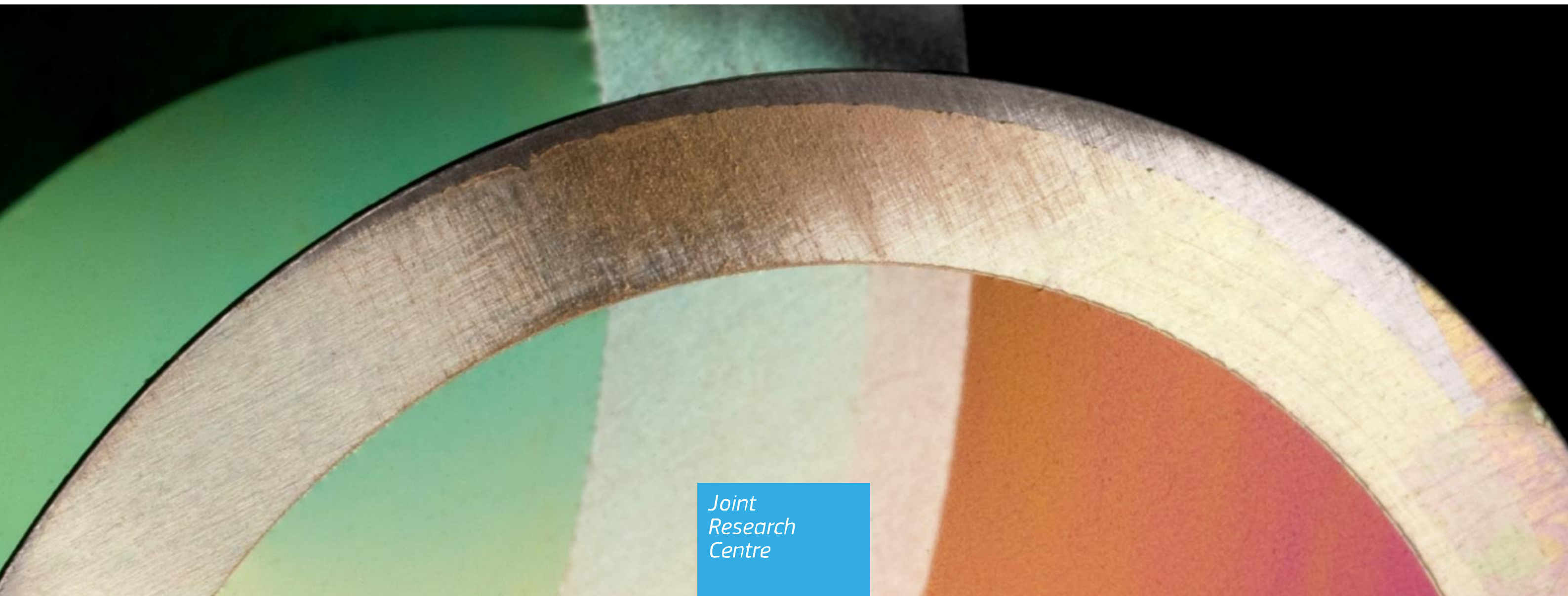
European Commission

THE CORONAVIRUS ECONOMIC CRISIS: ITS IMPACT ON VENTURE CAPITAL AND HIGH GROWTH ENTERPRISES

Colin Mason

30th April 2020



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EU Science Hub
https://ec.europa.eu/jrc

JRC120612

PDF ISBN 978-92-76-18432-4 doi:10.2760/408017

Luxembourg: Publications Office of the European Union, 2020

How to cite this report: Mason, C., *The Coronavirus Economic Crisis: Its Impact on Venture Capital and High Growth Enterprises*, Gavigan, J. editor, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-18432-4, doi:10.2760/408017, JRC120612.

Contents

Foreword

This paper has been prepared as a contribution to a larger on-going research activity on high growth innovative enterprises (HGEs) and scale-up companies of the European Commission's Joint Research Centre (JRC), led by the Unit for Finance, Innovation and Growth (B7). This broad activity analyses the sectoral and geographical variability and trends of HGE demographics in the EU and the framework conditions affecting their development with an emphasis on financing and risk-financing in particular. In keeping with the JRC's role of providing evidence and analysis to underpin EU policy, the work is conducted in close contact with a wide range of Commission policy DGs, and is designed to provide both EU-wide and member state specific input to the annual cycle of economic policy coordination in the EU known as the "European Semester". In the context of the COVID-19 crisis and the policy response to the immediate and subsequent socio-economic fallout, the vulnerability of high-growth and potential high-growth enterprises is a big concern particularly in view of the disproportionate contribution these enterprises can play in securing a sustainable exit from the crisis in the medium to long term. The importance of risk-capital and other means of financing for these firms means that it is vital to have a close-to-real-time means of monitoring the impacts of the crisis on venture capital markets in Europe and globally so that pertinent evidence can be provided also in close-to-real-time to those developing and implementing the policy response to the crisis. This paper represents a particularly timely contribution in this regard.

Acknowledgements

The paper has been prepared with the support of the European Commission's Joint Research Centre – Knowledge for Finance, Innovation and Growth Unit (JRC.B.7) [expert contract number CT-EX2019D365018-101] in the context of cooperation on policy-orientated evidence and analysis of high-growth enterprises. I am grateful to Giuseppina (Pina) Testa and James Gavigan for inviting me to be an expert to provide feedback on the JRC Technical Report on "Innovative High Growth Enterprises" and suggest how this work can be further developed and for supporting the publication of this paper.

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Colin Mason is Professor of Entrepreneurship in the Adam Smith Business School, University of Glasgow. He previously held a Chair in the Hunter Centre for Entrepreneurship, Strathclyde Business School, University of Strathclyde and before that was at the University of Southampton. He has held visiting positions at universities in Canada (Ottawa, Saint Mary's), Australia (Adelaide, UniSA, New Zealand (Otago) and Argentina (General Sarmiento). His research is in the area of entrepreneurship and regional development with specific research focus on entrepreneurial finance and on entrepreneurial ecosystems. He is one of the pioneers of research on business angel investing. He is co-author of five of the ten most cited papers on business angels and five of the top ten papers that are defined as 'citation classics'. He is also co-author of a highly cited OECD report on entrepreneurial ecosystems. He is the founding editor of the journal Venture Capital: An International Journal of Entrepreneurial Finance (published by Taylor and Francis Ltd) which is now in its 21st year of publication. He was joint winner of the ESRC's 2015 Outstanding Impact in Business award (with Prof Richard Harrison) for his research on business angels.

Summary

High growth enterprises (HGEs) make a major contribution to economic growth. They are innovative, many are technology based and they make a disproportionate contribution to job creation. HGEs typically go through a 'valley of death' in which their costs exceed revenues as they develop their product, achieve market traction and scale-up. For many HGEs, access to venture capital – from venture capital funds, business angels and increasingly equity crowdfunding platforms - is therefore critical, providing a financial 'runway' that provides them with the opportunity to reach profitability. The economic crisis created by the COVID-19 pandemic is expected to result in both an immediate and longer-term contraction in the supply of venture capital. This will have a significant negative economic impact over the longer-term. Investors will focus on supporting their existing investee companies and therefore are much less likely to consider making new investments. Moreover, the financial capability of investors to make further investments may be constrained as investors in venture capital funds pull back and business angels experience a decline in their net worth as a consequence of the decline in financial markets. This raises concerns, first, that many HGEs will fail as they run out of cash and, second, that potential high growth start-ups that emerge from the crisis will not be able to raise pre-seed and seed capital.

The immediate focus of government intervention has been to support the small business sector with measures to support their liquidity. A key focus has been the provision of loan guarantees to enable banks to lend to cash-strapped businesses. However, this type of support is not appropriate for HGEs; moreover, the eligibility rules for such schemes often excludes such firms. HGEs require other forms of financial support. These include co-investment schemes, tax incentives for business angels, convertible debt instruments and grants and other non-dilutive forms of finance. Developing agile government procurement processes is also a significant lever for government support to technology businesses. Many of these support measures already exist but require modification to increase their reach. The effectiveness of some new initiatives has been compromised by poor design. The increase in financially constrained HGEs and investors may result in an increase in acquisition activity. Governments should therefore also consider the need for greater scrutiny of the takeover of emerging technology companies by foreign companies because of the risk that key knowledge assets will be transferred to other geographical regions. More generally, Government needs to ensure that entrepreneurial ecosystems remain intact. Finally, governments must also ensure that the contraction of VC investing does not widen existing geographical disparities in venture capital investing and, as a consequence, high growth firms.

1 INTRODUCTION

The coronavirus pandemic has created a huge contraction in economic activity; output is falling and jobs are being lost. The IMF is expecting the GDP of developed countries to decline by 12% between the last quarter of 2019 and the second quarter of 2020, followed by a slow recovery. Other commentators are more pessimistic, suggesting that the GDP of developed countries will drop by between 15 and 30%.[1] The Eurozone suffered its biggest fall in employment and activity on record in April 2020. Commentators also note that this is not a 'normal' recession. It will not discriminate: rather than simply clearing out less productive firms it will also result in the death of many good firms.[2] There is a clear consensus that this economic crisis will result in a decline in venture capital (VC). Although venture-backed businesses represent a tiny proportion of businesses (Europe has 18,000 venture capital-backed startups[3]), they make a disproportionate economic impact[4] by financing innovative high growth enterprises (HGEs) which recent JRC research shows are responsible for most net employment growth in the EU. Moreover, as the JRC study also notes, VC backed companies are mostly high-tech.[5] Furthermore, 190 European startups have surpassed a $1bn valuation - unicorn status. Venture capital investment has accelerated the rise of unicorns: 82% of unicorns are VC-backed, compared with only 20% a decade ago.[6] The decline of VC will therefore have a negative impact on economic growth, not just in the immediate crisis period but also into the medium-term future. A sustainable economic recovery will depend on high growth, equity backed tech start-ups and scale-ups.

This paper looks at the drivers of the decline in VC and the ways in which the decline in investment will occur and then considers the ways in which government should intervene to mitigate the adverse economic impacts that are likely to arise. It concludes by highlighting the need for research that focuses on business angel investing in view of the role that they play in financing businesses at the start of the scale-up tunnel.

The paper has been written in response to the JRC's invitation for thoughts on appropriate interventions by governments and public authorities to support high growth enterprises (HGEs) to bridge the coronavirus crisis – what Sequoia Capital have termed "the black swan of 2020"[7] [8] - to some unknown "new normal" and what research activities the JRC might undertake which can be of potential relevance to policy-makers in the current circumstances. The focus is on HGEs rather than SMEs in general and specifically on venture capital on account of its significance for the emergence of HGEs. The account draws on commentary from various business news sources including Sifted,

[1] Martin Wolf: coronavirus could be worst economic crisis since Great Depression, Financial Times, 17th April. https://www.ft.com/video/fbaaa133-c94d-4e35-844b-bfde5f6a0635

[2] NESTA (2020) There will be no 'back to normal', 9th April. https://www.nesta.org.uk/blog/there-will-be-no-back-normal/?utm_source=Nesta+Weekly+Newsletter&utm_campaign=e99dadbc15-EMAIL_CAMPAIGN_2020_04_13_12_01&utm_medium=email&utm_term=0_d17364114d-e99dadbc15-181380285

[3] EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

[4] S Dumitriu (2020) What will it take to save the UK's startups and scaleups?, 2nd April. https://sifted.eu/articles/uk-startups-coronavirus-government/

[5] Flachenecker, F., Gavigan, J., P., Goenaga, X., Pasi, G., Preziosi, N., Stamenov, B., Testa, G., (2020). *High Growth Enterprises: demographics, financing & policy measures*. JRC Technical Report. Joint Research Centre. Brussels, Belgium. https://ec.europa.eu/jrc/en/publication/high-growth-enterprises-demographics-finance-policy-measures

[6] Europeanstartups. (2020) op.cit.

[7] https://medium.com/sequoia-capital/coronavirus-the-black-swan-of-2020-7c72bdeb9753

[8] However, Nicholas Taleb who coined the phrase to mean an unpredictable, rare, catastrophic event, has refuted this description, arguing that the pandemic was wholly predictable hence "a white swan if ever there was one". The New Yorker (2020) The Pandemic Isn't a Black Swan but a Portent of a More Fragile Global System, 21 April, https://www.newyorker.com/news/daily-comment/the-pandemic-isnt-a-black-swan-but-a-portent-of-a-more-fragile-global-system

Financial Times, City AM, Inc Magazine, Forbes, The Entrepreneur's Network, Pitchbook and a number of webinars.

2 VENTURE CAPITAL – AN OVERVIEW

Venture capital is a specialist form of finance designed to meet the needs of emergent firms, particularly in technology sectors, which are pursuing significant growth opportunities. The financing needs of such firms typically exceed their capability of generating funds internally, while their ability to attract bank loans (debt finance) is restricted by their lack of collateral and negative cash flows. Indeed, the faster a firm grows the more voracious is its appetite for cash to invest in research and development (R&D), product development and testing, recruitment of key team members, premises, specialized equipment, marketing, sales and distribution capability, and inventories. Venture capital fills this gap in the supply of finance – termed 'the valley of death' – investing on a medium- to long-term basis in exchange for an 'equity stake' to enable firms to scale-up and become profitable.[9] At some point investors will seek an exit to realise the capital gain from their successful investments. Typically this takes the form of a sale to a large corporate group. A small proportion of larger exits occur by means of an IPO.

There are three main sources of venture capital. These sources play complementary roles, financing HGEs at different points in their development.

The first is business angels – wealthy private individuals (often successful cashed out entrepreneurs) who invest their own money in new and early stage businesses. It is 'smart money': business angels are 'hands on', drawing on their own entrepreneurial experience to provide advice, operational support and contacts to add value to their investee companies. The past two decades has seen the emergence of angel groups that enable individual angels to invest collectively rather than on their own. This has raised their visibility, expanded the pool of angel investors, increased the professionalisation of their investing, and increased the size of investments that they make. Angel investment is more significant now than during the economic crisis of 2008. Business angels dominate seed and early stage investing.

The second are venture capital funds. They are professional investors who manage money raised from financial institutions (pension funds, insurance companies, banks, endowments, and increasingly sovereign wealth funds). Venture capital funds typically specialise by stage of business and size of investment, with some operating at the seed stage, others at the growth stage and others at the later stage. The ease in which VCs have been able to raise finance from institutional investors over the past decade[10] has resulted in an increase in the size of funds which, in turn, has brought about an increase in the size of investments and a shift away from seed and early stage investing. This is reflected in a much faster growth in the amount of finance invested by venture capital funds than the number of investments that has been driven by a growth of mega-funding rounds. The resulting market gap for small, early stage investments has been filled by angel groups, accelerators and seed VC funds. Some financial institutions also have their own venture capital subsidiaries. Several large nonfinancial companies, particularly technology companies, have established their own corporate venture capital subsidiaries which invest for strategic reasons in young technology companies to complement their own internal R&D activities. Most countries also have government-backed venture capital funds that have been established to fill investment 'gaps' – both market gaps such as smaller investments and geographical gaps.

[9] It is important to emphasise that venture capital is distinctive from private equity which invests to facilitate ownership change, typically involving the restructuring of large companies through management buyouts and buyins, family business ownership transitions, and public-to-private deals.

[10] See EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

The third is equity crowdfunding platforms that enable firms to raise finance from a large number of individuals, each investing a small amount. Crowdfunding has only existed for little over a decade and has yet to experience an economic recession.

Business angels are the most significant source of venture capital in terms of the number of businesses in which they invest, but the amounts that they invest are small. Venture capital funds are the most significant in terms of the amounts invested, reflecting their much larger size of investments. They will often provide follow-on investments for businesses that were initially funded by business angels. Equity crowdfunding platforms are still a relatively marginal source of equity capital, in part because they are highly regulated. In the UK, which has just three equity crowdfunding platforms, equity crowdfunding accounts for a minority of total seed and early stage funding (17% in the UK) although has grown rapidly in recent years. However, the significance of equity crowdfunding varies between countries on account the different regulatory regimes that are in place. According to Beauhurst, in the UK the largest 20 VCFs were involved in only 23 early stage deals in the £100,000-£2m size range out of a total of 1,634 deals. The vast majority were financed by business angels, EIS funds (tax-efficient managed investment vehicles that raise finance from high net worth individuals to invest in eligible ventures) and crowdfunding.[11]

Although only a small number of companies are backed by business angels and VCFs, they have a disproportionate impact on economic development, for example, in terms of innovation, job creation, R&D expenditures, and export sales. The injection of money and support from business angels and VCFs enables companies to grow much faster than the proceeds from sales revenue alone would allow. Moreover, this superior growth rate is sustained over the long run. Venture capital-backed companies are faster at developing products and bringing them to market, pursue more radical and ambitious product or process innovation, and produce more valuable patents. VC-backed companies also have large multipliers, creating four or five jobs for every direct job that they create directly.[12] A significant proportion of scale-up companies are venture capital backed. It is therefore clear that a decline in investing by business angels and VCFs will have significant immediate and longer-term negative impacts.

[11] Dumitriu, S (2020) most startups will fail, we should save them anyway, The Entrepreneur's Network, 7th April. https://www.tenentrepreneurs.org/blog/most-startups-will-fail-we-should-save-them-anyway

[12] D. Stanger (2020) What covid-19 means for start-up ecosystems and what can be done? Forbes, 1 April. https://www.forbes.com/sites/danestangler/2020/04/01/what-covid-19-means-for-startup-ecosystems-and-what-can-be-done/#517cab1c3c81

3 IMPACT OF THE CORONAVIRUS ECONOMIC CRISIS ON VENTURE CAPITAL

3.1 Impact on investment activity

There is a unanimous consensus that the economic crises induced by the coronavirus will result in an immediate reduction in venture capital investing, affecting all of the providers – business angels, equity crowdfunding platforms and seed and venture capital funds, although most of the commentary relates to venture capital funds. Start Up Genome reports that in China – the initial location of coronavirus – venture capital deals dropped 50-57 percentage points in the first two months of 2020 compared with the rest of the world.[13] And although there was a rebound in March with a six fold rise from February, investment in first quarter 2020 was less than half the amount invested in the same period in 2019. Moreover, seed investing was still in short supply.[14] There have also been declines in VC investing elsewhere in Asia. UK evidence from Beauhurst indicates that there were 344 equity deals in Q1 2020, the lowest since Q4 2014 and a 32% decline from Q4 2019. There were just 95 deals in March 2020 that raised £595m compared with 174 deals in March 2019 that raised £1.46bn.[15] In contrast, EuropeanStarups.co observe that venture capital activity in March and April was not significantly lower than previous months and the same period last year, with several big deals being made.[16] Similarly, Ascendant reported no material decline in the number of VC deals above £500,000 in UK and Irish technology companies in Q1 2020. However, it was acknowledged that these deals are likely to have been worked on for the past three to four months and that for some deals there would have been an imperative to complete before the end of the tax year.[17] Venture capital investment activity is therefore a lagging indicator. Ascendant also note that in the previous market crashes VCFs took about 4-6 months to really believe that the market had fundamentally changed and materially modify their investment activity. What all of this suggests is that the most likely scenario is that there will be a steeper decline in VC investing over the remainder of the year and beyond.

A decline in VC will impact both those businesses that have already raised one or more rounds of finance as well as entrepreneurs looking to raise venture capital for the first time[18] with a dramatic impact on the ability of entrepreneurs both to start and to scale-up companies. Moreover, the impact will not be confined to the crisis period and its immediate aftermath but will be long-lasting. Start Up Genome reports that in the economic crisis of 2000-1 global venture capital fell by 21.6% over 12 months, taking three years to recover to pre-contraction levels; in the 2007-9 economic crisis it fell by 29.3% over 12 months, taking one year to recover to its pre-contraction level.[19] However, there is significantly more VC available in Europe than was the case in 2008.[20] Indeed, the amount raised by venture capital funds across the EU-27 has risen from €16bn in 2015 to nearly €39bn in 2019.[21] This reflects the attractions of this asset class to financial institutions. But it has been argued

[13] https://theusbreakingnews.com/startup-genome-the-coronavirus-is-hurting-global-startup-investments/

[14] Financial Times (2020) Venture capital funding rallies in China after virus lockdown, 14th April. https://digital.olivesoftware.com/Olive/ODN/FTUK/Default.aspx

[15] Beauhurst (2020) The effect of coronavirus on UK investment: Q1 2020. 2nd April. https://about.beauhurst.com/blog/effect-of-coronavirus-uk-investment-q1-2020/

[16] EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

[17] Reported in Young Company Finance (VCF) issue 256, April 2020.

[18] Lewin, A (2020) Fundraising during coronavirus: Are startups screwed? Sifted, 16 March. https://sifted.eu/articles/startup-fundraising-coronavirus/

[19] Ibid.

[20] Sifted webinar: Startup funding during the crisis: what is really going on? 3 April. https://sifted.eu/articles/startup-funding-coronavirus/

[21] EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

that the relative ease with which VC funds have been able to raise finance has resulted in them making higher risk investments. As a consequence, it has been estimated that the European VC industry entered this crisis with a significant amount of finance available to invest (so-called 'dry powder').[22] According to data from Preqin, the UK venture capital industry has about $10.4bn of cash looking for investment opportunities — double the amount it had in 2014. Many funds therefore have money available to invest,[23] although there are also smaller funds with limited capital available. However, even though some VCs say that they are continuing to invest in the crisis it is anticipated that the majority will slow down their investing. This is for three reasons.

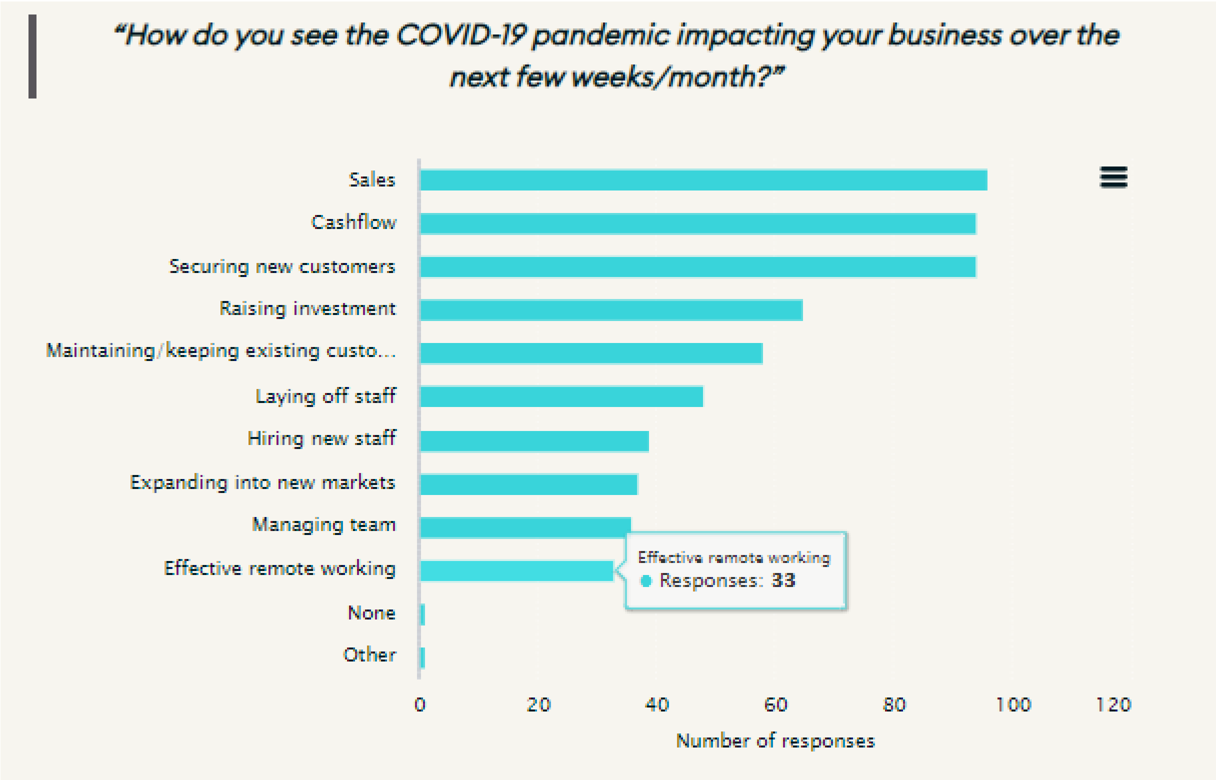
First, for the majority of their investee companies the crisis has created a huge demand shock. As the survey evidence below from Tech Nation illustrates (Figure 1), their burn rate of cash will increase as sales revenue falls much faster than they can reduce their costs. The Tech Tracker index of UK tech start-ups indicated that increasing sales is now their biggest challenge: 61% cited this as an issue — up from 45 per cent in the final quarter of 2019. Just 32 per cent of UK tech start ups are confident or very confident that their turnover will increase in the year ahead and more than one-third felt their businesses were not well prepared to deal with the economic downturn. And a report by Dealroom estimated that one-third of European tech companies were "vulnerable" to the Covid-19 crisis.[24] Hence firms that have already raised finance are likely to need to raise follow-on funding sooner than had been anticipated. Providing finance to extend their financial runway is crucial if they are not to fail.

Figure 1. Challenges Reported by UK Technology Scale-ups in the early stage of the coronavirus crisis (n=116)

[22] EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

[23] Financial Times (2020) Lombard: Start-up saviours, 6th April. https://www.ft.com/content/523024de-9115-45ee-923a-fd9a32a2502f

[24] All statistics from City AM (2020) UK tech startup confidence slumps amid Covid-19 crisis, 22nd April. https://www.cityam.com/exclusive-uk-tech-startup-confidence-slumps-amid-covid-19-crisis/



Source: Tech Nation (2020) The challenges facing UK tech in the Coronavirus crisis – scaleups surveyed, 31 March. https://technation.io/news/the-challenges-facing-uk-tech-in-the-coronavirus-crisis-scaleups-surveyed/

Second, the ability of VCs to raise new funds is expected to be much harder. Over the past decade many non-traditional investors in VC have entered the industry – including family offices, non-financial companies, hedge funds, investment banks, private equity firms and sovereign wealth funds. These investors have dominated investment in VC and PE over the past decade and more. Indeed, European VCs account for less than half (36% in 2019) of total investment in European start-ups, with the remainder coming from Asian and US VCs, family offices, corporate venture capital and sovereign wealth funds.[25] This has driven the emergence of mega funds that dominate later stage investing. These funds have provided significant amounts of funding to enable 'unicorns' – typically platform economy businesses - to sustain massive losses for a long period of time to dislodge incumbents or triumph over less well funded competitors, enabling them to remain private for longer without the need for an IPO.[26] It is suggested that some of these non-traditional investors are now overexposed to venture capital as an asset class and so will reduce their investment, becoming much more selective in the process. This is partly for technical reasons – the 'denominator effect': if the value of their other types of investments go down then they will become over-allocated to venture capital, prompting them to pull back on investing both directly and indirectly, via funds, in venture capital. However, it is also suggested that some of these non-traditional investors do not have a long-term commitment to the VC industry ("tourist money") and may stop investing if returns decline. If they pull back then this will create a liquidity crunch for later stage start-ups (Series B, C …). Investors may be unwilling to continue to fund these companies as exit options become more difficult and valuations drop.[27] Corporate venture investors – investing in early stage innovative companies as an external R&D and growth strategy - pulled back more quickly and sharply than other

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[25] EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

[26] Kenney, M and Zysman, J (2019) Unicorns, Cheshire cats, and the new dilemmas of entrepreneurial finance, Venture Capital: an international journal of entrepreneurial finance, 21 (1) 35-50.

[27] Ibid.

investors in the 2008-9 global financial crisis.[28] Hits to their earning and loss in their stock price value is likely to discourage them from making substantial external capital outlay.[29] It has also been suggested that US VCs which over the past decade increased their investing in Europe as US investment opportunities became expensive and now account for a significant proportion of later stage investments in Europe – are likely to cut back their commitment to investing in Europe. Most of these firms do not have a permanent physical presence in Europe, investing on a 'fly-in' basis. It is expected that less 'fly-ins' will happen, reducing their investment activity.[30]

Third, opportunities for investors to exit, both to harvest successful investments and also for distress sales, will diminish. Investors will have to write-down many of their investments on account of their poorer prospects for the future growth and profitability, reducing the likelihood that they will be able to exit from many of their investments. Falling prices and fewer opportunities to sell may require VCs to delay exits, requiring them to fund such companies for longer either out of necessity or to make them more appealing to buyers when market conditions improve. Acquisition by large companies is the most common way in which exits occur, with stock market listings only an option for larger businesses. There is likely to be a slowdown in the M&A market as large companies are less likely to make acquisitions as they focus on their own liquidity and maintaining operations. The stock market has also closed to IPOs. For those exits that do occur, valuations will fall, returning less cash to investors and entrepreneurs. This reduces their capacity to make new investments. Fewer exits and downward pressure on the valuation of those exits that do occur will have a negative impact on fund performance making it harder to raise new funding the future.

In this context in which demand for investment is increasing and there are uncertainties about the ability to raise future funds, VCs will therefore stretch their existing funds for longer and will be more cautious in future investing. This has implications both for firms in their portfolios and for firms seeking to raise finance for the first time.

3.2 Impact on Portfolio Firms

There is a clear consensus that VC funds will re-focus their attention on keeping their portfolio companies afloat – "everything else is secondary." Indeed, it is reported that some VCs have withdrawn from new investments after signing term sheets and sending letters of intent.[31] Because of their high level of investing in recent years VCs have a lot of companies in their portfolios. Venture capital firms adopt a staged approach to funding, with most reserving 50% of their capital for follow-on investing. Portfolio companies require follow on capital because they are loss making as they grow, investing in innovation and growth. Investors will prioritise their capital for their portfolio businesses, reducing the number of new investments that they make. They also have to consider whether the money that their Limited Partners (LPs) have promised will actually materialise and whether they will have to delay further fundraising. These risks will also discourage new investments. Commentators therefore suggest that VCs will seek to conserve their cash, using their funding more selectively to focus on the most promising businesses in their portfolios to ensure that they survive. It has been estimated that one-fifth of VC-backed companies are in markets that are growing rapidly as a result of the crisis.[32] VCs will also need to redesign the way in which they support their portfolio

[28] Stangler (2020) op.cit.
[29] Pitchbook (2020) Covid-19 influence on European VC market. 17th April.
[30] Sifted webinar: Startup funding during the crisis: what is really going on? 3 April. https://sifted.eu/articles/startup-funding-coronavirus/
[31] Beauhurst (2020) op.cit.
[32] EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

companies. Meanwhile companies will use the finance that they are able to raise to sustain their existing operations rather than to fuel further growth.

Companies that were expecting to raise more cash in the future may not be able to do so because customer acquisition and sales are likely to fall or they may simply not be able to make sales, making it more difficult to demonstrate market traction, resulting in the failure to meet the milestones that were set at the previous funding round. VCs will therefore focus on evidence for customer engagement. Early market validation is therefore likely to play a bigger role in future VC investment decisions. Sales and revenue is one indicator, but in some cases this may be a false indicator reflecting a temporary need, hence metrics that demonstrate engagement may be given more emphasis (e.g. net customer retention; power users). VC-backed companies with drug R&D and clinical trials in vaccines and infectious diseases are also well positioned for growth but have high burn rates due to their high R&D costs and capital expenditure and risk of delay and disruption to clinical trials. High cash burn companies that VCs have supported on the basis of enabling them to grow their gross merchandise volume (GMV) but which are unprofitable are particularly vulnerable. Firms with only a short runway of cash (less than six months) will be particularly vulnerable." It may be fatal for firms in the process of raising a new round of finance. Indeed, one commentator suggests that even if the Coronavirus is 'over' in six months, "anyone with less than 12 months runway is dead."

In summary, the companies in the portfolios of venture capital funds will have different experiences in their ability to both to survive and raise further funding depending on the following: how recent was their last funding round; stage of development; size of their cash pile; product/market; whether they are revenue generating or pre-revenue; their business model (e.g. contract based companies such as SaaS); and if they are consumer-oriented.[33] EuropeanStartUps.co capture this divergence in the prospects for European VC-backed startups (Table 1) and stage (Table 2), underlining the observation of one commentator that "businesses are all in the same storm but not in the same boat."[34]

Table 1. The Outlook for European VC-Backed Startups: (a) market served

Category	Challenges	Examples
Net positive	Managing rapid growth, even harder during lock-down - Consumer health: Groceries: Collaboration tools:	Biotech & B2B health:
Defensible	Operational challenges Shrinking lead pipeline, selling gets harder Heightened cash awareness, dealing with runway	Deep tech: Clean tech: Online payments: Developer tools
Vulnerable	Need to reduce costs	Fashion and apparel: Car sale: Proptech: Lending
Most affected	Sometimes revenues going to zero	Travel: Mobility: Jobs

Source: EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

33 Pitchbook (2020) COVID-19's Influence on the US VC Market, 1st April.

34 Quote from Victoria Lennox, President and Founder of Startup Canada at a NACO roundtable webinar on Innovations in Health Care, 23rd April.

Table 2. The Outlook for European VC-Backed Startups: (b) stage of development

Stage	Average number of employees	Size of last funding round €m	Potential outcome	
			1st & 2nd quartile performers	3rd and 4th quartile performers
Pre-Seed & Seed	20	1-4	Can manage cash-burn Can raise from investors if needed Accept smaller round & valuation Sufficient seed capital available	Even in a normal circumstances, 70-80% of seed stage startups do not make it to series A
Series A	70	4-15	Can manage cash-burn Can raise from investors if needed Accept smaller round & valuation Plenty of series A capital available	Many will reduce team by 25-50% For some, crisis will be fatal
Series B+	160	15-100	Cash-burn harder to manage Shortage of European mid-stage capital already pre crisis, now worse	Many will reduce team by 25-50% Focus on profitability Crisis will be fatal for many, including some that otherwise would make it
Later	600	100+	Sufficient growth equity available but terms have changed dramatically (e.g. Airbnb)	A few high-profile failures in bottom quartile (e.g. WeWork)

Source: EuropeanStartups.co (2020) Europe's Startup Ecosystem Navigating The COVID-19 Crisis, Launch report, 22 April. https://techround.co.uk/startups/european-startups-launch-report-reveals-the-first-large-scale-look-at-how-the-current-crisis-is-impacting-startups-in-europe/

There are three further significant consequences that arise from the exacerbation of the ever-present power disparities between entrepreneurs and VCs that results from the widening gap between the demand for finance from portfolio companies and the increased caution on the part of VCs to invest.

First, deal terms will shift back favour of investors from their present entrepreneur-friendly terms. This will see the re-emerge of participating preference shares, liquidation multipliers, anti-dilution provisions, rachets and warrants in term sheets.[35]

Second, valuations will fall. Estimates range from 10-40%, depending on the stage of the company. Most agree that later-stage startups will get hit the hardest as they reflect public markets which have fallen by between 25% and 40%[36] - albeit this is a return to the level of three or four years ago. This will exert a downward pressure on valuations. BVCA members reported that they expect to

[35] Sifted (2020)Term sheet turbulence: startups on a bumpy journey, 20th April. https://sifted.eu/articles/term-sheets-startups-coronavirus/
[36] Ibid.

significantly mark down portfolio valuations – the average anticipated mark down was 20%.[37] Investee businesses at series A and B rounds will find it difficult to meet the growth projections that set the price of the previous funding round, especially where an investee's cash reserves have been run down (a situation that can be created by unethical investors) which will also result in lower valuations. Entrepreneurs will therefore have to part with more equity. Dilution has implications for earlier investors in the business, including the founding team. It also has knock-on effects on later rounds.

Third, there is likely to be a growth in demand for venture debt which offers a valuable alternative means for high growth companies to lengthen their financial runway. Providers include dedicated venture lenders and traditional banks and debt providers. Currently European scale-ups have access to less venture debt than U.S. scale-ups.[38] Venture debt has two attractions. First, it may be cheaper than an equity round in which investors are looking for a steep discount. Second, it will not dilute entrepreneurs and early investors. Inflated valuations in recent years have made down rounds a likely outcome for companies that have taken hits on their growth and need to raise capital in the near future. Prior venture capital funding serves as a certification towards venture debt lenders and they can rely on a scale-up's patents as collateral, using warrants to overcome the agency problems associated with debt. For the suppliers of venture debt. However, debt repayments are not without risk. They can cut into cash streams for growth, putting more stress on companies that have seen revenues fall. Hence it is only appropriate for companies that are to cover loan payments: good candidates for venture debt are companies with SaaS and subscription-based business models.[39]

3.3 Impact on new investment activity

There will also be less finance available for start ups seeking to raise their first round of venture capital. These companies will face financial challenges because they have little or no cash buffer to cope with their lack of revenues. As a result, some will fail. Others will go into hibernation. And some will continue to bootstrap. A survey of 250 growth businesses in the UK currently seeking investment reported that more than 9 out of 10 will close within the next 12 months if their current investment plans are disrupted.[40]

Venture capital funds will be concerned about the businesses that are currently in their portfolio, particularly their late stage investments that are closest to exit, have the highest valuations but also high burn rates. Making new investments will not be their priority.[41] As one seed capitalist notes: "we have had to refocus our strategy on ensuring our existing portfolio of companies remain strong. They have revenues, contracts and funding to help mitigate the situation. However, we are likely to turn away around a dozen great, new and exciting companies that we hoped to support …. because

[37] British Venture Capital Association (BVCA)(2020) BVCA Feedback on Impact of COVID-19 on the UK Private Equity and Venture Capital Industry: 4th report. 9th April. https://www.bvca.co.uk/Portals/0/Documents/Policy/BVCA%20Feedback%20on%20the%20Impact%20of%20COVID-19%20-%2009-04-20.pdf?ver=2020-04-09-171929-697&utm_campaign=1882479_Friday%20Focus%2010-04-20&utm_medium=dotmailer&utm_source=BVCA

[38] Manigart, S, Vanacker, T, Knockaert , M and Verbouw, J (2020) Financing intangibles: Is there a market failure? University of Ghent. Paper drafted for the DG GROW Economic Seminar

[39] Pitchbook (2020) Venture Debt Set to Increase Role During Crisis. 24th April. https://pitchbook.com/news/reports/q2-2020-pitchbook-analyst-note-venture-debt-set-to-increase-role-during-crisis

[40] Save Our StartUps, 9th April. https://mailchi.mp/5cccf910d8d0/join-the-save-our-startups-campaign-update?e=e52146854c

[41] Blank, S (2020) What's Plan B? The Lifeboat Strategy for Your Startup, INC Magazine, 17 March. https://www.inc.com/steve-blank/coronavirus-covid19-pandemic-startup-leader-response-plan-strategy-crisis.html

the capital flow has diminished."[42] This will be exacerbated by travel restrictions and the associated difficulties in organising face-to-face meetings which will slow down deal sourcing and the due diligence process. And VCs that are seeking to raise their first fund will struggle to close. Only VC funds that have recently completed fund-raising, and hence with few companies in their portfolio, will be in a position to focus on making new investments. For all these reasons there will be fewer investors interested in investing in startups, and, as noted above, entrepreneur-friendly deal terms will disappear and valuations will get worse. One investors commented that "if you're raising €500,000 to €5m, [you were going to give away] 20% of your company; now it might be 25%."[43] Similarly, Eamonn Carey, Managing Director at the Techstars London Accelerator, commented that "in the past a seed round would give away 10-15%, maybe 20%. But now it is 25% of their equity".[44] This may prompt some entrepreneurs to reject the terms that they are offered and look for other ways to start (e.g. soft start). But the job losses resulting from the crisis is likely to increase start-up rates, increasing the demand for seed capital.

This emphasises the importance that business angels - which, as noted earlier, are the dominant source of equity capital, financing many times the number of businesses that raise finance from venture capital firms – continue to invest. However, they may have lost wealth from their mainstream investments in financial markets and property. They will also be looking to conserve cash to support their existing investments, particularly given the likelihood that it will be much more difficult for their investee businesses to raise follow-on investment from venture capital funds. Stephen Page, chief executive of Startup Funding Club, claimed that angel investors, who would typically invest in early-stage firms, are making a "run for the hills".[45]

Equity crowdfunding platforms are also experiencing a drop in investment activity. This, in turn, puts the platforms themselves at risk as their revenue is based on fee income that is related to the funds raised. Both Seedrs and Crowdcube are themselves backed by VC and are still lossmaking.[46]

To the extent that angels and VCs do consider new investment opportunities, these will be focused on "start-ups with a pandemic purpose", for example in health (especially personalised digital health) and education and in B2C markets that have been impacted by the coronavirus crisis (e.g. digital fitness, entertainment, remote working), whereas many consumer-oriented businesses will struggle to raise finance. These markets are indicated in Figure 2 from Dealroom.com.[47] However, there is a danger that this shift in the focus of venture capital investing in response to the 'shock' will result in inefficiencies in capital allocation that is driven by 'the fear of missing out', with over-investment in particular types of businesses while starving other sectors of investment, repeating previous episodes of 'venture capital myopia'.[48]

Figure 2. Structural vs. cyclical impact of the coronavirus crisis: a mental framework

[42] J Smith (2020) Why government needs to boost EIS tax relief to 80% to save our start-ups. Growth Business.co.uk. https://www.growthbusiness.co.uk/why-government-needs-to-boost-eis-tax-relief-to-80-to-save-our-start-ups-2557477/

[43] Sifted (2020)Term sheet turbulence: startups on a bumpy journey, 20th April. https://sifted.eu/articles/term-sheets-startups-coronavirus/

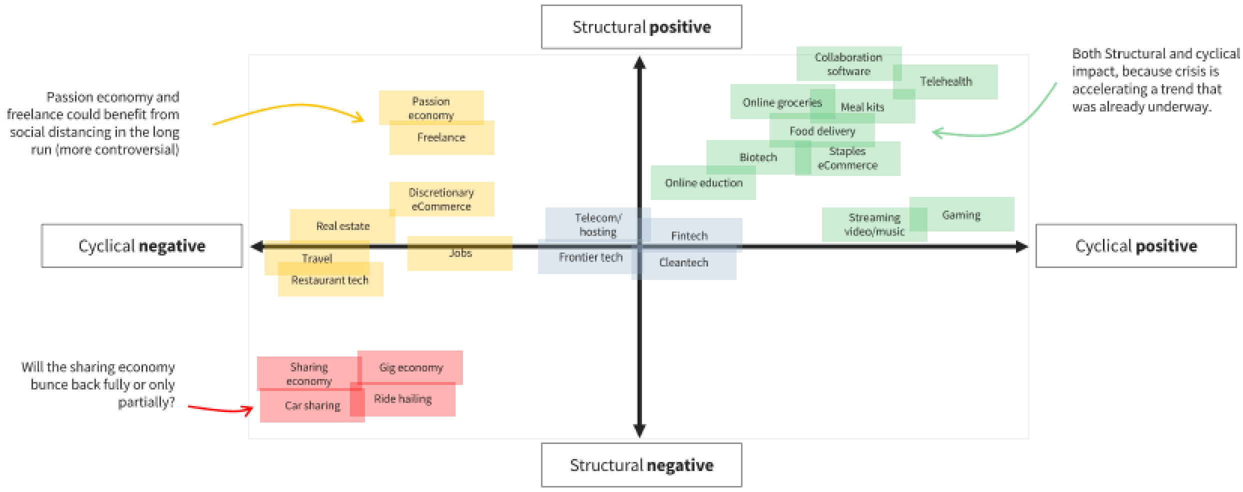
[44] HBAN webinar on Investing during COVID-19: a view from London, 22nd April.

[45] Daily Telegraph (2020) Third of start-ups in UK and Europe 'at risk of collapse', report warns. 21st April.

[46] Sifted. Crowdfunding platforms grapple with slowdown, 2nd April. https://sifted.eu/articles/crowdfunding-coronavirus/

[47] Dealroom.co (2020) Impact of the Corona crisis on startups & tech: initial findings. https://blog.dealroom.co/wp-content/uploads/2020/03/Corona-vFINAL.pdf

[48] Sahlman, W A and Stevenson, H H (1985) Capital market myopia, Journal of Business Venturing, 1 (1), 7-30.



Source: Dealroom.co (2020) Impact of the Corona crisis on startups & tech: initial findings. https://blog.dealroom.co/wp-content/uploads/2020/03/Corona-vFINAL.pdf

3.4 Summary

The shock to the entrepreneurial finance system as a result of COVID-19 will result in a decline in the amount of venture capital that is invested and in the number of deals that occur as investors seek to preserve the funds that they have already raised and encounter difficulties in their ability to raise new funds as financial institutions lose their enthusiasm for VC as an asset class. This decline will occur over a significant period of time and not be confined to the disruption in investment process caused by the crisis itself, and will therefore impact on the speed and strength of the economic recovery. Moreover, there will be a shift in the focus of the investment activity that continues. There will be a slowdown in mega deals (and because they are individually so large just a small decline in the number will have a significant impact on the amount invested). A larger proportion of deals will be follow-on rounds as investors put more capital into portfolio companies to lengthen their financial runway. Venture capital funds will focus on the venture stage rather than seed.

The likely direct outcome of these developments are as follows. First, companies that have traction cannot now develop and will stall. Second, recent start-ups will close resulting in the loss of businesses that might otherwise have flourished. Third, substantially fewer businesses will be started that have the potential to scale. Even companies addressing opportunities created by Covid-19 may struggle to raise cash. This drought in start-up finance risks losing the pipeline of future HGEs, with the impact only becoming apparent in three to five years' time. There will also be important intangible consequences. In particular, investors will become more risk averse. And entrepreneurs – and investors – may not be able to pick themselves up from the emotional loss that they will suffer from the closure of the businesses - their products, processes, knowledge and relationships - that they have worked hard to build.

The strength of the recovery will depend on high growth, equity backed start-ups and scale-ups. Although such companies are small in number they have a disproportionate economic impact.[49] These types of companies will be responsible for a large proportion of future job growth. The disruptions that economic crises cause to existing markets catalyses innovation by creating an

[49] Dumitriu, S (2020) What will it take to save the UK's startups and scaleups? Sifted 2nd April. https://sifted.eu/articles/uk-startups-coronavirus-government/

environment for entrepreneurs to launch new products, services and business models. Many successful companies are created in such times. For example, companies started in 2008/9 include WhatsApp, Slack, Airbnb, Stripe, Uber, Waymo Pinterest and Git Hub. Because these types of companies are typically loss making as they invest in scaling up and indeed may not be revenue generating for some time after starting they are not helped by the support that governments have introduced to support the small business sector – particularly loan schemes. Government intervention to support these companies needs to be based on ensuring that they can continue to access venture capital. The next section considers the policy interventions required to achieve this outcome.

4 HOW SHOULD GOVERNMENTS INTERVENE?

There is a need to recognise that the crisis has different stages that require different types of intervention. First, is the immediate crisis – the 'confinement' stage when economic activity has largely ceased. Here the objective is to prevent viable businesses from failing. Second, is the 'convalescent' phase during which time economic activity slowly picks up. The priority here is to support businesses to enable them to build up revenue again. Third, the mid- to long-term recovery phase when the 'new normal' emerges. The key challenge for government is to avoid becoming preoccupied with measures to address the immediate crisis but also to focus on the medium term to ensure that economies do not experience a drought of start-ups and scale-ups on account of the lack seed stage funding. Although government needs to focus on the immediate crisis it is important that the present time is also used to develop appropriate interventions for the recovery phase. Similarly, Governments must also recognize that, as noted in the previous section, entrepreneurial finance comprises different markets and different players hence a variety of types of intervention are required and focus cannot just be on the institutional venture capital industry.

4.1 To What Extent Can Previous Crises Provide Guidance?

It is debatable how much can be learnt from previous crises such as the post-2000 dotcom crash and the 2008 global financial crisis and the extent to which they should inform policies to address the present crisis. Indeed, over-reliance on the experience of past crises would be "fighting new battles with old weapons". Responses need to go beyond earlier playbooks.

The 2008 financial crisis was a global business crisis that had overleveraged lenders at its core. Central banks had direct levers to provide funding to distressed banks and by purchasing assets. In this crisis the causality runs in the opposite direction with the coronavirus triggering a corporate debt crisis that is resulting in bank losses. In this crisis banks should be part of the solution, not part of the problem. As a result of stricter capital requirements the banking sector is healthier than was the case in 2008. The concern is that banks are retreating from risk taking. A further source of concern is that risk has migrated to the non-bank part of the financial system – both traditional investors such as pension funds, insurance and mutual funds and newer investors such as hedge funds and private equity.[50] Governments therefore need to create tools that encourage the financial system to continue to commit capital to businesses, and HGEs in particular.[51] It has been suggested that the dotcom crisis of 2000 may be a better parallel in that it, like now, it had been fueled by the easily availability of venture capital in the 'dot.com boom' and tech companies relied on selling to one another, creating a 'house of cards' that quickly collapsed once the crisis kicked in. The venture capital industry recovered much faster after the 2008 GFC than it did following the 2000 dotcom crisis.

4.2 Approaches to intervention

Many small businesses have limited cash reserves and are likely to become insolvent fairly quickly as sales dry up. In an attempt to mitigate this outcome Governments have introduced a wide variety of support measures for the small business sector in general to help them preserve cash, providing loan

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[50] Financial Times (2020) Global finance: the weak link? 14th April. https://digital.olivesoftware.com/Olive/ODN/FTUK/Default.aspx

[51] Carstens, A (2020) Bold steps to pump coronavirus rescue funds down the last mile, Financial Times, 29 March, https://www.ft.com/content/5a1a1e9c-6f4d-11ea-89df-41bea055720b

finance, both directly though state agencies and by providing guarantees to banks, subsidising employee costs, and allowing the deferral of tax, business rates and social security payments. These interventions are focused preventing a cascade of business closures during the immediate crisis.[52] Suspension of wrongful trading legislation and director duties and responsibilities (which also applies to investors who take board positions) to enable them to navigate the current crisis has also been suggested[53] but not so far implemented.

However, these schemes will have limited benefits for HGEs. Providing access to debt through guaranteed loans schemes is not an appropriate financial instrument in which to support the majority of high growth start-ups and scale-ups – particularly those that are venture capital backed – because they are cash-flow negative, with no track record to underpin, or collateral (required for the non-guaranteed part of the loan) to secure such finance. Their main assets are IP and talent, while any personal assets that they might have had will have been used up. Moreover, the way in which such schemes have been designed means that many HGEs are not eligible. For example, the UK's Coronavirus Business Interruption Loan Scheme (CBILS) which provides financial support to smaller businesses (SMEs) across the UK that are losing revenue and seeing their cashflow disrupted as a result of the COVID-19 outbreak requires businesses to meet the lending criteria of banks in order to qualify. However, many would not meet this requirement: they might not have sufficient trading record or they may currently be loss making – in the so-called 'valley of death' – hence unable to service a bank loan. Indeed, the UK government admits that around 20 per cent of businesses are excluded from the emergency government loan schemes that have been implemented in recent weeks.[54] A new loan guarantee scheme for companies not able to access CBILS has been advocated.[55] Support to enable firms to furlough staff provide few benefits to new and small firms. They have few staff but need them to be able to continue to trade: if their staff are furloughed they are dead.[56]

In short, loan schemes and furlough schemes are not suitable for the high-growth, loss-making companies that form the majority of the startup and scaleup ecosystem. Interventions to support the survival of HGEs and the emergence of high growth potential start-ups in the recovery phase need to be based around other forms of financial support, specifically increasing the availability of risk capital. Without this, significant numbers of the innovative start-ups and scale-ups that will be needed to drive economic recovery will not get the funding that they require. Business angels need to be a major focus for such interventions. As noted earlier, they are at the start of the entrepreneurial pipeline, typically providing the first source of external finance to start-up and early phase companies. And as angel investing has increasingly become organized into managed groups so this has enhanced their financial capabilities, increasing both their size of investment and ability to make follow-on investments, thereby filling the so-called 'second equity gap' that has emerged over the past decade as venture capital funds have increased the size of their investments. Moreover, business angels and angel groups are increasingly participating in larger syndicated financing rounds along with other types of investors.[57] The non-financial support that angels are able to provide to their investee companies on account of their own extensive entrepreneurial and business

[52] See Sifted (2020) Support measures for startups affected by coronavirus: the ultimate resource, 24th April. https://sifted.eu/articles/coronavirus-support-startups/ for information on Government support in EU countries.

[53] BVCA (2020b) op. cit.

[54] Smith (2020) op. cit.

[55] BVCA proposes emergency bridge funding for early stage companies in the digital economy, 6th April. https://www.bvca.co.uk/media-and-publications/news/bvca-press-releases/details/BVCA-proposes-emergency-bridge-funding-for-early-stage-companies-in-the-digital-economy?utm_campaign=1882479_Friday%20Focus%2010-04-20&utm_medium=dotmailer&utm_source=BVCA

[56] Ibid.

[57] Mason, C (2018) Financing entrepreneurial ventures, in R Blackburn, D de Clercq and J Heinonen (eds) The Sage Handbook of Small Business and Entrepreneurship (Sage: London), pp 321-349.

experience, in the form of advice, expertise, connections, mentoring and emotional support, is also critical.

4.2.1 Co-investment Schemes

The conventional way in which governments have sought to increase the supply of finance is through co-investment schemes. Although there are a number of co-investment models and structures they share some key features: they comprise government-funded investment funds that invests alongside business angels, committing one euro for every euro that the private investors invest. Some co-investment schemes partner with venture capital funds. The co-investment fund invests under the same terms and conditions as the private investors on *a pari-passu* basis. The fund largely relies on the due diligence work carried out by the business angels to reduce costs. The risk of moral hazard is low because business angels have 'skin in the game'. Although of relatively recent origin, there are now reported to be over 150 co-investment and related funds in 23 European countries. The purpose of the funds is to support angel investors by sharing risks and enabling them to achieve greater portfolio diversification and to improve investment capacities by leveraging additional capital. It is significant that first co-investment scheme - the Scottish Co-Investment Fund - emerged in the aftermath of the post-2000 crash to address the liquidity constraints faced by individual angel investors and by angel syndicates as a result of the withdrawal of existing VC investors from the Scottish market, and increased reports of good companies failing to raise equity capital.[58]

By being based on 3rd party validation – in this case the willingness of a business angel to write a cheque to a start-up business - co-investment schemes address concerns that, on the one hand, because of adverse selection problems much of the funding that government makes available to support potential HGEs will ineffective,[59] and on the other hand that governments cannot 'pick winners'. Companies that have been accepted into recognized accelerators and incubators has been suggested as a further appropriate metric that identifies firms that have passed independent due diligence and would therefore be appropriate for government support.[60]

Evaluations of co-investment schemes have generally been favourable, concluding that they are effective in leveraging investment capital from existing investors by enabling them to do more and larger deals, and doing so in a manner that minimizes the cost to the public purse and the risk to public funds.[61] Moreover, the limited evidence available suggests that co-investment schemes generate a positive return to the public purse over the longer term. However, the effectiveness of co-investment schemes is likely to be reduced at the present time because of constraints on the ability of business angels and other early stage investors invest. One option might therefore be to raise the ratio of public-private investment from its present 1:1 ratio. But even so, one commentator argues

[58] Harrison, R (2018) Crossing the chasm: the role of co-investment funds in strengthening the regional business angel ecosystem, Small Enterprise Research, 25 (1), 3-22.

[59] Robin Klein (2020) Don't bail out the startups: The UK government shouldn't set up a bailout fund for startups. That's their investors' job. 9th April. Sifted. https://sifted.eu/articles/startup-bailout-uk/

[60] NACO Roundtable on Sustaining the Innovation Ecosystem, 16th April (webinar).

[61] Ibid. Also see Hayton Consulting + GEN (2008) Evaluation of the Scottish Co-Investment Fund: A Report to Scottish Enterprise. http://www.evaluationsonline.org.uk/evaluations/Browse.do?ui=browse&action=show&id=32&taxonomy=INV. Malcolm Watson Consulting (2016) Evaluation of the Scottish Co-Investment Fund (April 2009 – December 2013). Final Report to Scottish Enterprise. file:///C:/Users/cm252t/Downloads/Evaluation+-+Scottish+Enterprise_Scottish+Co-Investment+Fund+II%20(1).pdf

that "coinvestment schemes may save the very best prospects but a lot of startups will be left out."[62] Hence, they need to be complemented by other initiatives.

4.2.2 Tax incentives to business angels

Many countries offer tax incentives to business angels to shift the risk-reward balance of making high risk investments in early stage businesses. The UK's Enterprise Investment Scheme (EIS) and Seed Enterprise Investment Scheme (SEIS) is one of the most generous, giving 30% tax relief on investments in qualifying businesses as well as a range of other tax breaks. Investors can qualify for these tax breaks either by investing directly in qualifying businesses or via professionally managed investment funds (EIS Funds and Venture Capital Trusts). In 2019 £1.9bn was invested in over 4,000 businesses. Evaluations indicate that the government gets £4 back in tax revenue for every £1 invested and 9 jobs are created for every £1m invested. However, because most EIS investing occurs near the end of the tax year (5 April) the timing of the onset of the coronavirus crisis has resulted in a 70% decline in fund-raising in 2019-20. It has been suggested that EIS relief is raised to 80% to overcome the declining risk appetite of wealthy private individuals and encourage the release of capital that is currently not being invested. Investors also need to be incentivized to invest throughout the tax year and, in particular, in the early part of the 2020-21 tax year. A further suggestion is that the annual limits on how much investors can invest and how much companies can raise should be raised. For example, VCTs are restricted from investing more than £12m (£20m for knowledge-intensive startups) in a single company. If the limits were temporarily raised, the scheme could be repurposed to allow startups to raise bridging capital from investors they already work with.[63]

4.2.3 Convertible Debt Instruments

Tech startups that have raised a small seed round from angels and small micro funds also need to be the focus for targeted support. Typically, these innovation intensive startups would have hired a small team, built out an MVP and be progressing towards achieving the milestones and commercial metrics required to raise a late seed/ early Series A round from VC's and institutional investors. The drop in economic activity caused by COVID 19 will mean that these predominately B2B startups will find booked pilot sales will be postponed, the possibility of meeting new clients to achieve new sales highly curtailed and as a result their monthly "burn rates/losses" will increase and their already tight runway to achieve their product/ market fit milestones will shorten, and ultimately running out of cash. Their existing angels and micro funds are unlikely or unable to help with bridging money. Consequently, without help these startups that have achieved first signals that they have a product and business model that work and creates value for their initial early adopting customers and hence could achieve something big and significant are highly likely to die.

A number of commentators have identified the need for governments to create a convertible debt instrument aimed primarily, but not exclusively, at seed stage start-ups to buy them time to survive COVID 19 and get back to the commercial trajectory they were demonstrating before the pandemic arrived. This is a short-term debt that converts to equity at the next funding round. Investors loan money to the business, with these convertible notes either subsequently redeemed (for a profit) at

[62] Dumitriu, S (2020) Most start-ups will fail: we should save them anyway. The Entrepreneurs Network, 7 April. https://www.tenentrepreneurs.org/blog/most-startups-will-fail-we-should-save-them-anyway

[63] Dimitriu (2020) op. cit.

the end of the pandemic by the recovered startup founders and shareholders or converted into "discounted" shares when the startups raises their next seed+ or Series A round. It is therefore not a handout: it is an investment that should generate returns once the economy recovers. Government would work with existing investors – angel groups and (micro) venture funds to identify, reach and assess the eligible startups and even allocate the capital via the convertible notes. [64] It is also important that the tax breaks available to business angels (such as the UK's Enterprise Investment Scheme) should also apply to investments in the form of convertible debt as well as straight equity: typically they are not.

A proposal for the creation of a £300m UK "Runway Fund" that would provide convertible loan notes with discounts to start-ups of up to £500,000 to give them at least nine more months of operations and would then convert into equity at the next round could invest initially in around 600 start-ups.[65] Implementing a similar scheme for companies further along the funding path would require much greater financial commitment by governments. The British Venture Capital Association have proposed that government finances a £500m bridge funding facility for early stage companies supplemented by £125m from the private sector to provide up to £5m per company in the form of a convertible loan in the digital, biotech and life science sectors.[66] However, critics argue that the commitment of venture capital firms to put in 25p for every £1 provided by the government does not go nearly far enough and that the split must be much more even.[67]

4.2.4 Non-Dilutive Finance

Venture capital initiatives need to be complemented by intervention to increase the supply of non-dilutive finance (NDF), notably grants for innovation and commercialisation. NDF programmes are important for three reason. First, seed investors rarely invest in ideas alone. They recognise that the business plan is 'a work of fiction'. NDF supports the discovery and early commercialisation stages, funding ideas to market which, by providing evidence and validation that creates credibility, enhances their investability. Second, if entrepreneurs have to raise equity at too early a stage then they will experience significant dilution by the time their business gets to the scale-up stage, with potentially negative implications for their motivation and that of employees with share options, and limits their return on exit which, in turn, may reduce the scale of any entrepreneurial recycling that they are able to undertake.[68] Third, by enabling firms to achieve certain milestones it increases valuation. The support that often comes with NDF schemes is also critical. Governments have been encouraged to pay innovation grants up-front rather than in arrears and adopt a light touch to auditing to make speedy payments.

4.2.5 Reinventing Government Procurement

[64] B Hoberman (2020) UK government must act to help start-ups, Financial Times, 28 March. https://www.ft.com/content/d77102d6-6ea6-11ea-89df-41bea055720b
[65] Ibid.
[66] BVCA (2020a) op. cit.
[67] Financial Times (2020) Lombard: start-up saviours, 6th April. https://www.ft.com/content/523024de-9115-45ee-923a-fd9a32a2502f
[68] Mason, C M and Harrison, R T (2006) After the exit: acquisitions, entrepreneurial recycling and regional economic development, Regional Studies. 40, 55-73.

The most effective form of non-dilutive funding is revenue. Indeed, entrepreneurs are often given the advice that "the best money comes from customers". Procurement is one of the biggest and possibly most underrated levers of government given that they are the largest purchaser of goods and services in an economy. But "government procurement" usually involves complex processes, red tape, long delays and high costs, and disadvantaging technology start-ups and growth from bidding for contracts because the process is too costly, lengthy and unpredictable. The COVID-19 pandemic is changing this approach because of the dramatic increases in global demand for crucial health-related products, requiring governments to streamline previously complex procedures which had enabled many entrepreneurs to pivot their business to produce urgently needed products. This highlights the potential for Governments to support technology start-up and scale up community by reinventing their procurement so that it is aligned with technology and accessible to smaller companies. The development of agile procurement across all of government that integrates cutting-edge innovations into the delivery of public services that empowers innovative businesses to help public servants to find fast and reliable solutions to some of their most challenging problems would provide economic stimulus by enabling technology start-ups and scale-ups to sell into government. This would require a procurement process with the following features: (a) it would define problems, not solutions to empower the problem-solving capacity of the technology sector; (b) it would create a joint government-industry marketplace to establish a standardized process where government can more easily engage with qualified vendors who specialize in solving the sorts of problems they face; and (c) leverage the innovation infrastructure by procuring commercialized innovations through open competitions focused on solving defined problems.[69] Without such changes healthtech companies will not have a route to market.[70]

4.2.6 Design and Delivery Issues

Policy ineffectiveness is frequently linked to its design and delivery.[71] The pressure on governments to react quickly to the crisis has meant that they have had to work with existing institutions rather than designing new delivery mechanisms. Nevertheless, the design and delivery of these interventions will determine their effectiveness. Several have attracted criticism. For example, as noted above, most startups and scaleups do not qualify under the UK's Coronavirus Business Interruption Loans Scheme (CBILS) because only businesses that were profitable before the crisis are eligible. It was initially also limited to companies with a turnover of less than £45m but this restriction has now been lifted. The VC industry also raised concerns that VC-backed companies may excluded because investors who serve on their board may also be directors of other companies and hence seen as affiliated to a larger entity which is too large to be eligible.[72] [73] This has now also been removed. And the banks – which are the conduit for delivering the loans - have been criticized both for their slowness in approving applications and, initially for requiring directors give personal guarantees on that part of the loan that is not covered by the guarantee, leaving directors with the possibility they will be personally liable if their business fails. A requirement for banks to first offer

[69] Mondou, A and Deacon, C (2020) Bold government procurement policies can help companies recover from crisis, Globe and Mail, 20 April, https://www.theglobeandmail.com/business/commentary/article-bold-government-procurement-policies-can-help-companies-recover-from/

[70] Hawkins, J (2020) Coronavirus: Healthtech needs a route to market, City AM, 23 April 2020. https://www.cityam.com/coronavirus-healthtech-needs-a-route-to-market/?utm_source=newsletter&utm_medium=email&utm_campaign=Midday+newsletter+June+2019

[71] Arshed, N, Mason, C and Carter, S (2016) Exploring the disconnect in policy implementation: a case of enterprise policy in England, Environment and Planning C: Government and Policy, 34 (8), 1582-1611.

[72] Financial Times (2020) Lex: Tech start-ups duck and cover, 14 April. https://digital.olivesoftware.com/Olive/ODN/FTUK/Default.aspx

[73] BVCA (2020b) BVCA feedback on the impact of COVID-19 on the UK's private equity and venture capital industry: 4th report, 9th April

borrowers standard loan products before they could access the scheme has subsequently been dropped.[74] Another example of the exclusionary effects of scheme design is the UK's job retention scheme which enables firms to apply for a grant that covers 80% of their usual monthly wage costs, up to £2,500 a month to furlough employees. However, some company directors have a low salary-high dividend remuneration package. But dividends are not counted as income even though they are taxed as earnings (albeit at different rates to salary). This discriminates against those who pay their remuneration in this way either for legitimate tax planning reasons or to avoid the need to set up an expensive payroll system. Finally, the new UK Future Fund – which will invest between £125,000 and £5m in qualifying companies in the form of a convertible loan, matching the amount invested by private investors – has been criticized because of the requirement that companies must already have raised £250,000 from investors within the past five years, hence excluding start-ups. Moreover, it is not compatible with the SEIS/EIS which fuels the UK startup ecosystem, thereby "making it useless for the very audience that can most benefit from it".[75] The deal terms have also been criticized, described by one commentator as "deal terms that an aggressive investor would squeeze out of a distressed company that had nowhere else to go".[76]

4.2.7 Scrutiny of Proposed Acquisitions of Emerging Scale-Ups

The crisis is likely to result in an increase in 'necessity exits'. First, capital-squeezed companies that are unable to raise finance from their existing investors may turn to acquisition as a survival strategy. Second, investors who are financially constrained and may therefore be unable to fund their portfolio companies for longer may make the decision to seek to sell some of their investee businesses to generate cash to support other businesses in their portfolio. This increases the risk that innovative companies with a shortage of liquidity will be bought by opportunistic well-capitalised corporates, potentially removing the knowledge assets outside of the EU or closing them down because they might in the future challenge their competitive position before they have developed momentum ('buy and kill').[77] The risk that promising European HGEs will be targets of 'predatory behaviour' by companies and investors (such as hedge funds) particularly but not exclusively based in other regions of the world, should therefore prompt governments to consider tightening their rules on foreign takeovers. Concern has been raised that "a few powerful firms are set to gain more clout" as a result of the crisis, noting that, for example, it costs less to insure Johnson & Johnson's debt against default than Canada's and Apple's gross cash pile of $207bn exceeds most countries' fiscal stimulus.[78] Australia has temporarily tightened its rules on foreign takeovers on concerns that strategic assets could be sold off cheaply as a result of the coronavirus crisis.[79] Ursula von der Leyen, president of the European Commission, has conveyed a similar message in a speech addressed to EU member states, saying that "You should use all options to protect critical European companies from

[74] City AM (2020) Coronavirus loan scheme risks 'wall of redundancies and defaults' say critics, 7 April. https://www.cityam.com/coronavirus-loan-scheme-risks-wall-of-redundancies-and-defaults-say-critics/

[75] A Rose (2020) The government's Future Fund won't help UK startups, Seedlegals, 21 April. https://seedlegals.com/resources/the-governments-future-fund-wont-help-uk-startups/

[76] Ibid.

[77] Financial Times (2020) Silicon Valley buy-and-kill tactic puts regulators on the spot, 14 February.

[78] Mar 27, 2020 TyN Magazine(http://www.tynmagazine.com).
https://plus.google.com/share?url=http://www.tynmagazine.com/the-pandemic-shock-will-make-big-powerful-firms-even-mightier/http://www.linkedin.com/shareArticle?mini=true&url=http://www.tynmagazine.com/the-pandemic-shock-will-make-big-powerful-firms-even-mightier/

[79] Financial Times (2020) Australia tightens investment rules on foreign takeovers, 30 March. https://www.ft.com/content/fda7e3cf-a605-4697-9bc0-6fe91b739eb9

foreign takeovers or influence that could undermine our security and public order."[80] Margrethe Vestager, Executive Vice President of the European Commission and European Commissioner for Competition has also proposed that European countries should buy stakes in companies to stave off the threat of Chinese takeovers to protect businesses fighting for survival during the Covid-19 pandemic.[81] Regulators are already working on proposals to grant EU countries sweeping powers to derail unfair competition from state-backed enterprises. Whereas these particular actions are aimed at protecting large firms in key sectors there is a strong argument for also applying them to emerging tech companies with valuable intellectual property whose acquisitions might come 'under the radar'.

4.2.8 Protecting the entrepreneurial ecosystem

The HGEs that will survive this crisis are the ones adaptable, being able to quickly adjust their expenses (e.g. travel, accommodation, cloud computing costs) to bring them more closely into line with their declining revenue, to offer share options to employees in lieu of salary, to see downturn opportunities, to successfully pivot their business model, develop customer-centric strategies to minimise customer loss, to continually apply financial stress testing and apply risk management techniques. There is little that governments can do directly to help firms take these actions. Entrepreneurs access resources, information and knowledge to develop their capabilities through social interactions with resource providers (institutions, organisations and individuals) in their ecosystem. It is these relationships that facilitate entrepreneurship. Moreover, the resources in an ecosystem are sustained and reproduced through relationships amongst the various actors and stakeholders. However, government can provide backing for existing business support networks to provide financial advice and mentoring. Business angel groups can play a critical role here, both to draw upon the expertise of their investors to provide vital support to their investee businesses with advice, mentoring, coaching, online learning and psychological and emotional assistance and to provide channels to share information and resources between angels to enable them to provide more effective support. More generally, Governments need to ensure that entrepreneurial ecosystems remain intact. There is, for example, concern that co-working spaces, incubators and accelerators will suffer loss of income as tenants become unable to pay, threatening their survival[82] and "forcing entrepreneurs to go back to their garages".[83]

4.2.9 Need for Place-Based Policies

Government interventions must ensure that the contraction of VC investing does not widen existing geographical disparities in venture capital investing and, as a consequence, high growth firms. VC investments are highly geographical, evidenced in terms of the amounts invested, the number of investments and the size of investments, favouring the most economically developed cities and

[80] Financial Times (2020) Locking the dealmaking gates: Europe turns protectionist, 27th March. https://www.ft.com/content/9ea44ad6-1d46-43a0-a7b7-cdc4a8f92567

[81] Financial Times (2020) Vestager urges stakebuilding to block Chinese takeovers, 12 April, https://www.ft.com/content/e14f24c7-e47a-4c22-8cf3-f629da62b0a7

[82] For example, OneEleven, a private sector technology accelerator in Toronto backed by the Ontario Municipal Employees' Retirement System pension fund is to shut down for good because of the consequences of the impact of the COVID-19 on its client companies (layoffs and closures) on its own business model, Globe and Mail, 21 April, https://www.theglobeandmail.com/business/article-oneeleven-tech-accelerator-backed-by-omers-will-shut-down-for-good/

[83] Quote from Victoria Lennox, President and Founder of Startup Canada at a NACO roundtable webinar on Innovations in Health Care, 23rd April.

regions.[84] A JRC research study shows that firms in European start-up hotspots raise more money and more funding rounds.[85] Moreover, a much higher proportion of the VC investment that occurs outside of these venture capital hotspots is underpinned by government VC funds[86]. The JRC study further shows that the regional distribution of start-up VC is more evenly spread than that of both later-stage and stage seed[87] (which may be linked to the concentration of accelerators in major urban hubs). Business angel investing is also geographically concentrated, although not to the same extent as institutional VC.

A significant explanation for the uneven geography of VC is that the locations of VC firms is also clustered in major financial centres. VC investing is a person-to-person activity underpinned by the need for trust between both investor and entrepreneur. These can be difficult to establish virtually. Informal networks are a major source of deal referrals. The VC's investment decision is based on due diligence that draws significantly on face-to-face meetings with entrepreneurs. Their post-investment monitoring and value-added support also involves personal interaction. However, the importance of spatial proximity is stage dependent. This reflects differences in the nature and intensity of VC activity at different stages in the investment life cycle. Seed stage investors are most likely to invest locally: this is because information asymmetries are greatest at the seed stage and are most effectively managed by interpersonal contacts. Investors also work most intensively with their seed stage investee businesses. Interpersonal contacts are less important in later stage investments because information asymmetries are lower and the nature of the support provided is strategic. Moreover, VC investors who make long distance investments frequently syndicate with partners who are more closely located to the investee company and are therefore able to leverage the spatial proximity of these original seed investor(s) where face-to-face contact is required. Hence, the distance between companies and their investors extends as the company progresses through its life cycle, with companies typically relying on local investors for seed and early stage funding and for later stage funding from investors who are less likely to be local, particularly for firms outside of major economic centres where the larger VC firms are concentrated. Putting this another way, the proportion of seed deals led or solely funded by local investors in the same ecosystem is higher than the proportion of later stage deals (Pitchbook, 2019). In the USA the median distance between investor and investee business is under 100 miles for seed investment but 400 miles for later stage investments.[88]

The concern is that the retraction of VC investing will have a disproportionate impact on regions outside of major economic centres that are traditional venture hubs with detrimental effects on entrepreneurship and innovation. This has two dimensions. First, a contraction in seed investment in local markets will have a negative impact on start-up rates. Start-ups need local sources of seed capital – which typically comes from business angels, angel groups and seed funds - to be able to develop a meaningful track-record and metrics: without this they will not be able to get the attention of larger non-local venture capital firms. Second, it might become harder for businesses in less developed ecosystems that have raised local seed investment to attract later stage investment. This would arise, first, if a flight to safety pushes investors to invest closer to home, second, if non-local investors are less willing to travel in the future, and third if they have less capital to commit to new investments. In all of these circumstances investors would be likely to focus on deploying their

[84] Mason, C M (2007) Venture capital: a geographical perspective, in H Landström (ed) Handbook of Research on Venture Capital, Edward Elgar, Cheltenham, pp 86-112.
[85] Nepelski, D, Piroi, G and De Prato, G (2016) European Start-up Hotspots: Analysis of Venture Capital Financing in Europe. Joint Research Centre. JRC Scientific Policy Report. EUR 28021. Doi. 10.2791/39207
[86] Mason, C and Pierrakis, Y (2013) Venture capital, the regions and public policy: the United Kingdom since the post-2000 technology crash, Regional Studies, 47 (5), 1156-1171
[87] Nepelski et al (2020) op. cit.
[88] Pitchbook (2020) COVID-19's Influence on the US VC Market, 1st April. file:///C:/Users/cm252t/Desktop/PitchBook_Q2_2020_Analyst_Note_COVID-19s_Influence_on_the_US_VC_Market.pdf

limited capital to make investments in businesses located in closer geographical proximity to their office(s). This would be detrimental to the ability of start-ups in less developed ecosystems to scale. However, as the economic implications of such a development would only become apparent over the medium-term monitoring of VC investing in the immediate future is essential.

This has important policy implications. First, limiting interventions to the national scale is likely to have geographically uneven impacts, favouring existing venture capital hotspots. Accordingly there is a need for national-level interventions to be accompanied by measures to support venture capital in regions with less developed financial ecosystems. Second, most government interventions – particularly in less economically advantaged regions - are focused on increasing the supply of seed stage VC as this is where market inefficiencies are thought to be most pronounced. These interventions typically have stage and size of investment eligibility criteria. This focus and the investment restrictions will not be appropriate if it becomes harder for less developed ecosystems to 'import' follow-on investments from venture capital hubs, indicating the need for intervention at later stages in the venture life cycle.

APPENDIX: RESEARCH PROPOSAL

Business angels play a critical role in the entrepreneurial ecosystem. It has been estimated that they fund 20 to 50 times the number of start-ups that venture capital funds do, and are increasingly funding their investee companies over more than one round and increasingly to exit. They also provide much of the deal flow for venture capital funds. Moreover, UK evidence shows that business angel investment activity held up better than venture capital funding in the aftermath of the 2008 financial crisis.[89] So as well as undertaking close to real time monitoring of trends and developments within VC markets - globally, in the EU and in individual countries - in order to detect and relate important swings etc. it is important that JRC also closely monitors the angel market. It is only feasible to do this for the visible angel market – i.e. angel groups and high profile individual angels. I therefore recommend that JRC works with national business angel organisations (in conjunction with EBAN) to survey their members in order to take the pulse of angel investing on a regular basis to identify the demand for finance that they are receiving, their current and expected future investment activity, support measures required, and identification of good practice that should be shared.

[89] Mason, C M and Harrison R T (2015), 'Business angel investment activity in the financial crisis: UK evidence and policy implications, *Environment and Planning C; Government and Policy*, 33 (1) 43-60.

KJ-02-20-295-EN-N

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of the European Union

doi:10.2760/408017

ISBN 978-92-76-18432-4