CENTRE FOR RESPONSIBLE BANKING & FINANCE
CRBF

University of St Andrews
School of Management

WORKING PAPERS IN RESPONSIBLE BANKING & FINANCE

The Geographical Impact of the Covid-19 Crisis for Firms and Jobs: Evidence from the 100 Largest Cities and Towns of the UK

By *Ross Brown* and *Marc Cowling*

Abstract: In this paper we trace the economic and spatial consequences of the Covid-19 pandemic in terms of potential business failure and the associated job losses across the hundred largest cities and towns across the UK. The paper draws on unique UK survey data of 1500 firms of different size classes. On business failure risk we find a clear and unequal impact on poorer Northern and peripheral areas of the UK, indicative of weak levels of regional resilience in these areas, but a more random distribution in terms of job losses. Micro firms and the largest firms are the greatest drivers of aggregate job losses. We conclude that Covid-19 has made the stated intention of the current government's ambition to 'level-up' the forgotten and left behind towns and cities of the UK an even more distant policy objective than prior to the crisis. The paper argues that spatially blind enterprise policies are insufficient to tackle the crisis and better targeted regional policies will be paramount in the years to come to help mitigate the scarring effects of the Covid19 pandemic in terms of firm failures and the attendant job losses.

WP Nº 21-004

1st Quarter 2021

University of St Andrews
Scotland's first university

600 YEARS
1413 – 2013

The Geographical Impact of the Covid-19 Crisis for Firms and Jobs: Evidence from the 100 Largest Cities and Towns of the UK

Ross Brown, Centre for Responsible Banking & Finance, School of Management, University of St Andrews: Ross.Brown@st-andrews.ac.uk (Author for correspondence)

Marc Cowling, College of Business, Law and Social Sciences, University of Derby: M.Cowling@derby.ac.uk

Abstract

In this paper we trace the economic and spatial consequences of the Covid-19 pandemic in terms of potential business failure and the associated job losses across the hundred largest cities and towns across the UK. The paper draws on unique UK survey data of 1500 firms of different size classes. On business failure risk we find a clear and unequal impact on poorer Northern and peripheral areas of the UK, indicative of weak levels of regional resilience in these areas, but a more random distribution in terms of job losses. Micro firms and the largest firms are the greatest drivers of aggregate job losses. We conclude that Covid-19 has made the stated intention of the current government's ambition to 'level-up' the forgotten and left behind towns and cities of the UK an even more distant policy objective than prior to the crisis. The paper argues that spatially blind enterprise policies are insufficient to tackle the crisis and better targeted regional policies will be paramount in the years to come to help mitigate the scarring effects of the Covid19 pandemic in terms of firm failures and the attendant job losses.

Key Words: Covid-19; Business Failure; Job Losses; Levelling-Up; Economic Inequality

1. Introduction

The UK is currently in lockdown phase II and the Prime Minister has just outlined the terms and conditions for lockdown III. This has a very explicit and locally based tier system which becomes increasingly restrictive both for people and businesses as we progress upwards through the three tiers. Very recent Covid-19 research has shown that up to 1 in 10 businesses are at immediate risk of failure due to lockdown I and that this risk was unequally distributed across different size classes of firms with micro and small firms most at risk (Cowling et al, 2020). In this paper we trace the economic consequences in terms of potential business failure and the associated job losses across the hundred largest cities and towns across the UK.

In recent years, there has been mounting criticism levelled at small business scholars for paying insufficient attention to spatial and contextual factors when examining entrepreneurial phenomenon (Welter, 2011; Welter et al, 2019). This has been brought into sharp relief during the Covid-19 pandemic which has unfolded disparately and unevenly across different socio-economic groups, geographical areas and localities across the UK (Dorling, 2020). This aspatial focus has undoubtedly hindered our understanding of how different localities are impacted by crisis situations and how entrepreneurial resilience levels vary across different spatial locations and local communities (Roundy et al, 2017; Korsgaard, 2020). This paper seeks to counter this tendency by specifically examining the geographical impact of the Covid-19 pandemic on firms in different parts of the UK.

During the current pandemic there has been a growing body of evidence, from a wide array of economies, suggesting the firms most negatively affected are the most nascent start-ups and micro-sized firms (Brown, et al, 2020; Cowling et al, 2020; Kuckertz et

al, 2020; Martinez-Cillero et al, 2020). However, to date there has been an absence of evidence examining the locations where these firms will be the most adversely impacted. This crucial omission is concerning for a number of reasons. First, the bulk of evidence suggests that economic shocks have a disproportionate impact on certain types of non-core regions and cities. Evidence from the global financial crisis (GFC) demonstrates that the areas most affected were peripheral regions, whereas the least impacted were core regions and capital cities which typically have a disproportionate amount of higher-tech knowledge-based industries (Bishop, 2019; Blažek et al, 2019). Indeed, this is a key recurring theme emerging from the growing literature on regional resilience since the GFC (Bachtler and Begg, 2018).

A second factor why this research lacunae is vitally important concerns the direction of public policy during the pandemic. Thus far, most of the UK's business support policies have applied universally across the country. Indeed, all of the main support schemes (e.g. the British Business Bank's Bounce Bank Loan Scheme and Future Fund) are open to UK start-ups and small and medium-sized enterprises (SMEs)[1] irrespective of a firm's geographical location. Despite this, initial evidence shows that by far the largest beneficiaries of some of these schemes are firms located in London and the south-east of England which features the largest proportion of the overall UK's business stock. For example, data from the Future Fund shows that nearly three quarters of the Future Fund loans went to start-ups located in London and the south-east of England[2]. This means that the firms in the areas most adversely affected by the Covid-19 pandemic may not be

[1]The Bounce Back Loan Scheme provides government backed loans between £2,000 and £50,000 for UK SMEs while the Future Fund issues convertible loans to innovative UK companies with good potential that typically rely on equity investment and are currently affected by COVID-19.

[2] https://dailybusinessgroup.co.uk/2020/07/new-attack-on-higgins-as-scotland-misses-out-on-new-fund/

accessing the available support despite being the areas worst impacted. This could potentially have significant long-term implications for these regions which are now facing a protracted recession owing to the crisis. Therefore, empirically examining the geography of the firms most likely to be endangered by the shock of the crisis is crucial from a policy perspective.

The remainder of the paper is as follows. First, we examine the relevant literature on regional resilience and entrepreneurial ecosystems. Second, we outline the paper's methodology. Third, we highlight the key findings. Finally, we conclude and end some important policy considerations.

2. Literature Review

In response to growing calls for more contextually focused entrepreneurship research highlighted above, there has been a growth of two key strands of literature in recent years – regional resilience and entrepreneurial ecosystems - which have attempted to fill this gap. It seems no coincidence that both streams of literature have been advanced by a confluence of entrepreneurship scholars and economic geographers. The intersection of these disciplines potentially offers fruitful insights into the powerful role context and geography plays in shaping and mediating the nature of the entrepreneurial process.

2.1 Regional Resilience and Entrepreneurial Ecosystems

In recent years there has been an upsurge of academic interest in the concept of "regional resilience", a term invoked to describe how regions respond to exogenous shocks and disequilibrium (Hassink, 2010; Bristow and Healy, 2014; Boschma, 2015). Indeed, an expanding empirical literature has revealed how different locations have differing capabilities

to deal with exogenous or unforeseen shocks. This concept is of critical importance because a key inference from this literature is that differences in resiliency to major shocks contribute to determining the long-run growth paths of different regions (Bristow and Healy, 2014).

While this body of evidence shows how aggregate economic performance is affected by cyclical shocks, it fails to properly explain how different types of firms (specifically SMEs) adapt, change and reconfigure themselves to accommodate destabilising unforeseen shocks (Brown et al, 2020 forthcoming). Notwithstanding this, prior evidence suggests the smallest firms are disproportionately impacted by chronic uncertainty due to lower resilience levels to unexpected shocks (Williams and Vorley, 2017). For example, an interesting recent study examined credit scores to assess firm resilience during the post-GFC period which showed firm closure was often precipitated by falling credit scores in the years prior to foreclosure (Soroka et al, 2020). Indeed, while only a limited body of work has examined resilience in SMEs (Wishart, 2018), some studies have vividly illustrated that entrepreneurship is central to creating more resilient regional economies (Williams and Vorley, 2014). In sum, the resilience literature suggests where your small business is located matters acutely, especially when faced with crisis episodes.

In tandem with the work on regional resilience there has also been a rapid proliferation of literature on entrepreneurial ecosystems (EEs). In recent years, many OECD countries have embraced the concept of EEs as a means of informing their economic development activities aimed at boasting entrepreneurship marking it out as the latest "fad" in enterprise policy (Brown and Mawson, 2019). EEs in essence are the union of localised cultural outlooks, social networks, incubation facilities, funding sources, universities and active economic policies supportive of innovative-based new ventures (Stam, 2015). Together these factors determine

whether new firms emerge, grow and shape their capacity to thrive. A key feature identified by the burgeoning literature is the marked levels of observable heterogeneity within different EEs (Brown and Mason, 2017).

Cities and urban locations are becoming an important spatial unit of analysis when examining EEs (Xu and Dobson, 2019). A key facet detected within the literature on EEs is the fundamental importance of agglomeration economies found in urban economies which often accrue key benefits for entrepreneurial actors in terms of access to resources, dense networks, human capital, sources of innovation, potential customers and so on. Conversely, EEs located in more peripheral or rural economies often suffer liabilities which hinder the entrepreneurial process, such as low start-up rates, a lack of resources (finance and human capital), an anaemic entrepreneurial culture and limited role models (Roundy et al, 2017; Miles and Morrison, 2020). Entrepreneurial resilience can also be heavily undermined in peripheral and post-industrial EEs with low levels of entrepreneurial ambition and dynamism which can often stymie business growth in SMEs (Gherhes et al, 2020).

In sum, the literatures on regional resilience and EEs both point towards an array of factors which coalesce to mediate firm-level behaviour and certain peripheral locations seem less well-equipped than others to generate business growth and sustain firm-level resilience. This is likely to prove especially problematic for smaller firms during an existential economic shock such the current pandemic.

3. Data and Method

The data we use for this research is a UK survey of the active business population conducted in 2018-2019. A total of 1,500 businesses were surveyed by IFF Research using Computer-Aided-Telephone-Interviewing (CATI). To ensure that our achieved sample was

representative of the known UK business population, a size class – industry weighting was constructed and applied to the sample during analysis. The data is the same as that used in Cowling et al (2020) and contains detailed information relating to how businesses distribute their surplus earnings and profit (if they have any) including whether they retain cash in the business as a precautionary step. It is this precautionary saving that reduces the risk that a business will run out of cash (liquidity) when faced with a deterioration in trading conditions such as we are experiencing during the extended Covid-19 crisis. Firms that either had no profit or free cash to save and those who did but failed to save for precautionary reasons were deemed to be at significant risk of failure. This forms the first stage of our analytical chain. Full and detailed estimates of this firm risk modelling process are contained elsewhere (Cowling et al, 2020). At the firm size class level this study established that 8.46% of micro businesses (0-9 employees) were at severe risk, 10.77% of small firms (10-49 employees), 4.20% of medium-sized firms (50-249 employees), and 3.58% of large firms (250+ employees) across the entire UK business population.

The second stage is to establish the precise firm size distributions across the 100 largest cities and towns of the UK (measured by population) as this was found to be the key variable in determining risk of failure during Covid-19 due to running out of cash. For this we referred to the UK business population tables (Local Authority county – Business Register and Employment: Table 5, Office for National Statistics) which provide detailed firm size distributional and employment data at the local (and regional) level. This data was then used to calculate the precise number of firms of each size class (micro, small, medium, and large) in each of our 100 cities and towns predicted to be at severe risk of running out of cash during Covid-19. We then simply multiplied (for each size class of firm) the number of at risk firms within that size class located within each individual town or city by their average

employment to arrive at an estimate of (a) the total number of firms at severe risk (of running out of cash), and (b) the potential job losses if those firms failed. As our focus is upon individual town and cities we report our estimates at this spatial level.

4. Results

The first issue we address is the total number of businesses at severe risk and the jobs associated with these at risk businesses across the 100 largest towns and cities of the UK by population. At the aggregate level, we estimate that 123,470 businesses are at risk of running out of cash and this total figure is dominated by an estimated 108,515 micro businesses, employing between 1-9 people. At the other end of the size class distribution, we estimate that 251 large businesses are at risk. Obviously, the potential job losses associated with these at risk businesses varies very considerably across size classes with the average micro business having 3.64 employees compared to average employment in a large business of 1,414.18.

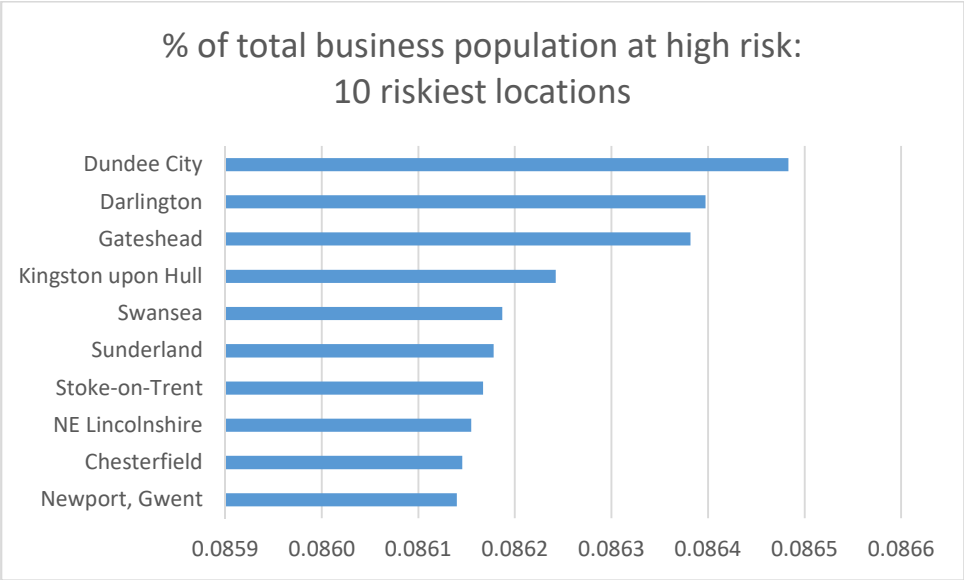
Table 1: Total business and job risk across 100 UK towns and cities

Risk to:	Micro 1-9 employees	Small 10-49 employees	Medium 50-249 employees	Large >250 employees	Total	% Population
Businesses	108,515	13,661	1,043	251	123,470	8.46
Jobs	394,995	266,110	101,845	354,900	1,117,849	5.88

Table 1 details the potential job losses associated with these at risk businesses which totals 1,117,849 UK workers or 5.88% of the total working population employed in private businesses in the largest 100 towns and cities. Whist potential job losses amongst micro businesses spread across the UK is the single largest source at 394,995 workers, it is also the case that potential job losses from the very few failures in large businesses are also a key component of aggregate total potential job losses at 354,900.

Next we focus on the unequal distributions of business and employment risk across the 100 largest towns and cities of the UK. From Figure 1, we can observe that there is not a single Southern English city or town in the top 10 most at risk of business failure locations. The highest business risk is in the Scottish city of Dundee where 8.65% of the total business population are at risk. There are also high concentrations of at risk firms in peripheral English North Eastern cities and towns including Darlington, Gateshead, Kingston-upon-Hull, Sunderland and also North East Lincolnshire. In addition, two English Midlands localities, Stoke-on-Trent and Chesterfield, and two Welsh areas, Newport and Swansea. We note that all these top 10 towns and cities are also associated with high levels of Covid-19 related incidence and associated restrictions.

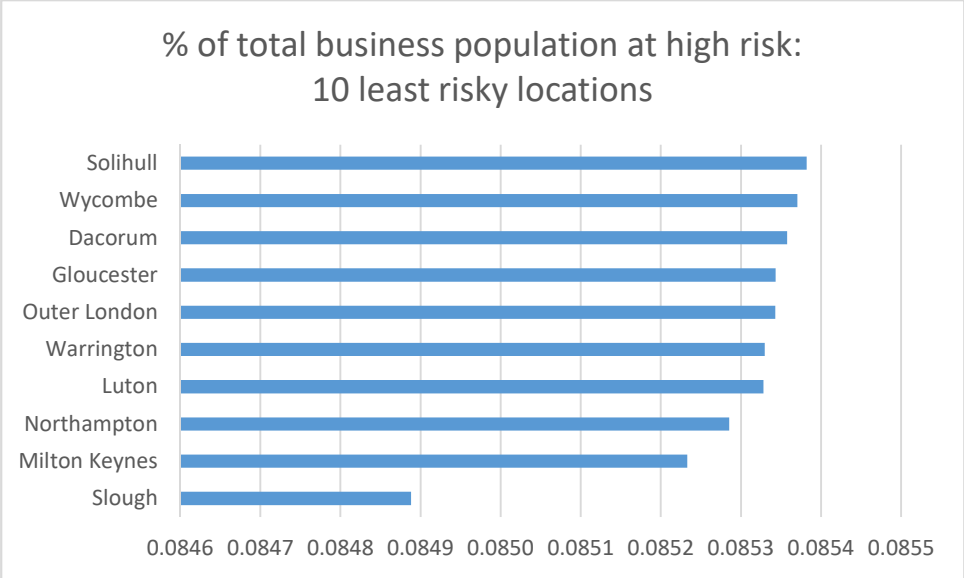
Figure 1: Business risk: Ten highest risk local areas



For comparative purposes Figure 2 depicts the lowest 10 locations for businesses at risk. With the notable exception of Warrington in the North West of England, the vast majority of low risk areas are in London and the South East of England, with the notable Midlands exceptions of Northampton, Gloucester and Solihull. We note here that the

wealthiest regions of the UK are located in London and the South East of England. In its entirety we begin to see a picture that separates the UK along similar lines as we observe for the distribution of wealth and incomes. Poorer and peripheral areas and regions have the highest incidence of business risk and richer and London-centric areas and regions have the lowest amount of firms at risk. This suggests that, at the business level, comparatively more firms in poorer and peripheral areas will disappear during the Covid-19 epidemic and that this inequality of impact on the business population will further disadvantage these areas in the post-Covid-19 era.

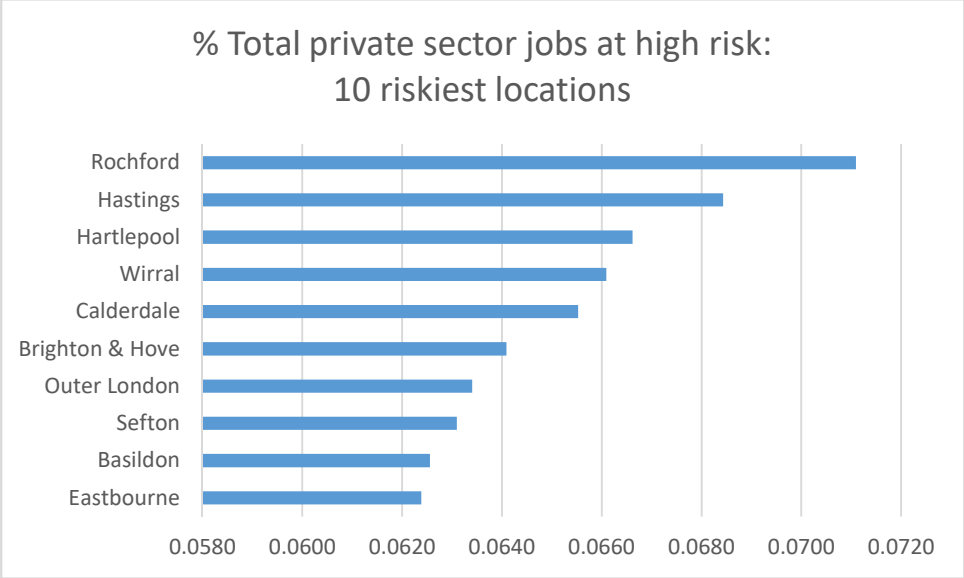
Figure 2: Business risk: Ten lowest risk local areas



We now turn our attention to the potential job losses associated with businesses at risk. Figure 3 shows the share of total jobs that are associated with at risk businesses within each locality. The first point of note is that the potential job losses are much more geographically and spatially diverse than was the case for business risk which was heavily concentrated in poorer and peripheral areas of the UK. For example, Rochford in Essex (a South Eastern English county) has the highest potential job losses out of local employment

at 7.11%. Hastings in Sussex (again a South Eastern English county) has the second highest potential job losses at 6.84%. However, a number of Northern English cities and towns are represented in the Top 10 for job losses (Hartlepool, Wirral, Calderdale, and Sefton) but so too is Outer London.

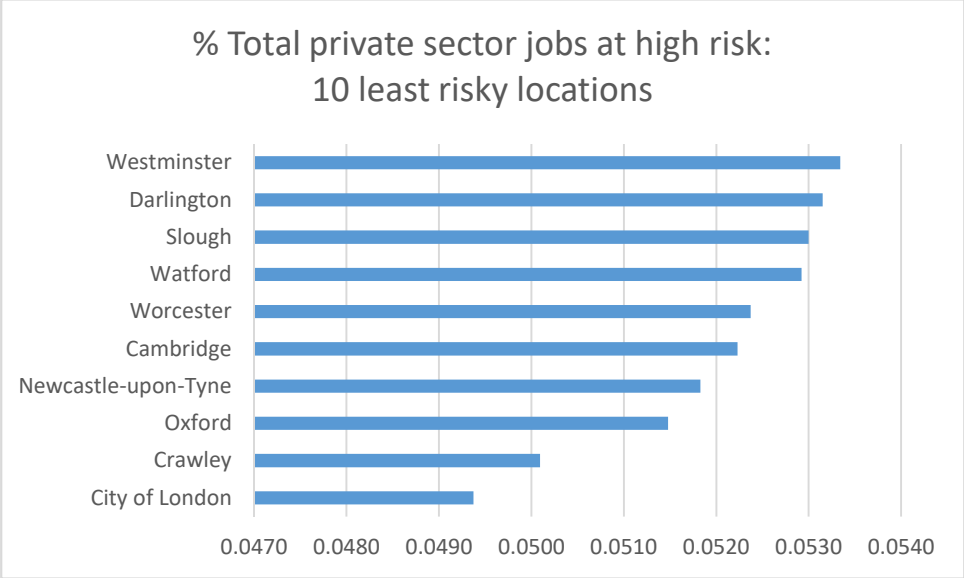
Figure 3: Job risk: Ten highest risk areas



In terms of the Lowest 10 at risk job loss areas (see Figure 4), again we observe a broad geographical spread with the City of London having the lowest rate of potential job losses at 4.94%, but also Northern English cities and towns such as Newcastle-upon-Tyne and Darlington also having low potential job loss rates. It is also interesting to note that regionally important cities such as Cambridge, Oxford, and Worcester, great mediaeval cathedral cities also appear at low potential risk of job losses due to business failure. This could be associated with high levels of knowledge-intensive firms in these more sophisticated locations. The distribution of potential job losses is much wider than that apparent for business failure across the towns and cities of the UK which highlights the

importance of the relative size distribution of firms within each locality. And this is important as there is a vastly different probability, even in good economic times, of an individual finding a new job in the South East of England than is the case in the peripheral and poorer regions outside of this disproportionately wealthy part of the UK.

Figure 4: Job risk: Ten lowest risk areas



5. Discussion and Conclusion

We were initially concerned about potential business failure across the UK due to Covid-19. But we were also aware that these at risk businesses employ millions of workers whose jobs were at risk too. In this paper we combined the two and questioned whether or not there was a unique geographic pattern to this unfolding crisis as some suggest (Dorling, 2020). Our results clearly show that business risk is unequally concentrated in poorer and more peripheral towns and cities of the UK, implying that any potential economic recovery will be more difficult to achieve given their already lower starting point pre-crisis. In line with other research on regional resilience, this clearly suggests that the impact of the current Covid-19 crisis is likely to have a strong spatial dimension due to weaker firm

resilience within these northern and peripheral geographic locations. This was particularly important as the current UK government have stated their desire to pursue a 'levelling-up' agenda that would redress the long-established economic inequalities across the UK, whilst also pursuing a distinct local and regional approach to battling the medical aspects of the Covid-19 crisis.

However, due to the unique town and city level distributions of firm size classes, which is the main driver of business failure, the potential loss of employment due to business failure was quite different at a spatial level and much more widely distributed across the towns and cities of the UK. In this sense two towns with an equal share of at risk businesses could have very different job losses associated with business failure due to a significant difference in their firm size class distributions.

So what does this mean for the post-Covid-19 levelling up agenda? Firstly, poorer northern peripheral towns and cities will have a much reduced business stock so unless this is offset by dynamic entry of new businesses their total capability will be reduced. Secondly, for those individuals who have lost their jobs due to business failure it is the potential of the business sector to provide new jobs for them that will determine their future economic outcomes. And we know wealthier regions and urban ecosystems have the consumer demand and entrepreneurial resources to support future firm growth which will absorb some of this new unemployment. But this is less likely to happen in poorer localities who also have proportionately less businesses per se to create new jobs, hence the resultant affect will be magnified in these areas. We conclude that the stated levelling-up agenda just got even harder to achieve due to the economic impacts of Covid-19.

The policy implications arising from the proceeding analysis are crucial. To mitigate the uneven spatial impact of the crisis on the UK economy, the government should make a concerted effort to ensure that regional policy is significantly bolstered during the post-pandemic era. Given that the UK is already one of the most inter-regionally unequal countries in the industrialised world (McCann, 2020) where the gap between the south and north is "longstanding, cumulative and systemic" (Martin et al, p. 355), the impact of the Covid-19 crisis makes this an even more pressing policy goal. In tandem with this, spatially blind enterprise policies such as the Future Fund need to be more geographically targeted towards firms in more northern and peripheral locations. There could be arguments for these types of Covid-19 related support instruments to be spatially calibrated so firms in certain locations receive higher levels of incentives and, vice-versa, in more advantageous regions like London and the South-East of England. To mitigate the anticipated jobs losses in times of crisis much more bold and imaginative policy measures are urgently required.

References

Bachtler, J., & Begg, I. (2018). Beyond Brexit: Reshaping policies for regional development in Europe. *Papers in Regional Science*, *97*(1), 151-170.

Bishop, P. (2019). Knowledge diversity and entrepreneurship following an economic crisis: an empirical study of regional resilience in Great Britain. *Entrepreneurship & Regional Development*, *31*(5-6), 496-515.

Blažek, J., Hejnová, T., & Rada, H. (2020). The impacts of the global economic crisis and its aftermath on the banking centres of Europe. *European Urban and Regional Studies*, *27*(1), 35-49.

Boschma, R. (2015). Towards an evolutionary perspective on regional resilience. *Regional Studies*, *49*(5), 733-751.

Bristow, G., & Healy, A. (2014). Regional resilience: an agency perspective. *Regional Studies*, *48*(5), 923-935.

Brown, R., & Mason, C. (2017). Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems. *Small Business Economics*, *49*(1), 11-30.

Brown, R., & Mawson, S. (2019). Entrepreneurial ecosystems and public policy in action: a critique of the latest industrial policy blockbuster. *Cambridge Journal of Regions, Economy and Society*, *12*(3), 347-368.

Brown, R., Rocha, A., & Cowling, M. (2020). Financing entrepreneurship in times of crisis: Exploring the impact of COVID-19 on the market for entrepreneurial finance in the United Kingdom. *International Small Business Journal*, *38*(5), 380-390.

Brown, R., Kalafsky, R., Mawson, S., & Davis, L. (2020). Shocks, uncertainty and regional resilience: the case of Brexit and Scottish SMEs. *Local Economy, Forthcoming*.

Colombelli, A., Paolucci, E., & Ughetto, E. (2019). Hierarchical and relational governance and the life cycle of entrepreneurial ecosystems. *Small Business Economics*, *52*(2), 505-521.

Cowling, M., Brown, R., & Rocha, A. (2020). Did you save some cash for a rainy COVID-19 day? The crisis and SMEs. *International Small Business Journal*, 0266242620945102.

Dorling, D. (2020). Want to understand the Covid map? Look at where we live and how we work. The Guardian, 29/11/20.

Gherhes, C., Vorley, T., & Williams, N. (2018). Entrepreneurship and local economic resilience: the impact of institutional hysteresis in peripheral places. *Small Business Economics*, *51*(3), 577-590.

Gherhes, C., Vorley, T., & Brooks, C. (2020). The "additional costs" of being peripheral: developing a contextual understanding of micro-business growth constraints. *Journal of Small Business and Enterprise Development*.

Hassink, R. (2010). Regional resilience: a promising concept to explain differences in regional economic adaptability?. *Cambridge Journal of Regions, Economy and Society*, *3*(1), 45-58.

Korsgaard, S., Hunt, R. A., Townsend, D. M., & Ingstrup, M. B. (2020). COVID-19 and the importance of space in entrepreneurship research and policy. *International Small Business Journal: Researching Entrepreneurship*.

Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Reyes, C. A. M., Prochotta, A., ... & Berger, E. S. (2020). Startups in times of crisis–A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights*, e00169.

Martinez-Cillero, M., Lawless, M., & O'Toole, C. (2020). Covid-19 Pandemic and SME Revenues in Ireland: What's the Gap? *Economic and Social Research Institute Quarterly Economic Commentary*, 113-.147

Martin, R., Pike, A., Tyler, P., & Gardiner, B. (2016). Spatially rebalancing the UK economy: towards a new policy model?. *Regional Studies*, *50*(2), 342-357.

McCann, P. (2020). Perceptions of regional inequality and the geography of discontent: Insights from the UK. *Regional Studies*, *54*(2), 256-267.

Miles, M. P., & Morrison, M. (2020). An effectual leadership perspective for developing rural entrepreneurial ecosystems. *Small Business Economics*, *54*(4), 933-949.

Roundy, P. T., Brockman, B. K., & Bradshaw, M. (2017). The resilience of entrepreneurial ecosystems. *Journal of Business Venturing Insights*, *8*, 99-104.

Soroka, A., Bristow, G., Naim, M., & Purvis, L. (2020). Measuring regional business resilience. *Regional Studies*, *54*(6), 838-850.

Williams, N., & Vorley, T. (2014). Economic resilience and entrepreneurship: lessons from the Sheffield City Region. *Entrepreneurship & Regional Development*, *26*(3-4), 257-281.

Welter, F. (2011). Contextualizing entrepreneurship—conceptual challenges and ways forward. *Entrepreneurship theory and Practice*, *35*(1), 165-184.

Welter, F., Baker, T., & Wirsching, K. (2019). Three waves and counting: the rising tide of contextualization in entrepreneurship research. *Small Business Economics*, *52*(2), 319-330.

Williams, N., & Vorley, T. (2017). *Creating Resilient Economies: Entrepreneurship, Growth and Development in Uncertain Times*. Edward Elgar Publishing.

Wishart, M. (2018). Business resilience in an SME context: A literature review. *Enterprise Research Centre*. Retrieved from: https://www.enterpriseresearch.ac.uk/wp-content/uploads/2018/07/Resilience-review-Final.pdf

Xu, Z., & Dobson, S. (2019). Challenges of building entrepreneurial ecosystems in peripheral places. *Journal of Entrepreneurship and Public Policy,* 8(3), 408-430.

The Centre for Responsible Banking & Finance
CRBF Working Paper Series
School of Management, University of St Andrews
The Gateway, North Haugh,
St Andrews, Fife,
KY16 9RJ.
Scotland, United Kingdom
http://www.st-andrews.ac.uk/business/rbf/

Recent CRBF Working papers published in this Series

First Quarter | 2021

21-003 **Javier Gomez-Biscarri, Germán López-Espinosa, Andrés Mesa Toro:** Drivers of Depositor Discipline in Credit Unions.

21-002 **Manthos D. Delis, Iftekhar Hasan, Maria Iosifidi, Steven Ongena:** Gender, Credit, and Firm Outcomes.

21-001 **I-Ju Chen, Iftekhar Hasan, Chih-Yung Lin, Tra Ngoc Vy Nguyen:** Do Banks Value Borrowers' Environmental Record? Evidence from Financial Contracts.

Fourth Quarter | 2020

20-018 **Angelos Kanas and Philip Molyneux:** Systemic Risk and CO2 Emissions in the US.

20-017 **Bill Francis, Iftekhar Hasan, Yinjie (Victor) Shen, Qiang Wu:** Do Activist Hedge Funds Target Female CEOs? The Role of CEO Gender in Hedge Fund Activism.

20-016 **Iftekhar Hasan, Qing He, Haitian Lu:** Social Capital, Trusting, and Trustworthiness: Evidence from Peer-to-peer Lending.

20-015 **Javier Gomez Biscarri, Germán López-Espinosa, Andrés Mesa Toro:** Remuneration as a Motivation of Earnings Management in Credit Unions.

Third Quarter | 2020

20-014 **Ross Brown, Jose M. Liñares-Zegarra, John O.S. Wilson:** Innovation and Borrower Discouragement in SMEs.

20-013 **Ivan Lim and Duc Duy Nguyen:** Hometown Lending.