EIF Research
and Market Analysis

Working Paper 2023/89

Entrepreneurial Finance and the Russian War against Ukraine: a Survey of European Venture Capital and Private Equity Investors

Helmut Kraemer-Eis, Joern Block, Antonia Botsari, Frank Lang,
Solvej Lorenzen, Walter Diegel

Helmut Kraemer-Eis
Head of the EIF's Research & Market Analysis, EIF Chief Economist

Contact:
h.kraemer-eis@eif.org
Tel.: +352 248581 394

Jörn Block
Professor of Management, University of Trier and Erasmus University Rotterdam
Contact:
block@uni-trier.de
Tel.: +49 651 201 3030

Antonia Botsari
Research Officer in the EIF's Research & Market Analysis division

Contact:
a.botsari@eif.org
Tel.: +352 248581 546

Frank Lang
Senior Manager in the EIF's Research & Market Analysis division

Contact:
f.lang@eif.org
Tel.: +352 248581 278

Solvej Lorenzen
PhD student, research associate at WIFU, Witten/Herdecke University

Contact:
solvej.lorenzen@uni-wh.de

Walter Diegel
Research associate at the Chair of Management, University of Trier

Contact:
unternehmensfuehrung@uni-trier.de
Tel.: +49 651 201 3030

Disclaimer

Editor:
Helmut Kraemer-Eis,
Head of EIF's Research & Market Analysis, Chief Economist

Contact:
European Investment Fund
37B, avenue J.F. Kennedy, L-2968 Luxembourg

Tel.: +352 248581 596
http://www.eif.org/news_centre/research/index.htm
Luxembourg, May 2023

Scan above to obtain a PDF version of this working paper

Executive Summary[1]

We examine how the Russian offensive war against Ukraine that started in 2022 affected the European entrepreneurial finance sector. Based on two surveys of European venture capital (VC) and private equity (PE) investors, our results show that the war - and the related consequences - had a strong impact on the two types of investors and their respective funds. The market sentiment experienced a strong decline for both investor groups. Both investor types report more risk-aversion of limited partners (LPs) and LPs leaving the market as important challenges resulting in an overall lower willingness of LPs to invest in their respective funds. In particular, banks, insurance funds and pension funds were found to show a lower willingness to invest. Apart from these fundraising issues, both investor types also report a number of important operational challenges in the context of the changed macroeconomic and geopolitical environment, such as the liquidity needs of portfolio companies, increased regulation and bureaucracy in fund management, and reduced exit and divestment opportunities. On the level of the portfolio companies, securing equity financing, maintaining liquidity as well as rising interest rates and inflation levels were considered the most pressing issues. VC and PE investors also report that their portfolio companies face several product-related, market, and operational challenges as a result of the war and the new macroeconomic and geopolitical situation. Overall, the situation seems to be more difficult for VC investors' portfolio companies than for those of PE investors. For the former, the financing- and liquidity-related issues seem to be of a more existential and survival-threatening nature. In response to these challenges, both VC and PE investors altered their investment strategies with regard to preferred industries and placing more emphasis on entrepreneurial experience. Financial investment selection criteria such as financial valuation, profitability, and cash- as well as revenue-generating capacity increased in importance. Again, we can observe differences between VC and PE investors. Our results have implications for VC and PE investors and for policy-makers due to the importance of the entrepreneurial finance sector for supporting entrepreneurship and innovation in Europe.

[1] This paper benefited from comments and inputs by many EIF colleagues, for which we are very grateful; we would like to express particular thanks to Anna Asfaw, Cindy Daniel, Oscar Farres, Davide Legnani, Filip Mandys, Barbara Marquardt, Ioannis Tzoumas and the EIF Research & Market Analysis colleagues. Moreover, we would like to express our gratitude for fruitful collaboration, support and advice to our Invest Europe colleagues Julien Krantz, Sofian Giuroiu and Lucrezia Lo Sordo. We also thank the respondents who took part in the two surveys underlying this study. All errors are attributable to the authors.

Table of Contents

1 | Introduction

The Russian war against Ukraine that started with the invasion of Russia into Ukraine on February 24th, 2022, is described as a turning point for the economic and geopolitical situation in Europe and worldwide. It does not only impose a terrible human cost but has also strongly affected the economy. While the long-term and historical impact of the war cannot be assessed at this point in time, the short-term impacts are already massive (e,g., Liadze et al., 2022). Prior research has looked into how the global stock markets and the commodities markets have responded to the Russian-Ukrainian war (e.g., Derindere Köseoğlu et al., 2023; Izzeldin et al., 2023). So far, however, we know little about the impacts of the war regarding the European entrepreneurial finance sector. Some first indications for the venture capital (VC) and private equity (PE) markets (e.g., with regard to the fundraising and exit environments, the business challenges faced, etc.) point towards a strong effect (Kraemer-Eis et al., 2022a, b, c). But we lack detailed and precise information about the severity and types of impacts. Yet, a better understanding of these impacts is needed for both practitioners and policy-makers due to the importance of the sector for innovation and entrepreneurship in Europe.

Our study aims to reduce this gap. To this end, we summarize the results of two surveys of VC (N=443 respondents) and PE mid-market (MM) fund managers[2] (N=224 respondents), conducted between 13th of July and 29th of August 2022 (VC) and between 14th of July and 29th of August 2022 (PE MM). The fund managers were asked to assess the market sentiment, report their challenges associated with the war and the macroeconomic environment as well as their reactions towards these challenges.

The market sentiment experienced a strong decline for both investor groups. Both VC and PE fund managers experience more risk-aversion of limited partners (LPs) and report LPs leaving the market. The increased risk-aversion results in an overall lower willingness of LPs to invest in VC or PE funds. This applies in particular to banks, insurance funds and pension funds. Besides these fundraising issues, the fund managers also experience a number of operational challenges such as the liquidity needs of portfolio companies, increased regulation and bureaucracy in fund management, as well as reduced exit and divestment opportunities.

Regarding their portfolio companies, the fund managers list securing equity financing, maintaining liquidity as well as rising interest rates and inflation levels as the most pressing issues. Apart from these financing issues, portfolio companies experience a number of product-related, market, and operational challenges resulting from the war and the new macroeconomic and geopolitical situation. Overall, the situation seems to be more difficult for the portfolio companies of VC than for those of PE investors. For the former, the financing- and liquidity-related issues seem to be of a more existential nature, threatening firm survival.

In response to these challenges, both VC and PE investors adapted their investment strategy regarding preferred industries and placing more emphasis on the experience of the entrepreneur.

[2] The terms “fund manager” and “investor” are used interchangeably throughout the paper.

Financial investment selection criteria such as financial valuation, profitability, and cash- as well as revenue-generating capacity gained in importance. Again, differences between VC and PE investors seem to exist. The war and the associated economic and geopolitical situation had a stronger impact on the investment strategy of VC than on that of PE investors.

Our study connects to prior research on the effects of exogenous crisis events on VC financing. Block and Sandner (2009) analysed the effect of the 2008-2009 global financial crisis on the VC market. They found that the financial crisis led to a 20% decrease of the average amount of funds raised per funding round. The effect, however, could only be detected in later funding rounds. Adding to this, De Vries and Block (2011) show that the financial crisis (but also the dot-com crisis) was associated with a lower tendency to syndicate and led to a lower overall size of the syndicates. Conti et al. (2019) report that VCs in the global financial crisis, in particular the more-experienced ones, changed their investment strategy and allocated more resources to their core investment sectors. Using Belgium data from the dot-com-crisis, Alperovych et al. (2015) show that VC behaviour in a crisis differs for private versus governmental VC firms. While private VC funds reduced their investments, governmental VC funds acted countercyclically and increased their investments. Focusing on the COVID-19 pandemic, Bellavitis et al. (2022) show that the pandemic was associated with a significant decline in VC investments across the world, particularly regarding early-stage ventures. Nonetheless, Crisanti et al. (2021) report that despite the measurable harm of the initial 2020 lockdowns, the VC industry did not suffer from a case of long COVID; and that 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.

The remainder of the study is organized as follows: Section 2 presents the samples, questionnaires, and summary statistics. Sections 3 and 4 report the market sentiment of the VC and PE investors and the concrete challenges associated with the Russian war against Ukraine. Section 5 shows the reactions of the investors, and section 6 summarizes the main results and concludes.

2 | Sample, questionnaire and summary statistics

The datasets used in this study are derived from two extensive pan-European surveys of PE and VC fund managers / general partners (GPs); namely the '2022 Private Equity Mid-Market Survey' (PE MM Survey) and the '2022 Venture Capital Survey' (VC Survey), conducted by the European Investment Fund (EIF).[3] To the best of our knowledge, the two surveys combined represent the largest survey of fund managers / GPs in Europe overall, but also dedicated to the topic of the Russian war against Ukraine and the resulting challenges. Both surveys were conducted online, and anonymized responses were received in July and August 2022.

While the PE MM and VC surveys target different groups of recipients, they share a similar questionnaire design and similar questions. Each survey participant was asked a total of up to 73 questions[4]. These included single choice, multiple-choice and ranking questions, as well as free-text inputs. For our study, we primarily draw on the survey questions focusing on how the Russian aggression against Ukraine and the associated geopolitical and macroeconomic implications have affected entrepreneurial finance investors in Europe. These questions concerned changes in investment strategy and investment selection criteria as well as information about fundraising and operational issues on both fund and portfolio company level. In addition, the dataset includes rich information on the demographics of the respective PE and VC fund managers, as well as their respective PE/VC firms. For more information on both surveys, please refer to Kraemer-Eis et al. (2022a, b).

The surveys originally targeted 3,308 PE and 4,866 VC fund managers, representing 1,615 distinct PE and 2,461 distinct VC firms, respectively[5]. The list of PE and VC firms as well as the details of relevant contacts within each firm were obtained from Pitchbook[6]. The VC sample was also enriched by contacts provided by Invest Europe (formerly European Venture Capital Association, EVCA) and the EIF.

[3] In the context of this paper, the terms PE and PE MM are used interchangeably. Note however that the survey targeted not all PE firms but only those that were active in the mid-market (MM) segment.

[4] Up to 69 questions in the case of the VC survey.

[5] The reported figures reflect the final versions of the samples that were used for the respective survey invitations (i.e., after removing fund managers/firms that explicitly requested not to participate in the survey or fund managers whom we failed to reach via e-mail).

[6] We applied the following search criteria in Pitchbook to identify relevant PE/VC firms: for PE: Deal Type: All Buyout types, Other Private Equity types; Investor Location: General region Europe (any office location); Investor Type: PE/Buyout, Growth/Expansion, Other Private Equity, Impact Investing; Fund Size: maximum 2.5 bn EUR (this criterion was intended to exclude large buyout PE firms and focus on the mid-market segment of the PE market); for VC: Deal Type: Venture Capital (either seed, early or later stage VC); Investor Location: General region Europe (any office location), Investor Type: Venture Capital (excluding corporate venture capital), Impact Investing, PE/Buyout, Growth/Expansion, Other Private Equity. For the purpose of the surveys, it was important to capture the full spectrum of the PE/VC activity in Europe and to identify all relevant players active in the European PE/VC markets. This was indeed achieved with the specified criteria which enabled us to identify PE firms also active in the VC market and vice versa.

The final dataset used for the analyses contains completed responses from 224 PE fund managers (representing 188 distinct PE firms), and 443 VC fund managers (from 362 VC firms). Response rates (at the fund manager level) were therefore 6.8% (PE survey) and 9.1% (VC survey). These response rates are comparable to other email-distributed academic surveys addressed to investors (e.g., Amel-Zadeh & Serafeim, 2018; Block et al., 2019). The vast majority of respondents hold the position of CEO or managing or general partner in their respective firm. This implies that while the analyses of this study are based on stated preferences, the data and responses collected represent the views of senior decision makers.

Tables A1 to A4 in the appendix report summary statistics about the survey respondents. The vast majority of respondents – 87% (VC survey) or 84% (PE survey) – were male; most respondents were between 45 and 55 years old, and their mean experience as fund managers was 13 years (VC survey) or 18 years (PE survey). The assets under management varied substantially: 22% of VC investors (11% of PE investors) had less than 50 million Euro; 9% of VC investors (15% of PE investors) had more than 1 billion. The median firm age was 11 (VC) and 14 years (PE), respectively, at the time the survey was conducted. The majority of VC investors invested in seed (33%) or early-stage ventures (35%), while most PE investors provided funding for venture growth (32%) or buyout situations (63%).

The PE and VC investors contacted were predominantly headquartered in the 27 EU countries, but also in other countries, such as Norway, Switzerland, Turkey, Israel, the United Kingdom, and the USA[7].The most prominent locations for VC investors were Germany (13%), the UK (10%), the Netherlands (10%), France (8%), and Spain (7%). For the headquarters of the PE investors, the most prominent locations were France (15%), Italy (12%), Germany (9%), the UK (9%), the Netherlands (7%), and Spain (7%).With regard to the industry or sector focus, VC investors were mainly active in Information and Communications Technologies (ICT) (31%), Biotech/Healthcare (20%), and Energy/Environment (12%); PE investors had a focus on Business Services (26%) and Business Products (18%), as well as on Biotech/Healthcare (13%). A further 19% (8%) of the PE (VC) investors reported to have no clear sector focus.

[7] Firms headquartered outside Europe were still included in the sample as long as they had an office in Europe and were active in the European PE/VC market.

3 | Market sentiment

Figures 1 and 2 show the market sentiments for the fundraising environment of VC and PE investors over time. The data for years prior to 2022 are derived from previous waves of the EIF VC and PE MM Surveys[8], which had comparable questions. The fund managers were asked about their expectations for the fundraising environment. The question posed to them was "*Over the next 12 months, how do you expect the fundraising environment to develop?*". The answer options were 'slightly/strongly deteriorate', 'stay the same', and 'slightly/strongly improve'. The figures report the percentages in each of the three categories and show the net balance. A negative net balance means that the negative answer categories were reported more frequently than the positive categories.

The Russian invasion into Ukraine and the related geopolitical and macroeconomic developments hit the European VC and PE markets at an exceptional time. Following a slump in the European VC and PE market activity during the COVID-19 pandemic in 2020 (net balance VC: -18%; net balance PE: -60%), the market sentiment had just recovered in 2021 (net balance VC: 24%; net balance PE: 30%). Fundraising and investments were at record highs (Kraemer-Eis et al., 2022c), driven to a large extent by the strong growth in various sectors (e.g., the digital economy, but also the health and biotech sectors) during the pandemic and additional government funds allocated to European VC markets (OECD, 2022).

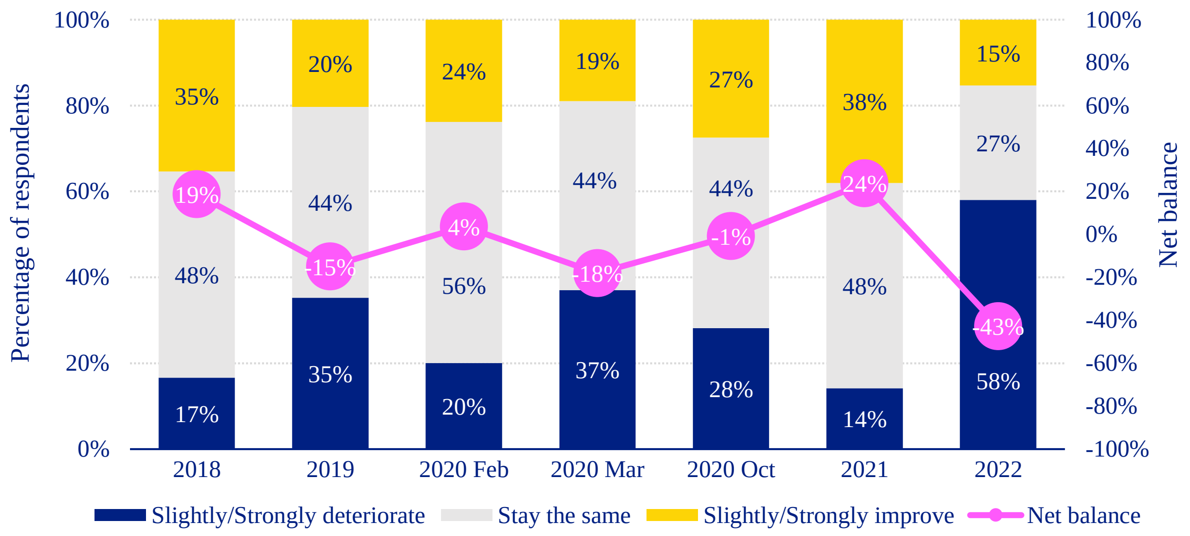
This positive evolution turned around in 2022 (net balance VC: -43%; net balance PE: -50%). Despite a still relatively robust investment and fundraising activity during the first part of the year (Invest Europe, 2022), the market sentiment that VC and PE fund managers[9] expressed in the surveys declined substantially, indicating significant headwinds for the near future. While the situation in 2022 was still assessed to be positive in many aspects of the VC/PE activity, expectations deteriorated strongly. Investors became particularly worried about fundraising (as also reflected in Figures 1 and 2) and the exit environment, mainly driven by the changed macroeconomic and geopolitical developments (Kraemer-Eis et al., 2022d). In parallel, the outlook for PE and VC investors' portfolio companies also worsened, particularly with respect to their access to finance (Kraemer-Eis et al., 2022a). The fund managers also perceived investment opportunities to be weaker than in 2021 (Invest Europe and Arthur D. Little, 2022). Unsurprisingly, geopolitical uncertainty and the related consequences (including the difficult macroeconomic environment) as well as the overall exit environment became the most important challenges for VC and PE funds (Kraemer-Eis et al., 2022b). The investors did not expect the macroeconomic and geopolitical challenges to improve in the course of 2023 (Atomico, 2022).

---

[8] Results of the previous waves of the EIF VC Survey and the EIF PE MM Survey are published in the EIF Working Paper series, available at www.eif.org/research. (accessed April 1st, 2023).

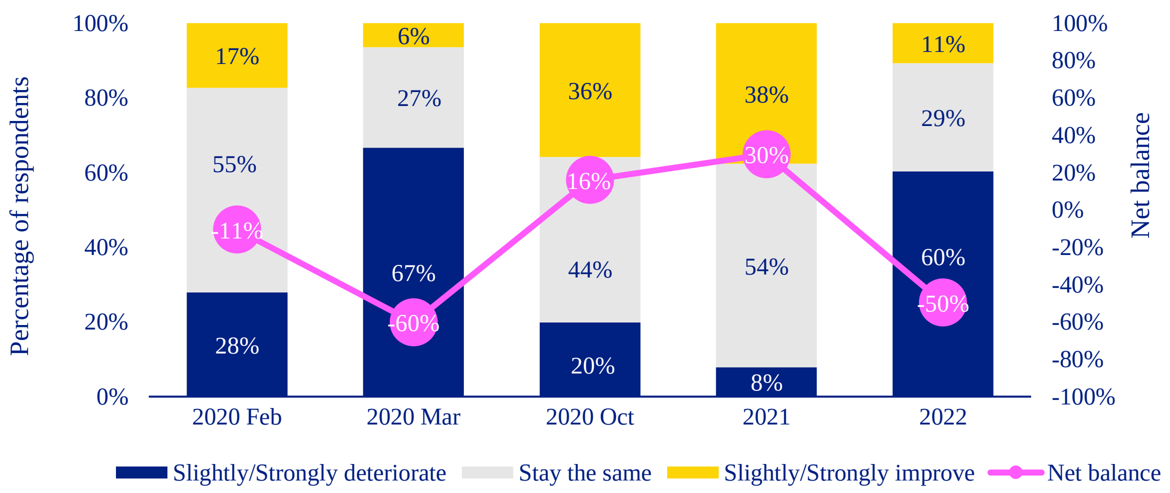
[9] In this study, the term "investors" refers to "fund managers".

Figure 1: Fundraising environment, VC fund managers' expectations for the next 12 months



Source : Kraemer-Eis et al. (2022b)

Figure 2: Fundraising environment, PE MM fund managers' expectations for the next 12 months



Source : Kraemer-Eis et al. (2022a)

4 | Challenges associated with the changed geopolitical and macroeconomic environment

4.1 | Fundraising challenges for investors

Overall picture

Table 1 displays the fundraising problems of VC and PE investors associated with the Russian war against Ukraine and the changes in the macroeconomic and geopolitical environment. The fund managers were asked about the extent to which certain items in a selected list of challenges constitute a fundraising problem for their fund. For each challenge, we calculated the number and percentage of respondents considering the respective challenge as either 'no problem at all', 'minor problem', 'important problem' or 'existential problem'. Column I (II) shows the answers of the VC investors (PE investors) and Column III reports the results of a test of equality of proportions, including the associated measure of statistical significance, the p-value.

The overall extent of fundraising challenges seems to be higher for VC than for PE investors. The ranking of the top challenges, however, seems to be similar. Both VC and PE investors report 'more risk-aversion of LPs' and 'LPs leaving the market' as their top challenges. Both investor types also named 'rising interest rates' and 'rising levels of inflation' as important challenges. However, differences between the investors can still be observed. For example, PE investors consider the 'shift of geographical focus of LPs' to be a more important issue compared to VC investors (32% for VC vs. 42% for PE, $p<0.05$). The two least important challenges were 'sanctions on high-net-worth individuals' and 'travel restrictions making fundraising difficult'.

Table 1: Fundraising challenges for VC and PE investors

	I	II	III	
	VC investors (N=443)	PE investors (N=224)	Test of equality of proportions	
Fundraising challenges			Difference	p-value
More risk-aversion of LPs	67.5%	52.2%	15.3%	0.000
LPs leaving the VC market/the PE mid-market sector	60.9%	48.2%	12.7%	0.002
Rising interest rates	48.3%	37.9%	10.4%	0.010
Rising levels of inflation	39.5%	37.9%	1.6%	0.698
Shift of venture stage focus of LPs/investment stage focus of LPs	37.9%	26.8%	11.1%	0.004
Increased regulations and bureaucracy	35.0%	30.4%	4.6%	0.232
Shift of geographical focus of LPs	32.3%	41.5%	-9.2%	0.020
Shift of sector focus of LPs	30.0%	21.9%	8.1%	0.026
Changes in fundraising terms and conditions	26.0%	26.3%	-0.3%	0.916
New political goals of LPs	24.2%	28.1%	-3.9%	0.267
Travel restrictions making fundraising difficult	14.9%	15.6%	-0.7%	0.805
Sanctions on high-net-worth individuals	11.3%	9.8%	1.5%	0.565

Note: This table displays the percentage of VC and PE investors who consider the respective issues as 'important' or 'survival-threatening' fundraising problems. The question asked was: "*Considering the current geopolitical situation and macroeconomic environment, to what extent do the following issues constitute a fundraising problem for your VC fund(s)/PE mid-market fund(s)?*". We report the results separately for VC and PE investors (Column I or II, respectively). Column III displays the differences in percentages and the results of a statistical test of equality of proportions between the two types of investors.

Changes in the willingness of different LPs to invest in VC/PE funds

Table 2 displays the perceived willingness of different LPs to invest in VC (Column I) or PE funds (Column II). Column III reports the results of a statistical test of equality of means (using the numerical values value behind the qualitative answer options). Regarding the willingness of LPs to invest into VC or PE funds as an asset class, we asked the fund managers to compare the current situation against the one before the war in Ukraine. In concrete terms, we asked the VC and PE investors to assess the willingness of different types of LPs to invest in VC or PE as an asset class on a four-point scale ranging from 'better than before the war in Ukraine' to 'significantly worse than before the war in Ukraine'. The LP categories displayed in the survey were 'banks and other finance companies', 'insurance funds', 'pension funds', 'government funds', 'corporate investors', 'endowments', 'foundations', 'family offices', and 'high-net-worth-individuals'.

The LPs whose willingness to invest changed the most were 'banks and other finance companies', but also large private institutional investors (such as 'insurance funds' and 'pension funds') and 'high-net-worth-individuals'. The LP whose willingness to invest changed the least was 'government funds'. Some differences between the VC and PE markets exist. PE investors suffer significantly more than VC investors from the reduced willingness of 'endowments' and ´foundations' to invest ($p<0.05$ for both).

Table 2: LPs' willingness to invest in VC and PE funds compared to before the war in Ukraine

	I				II				III
	VC (N=443)				PE (N=224)				Test of equality of means
Different LPs	Better	Similar	Worse	Significantly worse	Better	Similar	Worse	Significantly worse	p-value
Banks/other finance companies	1.1%	42.4%	45.4%	11.1%	0.9%	37.1%	55.4%	6.7%	0.783
High-net-worth individuals	3.2%	45.1%	42.2%	9.5%	6.7%	46.9%	40.6%	5.8%	0.166
Insurance funds	0.5%	43.3%	47.2%	9.0%	0.4%	43.8%	51.3%	4.5%	0.334
Pension funds	0.7%	47.0%	44.0%	8.4%	2.2%	43.8%	48.2%	5.8%	0.643
Corporate investors	1.6%	47.6%	42.9%	7.9%	2.2%	45.1%	48.2%	4.5%	0.678
Family offices	3.4%	45.6%	43.3%	7.7%	5.8.%	44.6%	43.3%	6.3%	0.349
Endowments	1.0%	61.2%	35.2%	3.2%	1.3%	51.3%	42.4%	4.9%	0.039
Foundations	1.4%	60.7%	35.2%	2.7%	1.8%	48.7%	45.5%	4.0%	0.015
Government funds	7.7%	72.0%	18.0%	1.8%	8.0%	57.6%	33.5%	0.9%	0.007

Note: This table displays the assessment of LPs' willingness to provide funding for VC and PE funds. The question asked was: "*How do you assess the current willingness of different LPs to provide funding for VC/PE mid-market funds as an asset class?*". We report the results separately for VC and PE funds (Column I or II) and display the percentage of responses in the respective categories. Column III displays the results of a statistical test of equality of means (using the numerical values behind the answer categories).

4.2 | Operational challenges for investors

Table 3 compares the concerns and operational challenges that VC and PE investors (Columns I and II, respectively) face in relation to the war and the changed macroeconomic and geopolitical situation. Column III displays a test of equality of proportions. The fund managers were given a list of operational challenges and had to answer the following question: "*Considering the current geopolitical situation and macroeconomic environment, to what extent do the following operational issues constitute a problem for your VC/PE fund?*". We report the combined percentage of answers where the respondent considered the respective challenge to be either 'important' or 'survival-threatening'.

The ranking of important or survival-threatening operational challenges is somewhat different between the two types of investors. While VC investors consider the ‘liquidity needs of portfolio companies’ (52%) as the most important issue, for PE investors, it is ‘more regulation and bureaucracy in fund management’ (34%) that presents the biggest challenge. Both VC and PE investors regard a ‘reduced set of divestments and exit opportunities’ (VC: 44%, PE: 33%) as an important or even survival-threatening operational issue. The same is true for the ‘decreased operational performance of portfolio companies’ (VC: 32%, PE: 33%) and ‘decrease in overall levels of venture valuation’ (VC: 31%; PE: 30%). The operational challenges which are considered least important are ‘defaulting LPs’ (VC: 8%; PE: 5%) and ‘travel restrictions impacting selection and monitoring of portfolio firms’ (VC: 7%; PE: 5%). We perceive differences with regard to ‘funds’ exposure to Russia, Ukraine and Belarus’ and ‘funds’ exposure to Eastern European EU countries’, where PE investors rate the respective challenge as significantly more important ($p<0.10$ or $p<0.01$, respectively). Next to these differences, PE and VC investors also differed with regard to ‘lack of suitable investment targets regarding investment topics’ ($p<0.01$). To summarize, while the operational challenges seem to be more survival-threatening for VC investors, PE investors seem to be relatively more vulnerable to their funds’ exposure to Russia, Ukraine, Belarus as well as to Eastern Europe.

Table 3: The most important operational challenges for VC and PE investors

	I	II	III	
	VC investors (N=443)	PE investors (N=224)	Test of equality of proportions	
Operational challenges			Difference	p-value
Liquidity needs of portfolio companies	51.9%	16.5%	35.4%	0.000
Reduced set of divestments and exit opportunities	43.8%	32.6%	11.2%	0.005
More regulation and bureaucracy in fund management	34.8%	34.4%	0.4%	0.921
Decreased operational performance of portfolio companies	31.8%	32.6%	-0.8%	0.843
Decrease in overall levels of valuation of portfolio firms	30.7%	30.4%	0.3%	0.928
Lack of qualified talent for fund management	25.3%	21.4%	3.9%	0.272
Increasing volatility of fund performance	22.6%	21.0%	1.6%	0.640
Lack of suitable investment targets regarding investment topics	10.4%	17.9%	-7.5%	0.007

Operational challenges (continued)	I VC investors (N=443)	II PE investors (N=224)	III Test of equality of proportions	
			Difference	p-value
Lack of own experience in how to account for geopolitical and macroeconomic uncertainties	9.5%	10.3%	-0.8%	0.747
Lack of suitable investment targets regarding venture stage/investment stage	8.8%	11.2%	-3.7%	0.330
Funds' exposure to Russia, Ukraine and Belarus	8.1%	12.5%	-4.4%	0.070
Funds' exposure to Eastern European EU countries	8.1%	14.7%	-6.6%	0.008
Lack of suitable investment targets regarding geographical focus	8.1%	12.5%	-4.4%	0.070
Defaulting LPs	7.7%	4.9%	2.8%	0.179
Travel restrictions impacting selection and monitoring of portfolio firms	7.0%	4.5%	2.5%	0.199

Note: This table displays the percentage of VC and PE investors who consider the respective issues as "important" or "survival-threating" operational problems. The question asked was: "*Considering the current geopolitical situation and macroeconomic environment, to what extent do the following operational issues constitute a problem for your venture capital/ PE mid-market fund(s)?*". We report the results separately for VC and PE investors (Column I or II, respectively). Column III reports the differences in percentages and the results of a statistical test of equality of proportions between the two types of investors.

4.3 | Challenges for portfolio companies

Table 4 (Panel A to Panel C) shows the challenges for the portfolio companies of VC and PE investors in relation to the Russian war against Ukraine and the changes in the macroeconomic and geopolitical environment. The question posed to VC and PE investors was "*Considering the current geopolitical situation and macroeconomic environment, to what extent do the following issues constitute a problem for your portfolio companies?*". The respondents rated a given list of challenges on a 4-point scale ranging from 'no problem at all' to 'survival-threatening problem'. We calculated for each challenge the number and percentage of respondents considering the respective challenge as either 'important' or 'survival-threatening'. Column I shows the answers of the VC investors, Column II those of the PE investors, and Column III shows the results of a statistical test of equality of proportions. We further distinguish between 'financing-related challenges' (Panel A), 'market-related challenges' (Panel B), and 'operational challenges' (Panel C).

Financing-related challenges for VC and PE portfolio companies

Regarding financing-related challenges, VC investors consider 'securing equity financing' (77%), 'securing liquidity' (71%), 'reduced exit opportunities' (64%), and 'rising inflation levels' (64%) as the four top challenges for their portfolio companies. The list is different for PE investors. PE investors consider 'rising inflation levels' (88%), 'rising interest rates' (49%), 'reduced exit opportunities' (40%) and 'decreases in valuation & multiples' (37%) as the most challenging issues for their portfolio companies.

Comparing the answers of VC and PE investors, VC investors seem to be overall more concerned about their portfolio companies. Six out of the nine financing issues listed pose a greater challenge to VC compared to PE portfolio companies. The strongest differences can be observed for 'securing equity financing' (77% for VC vs. 11% for PE, $p<0.01$) and for 'securing liquidity' (71% for VC vs. 24% for PE, $p<0.01$). By contrast, the macroeconomic implications of the war, as reflected in 'rising inflation levels' (63% for VC vs. 88% for PE, $p<0.01$) and in 'rising interest rates' (38% for VC vs. 49% for PE, $p<0.01$) are more worrying for PE portfolio companies. This can be explained by the fact that portfolio companies of PE investors are typically older and more established and therefore more likely to (also) use debt financing.

Table 4
Panel A: Most important financing-related challenges for VC and PE portfolio companies

	I	II	III	
	VC (N=443)	PE (N=224)	Test of equality of proportions	
Financing-related challenges			Difference	p-value
Securing equity financing	77.2%	11.2%	66.0%	0.000
Securing liquidity	71.3%	23.7%	47.6%	0.000
Reduced exit opportunities	64.1%	40.2%	23.9%	0.000
Rising inflation levels	63.2%	87.9%	-24.7%	0.000
Decreases in valuation & multiples	51.7%	36.6%	15.1%	0.001
Rising interest rates	37.9%	48.7%	-10.8%	0.008
Securing debt financing	32.5%	23.7%	8.8%	0.020
Changes in other financing terms and conditions	28.2%	20.5%	7.7%	0.032
Accessing public funding	28.2%	-	--	--

Market-related challenges for VC and PE portfolio companies

With regard to market-related challenges, it seems that yet again VC investors are more concerned about their portfolio companies than PE investors, with VC investors reporting higher percentages in five out of the six market-related issues listed. The two most important challenges for the portfolio companies of VC investors are 'customer acquisition' (51%) and 'strong product market competition' (28%), while the two most important challenges for the portfolio companies of PE investors are 'demand shifts of customers' (25%) and 'customer acquisition and retention' (22%). The differences between the two investor groups are statistically significant at the 1%-level for three of the six challenges.

Table 4
Panel B: Most important market-related challenges for VC and PE portfolio companies

	I	II	III	
	VC (N=443)	PE (N=224)	Test of equality of proportions	
Market-related challenges			Difference	p-value
Customer acquisition and retention	51.0%	21.4%	29.4%	0.000
Strong product market competition	27.8%	16.5%	11.3%	0.001
Difficulties to internationalize	27.1%	16.5%	10.6%	0.002
Demand shifts of customers	26.9%	24.6%	2.3%	0.522
Travel restrictions	17.4%	12.9%	4.5%	0.139
Export restrictions	13.5%	15.2%	-1.7%	0.567

Operational challenges for VC and PE portfolio companies

The evidence regarding the operational challenges looks a bit different. While with financing- and market-related challenges, VC investors were more concerned about their portfolio companies than PE investors, the opposite was true for the operational challenges. While both VC and PE investors considered the overall importance of operational challenges to be high for their portfolio companies, the reported percentages were higher for PE investors in six out of the eight operational issues mentioned ($p<0.01$). The top three operational challenges for the portfolio companies of VC investors were 'shortage of skilled labor' (72%), 'rising labor costs' (65%), and 'supply chain disruptions' (57%). The respective list for portfolio companies of PE investors was 'rising energy costs' (81%), 'rising labor costs' (79%), and 'supply chain disruptions' (75%). Compared to VC investors, twice as many PE investors identify 'rising energy costs' as an important or even survival-threatening problem for their investees. Again, these differences between PE and VC investors can be explained by the fact that PE portfolio firms are typically older and more established and therefore more likely to have operations already in place.

Table 4
Panel C: Most important operational challenges for VC and PE portfolio companies

	I	II	III	
	VC (N=443)	PE (N=224)	Test of equality of proportions	
Operational challenges			Difference	p-value
Shortage of skilled labor	71.8%	73.7%	-1.9%	0.610
Rising labor costs	64.6%	79.0%	-14.4%	0.001
Supply chain disruptions	57.1%	74.6%	-17.5%	0.000
Rising energy costs	41.1%	80.8%	-39.7%	0.000
Rising production costs (other than labor and energy)	40.9%	71.9%	-31.0%	0.000
Potential energy shortages	38.1%	59.4%	-21.3%	0.000
Increasing regulations and bureaucracy	37.2%	28.6%	8.6%	0.026
Lack of experience with geopolitical and macroeconomic uncertainties	27.5%	19.6%	7.9%	0.025

Note: Table 4 (Panels A, B & C) displays the combined percentages for the 'important' or 'survival-threating' financing-related challenges (Panel A), market-related challenges (Panel B), and operational challenges (Panel C) that the portfolio companies of VC and PE investors face. The question asked was: "*Considering the current geopolitical situation and macroeconomic environment, to what extent do the following issues constitute a problem for your venture portfolio companies/ PE mid-market portfolio companies?*". We report the results separately for VC and PE investors (Column I or II, respectively). Column III displays the differences in percentages and the results of a statistical test of equality of proportions between the two types of investors.

5 | Investor reaction

5.1 | Changes in investment strategies

Table 5 provides evidence for the changes in the investment strategies of VC and PE investors as a reaction to the Russian war against Ukraine and the changes in the macroeconomic and geopolitical environment. The survey respondents indicated that they have changed their investment strategy particularly with respect to the 'required experience of the entrepreneurs' and their 'preferred sector or industry'. Eleven percent of PE investors reported that they changed their geographical focus. Overall, the changes were more pronounced for PE than for VC investors. Significant differences between the two investor types can be observed for 'preferred sector or industry' ($p < 0.01$) and 'preferred venture stage/investment stage' ($p < 0.05$).

Table 5: Extent of change in the investment strategies of VC and PE investors

	I				II				III
	VC investors (N=443)				PE investors (N=224)				Test of equality of means
Response options	Not at all	Some-what	To a large extent	I do not know/ prefer not to say	Not at all	Some-what	To a large extent	I do not know/ prefer not to say	p-value
Required experience of entrepreneurs	46.5%	39.3%	11.7%	2.5%	38.8%	48.7%	11.6%	0.9%	0.101
Preferred sector or industry	59.6%	30.0%	7.7%	2.7%	30.4%	46.9%	21.9%	0.9%	0.000
Preferred geographical focus	65.5%	25.5%	6.1%	2.9%	66.5%	21.4%	11.2%	0.9%	0.241
Preferred venture stage/ investment stage	65.0%	27.8%	4.7%	2.5%	74.6%	19.6%	4.0%	1.8%	0.040

Note: This table displays the extent of change in the investment strategies of VC and PE investors. The question asked was: *"To what extent does the current geopolitical situation and macroeconomic environment change your investment strategy regarding...?"*. We report the results separately for VC and PE investors (Column I or II, respectively) and display the percentages of respondents in the respective categories. Column III displays the results of a statistical test of equality of means between the two types of investors (using the numerical values behind the answer categories).

5.2 | Changes in the importance of specific investment selection criteria

Table A5 in the appendix summarizes the importance of various investment selection criteria for both investor types. Sixty nine percent of VC investors (54 % of PE investors) rate the 'management team' as one of their top 3 investment selection criteria. Among VC investors, 'scalability of the business' and 'technology' rank second and third. For PE investors, 'profitability' and 'business model' rank second and third.

Table 6 shows the increase in importance of various investment selection criteria for VC and PE investors as a reaction to the Russian war against Ukraine. The question posed to the participants of the survey was "*Considering the current geopolitical situation and macroeconomic environment, has the importance of the respective investment selection criteria changed?*". The respondents rated for each criterion whether the importance became 'less important', 'more important' or 'didn't change'. In the following, we report the results for the 'more important' response option.

The top five criteria gaining importance for VC investors were 'valuation and deal terms' (62%), 'cash-generating capacity' (41%), 'profitability/profitability potential' (38%), 'exit potential' (37%), and 'revenue-generating capacity' (35%). In comparison, the corresponding ranking for PE investors is as follows: 'valuation and deal terms' (49%), 'industry' (45%), 'ESG-considerations' (44%), 'cash-generating capacity' (43%), and 'profitability/profitability potential' (34%).

While VC and PE investors had similar perceptions regarding some criteria (e.g., 'cash-generating capacity', and 'profitability/profitability potential'), we observed some remarkable differences in other criteria. For example, the 'industry' (16% for VC vs. 45% for PE, $p<0.01$), 'ESG considerations' (23% for VC vs. 44% for PE, $p<0.01$), and 'technology' (11% for VC vs. 26% for PE, $p<0.01$) became comparatively more important as investment selection criteria for PE investors than for VC investors. In turn, the incremental importance attached to 'valuation and deal terms' (62% for VC vs. 49% for PE, $p<0.01$) and 'revenue-generating capacity' (35% for VC vs. 28% for PE, $p<0.10$) was higher for VC than for PE investors.

Table 6: Increase in the importance of specific investment selection criteria

	I	II	III	
	VC investors (N=443)	PE investors (N=224)	Test of equality of proportions	
Investment selection criteria			Difference	p-value
Valuation and deal terms	62.3%	48.7%	13.6%	0.007
Cash-generating capacity	41.0%	42.9%	-1.9%	0.744
Profitability/profitability potential	37.9%	33.9%	4.0%	0.312
Exit potential	36.8%	29.5%	7.3%	0.060
Revenue-generating capacity	34.8%	28.1%	6.7%	0.084
Management team	27.5%	30.4%	-2.9%	0.447
Business model	25.3%	29.5%	-4.2%	0.249
ESG considerations	23.5%	43.8%	-20.3%	0.000
Geographical location of target company	21.7%	27.7%	-6.0%	0.085
Product´s value proposition	19.4%	28.1%	-8.7%	0.011
Industry	16.5%	44.6%	-28.1%	0.000
Scalability of the business	16.3%	21.9%	-5.6%	0.075
Past performance/track record	16.0%	14.3%	1.7%	0.557
Our ability to add value	14.2%	23.7%	-9.5%	0.002
Diversity and inclusion considerations	14.2%	16.5%	-2.3%	0.433
Total size of the addressable market	11.5%	13.4%	-1.9%	0.483
Technology	10.8%	26.3%	-15.5%	0.000
Venture stage[a]	10.2%	--	--	--
Market leadership[a]	--	17.9%	--	--
Strategic fit in investment portfolio	10.2%	12.1%	-1.9%	0.457
Referral by other GPs/investors	8.1%	2.7%	5.4%	0.006
Others	15.7%	16.5%	-0.8%	0.869

Note: The table displays the investment selection criteria with the highest increase in importance for VC and PE investors. The question asked was: "*Considering the current geopolitical situation and macroeconomic environment, has the importance of the respective investment selection criteria changed?*". We report the results separately for VC and PE investors (Column I or II, respectively). Column III reports the differences in percentages and the results of a statistical test of equality of proportions between the two types of investors.

[a] The investment selection criterion 'venture stage' ('market leadership') was only included in the VC survey (PE survey).

6 | Summary and implications

The Russian war against Ukraine and the associated change in the macroeconomic environment and geopolitical situation clearly affected the European entrepreneurial finance sector. Using information from two surveys conducted with VC and PE fund managers, our study shows how. The perceptions of the fundraising environment were worse than during the COVID-19 crisis. LPs became more risk-averse and less willing to invest. Apart from these fundraising issues, a significant number of operational challenges on the fund and portfolio level were reported. Overall, the situation seemed to be more difficult for the VC than for the PE sector. For VC portfolio companies, the financing- and liquidity-related issues seemed to be of a more existential and survival-threatening nature, which also negatively affected the VC investors themselves. In response to these challenges, both VC and PE investors altered their investment strategy regarding preferred industries and placing greater emphasis on the profitability and cash-/revenue-generating capacity of their portfolio companies.

Of course, these results should be interpreted with caution. First, the survey responses reflect the economic and political situation in summer 2022.[10] Second, although we used formulations linking our findings to the Russian war against Ukraine, it is not possible to claim any causality. The effects we observed might have also occurred without the war and it is hard to separate them from other effects occurring simultaneously related to the geopolitical situation and macroeconomic environment, particularly rising inflation levels and interest rates.

How does the current crisis and its associated challenges and investor reaction compare to the situation of earlier crises, in particular the dot-com crisis in the late 1990s and early 2000s (Alperovych et al., 2015; de Vries and Block, 2011) and the 2008-2009 global financial crisis (Block and Sandner, 2009; Conti et al., 2019)? The reasons for the current crisis are different – they are of a more exogenous nature and not driven by an overvaluation of technology, market saturation, and herding behaviour of investors and other market participants. It is the invasion of Russia into Ukraine and the change in the macroeconomic environment that led to the current crisis.

It is probably too early to make predictions what this implies for the recovery and the long-term prospects of the sector. Unlike in earlier crises, however, it could lead to a more fundamental shift in preferred industries and geographies, and therefore change investment strategies and preferences more profoundly. For example, although at the beginning of the COVID-19 crisis it looked as if we would experience a doomsday scenario, the VC and PE markets proved resilient, recovered quickly from the first shock of the pandemic and showed no signs of 'long COVID'. To the contrary, these markets were able to identify the opportunities and even finally (at least partially) benefit from the crisis (e.g., by supporting companies providing innovative solutions in the areas of healthcare and biotech). However, in the aftermath of the war in Ukraine, the expectations of the surveyed fund managers were at record lows for many of the market sentiment indicators, even when compared to those during the COVID crisis. In addition, further survey

[10] We refer further down in this section to market developments since summer 2022, which show that the European VC and PE market activity continued to cool down substantially, corroborating the survey findings.

findings, such as the greater risk-aversion of LPs and their lower willingness to invest into the asset class, hint towards structural issues which could be interpreted as patterns and risks of a more longer-term nature.

The sudden halt and resumption in demand following the COVID-19 confinement measures resulted in significant supply chain issues, igniting, in turn, a rising trend in import and producer prices, inflation as well as inflation expectations. These were further fuelled by the surge in energy prices in the aftermath of the war in Ukraine. The Russian war against Ukraine did not only affect the supply of funds and the valuation of portfolio companies, but also impacted the entrepreneurial opportunities as such and the associated production and supply chain processes. Future research will show how fundamental these changes in fact are and what this means for entrepreneurship and entrepreneurship rates in the affected countries, particularly Ukraine and Russia.[11] The future and prospects of the sector are related to (European) policy responses. EU and member state policies that aim to make Europe more resilient and independent regarding energy and key enabling technologies, for example, can lead to restrictions but also new opportunities for start-ups and high-growth firms with effects for entrepreneurial finance investors and their LPs.

There are signs that the European VC and PE market activity cooled down substantially since summer 2022, i.e. in the period following the surveys presented in this paper (Kraemer-Eis et al., 2022c). For example, according to recent PitchBook reports, VC fundraising increased at a slower pace in 2022, compared to the year before, and PE fundraising dropped significantly. At the same time, new PE investments stabilised, but VC investments into young innovative companies declined. Negative growth rates were reported for the exits of PE/VC-backed portfolio companies. Moreover, in the first months of 2023, market activity has not started to pick up again (PitchBook, 2023a, b).

It is unclear to what extent the effects of the current crisis are limited to Europe and how it affects entrepreneurial finance outside Europe. In their annual monitor produced together with PitchBook and published in Q4 2022, the US National Venture Capital Association (NVCA) states that "while 2022 marks an all-time high for VC fundraising and record amounts of dry powder [...] there is anxiety in the market, and current players are reinforcing their positions against the possibility of a tighter monetary environment" (NVCA and PitchBook, 2022, p. 3). Over the year, the number of VC deals dropped sharply between the first and the last quarter. It remains to be seen whether this sharp decline is just the "afterparty effect of 2021 wearing off" (NVCA and PitchBook, 2022, p. 3) or is more fundamental and long-term in nature. If the Russian war against Ukraine changes the character of globalization and multilateralism as we have seen it over the last decades, then this will certainly not only affect entrepreneurial finance in Europe but will have a worldwide impact. Such longer-term changes in the framework conditions for entrepreneurial finance imply the need for continuous analysis of the market situation and indicate that Europe requires a strong policy response in support of the European PE/VC markets and its final beneficiaries, the European enterprises (Kraemer-Eis et al., 2022c).

[11] A recent study by Audretsch et al. (2023) has analyzed the impact of the invasion of Crimea in 2014 on entrepreneurial activity in Russia and Ukraine. The study found a strong negative impact for Russia but not for Ukraine.

Appendix

Table A1: Respondents' characteristics

	VC investors (N=443)		PE investors (N=224)	
Respondents' characteristics	N	%	N	%
Gender				
Male	385	86.9	189	84.4
Female	58	13.1	33	14.7
Non-binary/prefer not to say	0	0	2	0.9
Age (years)				
18-24	3	0.7	0	0
25-34	31	7.0	5	2.2
35 – 44	91	20.5	32	14.3
45 – 54	197	44.5	108	48.2
55 – 64	93	21.0	70	31.3
65 or older	25	5.6	9	4.0
Prefer not to say	3	0.7	0	0
	Mean	SD	Mean	SD
Experience as VC/PE fund manager (in years)	13.1	8.4	18.2	7.9

Note: This table displays some human capital characteristics of the survey respondents. We report the results separately for VC and PE investors.

Table A2: Firm characteristics

Firm characteristics	VC investors (N=443) N	VC investors (N=443) %	PE investors (N=224) N	PE investors (N=224) %
Assets under management (in million EUR)				
< 50	99	22.3	24	10.7
50 – 99	78	17.6	17	7.6
100 – 199	93	21.0	58	25.9
200 – 499	93	21.0	70	31.3
500 – 999	41	9.3	22	9.8
>= 1,000	39	8.8	33	14.8
Investment stage				
Pre-seed stage	73	16.5	0	0
Seed stage	148	33.4	1	0.4
Early stage	157	35.4	1	0.4
Later stage	65	14.7	5	2.2
Growth capital	-	-	71	31.7
Buyout	-	-	142	63.4
Rescue/turnaround	-	-	4	1.8

	Mean	SD	Median	Mean	SD	Median
Firm age (in years)	13	8.6	11	15	8.5	14
Latest VC fund size/PE fund size (in million EUR)	138.1	255.8	76.0	227.4	328.1	150.0
Funds raised to date (absolute number)	3.8	6.9	3.0	3.6	3.1	3.0

Note: This table displays selected firm characteristics, as indicated by the survey respondents. We report the results separately for VC and PE investors.

Table A3: Headquarter location of VC and PE investors

	VC investors (N=443)		PE investors (N=224)	
Headquarter location	N	%	N	%
Germany	58	13.1	21	9.4
UK	44	9.9	21	9.4
Netherlands	43	9.7	16	7.1
France	35	7.9	33	14.7
Spain	29	6.5	16	7.1
Switzerland	21	4.7	7	3.1
Italy	17	3.8	27	12,1
Finland	16	3.6	8	3.6
Sweden	16	3.6	10	4.5
Belgium	15	3.4	8	3.6
Portugal	15	3.4	11	4.9
Denmark	13	2.9	4	1.8
Norway	11	2.5	1	0.4
Poland	11	2.5	0	0
Czechia	9	2.0	0	0
Greece	9	2.0	3	1.3
Ireland	9	2.0	4	1.8
Austria	8	1.8	1	0.4
United States	8	1.8	1	0.4
Bulgaria	7	1.6	3	1.3
Luxembourg	7	1.6	0	0
Estonia	6	1.4	3	1.3
Israel	6	1.4	0	0
Turkey	5	1.1	2	0.9
Croatia	4	0.9	3	1.3
Hungary	4	0.9	1	0.4
Lithuania	4	0.9	0	0
Iceland	3	0.7	0	0
Cyprus	2	0.5	0	0
Latvia	1	0.2	0	0
Lichtenstein	1	0.2	0	0
Singapore	1	0.2	0	0
Ukraine	1	0.2	1	0.4
Romania	0	0	1	0.4
Slovakia	0	0	1	0.4
Other	1	0.2	0	0

Note: This table displays the headquarter locations of the respondents' respective VC and PE firms. Firms headquartered outside Europe were still included in the sample as long as they had an office in Europe and were active in the European PE/VC market.

Table A4: Industry focus of VC and PE investors

	VC investors (N=443)		PE investors (N=224)	
Sector or industry	N	%	N	%
ICT	136	30.7	19	8.5
Biotech & healthcare	90	20.3	28	12.5
Energy and environment	55	12.4	7	3.1
Business services	41	9.3	59	26.3
Business products	32	7.2	40	17.9
Financial and insurance services	27	6.1	2	0.9
Chemicals and materials	10	2.3	1	0.4
Consumer services	9	2.0	7	3.1
Consumer goods	7	1.6	18	8.0
No clear sector focus	36	8.1	43	19.2

Note: This table displays the most important industries or sectors, in which VC and PE investors invest, as indicated by the survey respondents.

Table A5: Most important investment selection criteria

	I	II	III	
	VC investors (N=443)	PE investors (N=224)	Test of equality of proportions	
Investment selection criteria			Difference	p-value
Management team	69.3%	54.0%	15.3%	0.001
Scalability of the business	29.0%	19.2%	9.8%	0.005
Technology	27.5%	2.7%	24.8%	0.000
Total size of addressable market	24.6%	3.1%	21.5%	0.000
Product´s value proposition	23.9%	14.7%	9.2%	0.006
Exit potential	20.3%	13.8%	6.5%	0.04
Business model	14.7%	28.1%	-13.4%	0.000
Venture stage[a]	10.2%	n.a	--	--
Market leadership[a]	--	8.9%	--	--
Geographical location of target company	9.7%	9.8%	-0.1%	0.960
Revenue-generating capacity/potential	9.3%	13.4%	-4.1%	0.102
Valuation and deal terms	8.6%	15.6%	-7.0%	0.006
Strategic fit in investment portfolio	8.6%	5.8%	2.8%	0.203
ESG considerations	8.4%	9.4%	-1.0%	0.658
Industry	7.9%	12.1%	-4.2%	0.081
Our ability to add value	7.2%	22.8%	-15.4%	0.000
Profitability/profitability potential	6.3%	30.4%	-24.1%	0.000
Past performance/track record	6.1%	11.6%	-5.5%	0.013
Cash-generating capacity/potential	2.7%	18.3%	-15.6%	0.000
Other/s	1.6%	0.9%	0.7%	0.468
Diversity and inclusion considerations	1.1%	3.1%	-2.0%	0.067
Referral by other GPs/investors	1.1%	0.0%	1.1%	0.111

Note: This table displays the most important investment selection criteria for VC and PE investors. The question asked was: "*Considering your firm's overall activity in the venture capital/private equity market, what are your most important investment selection criteria?*". We report the results separately for VC and PE investors (Column I or II, respectively). The respondents were allowed to select multiple response options; hence, we report the respective percentages relatively to the total number of respondents for each investor type, while the reported figures reflect the percentage of respondents who have selected each item among their three most important investment selection criteria. Column III shows the differences in percentages and the results of a statistical test of equality of proportions between the two types of investors.

[a] The investment selection criterion 'venture stage' ('market leadership') was only included in the VC survey (PE survey).

References

- Alperovych, Y., Hübner, G., & Lobet, F. (2015). How does governmental versus private venture capital backing affect a firm's efficiency? Evidence from Belgium. Journal of Business Venturing, 30(4): 508-525.
- Amel-Zadeh, A., & Serafeim, G. (2018). Why and How Investors Use ESG Information: Evidence from a Global Survey. Financial Analysts Journal, 74 (3): 87–103. doi: 10.2469/faj.v74.n3.2.
- Atomico (2022). State of European Tech 22.
- Audretsch, D., Momtaz, P. P., Motuzenko, H., & Vismara, S. (2023). The Economic Costs of the Russia-Ukraine War: A Synthetic Control Study of (Lost) Entrepreneurship. arXiv preprint arXiv:2303.02773.
- Bellavitis, C., Fisch, C., & McNaughton, R. B. (2022). COVID-19 and the global venture capital landscape. Small Business Economics, 59(3): 781-805.
- Block, J., C. Fisch, S. Vismara, & Andres, R. (2019). Private Equity Investment Criteria: An Experimental Conjoint Analysis of Venture Capital, Business Angels, and Family Offices. Journal of Corporate Finance, 58: 329–352. doi: 10.1016/j.jcorpfin.2019.05.009
- Block, J., & Sandner, P. (2009). What is the effect of the financial crisis on venture capital-financing? Empirical evidence from US internet start-ups. Venture Capital–an International Journal of Entrepreneurial Finance, 11(4): 295-309.
- Conti, A., Dass, N., Di Lorenzo, F., & Graham, S. J. (2019). Venture capital investment strategies under financing constraints: Evidence from the 2008 financial crisis. Research Policy, 48(3): 799-812.
- Crisanti, A., Krantz, J., Pavlova, E., & Signore, S. (2021). The VC factor. Pandemic edition. Data driven insights into European VC and its resilience to the COVID-19 crisis. Joint EIF – Invest Europe study. First online 23 September.
- Derindere Köseoğlu, S., Mercangöz, B. A., Khan, K., & Sarwar, S. (2023). The impact of the Russian-Ukraine war on the stock market: a causal analysis. Applied Economics, published online on 7 March 2023. doi: 10.1080/00036846.2023.2188168
- De Vries, G., & Block, J. (2011). Venture capital syndication in times of economic crisis. Venture Capital–an International Journal of Entrepreneurial Finance, 13(3): 195-213.
- Invest Europe (2022). Investing in Europe: Private Equity Activity H1 2022 – Statistics on Fundraising, Investments & Divestments. Invest Europe, November 2022.
- Invest Europe & Arthur D. Little (2022). European Private Equity Survey – Full Report. November 2022.
- Izzeldin, M., Muradoglu, G., Pappas, V., Petropoulou, A., & Sivaprasad, S. (2023). The impact of the Russian-Ukrainian war on global financial markets. International Review of Financial Analysis, 87 (May). 102598.

- Liadze, I., Macchiarelli, C., Mortimer-Lee, P., & Sanchez Juanino, P. (2022). Economic costs of the Russia-Ukraine war. The World Economy.
- Kraemer-Eis, H., Block, J., Botsari, A., Diegel, W., Lang, F., Legnani, D., Lorenzen, S., Mandys, F., & Tzoumas, I. (2022a). EIF Private Equity Mid-Market Survey 2022: Market sentiment and impact of the current geopolitical & macroeconomic environment. EIF Research and Market Analysis Working Paper 2022/85.
- Kraemer-Eis, H., Block, J., Botsari, A., Diegel, W., Lang, F., Legnani, D., Lorenzen, S., Mandys, F., & Tzoumas, I. (2022b). EIF VC Survey 2022: Market sentiment and impact of the current geopolitical & macroeconomic environment. EIF Research and Market Analysis Working Paper 2022/82.
- Kraemer-Eis, H., Botsari, A., Gvetadze, S., Lang. F., & Torfs, W. (2022c). European Small Business Finance Outlook 2022. EIF Research and Market Analysis Working Paper 2022/84.
- Kraemer-Eis, H., Botsari, A., Gvetadze, S., Lang, F., & Torfs, W. (2022d). European Small Business Finance Outlook: SMEs in between crises. SUERF Policy Brief, No 497, December 2022.
- NVCA & PitchBook (2022). The PitchBook-NVCA Venture Monitor.
- Pitchbook (2023). European PE Breakdown, Q1/2023.
- Pitchbook (2023). European Venture Report, Q1/2023.

About

… the European Investment Fund

The European Investment Fund (EIF) is Europe's leading risk finance provider for small and medium sized enterprises (SMEs) and mid-caps, with a central mission to facilitate their access to finance. As part of the European Investment Bank (EIB) Group, EIF designs, promotes and implements equity and debt financial instruments which specifically target the needs of these market segments.

In this role, EIF fosters EU objectives in support of innovation, research and development, entrepreneurship, growth, and employment. EIF manages resources on behalf of the EIB, the European Commission, national and regional authorities and other third parties. EIF support to enterprises is provided through a wide range of selected financial intermediaries across Europe. EIF is a public-private partnership whose tripartite shareholding structure includes the EIB, the European Union represented by the European Commission and various public and private financial institutions from European Union Member States, the United Kingdom, and Turkey. For further information, please visit *www.eif.org*.

… EIF's Research & Market Analysis

Research & Market Analysis (RMA) supports EIF's strategic decision-making, product development and mandate management processes through applied research and market analyses. RMA works as internal advisor, participates in international fora and maintains liaison with many organisations and institutions.

… this Working Paper series

The EIF Working Papers are designed to make available to a wider readership selected topics and studies in relation to EIF´s business. The Working Papers are edited by EIF´s Research & Market Analysis and are typically authored or co-authored by EIF staff, or written in cooperation with EIF. The Working Papers are usually available only in English and distributed in electronic form (pdf).

EIF Working Papers

2023/089	*Entrepreneurial Finance and the Russian War against Ukraine: a Survey of European Venture Capital and Private Equity Investors*
2023/088	*Fairness in algorithmic decision systems: a microfinance perspective*
2023/087	*Female access to finance: a survey of literature.*
2023/086	*Determinants of EU Greentech investments: the role of financial market conditions*
2022/085	*EIF Private Equity Mid-Market Survey 2022: Market sentiment and impact of the current geopolitical & macroeconomic environment.*
2022/084	*European Small Business Finance Outlook 2022.*
2022/083	*The 2021 EIF SME Access to Finance Index. October 2022 update.*
2022/082	*EIF VC Survey 2022: Market sentiment and impact of the current geopolitical & macroeconomic environment.*
2022/081	*EIF Business Angel Survey 2021/22: Market sentiment.*
2022/080	*EIF Private Debt Survey 2021 - ESG considerations in the lending strategy of private debt funds.*
2022/079	*EIF Private Debt Survey 2021 - Private Debt for SMEs - Market overview.*
2021/078	*EIF Private Equity Mid-Market Survey 2021: Market sentiment.*
2021/077	*EIF Private Equity Mid-Market Survey: Fund managers' perception of EIF's value added.*
2021/076	*The 2020 EIF SME Access to Finance Index - October 2021 update.*
2021/075	*European Small Business Finance Outlook.*
2021/074	*EIF Venture Capital Survey 2021: Market sentiment.*
2021/073	*EIF VC Survey Autumn 2020 - Regional analysis.*
2021/072	*Financial and social inclusion in Europe.*
2021/071	*EIF Venture Capital, Private Equity Mid-Market & Business Angels Surveys 2020: Market sentiment – COVID-19 impact – Policy measures.*
2021/070	*The impact of VC on the exit and innovation outcomes of EIF-backed start-ups.*
2021/069	*Scale-Up Financing and IPOs: Evidence From Three Surveys.*
2020/068	*The EIF SME Access to Finance Index - September 2020 update.*
2020/067	*European Small Business Finance Outlook 2020. The impact of COVID-19 on SME Financing markets.*
2020/066	*Measuring microfinance impact: A practitioner perspective and working methodology.*
2020/065	*The social return on investment (SROI) of four microfinance projects.*
2020/064	*The market sentiment in European Private Equity and Venture Capital: Impact of COVID-19.*
2020/063	*ESG considerations in Venture Capital and Business Angel investment decisions: Evidence from two pan-European surveys.*
2020/062	*The Business Angel portfolio under the European Angels Fund: An empirical analysis.*

2019/061	*European Small Business Finance Outlook.*
2019/060	*EIF Business Angels Survey 2019 - Market sentiment, public intervention and EIF's value added.*
2019/059	*EIF VC Survey 2019 - Fund managers' market sentiment and policy recommendations.*
2019/058	*EIF SME Access to Finance Index – June 2019 update.*
2019/057	*European Small Business Finance Outlook.*
2019/056	*The real effects of EU loan guarantee schemes for SMEs: A pan-European assessment.*
2019/055	*The European Venture Capital Landscape: an EIF perspective. Volume V: The economic impact of VC investments supported by the EIF.*
2019/054	*Econometric study on the impact of EU loan guarantee financial instruments on growth and jobs of SMEs.*
2018/053	*European Small Business Finance Outlook.*
2018/052	*The effects of EU-funded guarantee instruments of the performance of Small and Medium Enterprises - Evidence from France.*
2018/051	*EIF VC Survey 2018 - Fund managers' perception of EIF's Value Added.*
2018/050	*European Small Business Finance Outlook.*
2018/049	*EIF SME Access to Finance Index – June 2018 update.*
2018/048	*EIF VC Survey 2018 – Fund managers' market sentiment and views on public intervention.*
2018/047	*EIF SME Access to Finance Index.*
2017/046	*European Small Business Finance Outlook.*
2017/045	*The European venture capital landscape: an EIF perspective. Volume IV: The value of innovation for EIF-backed startups.*
2017/044	*Financing Micro Firms in Europe: An Empirical Analysis.*
2017/043	*European Small Business Finance Outlook.*
2017/042	*Credit Guarantee Schemes for SME lending in Western Europe.*
2017/041	*The European Venture Capital landscape: an EIF perspective. Volume III: Liquidity events and returns of EIF-backed VC investments.*
2017/040	*Financing Patterns of European SMEs Revisited: An Updated Empirical Taxonomy and Determinants of SME Financing Clusters.*
2017/039	*Guaranteeing Social Enterprises – The EaSI way.*
2016/038	*The European Venture Capital Landscape: an EIF perspective. Volume II: Growth patterns of EIF-backed startups.*
2016/037	*European Small Business Finance Outlook.*
2016/036	*The role of cooperative banks and smaller institutions for the financing of SMEs and small midcaps in Europe.*
2016/035	*European Small Business Finance Outlook.*
2016/034	*The European Venture Capital Landscape: an EIF perspective. Volume I: the impact of EIF on the VC ecosystem.*
2016/033	*Evaluating the impact of European microfinance. The foundations.*

2015/032	*European Small Business Finance Outlook.*
2015/031	*SME Securitisation – at a crossroads?*
2015/030	*Financing patterns of European SMEs: An Empirical Taxonomy.*
2015/029	*The Economic Impact of EU Guarantees on Credit to SMEs - Evidence from CESEE Countries.*
2015/028	*European Small Business Finance Outlook.*
2015/027	*Bridging the university funding gap: determinants and consequences of university seed funds and proof-of-concept Programs in Europe.*
2014/026	*European Small Business Finance Outlook.*
2014/025	*Institutional non-bank lending and the role of debt funds.*
2014/024	*European Small Business Finance Outlook.*
2014/023	*Pricing Default Risk: the Good, the Bad, and the Anomaly.*
2014/022	*Guidelines for SME Access to Finance Market Assessments.*
2014/021	*Financing the mobility of students in European higher education.*
2013/020	*European Small Business Finance Outlook.*
2013/019	*SME loan securitisation 2.0 – Market assessment and policy options.*
2013/018	*European Small Business Finance Outlook.*
2013/017	*Forecasting distress in European SME portfolios.*
2012/016	*European Small Business Finance Outlook.*
2012/015	*The importance of leasing for SME finance.*
2012/014	*European Small Business Finance Outlook.*
2012/013	*Progress for microfinance in Europe.*
2011/012	*European Small Business Finance Outlook 2/2011.*
2011/011	*Business Angels in Germany. EIF's initiative to support the non-institutional financing market.*
2011/010	*European Small Business Finance Outlook.*
2011/009	*The performance and prospects of European Venture Capital.*
2010/008	*Impact of Legislation on Credit Risk – How different are the U.K. and Germany?*
2010/007	*SME Loan Securitisation – an important tool to support European SME lending.*
2010/006	*Drivers of Private Equity Investment activity. Are Buyout and Venture investors really so different?*
2010/005	*Private Equity Market Outlook.*
2010/004	*Private Equity and Venture Capital Indicators – A research of EU-27 Private Equity and Venture Capital Markets.*
2010/003	*Private Equity Market in Europe – Rise of a new cycle or tail of the recession?*
2009/002	*Financing Technology Transfer.*
2009/001	*Microfinance in Europe – A market overview.*

#Believe InSmall

www.eif.org

Scan above to obtain a PDF version of this working paper

Follow our stories and work on social media

European Investment Fund

@eif4smes

@EIF_EU

engage.eif.org