share of industrial emissions. When one considers value added shares (see Annex 1) an appropriate allocation key for emission contributions, industrial SMEs⁸⁸ would account for 35% of European industrial emissions. This is likely to be a lower bound of the true share, as large industrial installations are typically more strictly regulated than their smaller counter-parts, for example through the EU ETS, and have therefore invested more

⁸⁸ Operating in NACE section C.

in emissions abatement in the recent past.⁸⁹ Some studies estimate the share of SMEs in total industrial emissions as high as 70% (OECD, 2020a).

To reach the net-zero targets, a significant investment challenge awaits Europe's industrial SMEs. Crosscutting industrial technologies, such as more efficient motors, improved process heating processes, electronic control systems, and other measures such as air or steam leak reduction operations, have a high potential of optimising plant efficiency in a cost-efficient manner, with logical ramifications for energy savings and emissions reductions. Additional mitigation potential for industrial SMEs lies in the realisation of scale effects, by coordinating certain activities alongside other SMEs, for example, through the sharing of infrastructure, such as waste and management facilities, or heating and cooling installations (IPCC, 2014).

Transport

Transport, accounting for 23% of EU emissions in 2019, is the only sector in which emissions have not decreased over the past three decades, mostly driven by a steady rise in road transport emissions. Domestic aviation emissions rose as well, but contributed only a negligible portion to total transport emissions.⁹⁰ Decarbonising the transport sector will likely be one of the most challenging aspects of Europe's net-zero plans, in light of the continuing growth in the demand for transport services and the relative lack of progress to date (IPCC, 2014). Reducing transport emissions will require extensive investment efforts, most importantly in the electrification of Europe's car fleet, but also for the development of biofuels and the promotion of alternative mobility solutions, such as multi-modal public transport systems.

Emission reductions in mobility are a short- and medium-term policy priority for the European Commission, which will prove highly relevant for SMEs. Most obviously, the decarbonisation of the transport sector itself will require heavy investment efforts. In the EU-27 as a whole, nearly 50% of transportation companies are SMEs. In addition, the decarbonisation of European mobility will also lead to increased investment demand arising from SMEs outside of the transport sector, for example, to finance car fleet electrifications or invest in efficiency improvements in logistical operations. IT-technology will be a key element in greening SMEs' transport and mobility activities, in particular concerning logistical activities. E-platforms focusing on logistics sharing, for example, can minimise non-utilised transport capacity, increase efficiency, reduce costs, and cut emissions (Central Europe, 2014).

The electrification of the European fleet of company cars will also be an important pillar of emission reduction policies in the mobility sector. Company cars make up a significant percentage of the aggregate passenger car fleet in Europe. In Belgium, for example, 6 in 10 newly purchased cars were company vehicles, 60% of which were bought by SMEs (Fleet, 2021). It is evident that the electrification of the SME car fleet will bring about some significant challenges. Charging infrastructure involves large upfront capital expenditure and requires sufficient parking space to have it installed, two elements often unavailable to SMEs. Furthermore, policy focus on Europe's corporate car fleet is particularly important given corporate cars often end up on the

⁸⁹ The EU ETS covers large industrial installations directly and allocates annual emission allowances to an exhaustive list of Europe's largest industrial installations.

⁹⁰ International aviation emissions not included.

market for used cars, so that decarbonisation efforts in the corporate car sector/fleet are also reflected in the segment for second-hand vehicles (Transport and Environment, 2020).

Agriculture

Per 2019, agriculture accounted for 13% of EU emissions. Agricultural emissions have not declined as much as in other sectors and even increased slightly since 2010. Agriculture is typically a low value added activity, which results in a high emission intensity of agricultural production. Since agriculture is a sector of high strategic importance for the security of Europe's food supply, agricultural emission abatement is often considered a sensitive exercise and the potential for emission reduction is considered more difficult to achieve than in other sectors (McKinsey, 2020). About half of Europe's agricultural emissions stemmed from livestock-related activities, while soil management (crop fertilisation) and fossil fuel combustion for heating/cooling purposes or machinery operations accounted for the other half. In particular, emissions related to crop fertilisation have proven difficult to reduce, but also fuel-combustion related emissions did not decline significantly in recent years.

Around 80% of Europe's food products are produced by SMEs (SMEUnited, 2021b), hence, SMEs will be responsible for an important part of European abatement efforts in the agricultural sector. Particular abatement potential lies in on-farm production of renewable energy, agricultural photovoltaic systems, wind farms or heat recovery systems (EIP-Agri, 2019).⁹¹ Also on the energy-side, investments in the carbon-neutralisation of on-farm equipment could even lead to net cost-savings (McKinsey, 2020). On the demand side, investments in IT-solutions to improve supply chain processes can contribute to agricultural abatement by reducing food waste (IPCC, 2014). Difficult to abate leftover emissions in the agricultural sector can furthermore be compensated by natural carbon sequestration, the process of capturing and storing atmospheric carbon dioxide in soils (McKinsey, 2020).

Buildings

Finally, the remaining 12% of emissions arose from the energy consumption of buildings.⁹² The decline in building emissions observed since 1990 was driven by the rising popularity of small-scaled renewable energy production, such as heat pumps, and improvements in the energetic performance of building envelopes and electric appliances. In particular in the short- to medium-term, abatement efforts in the building sector will be a key element in the EU's climate policy.

The policy focus on building is partly driven by the fact that, during the past decade, technological advances in this field have greatly improved the cost-efficiency of such measures. This underlines the importance of innovation financing for Greentech start-ups, as investment in new technologies today will facilitate the climate transition in the decade ahead, by reducing transition costs across the EU economy (European Commission, 2020b). Another factor that motivates the policy focus on building emissions is the large lock-in risk, as a consequence of the long life-span of buildings. With a renewal rate of just 1-2%, the life span of buildings can be up

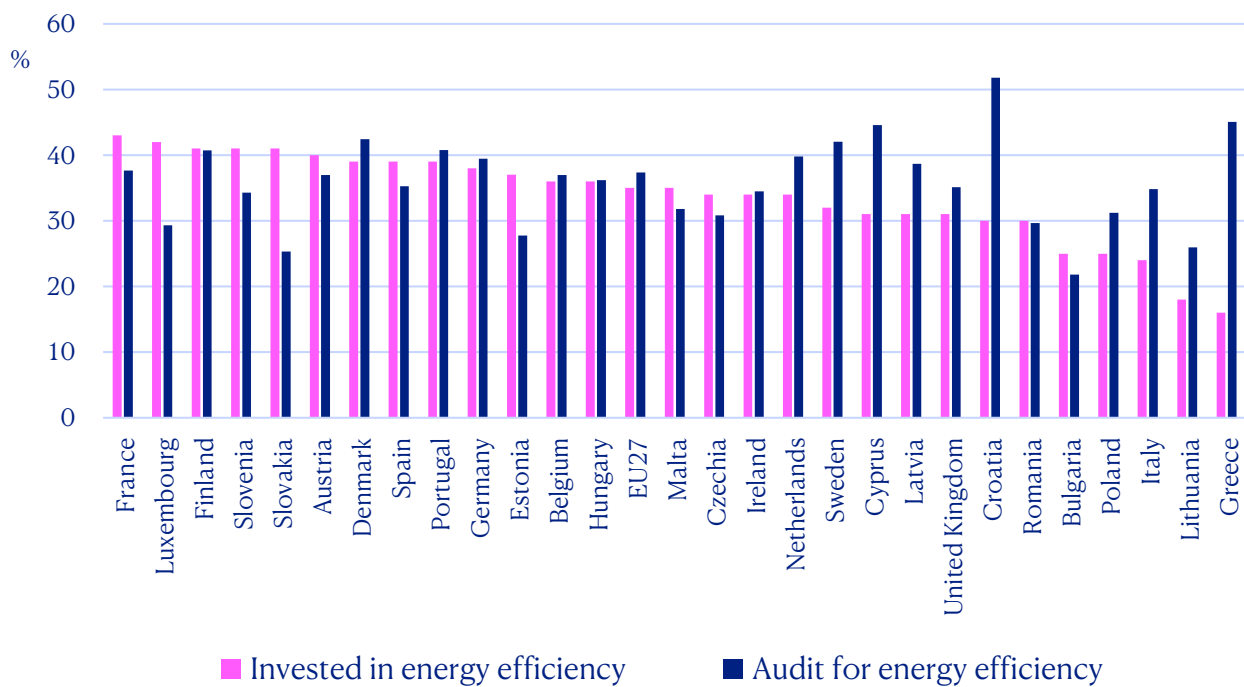
⁹¹ Agricultural photovoltaic systems also referred to as 'solar sharing', combines solar power generation using photovoltaic technology and agricultural activities, effectively enabling a dual use of the same piece of land (Cho et al., 2020).

⁹² Excluding emissions of construction, which are contained in the residual industrial category 'Other'.

to 100 years. Therefore, immediate policy action is warranted to avoid locking-in carbon intensive construction practices (IPCC, 2014).

SMEs, making up 99% of EU enterprises, occupy the vast majority of European corporate building space. Every year, only 0.3% of the EU’s non-residential buildings⁹⁵ undergo a structural⁹⁴ energetic renovation. This is far below the renovation rate required to modernise Europe’s building stock in accordance with the ambition to become climate neutral by 2050. Increasing the rate of renovation of the corporate building stock will lead to a rising demand for capital to finance renovation services. While little is known about the magnitude of corporate building investment needs, we do know that commercial buildings’ renovation operations are mostly financed using internal resources (European Commission, 2019). This can prove to be a limiting factor for SMEs, who typically do not dispose of the same liquidity options as their larger counterparts do.

Figure 82: SME investments and audits in the context of energy efficiency (2020)



Source: EIB (2021), authors’ calculations

Energy audits can assist firms in assessing how to reduce building energy consumption and guide them in making cost-efficient investment decisions, reducing energy costs together with building emissions (European Commission, 2018). While energy audits are obligatory for large firms, they are merely recommended for SMEs.⁹⁵ Unsurprisingly, only 37% of SMEs report having conducted

⁹⁵ The category of non-residential buildings includes public buildings on top of the corporate building stock.

⁹⁴ Structural energetic renovation being defined as those renovations that achieve a reduction in primary energy consumption of 60%, or above.

⁹⁵ EU countries use different approaches to encourage and support the implementation of energy audits in SMEs. For example, in Germany, Austria and Croatia, SMEs are given tax reduction incentives for conducting energy audits. In Denmark and Sweden, SMEs are supported with relevant information (European Commission, 2021).

an energy audit, compared to 75% of large enterprises (Figure 82). Hence, it is likely that a significant number of SMEs in Europe undervalue the benefits of energy efficiency investment (EIB, 2019). Per 2020, only one in three European SMEs had invested in energy efficiency measures, compared to 60% of large firms, indicating the existence of a significant untapped abatement potential, most likely driven by the presence of financing constraints.

8.3 | The EU Greentech ecosystem

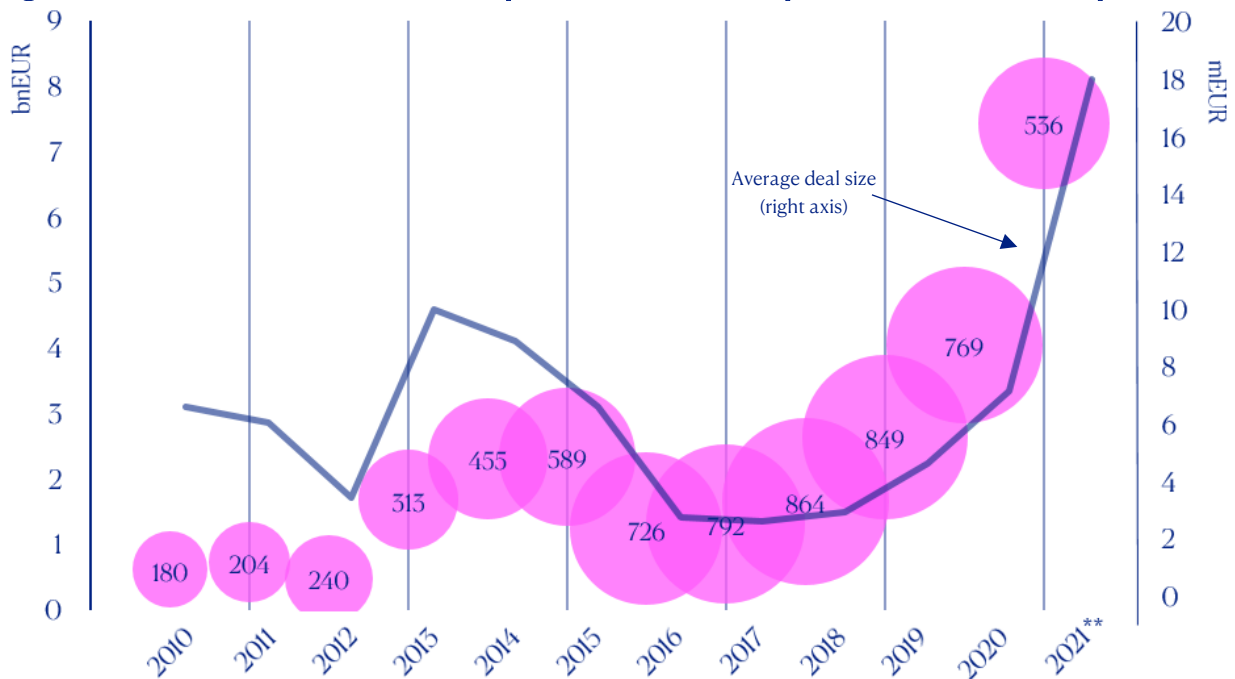
Greentech innovation is a key element of Europe's net-zero strategy. By lowering the cost of greenhouse gas abatement or pollution reduction, it can ensure the EU reaches climate neutrality in a cost-efficient manner. Moreover, innovation can help EU firms to adapt to the reality of an altered climate, for example, through the introduction of new crop management or irrigation techniques in agriculture, better weather forecasting technologies, or advances in the field of disease control.

The analysis in this section considers only VC and PE growth financing (referred to as VC + scale up hereafter) invested in companies that are headquartered on EU-27 territory. In terms of volumes, this constitutes only a fraction of the total market, which apart from the two categories considered here, furthermore includes mergers and acquisitions, PE buy-outs and IPOs. However, the VC + scale up segment is arguably of most relevance to SMEs and also better reflects trends in innovation financing.

Greentech innovation financing⁹⁶ has been on the rise in recent years (Figure 83). After a minor set-back during the period 2013-2016, VC and PE growth investments in European Greentech companies have increased sharply from 2017 onwards, reflecting the growing societal concerns about environment and sustainability and the increased focus of EU policy makers on private financing as a catalyst for the green revolution.

⁹⁶ Defined as the combined categories of Cleantech, Climate tech and Agritech companies in the PitchBook database, where Cleantech refers to "Companies with the primary purpose of developing new technologies related to clean energy production, transmission, storage, or use; water treatment and management; and/or efficiency in energy or resource management and use"; Climate tech refers to companies "developing technologies intended to help mitigate or adapt to the effects of climate change. The majority of companies in this vertical are focused on mitigating rising emissions through decarbonisation technologies and processes. Applications within this vertical include renewable energy generation, long duration energy storage, the electrification of transportation, agricultural innovations, industrial process improvements, ad mining technologies, among other"; and Agritech refers to "Companies that provide services, engage in scientific research, or develop technology which has the express purpose of enhancing the sustainability of agriculture. This includes wireless sensors to monitor soil, air and animal health; hydroponic and aquaponic systems; remote-controlled irrigation systems; aerial photo technology to analyse field conditions; biotech platforms for crop yields; data-analysis software to augment planting, herd, poultry and livestock management; automation software to manage farm task workflows; and accounting software to track and manage facility and task expenses." (PitchBook, 2021a).

Figure 83: Innovation finance for European Greentech companies (VC + PE scale-up, EU-27)*



* The bubble surface area indicates annual number of deals.

** Incomplete yearly total at the time of data extraction (18/10/2021).

Source: Pitchbook, authors' calculations

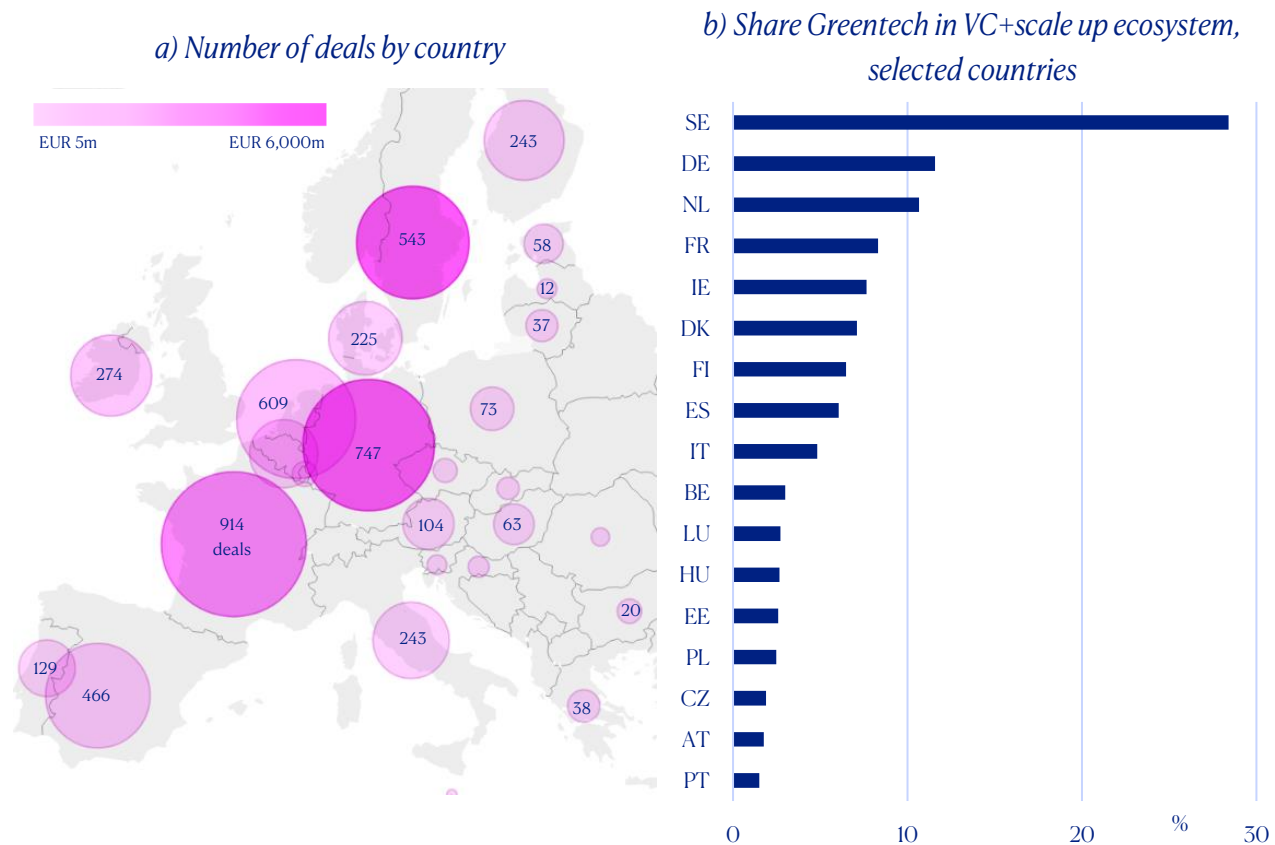
Even during the COVID-19 crisis, the European Greentech sector continued to expand steadily. Over 2020, investments in EU Greentech companies increased by 53%, outpacing the aggregate market significantly. The growth rate of Greentech finance continued to accelerate during the first three quarters of 2021 and the data available at the time of writing seems to indicate that upon continuation of the current growth trend, the EU Greentech VC + scale up market will most likely have doubled by the end of the year. These findings are in line with a number of recent studies that confirm the robustness of ESG investing during the recent crisis (Chiappini et al., 2021; Bauer et al., 2021).

To get an idea about where most Greentech innovation has taken place in recent years, Figure 84 illustrates the geographical distribution of all deals in the EU Greentech space since 2015. Combined over all geographical hubs, over the entire considered period, the total amount of VC+scale up financing invested in Greentech companies headquartered in the EU-27 amounted to more than EUR 20bn.

In recent years, Sweden has been the key hub in the EU-27 Greentech ecosystem. With a total investment volume of nearly EUR 6bn since 2015, Sweden is the largest beneficiary of Greentech financing in Europe. It punches well above its weight, even exceeding the German market, which comes in second with a total deal volume of EUR 4.3bn. Swedish Greentech companies attracted no less than 28% of total Swedish VC and scale-up financing during that period (Figure 84, right

panel)⁹⁷. For Germany, this percentage amounted to about 12%, which given the size of the German market is also quite impressive. France was the third largest Greentech market, with EUR4bn of investment spread out over 914 deals.

Figure 84: Geographical distribution of the EU-27 Greentech ecosystem (2015-Q3/2021)



Source: Pitchbook, authors' calculations

The EU Greentech innovation ecosystem is as diverse as the environmental problems it aims to address and Greentech companies are typically active across a variety of different sectors. By combining data on all Greentech investees over the past two decades, Figure 85 illustrates in which economic sectors European Greentech companies operate. In order to avoid double counting, the categorisation proceeds by using only the main industry⁹⁸ in which a Greentech company is active and therefore provides only a partial picture of the ecosystem, as many Greentech investees run business models with cross-cutting applications.

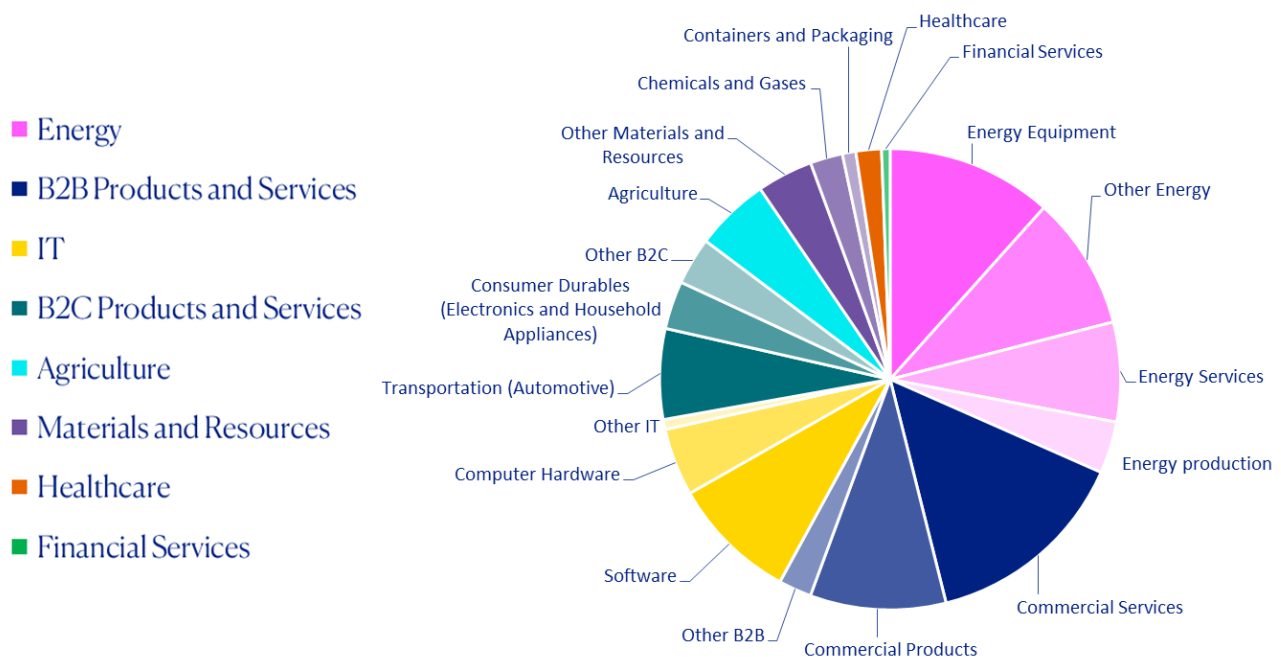
Unsurprisingly, given the urgency of the climate issue and its prominence in the public debate, the largest category of Greentech companies was energy, accounting for about 40% of investee companies. B2B product and services was the second largest category (25% of investees), driven

⁹⁷ To ensure consistency between the nominator and the denominator for the percentages presented here, the total size of the VC + Scale up market is derived from PitchBook data and therefore differs from the statistics presented in Chapter 4 |, which is based on data from Invest Europe.

⁹⁸ As defined by PitchBook, according to its own proprietary industrial classification (PitchBook, 2021b). Industrial categorization methods are typically not ideal to categorise Greentech investment, given the crosscutting nature of Greentech technologies.

by the subsector ‘environmental services’, which is a catch-all category that refers to a variety of environmental applications, like services related to renewable energy production and circular economy activities. IT accounted for the 3rd most populated category (13.7% of investees), hosting a diverse group of Greentech companies that focussed on business models with cross-cutting applications. An almost equally large share of Greentechs (12.6%) was active in the field of B2C goods and services, driven by the consumer transportation categories. About 250 EU-27 Greentech investees were registered as agricultural companies.

Figure 85: Sectoral* distribution of VC/scale up-financed Greentech companies (EU, from 2015 onwards)**



* Sectoral distribution as indicated by the primary industry in which a Greentech company is active.

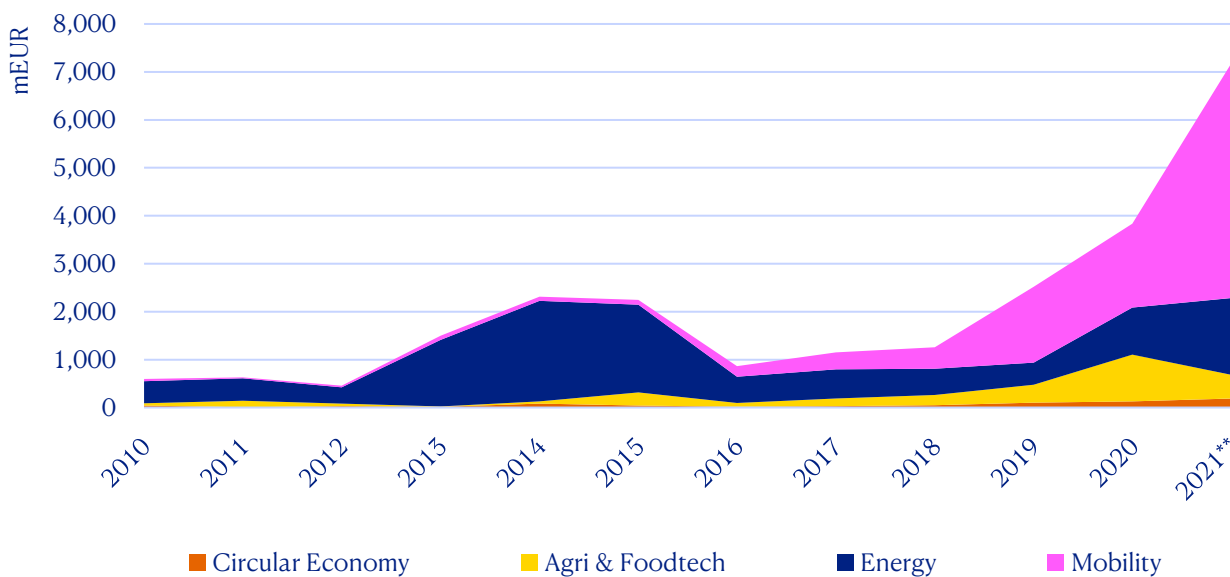
** Considered over the aggregate sample of all Greentech companies that have received at least one VC or PE scale-up investment during the period 2000-Q3/2021.

Source: Pitchbook, authors' calculations

Traditional sector classifications, in particular when applied to form exclusive sectoral categories, are prone to limitations when describing an ecosystem as diverse and crosscutting as Greentech. To get a deeper understanding of the application fields of Greentech innovations, Figure 86 goes beyond industry classifications and provides an overview of some of the most relevant emerging trends in the Greentech ecosystem by classifying EU-27 Greentech deals based on the deal descriptions.⁹⁹ It distinguishes between four different Greentech application fields: circular economy, agri- and Foodtech, energy and mobility.

⁹⁹ Categorizing proceeds based on a list of keywords that are relevant to the Greentech subsegment under consideration, using company descriptions as a means of categorizing individual investment deals. This classification method is not designed to construct categories that are mutually exclusive and resulting categories might overlap to a minor extent when companies have a dual focus,

Figure 86: recent trends in some select environmental sub-segments in the EU Greentech ecosystem*



* Totals do not perfectly coincide with the volumes represented in Figure 83, as a limited share of deals was not straightforwardly categorised under either four categories and were omitted from the analysis for reasons of brevity. Moreover, the classification method was not designed to construct mutually exclusive categories, leaving open the possibility of a minor degree of overlap (see footnote 99).

** Incomplete year data extracted at the time of writing (19/10/2021).

Source: Pitchbook, authors' calculations

Considered over the combined period 2015-Q3/2021, about half of total investments (VC+scale up) in the European Greentech sphere flowed into companies with business models that were focused on mobility and transport solutions, such as electric vehicles (EVs), EV batteries, e-scooters, IT-platforms for shared micro-mobility solutions, hydrogen power technologies with applications in transport, EV technology in the aviation industry, etc.

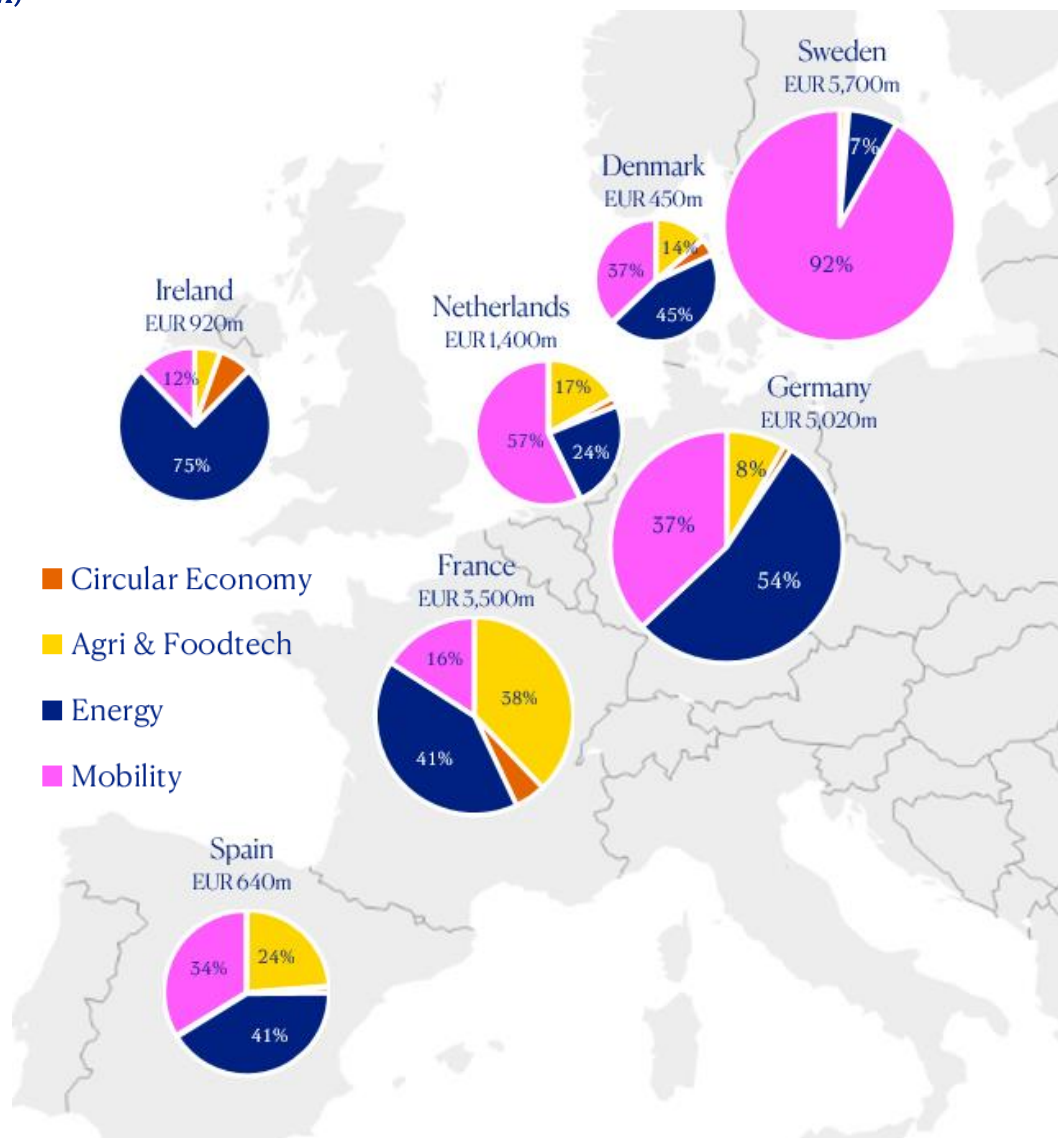
Another 35% of invested volumes went to companies active in the field of energy applications and operated business models focussing on renewable energy infrastructure (wind farms, solar power generation plants) or equipment (eg, photovoltaic panels), new generation nuclear energy, biogas production, etc. Sustainable Food- and Agritech made up 13% of the EU-27 Greentech sector (insect-based protein production, sustainable soy production, IoT technology for vertical farming systems, etc.). The smallest category, making up 3% of total investment volumes, were companies in the circular economy sector, focussing mostly on waste management and recycling technology.

The European Greentech ecosystem has grown increasingly focused on mobility solutions in recent years. Investments in mobility and transport Greentech were the driving force behind the growth in investment volume. During the first three quarters of 2021, mobility accounted for nearly 70% of investments. Given that decarbonising the transport sector will likely be one of the

for example, by designing renewable energy technology that has explicit applications in agriculture or transport. However, the overlap is very limited and concerns a limited number of deals.

most challenging aspects of Europe’s net-zero plan, this is a welcomed trend. The EU mobility sector has been lagging in the sustainability revolutions and technological developments of today will ensure a cost-efficient transition towards net-zero in the transport sector in the decade ahead.

Figure 87: Environmental focus* of the largest European local Greentech ecosystems (2015-Q3/2021)



* As measured by the distribution of total investment volume (VC + scale-up) in a country’s Greentech ecosystem across different subsegments considered.

Source: Pitchbook, authors’ calculations

There are pronounced differences in the environmental focus of local Greentech ecosystems (Figure 87). Considered over the period 2015-2021, the Swedish and Dutch markets were predominantly focused on mobility, whereas the German and Irish Greentech ecosystems were more energy-orientated. The centre point of the European Agri- and Foodtech is located in France, where this segment accounted for 38% of total investment volume, substantially more than any other country considered.

National differences in environmental focus of Greentech investments can reflect differences in national policy priorities, which in turn partially depend on economic sectoral structures and associated differences in national sectoral emission distributions. France, for example, has a large agricultural sector, compared to other EU Member States. Therefore, it is not surprising their Greentech financing ecosystem is more focused on agricultural innovations. Germany's emissions, on the other hand, are driven disproportionately by its electricity generation sector. This correlates indeed with its Greentech investment focus in the field of energy solutions. Sweden has always been a front-runner when it comes to sustainable mobility, which again correlated with the environmental focus on their Greentech ecosystem.

8.4 | Green finance and investment prospects

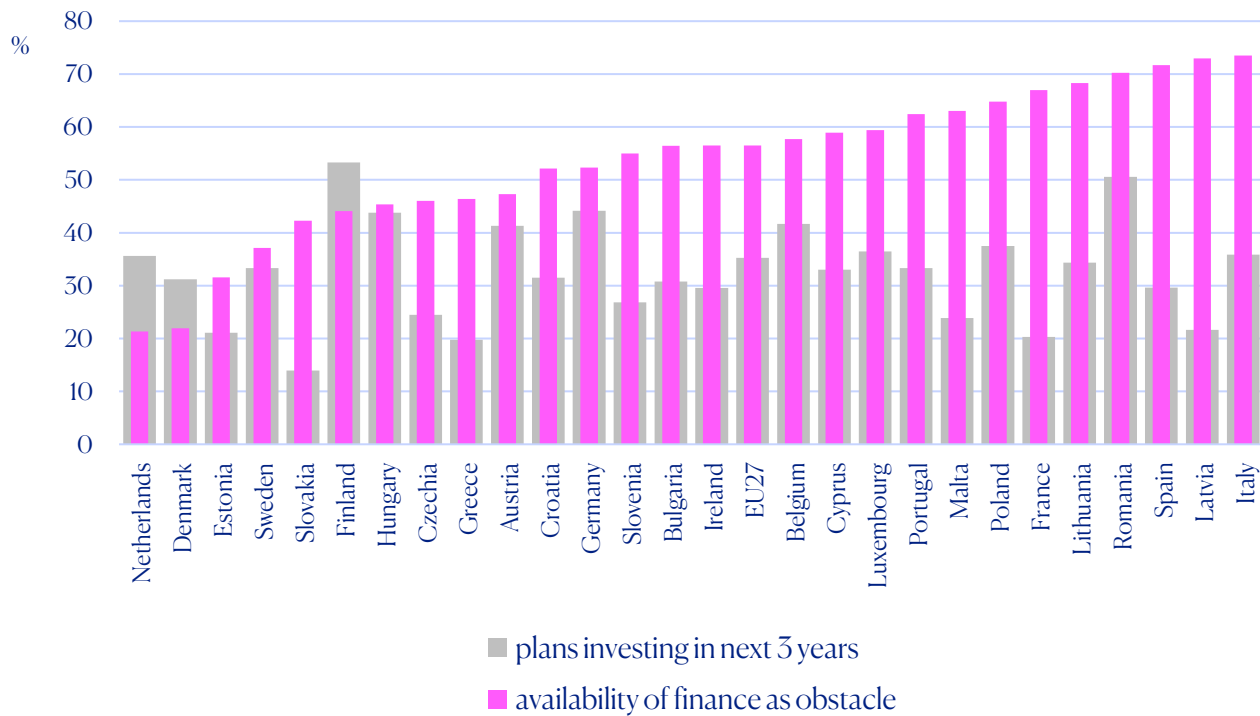
The green investment revolution brought about by the EU Green Deal will pose significant challenges to the European economy. Undeniably, European SME are at the heart of the EU Green Deal. Involving them in the transition process towards net-zero will be a key determinant of success for the European climate plan and the European goal to comply with the Paris Agreement.

SMEs, just like all other economic actors, will be required to invest significantly in the abatement of their own emissions. For the European economy as a whole, the European Commission has calculated that in order to reach an emission reduction of 55% by 2030, investment in the EU energy system will need to increase by more than EUR 350bn on average, every year until 2030. RMA's own calculations¹⁰⁰ indicate that EUR 20bn could directly relate to the implementation of mitigation measures by SMEs.

While SMEs' mitigation efforts will be essential to achieve the EU net-zero target, evidence from a recent EIB survey (EIB, 2021) indicates that only one in three European SMEs are planning to invest in mitigation or adaptation measures in the near future. That same survey also reveals more than 55% of SMEs consider access to finance an obstacle for such investments. Especially firms in Southern Europe are likely to identify access to finance as an investment obstacle. Not surprisingly, younger firms are more concerned about availability of green finance compared to their older peers.

¹⁰⁰ The allocation methodology involves allocating country-sector specific mitigation investment estimates available from the impact assessment of the EU Green Deal (European Commission, 2020b) to the segment of SMEs by using value added shares (industrial sectors) as well as employment shares and statistics on corporate office space (commercial+residential sector), by country. Elaborate calculation details are available upon request.

Figure 88: SME investment plans and access to finance for mitigation and adaptation measures



Source: EIBIS (EIB, 2021), authors' calculations

The relatively low propensity of SMEs to invest in greening their activities could also be driven by informational barriers. While SMEs might be willing to implement measures to tackle the impacts of weather events and emissions reduction, they seem uncertain about technological developments in the near future and consider it an obstacle to invest. Many firms (in particular SMEs) with rather low energy costs as a share of their revenue allocate fewer resources to improving energy efficiency, resulting in a low level of knowledge (IPCC, 2018). The data confirms this. Six in ten European SMEs report to face these informational barriers and nearly seven in ten consider them too costly (EIB, 2021). This also brings about straightforward implications for policy makers. Governments should encourage SMEs to undergo energy audits by establishing a favourable framework and informing them about energy saving opportunities (European Commission, 2021c).

Widespread availability of green debt-based financing will be crucial to ensure continuity in the SME greening process. Many of the investment posts included in the EUR 20bn SME mitigation investment figure quoted above, such as energy efficiency improvements of building envelopes or the implementation of small-scaled renewable energy production technology, are typically not the type of projects that are financed by equity instruments. Government support for Green debt product will ensure that mitigation expenses will not crowd out other productive investments. Blended financing instruments, combining debt-products with grants, can relieve some of the cost-pressure of such investments, while alleviating green financing constraints.

The role of a healthy EU Greentech ecosystem can hardly be overstated in this context. Promoting equity-finance instrument will promote the development of green innovations, which

will render the climate goals more achievable and affordable, not just for SMEs, but for the European economy as a whole. In addition, it will allow EU to position itself at the forefront of the global Greentech sector and enhance its competitive position in the global economic environment.

The crosscutting nature of the issue at hand implies policy should look beyond mere environmental policies and recognise the interaction between the SME greening process and digitalisation. Many of the leading technologies that are currently being developed and that will ensure a cost-efficient climate transition are IT-driven and will require a well-developed in-house digital infrastructure. Continued support for SME digitalisation will therefore undoubtedly have spill-over effects to Europe's sustainability ambitions.

Finally, the regulatory frameworks that are currently being developed should take into account the intrinsic limitations faced by Europe's smallest corporations. SMEs often do not have the means to invest in costly compliance mechanisms and excessive administrative burdens can prove problematic for the most vulnerable of them. Therefore, SME-friendly environmental standards will contribute positively to compliance rates, while avoiding unnecessary cost-increases, which could threaten their competitive positions vis-à-vis, other parts of the world.

9 | Conclusion and discussion

Since the previous ESBFO (September 2020), the financing outlook of European SMEs has changed, driven by the developments in the context of the global COVID-19 pandemic and subsequent policy response. While the economic fall-out of the pandemic turned out to be less severe than initially anticipated, the consequences for the European economy were nevertheless dramatic.

Liquidity support programs managed to shelter European SMEs from the worst of the crisis, but their financing situation remains precarious, as one in three European SMEs consider access to finance to be a highly important problem. Government support for corporate debt and record-low borrowing costs have led to a strong increase in the use of bank-based debt products, stoking fear for a growing corporate debt bubble. However, corporate outstanding debt as a share of GDP, in the Euro area remains below its pre-financial crisis level, leaving some leeway for policy makers to continue to support SMEs most pressing liquidity and long-term investment needs. Strong public support has proven effective in combating the negative economic impact of the COVID-19 crisis and continued support for SME financing remains warranted to ensure a sustainable economic recovery. Phasing out of from this support has to happen carefully and orderly.

The European *PE/VC ecosystem* weathered the crisis reasonably well. The EIF surveys among Business Angels, VC and PE MM investors, conducted at the outbreak of the COVID-19 pandemic, brought to light that investors' expectations for the near future of the sector have considerably worsened. However, investor fears turned out to be unjustified. Initially, PE/VC investment volumes were impacted significantly by the confinement measures, as strict lockdown regimes prevented funds to close deals. As a result, deal volumes slumped during the first weeks following the onset of the pandemic, but they quickly recovered thereafter, limiting the long-term consequences of the pandemic on the VC/PE industry. Finally, VC investments in 2020 ended on record levels, fundraising experienced only a slight dip. An important factor for the smaller than expected drop in fundraising is the increased participation of Government agencies – moreover, the entire VC ecosystem in Europe has matured and is much more resilient today, also partially driven by public support – including EIF. Overall, as shown by EIF's equity surveys, market participants are optimistic as regards the long term perspectives of the markets.

The EIF helps establish a well-functioning, liquid *equity market* that attracts a wide range of private sector investors. In doing so, the EIF aims at leveraging its market assistance and seizing market opportunities in all areas of the equity eco-system which are relevant to the sustainable development of the industry. In the coming years, the EIF will continue to act as a cornerstone investor across the spectrum of Technology Transfer through venture capital (incl. impact investing) to the Lower Mid-Market and mezzanine financing. This also includes the launch and extension of new/pilot initiatives.

The COVID-19 pandemic has led to a strong surge in the use of *guarantee* instruments, both at the national and European level, to meet with urgent short-term corporate liquidity shortages. The

total number of outstanding public guarantees among AECM members more than doubled in 2020. Public guarantee policies differed greatly across countries and jurisdictions, in terms of both the funds available and the credit support usage, reflecting the unequal economic shocks experienced.

The European *SME securitisation* market also bears the consequence of the COVID-19 crisis. With the start of this new crisis, transaction parties focused more on amending deal documentation than on deal origination (Moody's, 2020a). The impact on SMESec asset quality and deal performance remains still to be seen – the level of uncertainty continues to be very high.

In the areas of credit guarantees and securitisations, the EIF cooperates with a wide range of financial intermediaries. They include: banks, leasing companies, guarantee funds, mutual guarantee institutions, promotional banks, and other financial institutions that provide financing or financing guarantees to SMEs, such as debt funds. Given that SMEs have no direct access to the capital markets, banks are typically the most important source of external SME finance. Hence, funding limitations of banks have direct impact on SME lending capacity. For loans to SMEs, a standardised, transparent and quality-controlled securitisation market could transform these illiquid loans into an asset class with adequate market liquidity.

Microfinance is an important contribution to support inclusive growth. The EIF provides funding, guarantees and technical assistance to a broad range of financial intermediaries, from small non-bank financial institutions to well-established microfinance banks to make microfinance a fully-fledged segment of the European financial sector. Particularly, in the wake of the pandemic, support on a European level has become of central importance – via funding, guarantees and technical assistance to a broad range of financial intermediaries, from small non-bank financial institutions to banks well-established in the microfinance or social enterprise finance market. Therefore, the EIF intends to sustain its support of microcredit, social investments, and participation in the increasing number of social finance institutions that are being established in Europe.

Fintechs, that are already integral part of SME financing landscape, seem to have benefited from the conditions imposed by the lockdown measures. VC and PE growth investment volumes into European Fintech companies skyrocketed during the second half of 2020 and the first three quarters of 2021. Average deal sizes continued to increase, indicative of a maturing market. Particularly during the first three quarters of 2021, a number of very large, high-profile deals resulted in a strong increase in average deal size. Investment deals focused mostly on technologies that grew increasingly popular during the pandemic, such as digital payment processing, to name but one example. Business-focused alternative financing platforms weathered the crisis reasonably well, and volumes disbursed on European platform continued to grow during the crisis year 2020, mainly supported a continued increase in institutional involvement.

The COVID-19 pandemic is not the only crisis the world is currently facing. The *climate emergency* is growing increasingly urgent with every passing year. By endorsing the Paris Agreement on climate change, the European Union has committed itself to a path of sustainable economic growth. Private financing will play a central role in Europe's net-zero plans. Undeniably, European SME are at the heart of the EU Green Deal. Involving them in the transition process

towards net-zero will be a key determinant of success for the European climate plan and the European goal to comply with the Paris Agreement.

In the Climate Bank Roadmap 2021-2025 (EIB, 2020), the EIB group outlines its goals for climate finance that supports the European Green Deal and helps make Europe carbon-neutral by 2050. SMEs and enterprises in the EIF's portfolio have contributed to the EU's drive for resource efficiency and green transition for many years. The EIF aims to further accelerate its activities in the sphere of green finance, through its support for intermediated debt financing and equity products. Use of decentralised financial instruments in support of climate and environment-related projects can make efficient use of (scarce) public sector resources and, thus, have strong leverage potential to catalyse investment by the private sector.

The development or further enhancement of intermediated debt products that support the green transformation will be among the key business development priorities of the EIF. These will be provided in the form of guarantees, counter-guarantees or credit enhancement and support for the European microfinance sector, with the shared purpose of accelerating the transition to green energy production, low-carbon emission transport and to reduce greenhouse gas emissions and energy consumption in residential and industrial sectors, among others. In the same vein, through its activities with EU Member States and/or regional Managing Authorities, the EIF will design financial instruments promoting similar climate and environmental objectives, in line with national/regional policies (including cohesion and agricultural policies in the context of ESIF programmes (EIB, 2020).

It is clear that 2020 has proven to be an extremely challenging years for European SMEs. However, every crisis presents an opportunity. Rising demand for green products and services present unprecedented growth opportunities for the European Greentech sector. By supporting the development of a healthy ecosystem of innovation finance, European policy makers can position the EU as a global market leader of Greentech technology. Moreover, those same Greentech companies will ensure the EU can transition to climate-neutrality in a cost-efficient manner.

Enhanced use of investment in equity funds or subordinated debt/quasi-equity (as well as first-loss provisions) can leverage greater private sector capital and improve the bankability of higher-risk projects. Some of these products can address niche or region-specific market gaps and investment needs or can act as a catalyst to enable and accelerate strategic investment and can be combined with tailored advisory support (EIB, 2020).

Annexes

Annex 1: SME shares by country industry

SME employment shares by country and NACE section (% , 2020)

Country \ Nace	B	C	D	E	F	G	H	I	J	L	M	N
AT	34	33	33	59	72	63	43	89	54	94	88	61
BE	68	33	38	37	79	81	54	88	47	98	84	43
BG	13	50	48	37	85	84	55	84	57	99	90	66
CY		79	19		96	82	71	75	47		87	83
CZ	18	40	40	52	84	70	44	85	47	99	84	63
DE	38	26	39	54	83	56	47	80	37	82	73	47
DK	90	35	50	84	84	64	44	78	55	86	66	64
EE	36	73	55	62	89	81	73	87	67			78
ES	65	47	32	30	84	65	47	71	31	96	71	40
EU-27	45	35	30	46	80	64	44	78	38	83	76	49
FI	45	38	67	72	75	63	60	75	57	97	78	59
FR	60	29	12	27	68	55	24	69	30	59	75	42
GR	21	46	47	51	88	72	54	76	40		84	60
HR	58	50	23	60	84	65	50	61	49	95	94	71
HU		29	21	38	87	77	50	79	48	99	83	69
IE	40	6	27	38	86	78	49	85	22	96	67	74
IT	59	60	30	46	92	74	45	86	38	98	86	47
LT		52	40	72	83	73	54	84	63		93	65
LU		35	53	79	81	85	37	81	56		62	72
LV	89	64	33	86	87	78	52	72	52	93	99	86
MT		68		60	97	88	64	74	69		93	83
NL	42	52	23	44	78	70	49	79	53	80	74	46
PL	7	39	14	61	83	64	50	81	37	96	79	53
PT	41	64	57	52	83	77	55	85	44	99	85	53
RO	16	33	9	40	93	70	54	84	42	96	82	58
SE	18	28	28	53	70	55	51	81	43	75	68	43
SI	46	50	40	73	92	71	57	78	64		97	67
SK	28	39	17	45	92	74	45	89	42	98	82	78

B	Mining and quarrying	H	Transport
C	Manufacturing	I	Hospitality
D	Electricity & Gas	J	ICT
E	Water & Waste management	L	Real estate
F	Construction	M	High-tech services
G	Wholesale and retail	N	Admin services

Source: European Commission (2021a)

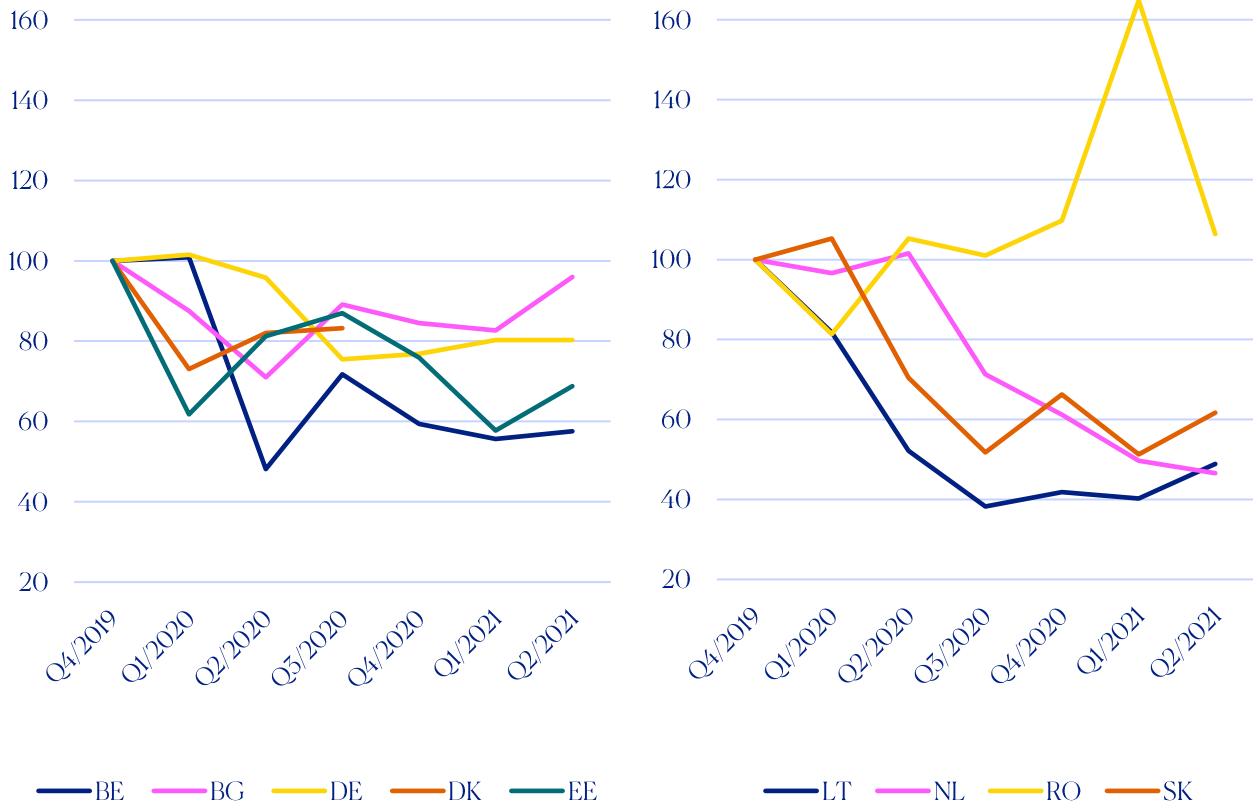
SME value added shares by country and NACE section (% , 2020)

Country \ Nace	B	C	D	E	F	G	H	I	J	L	M	N
AT	34	33	33	59	72	63	43	89	54	94	88	61
BE	68	33	38	37	79	81	54	88	47	98	84	43
BG	13	50	48	37	85	84	55	84	57	99	90	66
CY	.	79	19	.	96	82	71	75	47	.	87	83
CZ	18	40	40	52	84	70	44	85	47	99	84	63
DE	38	26	39	54	83	56	47	80	37	82	73	47
DK	90	35	50	84	84	64	44	78	55	86	66	64
EE	36	73	55	62	89	81	73	87	67	.	.	78
ES	65	47	32	30	84	65	47	71	31	96	71	40
FI	45	38	67	72	75	63	60	75	57	97	78	59
FR	60	29	12	27	68	55	24	69	30	59	75	42
GR	21	46	47	51	88	72	54	76	40	.	84	60
HR	58	50	23	60	84	65	50	61	49	95	94	71
HU	.	29	21	38	87	77	50	79	48	99	83	69
IE	40	6	27	38	86	78	49	85	22	96	67	74
IT	59	60	30	46	92	74	45	86	38	98	86	47
LT	.	52	40	72	83	73	54	84	63	.	93	65
LU	.	35	53	79	81	85	37	81	56	.	62	72
LV	89	64	33	86	87	78	52	72	52	93	99	86
MT	.	68	.	60	97	88	64	74	69	.	93	83
NL	42	52	23	44	78	70	49	79	53	80	74	46
PL	7	39	14	61	83	64	50	81	37	96	79	53
PT	41	64	57	52	83	77	55	85	44	99	85	53
RO	16	33	9	40	93	70	54	84	42	96	82	58
SE	18	28	28	53	70	55	51	81	43	75	68	43
SI	46	50	40	73	92	71	57	78	64	.	97	67
SK	28	39	17	45	92	74	45	89	42	98	82	78

B	Mining and quarrying	H	Transport
C	Manufacturing	I	Hospitality
D	Electricity & Gas	J	ICT
E	Water & Waste management	L	Real estate
F	Construction	M	High-tech services
G	Wholesale and retail	N	Admin services

Source: European Commission (2021a)

Annex 2: Insolvencies by country (Q4/2019 = 100)*



* Seasonally adjusted data. "The voluntary nature of the data collection until the end of 2020 and the limited length of the current time series does not allow for the application of seasonal adjustment in full scale and some further adjustment can be expected when longer time series become available. Any conclusions about the evolution of registrations of businesses and bankruptcy declarations in the EU Member States and euro area need to be made with caution (Eurostat, 2021)."

Source: Eurostat, authors' calculations

Annex 3: Financing Scale-ups: selected issues

There is broad consensus among scholars, policy makers, and market participants that the European PE/VC ecosystem lacks the risk capital to scale-up promising companies, the so-called “scale-up gap”. This annex summarises key elements of the discussion from selected sources.

A scale-up gap in Europe has often been discussed in academic research and consultancy studies. Limited financing opportunities are prevalent in Europe not only at the seed and start-up stage of a company’s lifecycle but also during later-stage financing for scale-ups (Aernoudt, 2017; Kraemer-Eis & Lang, 2017). The difference between Europe and the US in terms of creation of firms is not major. However, there is a significant scale-up gap, whereby start-ups do not manage to bridge the transition to later-stage growth (Aernoudt, 2017). Only 0.5% of European start-ups are estimated to really scale (Reypens et al., 2020).

Duruflé et al. (2017) find that in the US about two-thirds of all VC goes to scale-ups, compared with less than half in Europe. They also find that, when looking at average investment sizes across rounds, while there is little difference between the EU and the US at the start-up stage, at the scale-up stage US companies receive larger funding rounds. Similarly, Kraemer-Eis & Lang (2017) find that while the gap between the EU and the US is visible in all development stages, it is particularly significant at the later stage. They also find that US companies are funded by significantly larger VC funds at the scale-up stage and the average VC-backed US company received five times higher amounts than its EU counterpart. As a result, Europe is unable to reap the benefits of its most promising young companies during the crucial expansion stage and loses entrepreneurship, technological know-how and jobs. Aernoudt (2017) estimates that closing the scale-up gap between the EU and the US could create in Europe up to one million jobs and EUR 2tr of additional GDP over 20 years.

Reypens et al. (2020) also show that Europe struggles to scale its start-ups. Of the 2.4m businesses created in Europe in 2011, by 2016 only 42% had survived and these surviving businesses grew only slightly, increasing average employee numbers from 1.67 in 2011 to 2.94 in 2016. Similarly, Duruflé et al. (2017) suggest that while Europe has experienced a “start-up” revolution over the last two decades, with comparable numbers of tech start-up companies as the US, the main challenge for Europe has become the scaling up of companies. A number of differences between Europe and the US, which may help explain the scale-up gap in Europe, are identified: the US has more later-stage equity investors that have access to deeper pools of money; the US has developed a market for venture debt, which remains in its infancy elsewhere; and the stock market environment remains stronger in the US.

A large-scale study was conducted by Vlerick Business School on behalf of Scale-Ups.EU and used information about more than 80,000 scale-ups in eight European countries (Scale-Ups.EU, 2020). The findings show that scale-ups with external investors on board are more professionally managed and have made greater progress in terms of internationalisation, innovation and talent management. This highlights the positive role of external financing for scale-ups compared to relying only on internal resources. At the same time, raising external financing is also identified as one of the biggest challenges for scale-ups. The study finds that for

almost one-third of scale-ups, finding sufficient financing is the main challenge while it is primarily scale-ups that have already raised external equity financing that identify financing as their main challenge. The latter points to the existence of a scale-up gap in Europe: scale-ups manage to find smaller, early-stage amounts, but struggle to obtain financing in larger follow-on rounds.

Related to the scale-up issue is the topic of “relocation”, which is an under-researched area. Braun et al., 2019 investigated whether foreign VCs’ investments pull economic activity away from domestic economies.¹⁰¹ Using a large sample of European VC backed companies during 2000-13, they find that entrepreneurs supported by foreign investors are 20% more likely to also experience a foreign exit/IPO. For US VCs: entrepreneurs supported by US investors were 10% more likely to experience an exit/IPO in the US. Braun et al. (2019) also find that foreign investors backed, on average, better quality European ventures.

Against this background it is interesting that - according to Atomico (2020) - the share of European VC deals per year with at least one investor from US or Asia continues to increase – despite travel restrictions, even in 2020 the level of foreign tech investor participation in Europe increased to record high levels. EIF data shows that during the period 2003 to 2015, on average, 44% of the companies backed by EIF investee VC funds which were sold were acquired by non-European buyers, in particular from the US (Prencipe, 2017).

Bradley et al. (2019) believe that, how much relocation actually happens, is a function of the strength of the domestic ecosystem. In a stronger domestic ecosystem, local entrepreneurs have fewer reasons to leave and, in fact, more reasons to return. Onetti (2017) estimates that 13% of European scale-ups are “dual”¹⁰², 83% of which relocated their headquarters to the US (more than half to Silicon Valley) and 14% to another European country with London being the most frequent destination.

The World Economic Forum (2020) puts the spotlight of the relationship between scale-up issues and the green transition. Deep tech start ups are typically characterized by a very long R&D phase – and linked to this also long-term funding needs. They need more time and more capital. Deep-tech start-ups typically need to make large capex investments before scaling their revenue as they invest in physical production lines before moving from the “lab” to economies of scale. On the other hand, deep tech companies are critical to achieving the green transition. Examples: virtual and augmented reality can reduce business and leisure travel, blockchain can help track carbon emissions, and robotics is a requirement for vertical indoor farms that help adapt to climate change. Therefore, structural issues in financing scale ups in general, and deep-tech scale ups specifically, have also a negative impact on achieving the green transition.

An Independent expert report for the European Commission (EC, 2021f) also points to the large gaps between US and Europe in VC financing, as well as to smaller fund sizes in Europe. The study finds that part of the issue with supporting growth companies can be found in the absence

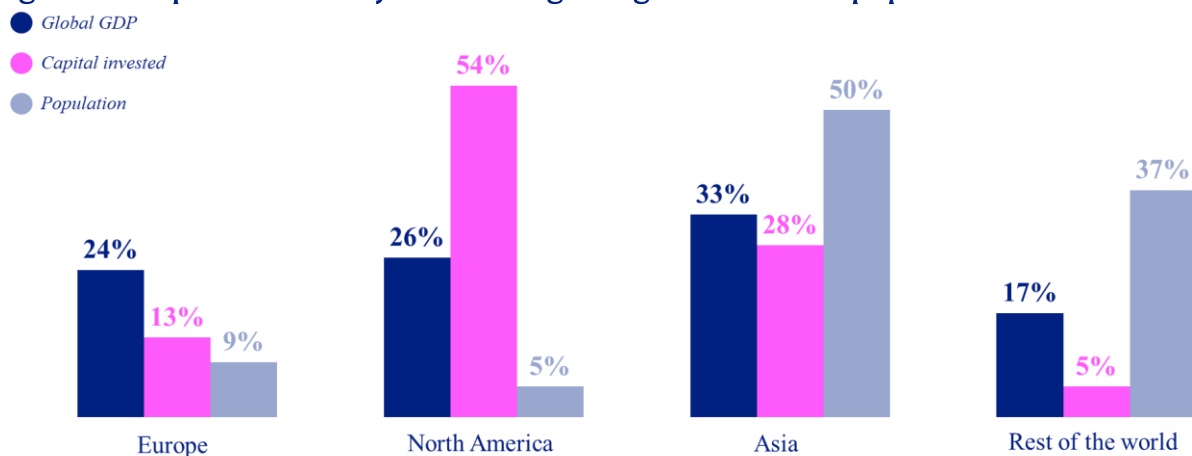
¹⁰¹ In Braun et al. (2019) “foreign” investors are investors from a different country than the portfolio company’s country of operations, i.e. not necessarily outside of EU-27.

¹⁰² Scale-ups initially founded in Europe and that subsequently moved their headquarters abroad while maintaining a strong operational presence in their place of origin.

of crossover funds. Moreover, equity markets in Europe are somewhat constrained from availability of later-stage equity funding to growth companies in the pre-IPO phase. As a result, many European companies look towards the US or China for funding of a sufficient ticket size. Main cause: “small average fund size of European late-stage VC and growth PE funds [...]. Larger funds have not emerged at a sufficient level, not least due to the issue of engaging large institutional investors in later-stage financing. Therefore, public involvement is needed, and the support needs to be substantial [...]. The support should preferably come through EU intervention, due to the international character of later-stage funding; companies can cross borders to seek later-stage financing and [...] [To avoid that scale-ups] look towards the US or China for funding, it is important that Europe as a whole can deliver.”

Atomico (2020) finds that European funds recently started writing bigger checks at larger valuations. However, although Europe accounts for around one quarter of global GDP, its share of global tech VC investment is only 13%, despite the growth observed in recent years (Figure 89). In terms of capital invested, Europe’s market share drops gradually across round size brackets (Figure 90).

Figure 89: Capital invested by relative weight of global GDP and population

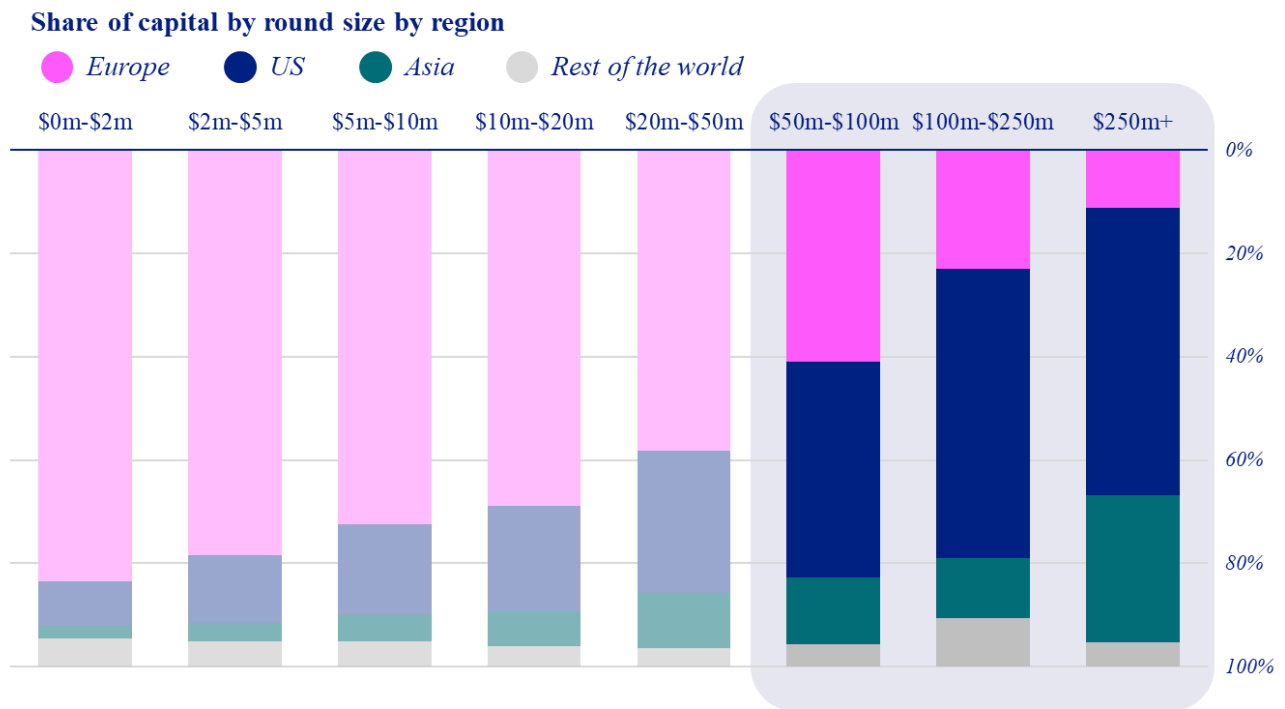


Source: Atomico (2020), based on data from Dealroom

Recent EIF survey results (Botsari et al., 2021)¹⁰³ suggest that there remains significant scope for improving scale-up financing opportunities in Europe, a finding largely consistent with the existing academic literature. Among the survey respondents overall, there exists broad agreement for a number of actions which can be implemented in order to address this gap, including improving the possibility for European scale-ups to execute an IPO and providing public support for funds focusing on the scale-up stage and for funds investing around IPOs. Moreover, the continued growth of PE, the demonstrated outperformance of IPOs as an exit route and the differences between public and PE markets, all highlight the important role which larger crossover funds could play in addressing the European scale-up gap.

¹⁰³ The EIF Business Angel, VC and PE MM Surveys represent the largest regular survey exercises among BAs and GPs in Europe and provide as such a good picture of the European markets.

Figure 90: Share of capital invested in Europe by round size and geographic source region, 2016 - 2020



Source: Atomico (2020), based on data from Dealroom

A significant percentage of EIF survey respondents, especially among VC and BA respondents, agreed that public support for funds specialising in investments pre/at/post IPO of SMEs in Europe would facilitate the possibilities for companies to scale-up. Among PE MM respondents, the highest level of agreement with this statement exists in the DACH region (68%). Such public support could address the scale-up gap and limit the risk of foreign acquisitions (Botsari et al., 2021).

The recent EIF study provides evidence that more financing opportunities for companies in Europe aiming to scale-up their growth is needed. Europe has developed a successful ecosystem for young and innovative start-ups. However, what is missing is an environment, and in particular the financing opportunities, that helps innovative enterprises to grow further beyond the start-up stage and enables successful high-growth companies to stay in Europe. This would also allow the European economy and society to reap the benefits of providing successful public framework conditions and financing opportunities for its young and innovative generation of entrepreneurs. The study shows that forceful policy actions to improve the possibilities for successful IPOs can indeed be an important way to enhance the scale-up financing in Europe.

More generally, the readiness of large private institutional investors to invest in European VC has been perceived to be poor by EIF VC Survey respondents and the involvement of pension funds as investors appeared to be the most important element that is currently underdeveloped. Respondents appreciate governmental programs that encourage private LPs to invest (Kraemer-Eis et al., 2018).

EIF surveys performed in the context of the COVID-19 crisis (Kraemer-Eis et al., 2021) revealed that the exit environment has become an even more important challenge for PE and VC fund managers since the beginning of last year. The surveys also support the notion that there exists an unprecedented opportunity to benefit from some of the strong tailwinds created by the crisis, for example in digital transformation across sectors. However, these opportunities might not always be supported by the sufficient availability of financing sources. The EIF survey results suggest that this is particularly relevant in the very initial stages (e.g., as business angels showed a comparatively negative perception of the market situation and policy measures and VCs might look more frequently for revenue-generating start-ups), but also in the growth stage segment and financing of “scale-ups”. This creates a need for policy measures that appropriately ensure that companies which are implementing new opportunities will have sufficient access to finance.

Annex 4: Sectoral classification

Industry

Sub-Sector	CRF ¹⁰⁴ codes	CRF category name	% ¹⁰⁵
Cement	CRF2A	Mineral industry	2.9%
	CRF1A2F	Fuel combustion in manufacture of non-metallic mineral products	2.37%
Metal	CRF2C	Metal industry	2.12%
	CRF1A2A	Fuel combustion in manufacture of iron and steel	2.15%
	CRF1A2B	Fuel combustion in manufacture of non-ferrous metals	0.25%
Chemicals	CRF2B	Chemical industry	1.59%
	CRF1A2C	Fuel combustion in manufacture of chemicals	1.86%
Oil, Gas & Coal	CRF1B	Fuels - fugitive emissions	1.84%
	CRF1A1B	Fuel combustion in petroleum refining	2.81%
	CRF1A1C	Fuel combustion in manufacture of solid fuels and other energy industries	1.07%
Other	CRF2D	Non-energy products from fuels and solvent use	0.24%
	CRF2E	Electronics industry	0.02%
	CRF2F	Product uses as substitutes for ozone depleting substances	2.25%
	CRF2G	Other product manufacture and use	0.28%
	CRF2H	Other industrial process and product use	0.01%
	CRF1A2E	Fuel combustion in manufacture of food, beverages and tobacco	1.01%
	CRF1A2D	Fuel combustion in manufacture of pulp, paper and printing	0.69%
CRF1A2G	Fuel combustion in other manufacturing industries and construction	3.74%	

Utilities

Sub-Sector	CRF codes	CRF category name	%
Power	CRF1A1A	Fuel combustion in public electricity and heat production	21.05%
Waste Management	CRF5	Waste management	3.2%

Transport

Sub-Sector	CRF codes	CRF category name	%
Passenger Cars	CRF1A3B1	Fuel combustion in cars	13.31%
Trucks & Buses	CRF1A3B2	Fuel combustion in light duty trucks	2.43%
	CRF1A3B3	Fuel combustion in heavy duty trucks and buses	5.95%
Flights	CRF1A3A	Fuel combustion in domestic aviation*	0.43%
Ships	CRF1A3D	Fuel combustion in domestic navigation	0.47%
Other	CRF1A3B4	Fuel combustion in motorcycles	0.28%
	CRF1A3B5	Fuel combustion in other road transportation	0.00%
	CRF1A3C	Fuel combustion in railways	0.11%
	CRF1A3E	Fuel combustion in other transport	0.15%

*Emissions resulting from international aviation and navigation are recorded as a memo-item under source code CRF1D1. Since the analysis focusses on domestic economic activity within the EU, the transport category only accounts for emissions deriving from domestic transports, and hence excluded international aviation and navigation.

¹⁰⁴ CRF: Common Reporting Framework of the UNFCCC for emission inventory reporting.

¹⁰⁵ The shares represented refer to the ratio of the respective CRF category emissions in total EU-27 emissions, 2019, *excluding* LULUCF and memo items (CRF code TOTX4_MEMO).

Agriculture

Sub-Sector	CRF codes	CRF category name	%
Live stock	CRF3I	Livestock	6.09%
Soil & Crops	CRF3C	Rice cultivation	0.07%
	CRF3D	Managed agricultural soils	0.07%
	CRF3F	Field burning of agricultural residues	4.21%
	CRF3G	Liming	3.46%
	CRF3H	Urea application	0.75%
	CRF3I	Other carbon-containing fertilizers	0.02%
	CRF3J	Other agriculture	0.01%
Heating & Equipment	CRF1A4C	Fuel combustion in agriculture, forestry and fishing	2.13%

Buildings

Sub-Sector	CRF codes	CRF category name	%
Commercial	CRF1A4A	Fuel combustion in commercial and institutional sector*	3.59%
Public	CRF1A4A	Fuel combustion in commercial and institutional sector*	
Households	CRF1A4B	Fuel combustion by households	8.79%

*Emissions deriving from fuel combustion in the commercial and institutional sector are allocated to the sub-sector Commercial and Public using allocation keys derived from the air emission accounts (AEA), where total emissions in the commercial and institutional sectors are calculated as the sum of NACE section codes G, J, K, L, M, N, S, T (service sectors); O, P, Q, R and U (institutional sector). Fuel combustion by household includes all emissions resulting from small scaled, local combustion processes used for cooling and heating, as well as cooking. The buildings category excludes emissions resulting from the heating and cooling of buildings used to house industrial and agricultural facilities, as these are included under their respective classifications (CRF1A4C, CRF1A2E, CRF1A2D, CRF1A2G).

Annex 5: Country-specific 2030 emission targets (compared to 2005 levels) under the Effort Sharing Regulation

	<i>Prior target</i>	<i>Fit for 55 target</i>
<i>Belgium</i>	-35 %	-47%
<i>Bulgaria</i>	-0 %	-10%
<i>Czechia</i>	-14 %	-26%
<i>Denmark</i>	-39 %	-50%
<i>Germany</i>	-38 %	-50%
<i>Estonia</i>	-13 %	-24%
<i>Ireland</i>	-30 %	-42%
<i>Greece</i>	-16 %	-22.7%
<i>Spain</i>	-26 %	-37.7%
<i>France</i>	-37 %	-47.5%
<i>Croatia</i>	-7 %	-16.7%
<i>Italy</i>	-33 %	-43.7%
<i>Cyprus</i>	-24 %	-32%
<i>Latvia</i>	-6 %	-17%
<i>Lithuania</i>	-9 %	-21%
<i>Luxembourg</i>	-40 %	-50%
<i>Hungary</i>	-7 %	-18.7%
<i>Malta</i>	-19 %	-19%
<i>Netherlands</i>	-36 %	-48%
<i>Austria</i>	-36 %	-48%
<i>Poland</i>	-7 %	-17.7%
<i>Portugal</i>	-17 %	-28.7%
<i>Romania</i>	-2 %	-12.7%
<i>Slovenia</i>	-15 %	-27%
<i>Slovakia</i>	-12 %	-22.7%
<i>Finland</i>	-39 %	-50%
<i>Sweden</i>	-40 %	-50%

Source: European Commission (2021d)

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