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Working Paper

New survey evidence on COVID-19 and Irish SMEs: Measuring the impact and policy response

ESRI Working Paper, No. 698

Provided in Cooperation with:
The Economic and Social Research Institute (ESRI), Dublin

Suggested Citation: Kren, Janez; Lawless, Martina; O'Toole, Conor; McCann, Fergal; McQuinn, John (2021) : New survey evidence on COVID-19 and Irish SMEs: Measuring the impact and policy response, ESRI Working Paper, No. 698, The Economic and Social Research Institute (ESRI), Dublin

This Version is available at:
https://hdl.handle.net/10419/237969

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ESRI

Working Paper No. 698

April 2021

New survey evidence on COVID-19 and Irish SMEs

Measuring the impact and policy response

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Abstract: In this paper, we use new survey data on the Irish SME population to trace out the impact of the pandemic on firms' revenues, their capacity to adjust their cost base and their usage of policy supports. Between March and October 2020 over 70 per cent of firms experienced some fall in turnover with a median fall of 25 per cent compared to 2019. The impact of the shock appears uncorrelated with past firm performance which highlights its exogenous nature. Expenditure fell by 8.5 per cent on average with 40 per cent of firms cutting spending. Losses were incurred in over 30 per cent of enterprises with a further 30 per cent just breaking even. We find that about 61 per cent of SMEs received wage subsidies, 20 per cent of firms used tax warehousing while fewer than 6 per cent of firms used lending initiatives. Policy support take-up is more likely among those more affected by the downturn, while the smallest firms appear less likely to use support than larger firms.

Acknowledgements: We would like to thank officials in the Department of Finance for access to the underlying microdata and to our survey partners B&A for their work. We would also like to thank Vasileios Madouros, Fang Yao, and Niall McGeever. The views expressed in this paper are those of the authors alone and do not represent the official views of the Central Bank of Ireland or the ESRI. Any remaining errors are our own.

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1 Introduction

The COVID-19 pandemic has represented an unprecedented shock to the Irish and global economies. Its impact has been acutely felt by the Small and Medium Enterprise (SME) sector. SMEs account for 99 per cent of businesses in Ireland and 68 per cent of private sector employment.[1] Many of these firms have had to close periodically due to public health restrictions and/or deal with a major drop in demand. Previous research for Ireland has highlighted very serious losses, with estimates that up to one-in-two firms faced a revenue shortfall during the first three months of the pandemic (2020 Q2) and that one-in-six SMEs may have been financially distressed at end-2020 (Lawless et al., 2020a; Lambert et al., 2020).

COVID-19 is a global shock, with numerous studies similar in spirit to our own emerging globally. Most of these studies highlight major falls in turnover and employment (Apedo Amah et al., 2020; Bartlett & Morse, 2020; Chetty et al., 2020), widescale and intermittent closures (Bartik et al., 2020), increased failure risks (Kalemli-Ozcan et al., 2020) and lower productivity levels (Bloom et al., 2020). These studies highlight major uncertainties around future demand and recovery, with evidence from the US suggesting that firms expect demand to remain over 30 per cent lower than normal on an ongoing basis (Balla-Elliott et al., 2020).

To deal with the economic fallout from the pandemic, a range of policy measures have been introduced. Across the globe, over 1,600 instruments have been introduced across 135 countries (Cirera et al., 2020). These are mainly debt-based policies, employment cost supports and tax measures. In Ireland, an extensive set of policies has also been introduced focusing on wage subsidisation, tax and payment deferrals, grants and direct cost supports as well as lending facilities.

Despite the existing research and extensive policy response, a number of data gaps exist in the Irish context. Such gaps are problematic in building a thorough evidence base for the development and targeting of policies as well as an understanding of the channels impacting firms. These data gaps are as follows: 1) a quantification of the up-to-date position of Irish SMEs in terms of operating activities, assets and indebtedness just prior to the pandemic which could be combined with pandemic impact data; 2) no detailed information on expenditure and costs[2]; and 3) updated information on the usage of policy measures, which could be combined with data on the real economy impact of the pandemic.

[1] We divide firms into four size groups: the self-employed, other micro firms (employing between 2 and 9 people), small firms (with 10 to 49 employees) and medium firms (with 50 to 249 employees).

[2] Some high level information is available from a series of CSO surveys on the business impact of COVID-19: https://www.cso.ie/en/releasesandpublications/ep/p-covid19/covid-19informationhub/economy/businessimpactofcovid-19survey/

To bridge these gaps, we use new survey data that were collected as part of the Department of Finance Credit Demand Survey series. The survey was extensively redesigned in light of COVID-19 to capture information on SME performance prior to the pandemic and to provide information on its impact on turnover, expenditure and profits with reference to the time period from from March to October 2020. It also included a range of questions on firm usage of selected policy supports. Our research builds on recent papers in this space (Lambert et al., 2020; Lawless et al., 2020a; McGeever et al., 2020a) and provides the most detailed analysis to date for Ireland of SMEs before and after the pandemic began.

A number of important findings emerge. First, considering the pre-pandemic baseline, we document firms' cost structure, liquidity and indebtedness. We show that the median SME had cash on hand sufficient to cover 3 weeks of 2019 levels of total expenditure, or 31 weeks of fixed cost expenditures. As noted in other studies (McQuinn & McCann, 2017) Irish SMEs had relatively low levels of indebtedness and leverage in the years preceding the pandemic, suggesting that SME balance sheets were unlikely to be an amplifier of pandemic-related economic stress.[3]

Second, the results reveal the uneven impact of the pandemic across sectors: while the median fall in turnover was just over 25 per cent, firms in hotels and restaurants noted a median decline of 65 percent. Across other sectors, the wholesale trade sector and business services were amongst the least impacted, although the median reduction in output is still substantial. Similar to other international research (Cirera et al., 2020), the decline in turnover was largest for self-employed enterprises.

A key finding, previously unexplored in this area, relates to the extent that firms were able to absorb the turnover shock by adjusting expenditures. We find that 40 per cent of firms reduced expenditure with an average reduction of 8.5 percent. We estimate that a one euro decline in revenue is associated with a 0.36 euro decline in expenditure, suggesting that firms in the main have not had sufficient cost reduction capacity to eradicate the effect of the pandemic on profit margins.

The data show that operating losses were widespread with an average of 9 per cent losses during the pandemic (as compared to profit margins of 24 per cent in 2019). Of note, there is no evidence of a link between firm profitability in 2019 and how they fared in 2020 highlighting the exogenous nature of the shock.

Measuring SMEs' usage of support schemes, the main instruments used, during the period in which the survey covered (April to September 2020), have been tax warehousing or deferred tax payments, wage subsidies through the Temporary Wage Subsidy Scheme (and the follow up Employment Wage Subsidy Scheme), grants and

[3] 40 per cent of SMEs had no debt in 2019, with the median indebted SME having a debt to assets ratio of just 12 per cent.

fixed cost supports as well as lending facilitation measures. At the time of writing it appears that public health restrictions are going to persist for a longer period than envisaged in summer 2020. Given this context, it is important to continue to provide firms, who are closed due to the regulations, with sufficient support to survive this current period.

The rest of this paper is structured as follows: section 2 provides an overview of the cost and financial position of firms before the pandemic. Section 3 considers the impact of the pandemic on turnover, employment, expenditure and profitability. Section 4 assess the policy response and section 5 concludes.

2 Cost structure and financial vulnerability before the pandemic

SMEs are the predominant enterprise type in Ireland, accounting for 99 per cent of active businesses, with 92 per cent of these being "Micro", i.e. having less than 10 employees. In total SMEs account for 68 per cent of private sector employment, highlighting their central importance to overall economic activity. Economies of scale imply that larger firms are typically more productive: despite accounting for almost all active enterprises, SMEs account for 46 per cent of private sector turnover and only 37 per cent of gross value added (with the remainder owing to large enterprises of over 250 employees, many of whom are Multi-National Enterprises, MNEs).

Despite Ireland's reputation as a high-tech, knowledge intensive exporting economy, the majority of employees in Ireland work in traditional, domestic-facing sectors where SMEs are the dominant employer. Eurostat data show that Ireland had the highest share of employment in the "High Tech Manufacturing" (2.8 per cent) and "High-Tech Knowledge-Intensive Services" (5.3 per cent) among all EU countries in 2018.[4] By comparison, 43 per cent of private employees work in the Motor, Wholesale, Retail, Transport, Storage, Accommodation and Food sectors, with another 9 per cent in Construction.[5] As a measure of economy-wide vulnerability to the direct effects of the pandemic, Ireland's employment structure has certain fragilities, with higher levels of pre-pandemic total employment relative to EU averages in the Accommodation and Food (13 versus 8 per cent) and Wholesale and Retail sectors

[4] https://ec.europa.eu/eurostat/statistics-explained/images/3/3c/Employment_in_high-tech_sectors%2C_EU-28_and_selected_countries%2C_2018.png

[5] See https://www.cso.ie/en/releasesandpublications/ep/p-bii/businessinireland2018/detailedbusinesssectors/.

(25 versus 23 per cent).[6]

SMEs in Ireland entered the COVID-19 pandemic in relatively good financial health. The decade since the global financial crisis in Ireland was characterised by substantial deleveraging across the SME sector. In aggregate, between December 2010 and December 2019 the outstanding stock of credit to SMEs outside the property and financial sectors fell by 47 per cent, from €27bn to €14bn. The composition of aggregate credit to enterprises has also changed dramatically, with less focus on property-related borrowing across the business sector (see McCann & McIndoe-Calder (2014) for details of the scale of this activity among SMEs whose main activity did not relate to property during the last crisis). Since the economic recovery began in 2013, Irish SMEs have had lower levels of credit applications than SMEs across Europe, citing the desire to utilize internal funds as their main financing source for investment.[7] Indeed, internal funds holdings have been shown to be higher in Ireland than in other countries in recent years (Lawless et al., 2020b). The share of firms reporting zero debt balances rose steadily since 2013, while the share of highly indebted firms (those with debt greater than turnover) fell over the same horizon (McQuinn & McCann, 2017). These patterns are likely caused by a number of factors, including risk aversion owing to the scarring experience of many over-indebted businesses during the last crisis, a survivorship bias where many of the highest-risk firms were liquidated after the last crisis, the higher cost of borrowing in Ireland, among others.

We now highlight a number of new insights on pre-pandemic starting points from the 2020 version of the *SME Credit Demand Survey* (CDS). In Table 1, we provide for the first time to our knowledge a breakdown of the cost structure of Irish businesses. The 2020 version of the CDS included detailed questions on the share of eight different expenditure items: purchases, wages, taxes, utilities, rent, loan repayments, commercial rates, and a miscellaneous category. We split these costs into Variable Costs (purchases, wages, taxes), Fixed Costs (utilities, rent, loan repayments, commercial rates), and Miscellaneous. Gaining an understanding of the ex-ante cost structure of SMEs allows us to deepen our assessment of the likely survival prospects and solvency positions of SMEs today, given that the businesses most likely to end up in a non-viable situation are those with fixed costs that were

[6]Comparison to EU average sectoral employment shares using Eurostat's Annual enterprise statistics for special aggregates of activities (NACE Rev. 2) [SBS_NA_SCA_R2].

[7]This pattern has been prevalent in each of the Central Bank of Ireland's *SME Market Reports* in recent years: https://www.centralbank.ie/publication/sme-market-reports.

larger than their revenues during the most acute phase of the pandemic.

Table 1: SME's expenditure structure in 2019

	Variable costs				Fixed costs					
	Purch.	Wages	Taxes	All	Util.	Rent	Debt	Com.	All	Misc.
Manufacturing	47	28	5	81	5	2	1	2	10	9
Construction	38	36	7	81	4	1	2	2	9	10
Wholesale	52	24	6	82	4	3	2	2	11	7
Hotels & restaurants	29	37	7	73	7	4	2	3	16	11
Business services	23	46	8	76	5	4	1	2	12	12
Other	28	45	4	77	5	2	1	1	10	13
Self-employed	44	22	9	75	7	5	2	2	15	9
Micro	37	34	7	79	5	4	2	2	13	9
Small	36	38	6	80	5	2	2	2	11	9
Medium	37	37	4	78	4	2	1	1	9	13
Total	37	35	6	79	5	3	2	2	11	10

Means of item's share in total expenditures. Purch.=purchases of goods and services, Com.= commercial rates.

In total, we highlight that on average 79 per cent of expenditures in 2019 were Variable, and 11 per cent were Fixed. This cost structure suggests that SMEs had significant scope to adjust costs downward in response to the adverse revenue shocks that hit in March 2020. Firstly, certain purchases should mechanically adjust downwards with businesses demand, as businesses slow their own purchases of raw materials and goods for resale in response to a lack of prospective sales. However, in practice, it is unlikely that businesses were able to achieve one-for-one reductions in purchase costs given the uncertainty that has prevailed during the pandemic about the future path for sales. Furthermore, the incidence of purchases on trade credit combined with the sheer speed of the shock in March 2020 meant that across the economy, over ten billion euro worth of inputs may have been purchased by firms who faced rapid closure due to public health restrictions and therefore may not have received the expected revenue required to repay (McCann & Myers, 2020).[8]

[8]Key representative groups were corroborating the risk that variable costs may have arisen before SMEs were able to anticipate the shock to their demand. For example, quoting IBEC chief economist Gerard Brady, the Irish Times reported the following in April 2020: "*For many businesses orders which were fulfilled in the opening quarter of the year have not been paid for, expensive stock is left sitting on the shelves, and payment timelines are stretched. As a result, the need for liquidity has greatly increased.*"

Wages comprise on average 35 per cent of business expenditures. The income supports in place since March 2020 means that this is a very important cost item that has largely been mitigated for SMEs experiencing turnover shocks, through the possibility of either laying workers off who then receive the PUP, or maintaining staff but having a substantial portion of wages covered through the TWSS/EWSS.

The fact that Fixed Costs represent on average only 10 per cent of total expenditures means that for many businesses, such costs likely can be met through grants such as the re-start grant and CRSS, and cash holdings and borrowing. Looking across sectors, there is important variation: Hotels and restaurants had on average the highest share of Fixed Costs in total expenditure at 16 per cent on average, highlighting another ex-ante vulnerability that will have made it more difficult to absorb the pandemic revenue shock. Similarly, looking across firm sizes, self-employed businesses had the highest share of Fixed Costs at 15 per cent, compared to 9 per cent for Medium-sized firms.

We now turn our attention to measures of ex-ante vulnerability that had the potential to exacerbate the effects of an unexpected shock such as the COVID-19 pandemic. Given that the COVID-19 shock has been in the first instance an acute liquidity crisis for businesses, in Table 2 we focus on the liquidity position of SMEs, measuring cash holdings across sectors and firm size groups. We report four measures: cash amounts, the cash to total assets ratio, cash to total expenses, and cash to fixed costs. The final row in the table provides statistics across the entire sample. SMEs held on average €930,000 of cash balances in 2019, however this masks a significant skewness across firms: one half of SMEs held only €45,000 or less. Cash was on average 24 per cent of total assets for Irish SMEs in 2019, and 15 per cent at the median.

Perhaps the most relevant liquidity metrics for firms' survival to withstand the pandemic shock related to their capacity to cover expenses. SMEs had on average cash balances to cover 15 weeks of total expenditure. However, when focussing only on fixed costs, we see that the liquidity position of SMEs appears much more robust: SMEs had on average 161 weeks' worth of fixed costs in cash, or 31 weeks at the median. Interestingly, when measuring cash to expenses or cash to fixed costs, the liquidity position of SMEs is similar across sectors and firm size groups. One notable outlier is the Hotels & restaurants sector, in which half of SMEs had cash to cover only 18 weeks of fixed costs, or less (versus a median of 31 weeks across the SME population).

Table 2: Cash and cash equivalent assets in 2019: Levels and ratios

	in 1000 EUR		Cash/Assets		Cash/Expenses*		Cash/Fixed*	
	Mean	Med.	Mean	Med.	Mean	Med.	Mean	Med.
Manufacturing	413	60	17	10	11	3	139	30
Construction	296	38	23	15	7	2	143	24
Wholesale	957	40	20	10	12	3	185	33
Hotels & restaurants	805	50	14	10	20	3	119	18
Business services	817	50	36	25	20	5	179	46
Other	2102	50	26	10	20	4	127	27
Self-employed	12	1	19	5	16	1	141	23
Micro	653	15	24	10	17	2	177	27
Small	822	100	25	15	12	3	173	29
Medium	1918	310	23	15	17	4	127	41
Total	930	45	24	15	15	3	161	31

* Average weekly total expenditures, average weekly fixed-cost expenditures

Table 3 looks at debt and leverage at the onset of the pandemic. Our data tell us that 61 per cent of SMEs have debt, which is €1.3m on average and €200,000 at the median. Leverage, as measured by the debt to assets ratio, is on average 53 per cent (or 19 per cent on the basis of debt-to-turnover, a measure incorporating ability to repay), with half of SMEs having leverage ratios of 12 per cent or lower (4 per cent or lower for debt-to-turnover). McCann & McIndoe-Calder (2012) have previously show that the average leverage ratio in a 2010 sample of Irish SMEs was 72 per cent, suggesting a marked reduction since the last crisis. Further, they show a strong non-linearity in the effect of leverage on SME default, with loans in the bottom half of the loan size to assets ratio distribution having similar defaults that are half the size of default rates in the top decile of this measure of leverage. These metrics suggest that overall the sector did not enter the pandemic with high ex-ante levels of credit-driven vulnerability. There is a sectoral dispersion, with leverage ratios on average 65 per cent in the Wholesale & Retail sectors and 60 per cent in the Hotels & restaurants sector (32 per cent for debt-to-turnover, well above all other sectors), which, all other things equal, heightens the risk of insolvency and leaves less scope to borrow to adjust to the revenue shocks experienced in 2020.

Overall the data tell a story of relatively resilient SME finances, with low levels of indebtedness across the SME population at the onset of the pandemic. While cash balances are low for many SMEs, they nonetheless represented over half a year's worth of fixed costs or more for the majority of SMEs.

Table 3: Debt and assets in 2019

	Debt			Assets		Debt/assets		Debt/turn.	
	$\text{Share}_{D>0}$	Mean*	Med.*	Mean*	Med.*	Mean	Med.	Mean	Med.
Manufacturing	69	1121	375	3624	1500	34	14	16	7
Construction	64	1090	175	1912	400	51	16	13	3
Wholesale	65	1087	175	3378	600	65	13	19	4
Hotels & restaurants	63	2423	600	6916	1300	60	16	32	7
Business services	54	1027	70	2090	200	58	6	17	2
Other	56	2099	250	18478	1000	27	4	17	1
Self-employed	44	53	10	134	50	29	0	20	0
Micro	59	274	50	943	175	56	8	17	3
Small	64	1101	300	2852	1000	55	13	17	4
Medium	70	3390	1000	17533	4000	56	25	26	7
Total	61	1360	200	5312	600	53	12	19	4

* Nominal values in 1000 EUR. Average and median debt are reported only for the firms with debt. Debt-to-assets, and debt-to-annual turnover ratios are multiplied by 100.

3 Revenue and costs during the pandemic

The previous section gave an overview of the structure and performance of the SME sector just prior to the arrival of the COVID-19 pandemic. In this section, we examine the impact on firms across a range of indicators of performance – turnover, profitability and employment – and we also examine the extent to which firms were able to adjust their expenditures as business activity fell.

3.1 *The impact on turnover and profitability*

Beginning with turnover, Table 4 shows the extent of the falls in turnover across broad sectors and size groups. This compares the period between mid-March and October 2020 to the level of activity in 2019. The table shows changes for the mean of each sector and size group and at a number of other points in the distribution (first quartile, median and third quartile). These measures show fairly considerable variation in several cases, demonstrating that the pandemic did not affect firms across or within groups evenly. The bottom row of the table gives the overall extent of the effect of the pandemic on the SME sector, showing a mean fall in turnover of over 26 per cent. The median is just very slightly below this for the SME sector as a whole, showing a decline in activity of one-quarter relative to the previous year. Many firms faced more severe falls in turnover than this average indicates, with turnover halving for firms at the 25th percentile. At the other end of the distribution, no change in output was faced by firms at the 75th percentile and the more detailed graphs in Figure 2 show a certain, albeit relatively small, group of firms increased turnover in this period.

Across sectors, the pandemic and resulting public health restrictions had a particularly severe impact on the hotels and restaurants sector, where median turnover fell by 65 per cent and firms at the 25th percentile encountered declines of 80 per cent relative to previous activity. This was also the only sector where substantial declines in turnover are found even at the upper end of the distribution. Across other sectors, the wholesale trade sector and business services were amongst the least impacted, although the median reduction in output is still substantial.

The variation in impact across size groups is slightly less stark than across sectors. We find that the self-employed are much more affected than the other size classes with median falls in turnover of 35 per cent compared to the overall impact of 25 per cent across the SME sector as a whole. The scale of the reduction in turnover of 70 per cent towards the most affected end of the distribution (25th percentile) is also considerably greater amongst the self-employed than was encountered for other size classes. Apart from the self-employed the scale of the reductions in turnover

is broadly similar for each of the other size classes. More detail on the extent of variation within the broad groups is shown in Figure 2 which shows boxplots for each sector and size group, indicating the spread of the turnover shock and also how this compares to changes in expenditure (discussed further later in this section).

Table 4: Change in turnover between mid-March and October 2020 compared to 2019

	Freq.	Mean	Q_1	Med.	Q_3
Manufacturing	181	-20.4	-40	-20	0
Construction	134	-25.3	-40	-30	0
Wholesale	466	-19.6	-40	-25	0
Hotels & restaurants	167	-60.8	-80	-65	-40
Business services	333	-25.0	-40	-25	0
Other	211	-22.9	-35	-15	0
Self-employed	155	-33.9	-70	-35	0
Micro	424	-25.9	-50	-25	0
Small	567	-25.0	-40	-27	0
Medium	346	-26.6	-40	-20	0
Total	1492	-26.5	-50	-25	0

In terms of other firms characteristics that may lead to differential exposure to the effects of the pandemic on turnover, we can also look at exporting status and location in counties with longer restriction periods in August. (O'Toole, 2020) showed that there were considerable differences between domestically-orientated services sectors and the export-orientated multinational sectors, particularly pharmaceuticals and medical devices, with the latter increasing rather than decreasing activity during 2020. Figure 1 shows that this stark difference in performance between multinational-dominated sectors and other sectors is not strongly reflected in differences between exporting and non-exporting SMEs. The particular sectoral concentration in pharmaceuticals and medical devices appears therefore to be the key factor driving the difference rather than export status. Figure 1 also shows the difference in turnover impacts for Dublin and for Laois, Offaly and Kildare relative to other counties as restrictions remained in place longer in these areas. The impact is limited, probably due to the much greater impact of the initial country-wide restrictions.

Such a substantial reduction in turnover would of course be expected to also be reflected in profit margins. The two would not necessarily be completely correlated however as the extent of the impact on profitability will depend on whether and by how much firms could also change their expenditures, which we look at in more

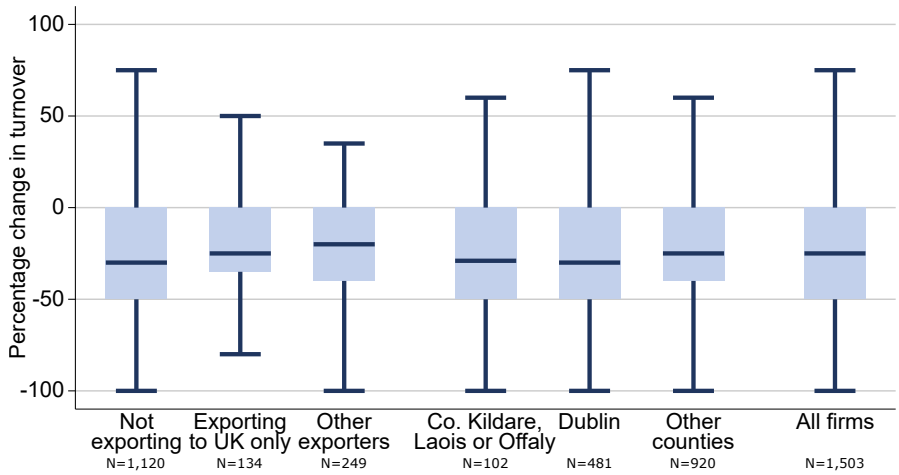

Figure 1: Differences in turnover shock by exporter status and county

detail below. Firstly however, we examine the size of profits or losses made by firms in the period from mid-March to October 2020 and how these compare to profits in the previous year. Table 5 shows that for firms in the SME sector as a whole, there were average losses of 9 per cent following the onset of the pandemic. This compares to an estimated mean profit margin of 24 per cent in 2019. The variation in the size of the losses in the second and third quarters of 2020 is fairly considerable, both between and within sectors. As with turnover, the experience of the hotels and restaurants sector is once again the most negatively impacted, with mean profit margins of -35 percentage points and a median of -30 per cent. Across most other sectors, the median profit margin was zero compared to a median of 15 per cent in 2019. At the upper end of the profit margin distribution (75th percentile), margins remained positive in many sectors but at a substantially reduced level relative to the highest margin firms in the previous year. Across size categories, the self-employed again appear to have been the hardest hit with mean losses of 20 per cent compared to the overall mean of 9 per cent. They were also the only group where even the top percentile had a zero profit margin.

The changes in turnover and extent of losses across all sectors and size groups show the magnitude of the COVID-19 shock on the SME sector of the economy. Next, we examine if there is any pattern to suggest that the most affected firms were those that were already in financial difficulty. If the effects of the pandemic were largely concentrated in firms that were struggling to be profitable in the growing economic environment prior to the pandemic, that might affect how support policies would be formulated or influence how they should be targeted. In particular, policy questions around long-term viability, which will be a key determinant in whether financially distressed companies are more likely to be liquidated or restructured, are

Table 5: Profit margin in 2019, and between mid-March and October 2020

	Profit margin 2019					Profit margin 2020				
	Freq.	Mean	Q_1	Med.	Q_3	Freq.	Mean	Q_1	Med.	Q_3
Manufacturing	164	21.1	0	11	50	169	-3.3	-10	0	10
Construction	127	20.8	1	17	38	126	-7.2	-14	0	0
Wholesale	432	26.1	2	15	50	420	-5.9	-15	0	8
Hotels & restaurants	150	29.1	0	20	53	147	-34.9	-70	-30	0
Business services	311	30.5	4	20	59	308	-4.3	-5	0	5
Other	198	11.4	0	6	33	187	-8.9	-10	0	5
Self-employed	148	29.6	5	33	60	142	-19.8	-50	0	0
Micro	398	25.4	0	20	50	378	-7.5	-20	0	3
Small	518	21.3	0	12	47	523	-7.0	-15	0	5
Medium	318	24.8	0	9	50	315	-8.7	-20	0	7
Total	1381	24.2	0	15	50	1358	-8.9	-20	0	5

likely to take into account a combination of pre-pandemic profitability, in-pandemic performance, and sectoral and firm-specific outlook based in changes to demand.

By correlating the broad performance of firms in 2019 with that of 2020, we find that the impact of the pandemic was so wide-spread that there is no evidence of a strong and direct link between firm profitability in 2019 and how they fared in 2020.

Table 6 shows the profitability cross-tabulation of the two years, showing whether firms made a profit, loss or broke even in 2019 and the category they moved into in 2020. Note that the survey did not directly ask about 2019 profits: The profitability categories in 2020 are directly from the data, and profitability in 2019 is calculated from the information collected on expenditures and turnover. Cross-checking of these profitability group estimates show that the aggregated numbers are closely comparable to data collected from 2019 survey.

In 2019, almost 65 per cent of SMEs made a profit, 28 per cent broke even and 7 per cent made a loss. In 2020, the impact of the pandemic resulted in 36 per cent making a loss and the share of firms making a profit fell to just under one-third. Of the firms that made a loss or broken even in 2020, the majority had made a profit in 2019. The share of firms making a loss in both years was just over 3 per cent. Despite the extent of the economic downturn associated with COVID-19, some of the firms that made a loss in 2019 returned to profitability in 2020. Overall, this cross-tabulation demonstrates the broad impact of the pandemic on business activity and an almost complete lack of correlation between prior performance and profitability during this period. In particular, the results here suggest that 2020 performance alone is likely to be a poor gauge of long-term viability, with the majority of firms

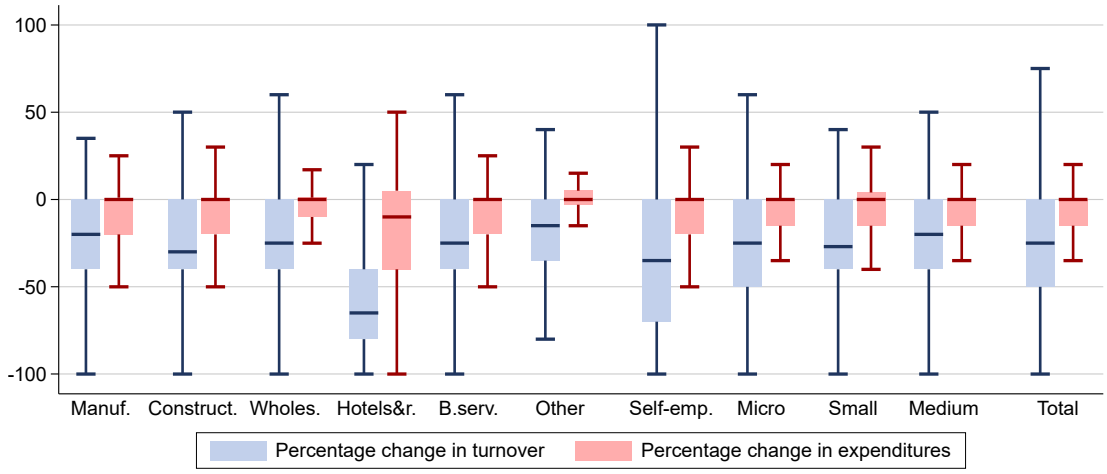

Figure 2: Distribution of turnover and expenditure shocks by firm size and sector
Boxplots exclude outside values.

struggling in 2020 having a history of pre-pandemic profitability. Combining these trends with sector- and firm-specific outlook, there will be much complexity involved in arriving at decisions around the appropriate tapering of financial supports, bank lending decisions, and restructuring and insolvency decisions.

Table 6: Profitability cross-tabulation

	Profitability in 2020			
Profitability in 2019	Loss	Broke even	Profit	Total
Made a loss	3.2	2.2	1.9	7.3
Broke even	10.2	9.0	9.7	28.3
Made a profit	22.8	19.8	21.9	64.4
Total	36.1	30.9	33.0	100.0

The results so far show that almost three-quarters of SMEs experienced declines in turnover between March and October 2020 and that over one-third made losses while a further 31 per cent had profit margins of zero. In Table 7, we examine in more detail the correlation between the extent of the turnover shock and profit margins. Of the 36.5 per cent of firms that made a loss, almost all had experienced substantial falls in turnover of at least 25 per cent. A substantial minority (10.4 per cent of all firms, equivalent to 28 per cent of those making losses) had turnover declines in excess of 75 per cent. Firms that broke even also mainly experienced losses but of lesser magnitude with the largest group having losses in the range of 25 to 50 per cent. Firms that made profits in this period experienced either small decreases or saw turnover increase. A small fraction of firms however continued

to make profits despite large reductions in turnover, suggesting high starting profit margins in these small number of instances.

Table 7: Changes in turnover and profit margin cross-tabulation

	Profitability in 2020			
Change in turnover	Loss	Broke even	Profit	Total
V. large decrease	10.4	1.3	0.5	12.2
Large decrease	8.9	3.3	1.0	13.2
Medium decrease	11.8	12.0	5.7	29.5
Small decrease	2.9	5.4	7.1	15.4
Remained	1.6	7.6	8.3	17.5
Increase	0.8	1.5	9.9	12.3
Total	36.5	31.1	32.5	100.0

A very large decrease is defined as 75% or more, large between 75% up to including 50%, medium between 50% up to including 25%, and a small decrease is less than 25%.

3.2 *How has expenditure reacted?*

The substantial reductions in turnover could be considered the most direct impact on businesses due to pandemic and the associated public health measures put in place to limit its spread. To understand the total effect on firm finances, we also need to assess the extent to which they were able to reduce expenditure as turnover contracted. Previous work on the impact of the pandemic on SMEs, such as Lawless et al. (2020a) and Lambert et al. (2020), had limited information on the level and composition of expenditure and gathering more detailed information on expenditure adjustments was one of the central objectives of the most recent wave of the CDS data. In this section, we document how overall expenditure developed in 2020 and how this related to the severity of turnover reductions. For the group of firms that reduced expenditure, we further examine the composition of the reductions across a range of expenditure categories.

The mean reduction in expenditure across all firms shown in Table 8 was 8.5 per cent while the median was no change in overall expenditure. This compares to the overall turnover reduction of approximate one-quarter shown in Table 4. Across sectors, hotels and restaurants had the most substantial reductions in expenditure with a mean reduction of just over 18 per cent and a 40 per cent reduction at the 25th percentile. Across size groups, the largest mean decline was amongst the self-employed with the other three categories being broadly similar in terms of average reductions. Increases in expenditure are rare for the self-employed but somewhat

more commonly incurred in the larger size groups. Comparing the expenditure distribution by sector and firms size to that of turnover in Figure 2, the most striking features are the smaller median reductions and the much narrower spread of the distributions of expenditure reductions across all groups.

To examine slightly more formally the correlation between turnover and expenditure changes, the right-hand panel of Table 8 shows the estimated relationship between expenditure and turnover for each sector and size group, modelled as:

$$\Delta\text{Expenditure}_i = \beta_0 + \beta_1 \cdot \Delta\text{Turnover}_i + \epsilon_i \tag{1}$$

The estimates for the full sample in the bottom row of the table corresponds to the fitted line in Figure 3. Overall, we find a statistically significant coefficient of 0.366. This indicates that for every one per cent fall in turnover, we would expect to see a 0.366 per cent fall in expenditure, although no direct causation can be inferred from this estimation. There is considerable variation across sectors and size groups beneath this overall coefficient with stronger relationships (over 0.5) found in manufacturing and the hotels and restaurants sector. Across size groups, there is almost no variation in the magnitude of the relationship between turnover change and expenditure change.

Table 8: Change in expenditure

	Change in expenditure					Expenditure elasticity	
	Freq.	Mean	Q_1	Med.	Q_3	Constant	Slope
Manufacturing	179	-8.7	-20	0	1	3.929**	0.560***
Construction	130	-8.6	-20	0	0	0.892	0.351***
Wholesale	452	-6.2	-10	0	0	0.104	0.326***
Hotels & restaurants	159	-18.4	-40	-10	5	13.766***	0.512***
Business services	323	-11.1	-20	0	0	0.598	0.419***
Other	205	-1.6	-3	0	5	3.850**	0.198***
Self-employed	153	-13.2	-20	0	0	−2.022	0.370***
Micro	408	-8.3	-15	0	0	1.809	0.360***
Small	552	-7.5	-15	0	4	3.530***	0.357***
Medium	335	-8.3	-15	0	0	2.004	0.355***
Total	1448	-8.5	-15	0	0	2.173***	0.366***

Slope coefficients, β_1 from equation 1, are expenditure elasticity of turnover. Significance levels (*** p¡0.01, ** p¡0.05, * p¡0.1) estimated using robust standard errors. Regressions exclude outliers with changes greater than 100%.

Table 9 shows the link between changes in expenditures and changes in turnover in a different format, calculating the share of firms in each of the cells representing a turnover change category and an expenditure change category. Looking first at

the total column for changes in turnover, we find that just over 70 per cent of firms experienced a decline in turnover. Almost 12 per cent of firms experience falls of more than 12 per cent. A further 17 per cent had no change and just under 12 per cent had a turnover increase. In terms of expenditure, fewer firms (39 per cent over the four subcategories of decline) had a decrease of some amount in expenditure, 37 per cent had unchanged expenditures and almost one quarter increased spending. While this shows the pattern of correlation between changes in turnover and expenditure, it is striking that a fairly substantial group (over 13 per cent) faced a combination of decreased turnover but higher expenditure. This is also evident in the number of dots in the upper-left quadrant of the scatterplot of changes of turnover and expenditure changes in Figure 3.

Table 9: Change in expenditures and changes in turnover cross-tabulation

	Change in expenditures						
Change in turnover	VL. dec.	L. dec.	M. dec.	S. dec.	Rem.	Incr.	Total
V. large decrease	2.3	2.4	2.0	1.6	2.5	1.0	11.8
Large decrease	0.4	2.2	2.5	1.8	3.4	2.9	13.1
Med. decrease	0.1	0.6	4.7	8.3	10.2	6.1	30.0
Small decrease	0.0	0.5	0.5	4.8	6.5	3.4	15.7
Remained	0.2	0.1	0.6	2.4	9.7	4.5	17.4
Increase	0.0	0.0	0.1	0.7	4.7	6.5	12.0
Total	2.9	5.8	10.6	19.5	37.0	24.3	100.0

In order to understand how firms were adjusting their expenditures as part of the adjustment to the severe shock to turnover that most firms encountered, the survey asked those firms that had reported decreased expenditure overall for a breakdown of where they had made reductions in costs.[9] Table 10 therefore represents a subset of the total sample, approximately one-third of firms.[10]

The first column of the table gives the number of firms responding that their expenditure on the relevant item had fallen and the second column expresses the same information as a percentage of firms that had reduced overall expenditure. This indicates that when firms reduced overall expenditure, the most common item that declined was purchased inputs of goods and services, which were reduced by almost 70 per cent of firms. Reductions in wages were the next most common area of expenditure savings, with 65 per cent of firms that reduced total expenditure

[9]The detailed breakdown of expenditure categories is not available for firms where total expenditure was unchanged or increased.

[10]This is slightly fewer than the 39 per cent indicating an expenditure fall due to some missing observations in the expenditure composition question.

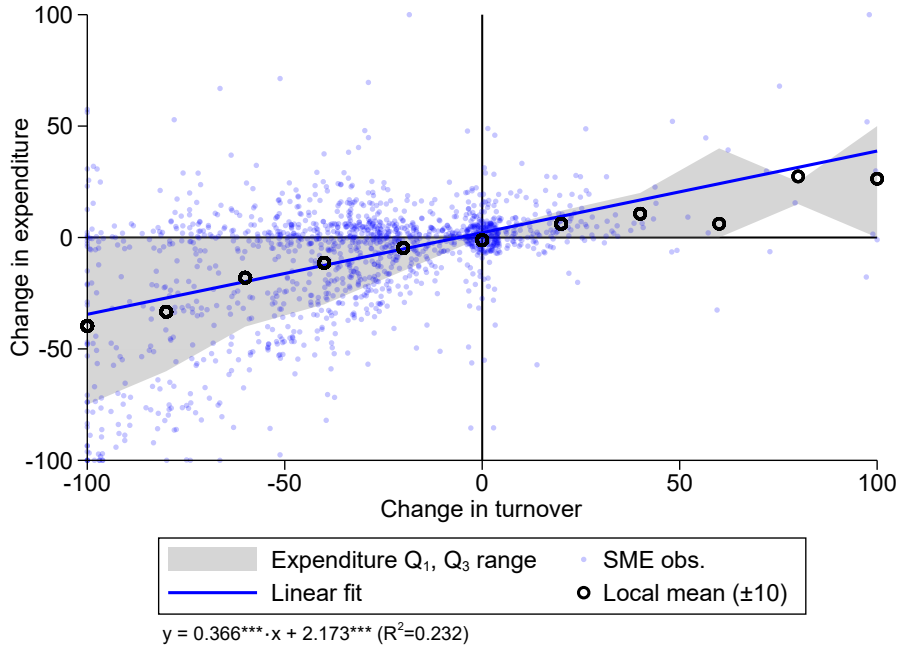

Figure 3: Change in expenditures and change in turnover since the beginning of the pandemic

reporting that this was one of the areas were costs declined. This makes sense as both of these are variable costs and, as we saw in Table 1, they make up the vast majority of expenditure for most SMEs so are therefore the most obvious areas to seek reductions. At the same time, there is limited evidence of a correlation between firms having high shares of fixed expenditures and the change in total spending as shown in Figure 4.

Payments to the Revenue Commissioners, utility payments and commercial rates were other areas where reductions were made by a relatively large share of the firms reducing overall expenditure. The shares of firms reducing payments on rent or debts is substantially lower as these are areas where not all firms have expenditure - recall that in Table 1 rent represented an average of 3 per cent of SME expenditure and debt repayments made up an average of 2 per cent. This also would be a factor in how many areas firms sought expenditure reductions, with Figure 5 showing most concentrated the decreases in their expenditure in either one or two areas.

While the focus of this section has been on reducing expenditures to cushion some of the impact of turnover falls, the pandemic also potentially increased costs for many firms in the form of necessary investments on complying with health and safety measures. Table 11 shows that these new investments amounted to between 0.5 and 2.5 per cent of 2019 expenditures across firms. Larger shares were prominent in firms that reported overall increases in expenditure although we do not have enough detail to say if the health investments were the main driver of the overall

Table 10: Change in expenditures

	$N_{\Delta E_i<0}$	$Share_{\Delta E_i<0}$	Mean	Q_1	Med.	Q_3
Goods & services purchases	385	68.9	-46.7	-70	-40	-20
Wages, personal costs	363	64.8	-46.5	-70	-40	-20
Payments to Revenue	154	27.5	-39.9	-60	-30	-10
Utilities	153	27.4	-25.8	-40	-20	-10
Commercial rates	111	19.9	-51.8	-100	-50	-10
Rent	63	11.3	-39.4	-50	-25	-15
Interests and debt payments	55	9.9	-37.6	-80	-25	-10
Other expenditures	102	18.2	-56.6	-100	-50	-20

This table includes only 560 SMEs that had experienced decline in total expenditure and provided data on changes in each item. Among this subset, 37% are rentees and 61% have some debt. Mean, median and quartiles apply only to firms with decreases in the expenditure item.

increase. It is notable that even firms with large and very large overall decreases in expenditures report outlays of up to 1 per cent of total 2019 expenditure levels on this new outgoing.

Table 11: Average investments related to COVID-19 health & safety measures as a share of 2019 expenditures

	Change in expenditures					
Change in turnover	VL. dec.	L. dec.	M. dec.	S. dec.	Rem.	Incr.
V. large decrease	1.0	0.5	1.6	0.5	0.7	.
Large decrease	.	0.5	1.4	0.4	1.3	2.5
Med. decrease	.	.	0.8	0.9	1.4	2.5
Small decrease	.	.	.	0.5	1.0	2.9
Remained	.	.	.	0.4	0.7	1.1
Increase	.	.	.	.	1.1	0.6

. = Insufficient data (fewer than observation)

3.3 *Changes in employment*

The unprecedented scale of the impact of the pandemic on employment has been the key focus in terms of the targeting of the policy response with the launch of interventions such as the Pandemic Unemployment Payment (PUP) and the Temporary Wage Subsidy Scheme (TWSS). Policy interventions will be discussed further in the next section, while this section looks specifically at how employment has changed within the SME sector and its relationship between the other main indicators of the severity of the impact of the pandemic on firms, turnover and profitability. We discussed earlier in the section the extent of turnover declines amongst SMEs during the period covered by the survey, March to October 2020, when over 70 per cent

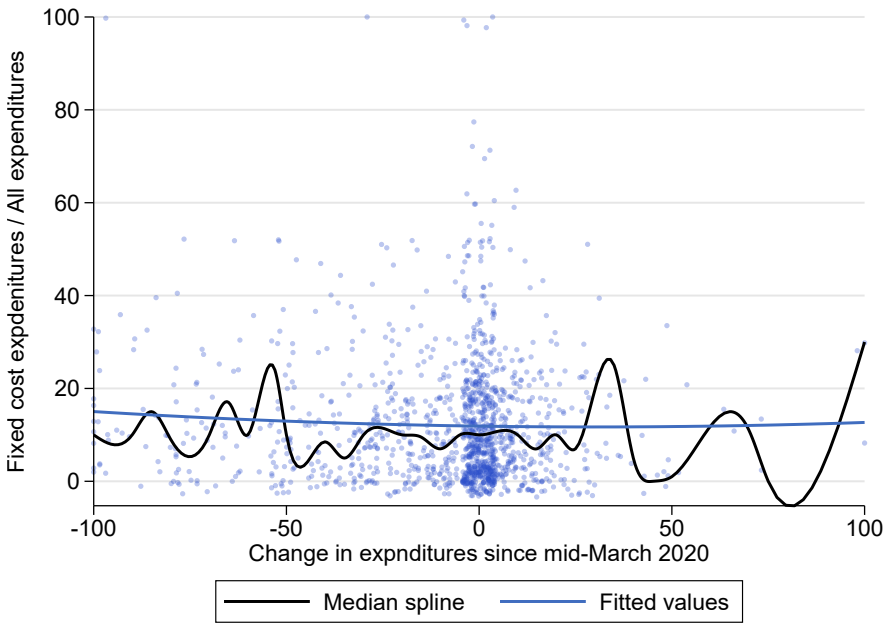

Figure 4: Relationship between change in expenditures and share of fixed costs

reported reductions in activity. Table 12 shows how the broad categories of changes in turnover overlap with changes in firm employment.

Overall, 28 per cent of SMEs reported reductions in both turnover and staff. However, it is not the case that falls in turnover automatically result in employment reductions. Of the 70 per cent experiencing turnover decreases, the largest share (representing 38.5 per cent of all firms) kept their staff numbers unchanged. A small number of firms (4 per cent) reported increases in employment despite falls in turnover – perhaps due to increased obligations on social distancing. The magnitude of the impact of the pandemic on SME activity is also reflected in the very small share of firms (4 per cent) where both turnover and employment increased. This is shown in more detail in Figure 6 which shows the shares of firms changing employment at each point along the turnover change continuum.

Figure 7 presents the same exercise comparing employment changes at each level of profit margin. This shows decreases in employment more common for firms making losses but some staff reductions and a majority share of unchanged staffing for firms even with relatively high profit margins. The total shares of firms in each of the categories of staff change and profit group are shown in Table 13 which finds that slightly over 7 per cent of firms reduced staff levels despite making a profit.

Another expenditure item that can be used as an indicator of financial distress is the missing of payments. Table 14 shows that slightly over ten per cent of SMEs report that they have encountered delays in the payment of invoices by their customers while 7 per cent report missing or deferring payments to their own suppliers.

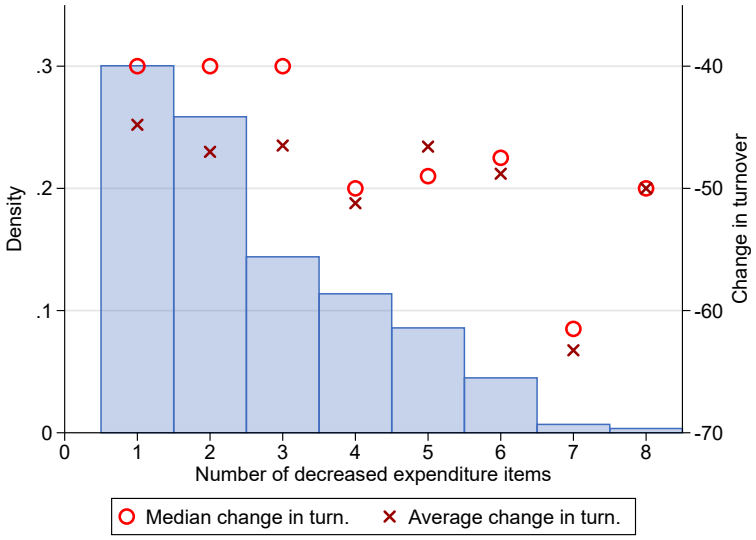

Figure 5: Count of expenditure decrease items

Table 12: Employment and change in turnover cross-tabulation

	Change in staff in 2020			
Change in turnover	Decreased	Same level	Increased	Total
V. large decrease	6.6	5.0	0.3	11.8
Large decrease	6.5	6.4	0.2	13.1
Medium decrease	10.9	16.4	2.7	30.0
Small decrease	4.1	10.7	0.9	15.7
Remained	2.9	13.2	1.3	17.4
Increase	1.0	6.9	4.1	12.0
Total	31.9	58.6	9.5	100.0

The most common missed or deferred payment was on taxes, which was reported by 21 per cent of firms. This is likely linked to the use of tax warehousing as a policy intervention to support SMEs which will be discussed further in the next section. Repayments on loans from banks and other institutions were also missed by a relatively substantial portion of businesses. 12 per cent of all sampled SMEs report deferring a bank loan payment, which, when combined with the fact that around half of sampled SMEs have bank debt, is broadly in line with previous Central Bank reporting that 28 per cent of SME debt was subject to a payment break in June 2020.

Table 13: Employment and profitability cross-tabulation

	Change in staff in 2020			
Profitability	Decreased	Same level	Increased	Total
Made a loss	16.8	17.4	2.7	36.5
Broke even	8.0	21.4	1.6	31.1
Made a profit	7.2	19.4	5.9	32.5
Total	32.1	58.1	9.7	100.0

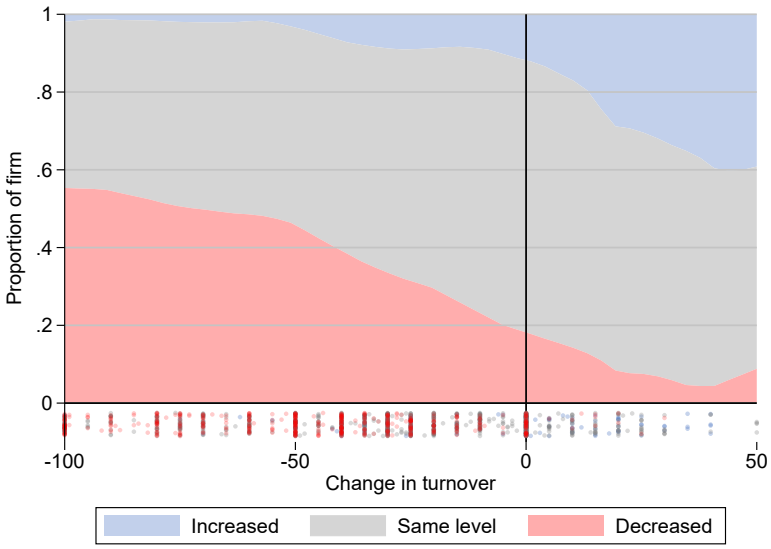

Figure 6: Change in number of staff

Blue=fraction of firms that have increased employment, grey= the same staff, red=have reduced staff as a function of change in turnover. Estimated using kernel-weighted local polynomial smoothing. Dots below the x-axis represent where firms are located in terms of change in turnover. Note that firms with firms with a large increases in turnover are not included, because of the very low number of observations.

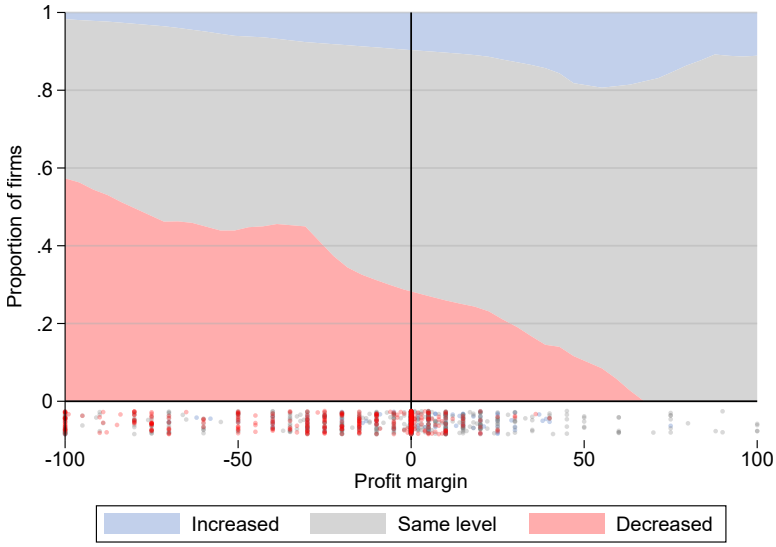

Figure 7: Change in number of staff

Blue=fraction of firms that have increased employment, grey= the same staff, red=have reduced staff as a function of profit margin. Estimated using kernel-weighted local polynomial smoothing. Dots below the x-axis represent where firms are located in terms of change in turnover. Note that the low number of observations with high profit margins reduce reliability of estimates upper end of the distribution.

Table 14: Invoices unpaid to the SMEs and payments deferred by the SMEs

	Unpaid invoices		Share of firms that have missed or deferred						
	Share	Percent	Bank	O. loan	Person.	Tax	Mortg.	Rent	Suppl.
Manufacturing	47	7.4	8	6	5	21	5	6	7
Construction	59	13.0	5	7	2	14	3	4	7
Wholesale	50	10.6	12	6	2	19	3	8	5
Hotels & restaurants	30	6.8	37	17	12	40	16	16	25
Business services	59	15.5	7	3	1	22	4	4	5
Other	36	6.8	11	5	1	14	2	4	3
Self-employed	43	10.9	7	2	2	7	5	5	3
Micro	47	11.4	8	5	2	18	6	7	5
Small	50	10.6	14	7	3	25	4	7	9
Medium	51	9.4	18	10	4	26	5	7	10
Total	48	10.6	12	7	3	21	5	7	7

Percent=percentage of pre-March invoices still owed in October 2020, O. loan=other (non-bank) business loans, Suppl.=payments to suppliers.

4 The Policy Response

The very specific nature of the economic shock, which effectively turned off demand instantaneously for many firms, required the deployment of a non-traditional suite of policies. Internationally, recent research by the World Bank has shown that a total of 1,607 policies have been introduced across 135 countries (Cirera et al., 2020). They note that 75 per cent of these policies are either debt instruments, employment cost support or tax measures. In Ireland, the policy response has indeed clustered in these areas with measures to date including wage subsidisation, tax, loan and commercial rate payment deferrals and fixed cost recovery schemes. This was complemented by an expansion of more standard lending support.

In this section, we draw on our new survey evidence to explore the awareness and usage of selected supports across different groups of SMEs. We also review some of the other more recent supports which were only brought in after the survey went into the field but are important in terms of the ongoing response to the COVID-19 pandemic.

4.1 *The usage and availability of policy supports: Survey evidence*

A crucial economic and societal policy aim was to minimise the labour market fallout and attempt to keep employees and businesses connected through any disruption. To address these aims, one of the earliest policy initiatives at the enterprise level was the introduction of a *Temporary Wage Subsidy Scheme (TWSS)* which provided those employers, who had faced a fall in turnover of greater than 25 per cent, with a payment to offset their wage cost if they agreed to keep the employee. The payment was initially set as 70 per cent of pre-pandemic wage levels per employee up to a maximum of €410 per person. This was changed on 4th of May 2020 to have a more graduated payment structure.[11] The TWSS continued to operate up until the 30th of August 2020 when it was replaced by the Employment Wage Subsidy Scheme (EWSS), which attempted to put the policy on a more longer term basis. In terms of the efficacy of this policy measure, our data in table 10 shows that on average 35 per cent of SMEs costs were from wages. Therefore providing support to cover wage costs not only helps to maintain links between employees and employers but it also addresses one of the key cost items of a firms operational activities. The use of wage cost support/wage subsidies was very prevalent internationally (Cirera et al., 2020).

[11] A full detailing of the scope of the TWSS is outside the scope of this short policy overview. Please see www.citizensinformation.ie/en for more details.

Table 15 outlines the percentage of enterprises either aware of, or that used, the TWSS. While nearly all firms (across sector and size classes) were aware of the TWSS, the usage overall was approximately 60 per cent or three in every five firms. Usage of the TWSS was highest in the hotels and restaurants and constructions sectors' which reflects the fact that these sectors were disproportionately affected by the economic impact of the shocks; over 85 per cent of hotels and restaurants used the TWSS while 70 per cent of construction SMEs used the scheme. Usage was lower amongst manufacturing and wholesale firms. The correlation between the turnover shock faced by the sector and its average usage of TWSS is presented in figure 10. It is clear the TWSS has been used more extensively by firms in the worst affected sectors. Indeed, if we consider the correlation between turnover shocks and TWSS usage, over 70 per cent of firms experiencing a turnover shock of over 25 per cent used the TWSS. It is noteworthy that there are a non-trivial share of those enterprises who have reported an increase in turnover relative to 2019 have availed of the TWSS (one-in-five). It must be noted that while TWSS eligibility was based on a revenue fall of 30% relative to pre-pandemic revenues at the point of application, our results are for average revenue declines across the March to September period, which explains why some companies using the TWSS are reported as having revenue declines of less than 30% (their turnover may have fallen, they correctly entered the scheme, and then their turnover recovered during reopening phase).

There are notable differences across firm size in the take up of the TWSS with micro enterprises and self-employed firms using the scheme much less than other size groups. However, figure 8 shows that the usage rates by the number of employees are very non-linear with a rapid increase in usage between 2 and 10 employees and a gradual decline then as size increases to 250.

In addition to the TWSS, a number of cash flow measures were introduced early in the pandemic to support SMEs. One such policy was the provision of a warehousing facility for tax liabilities (VAT and PAYE tax liabilities) which incorporated the postponement of interest collection on late payments. Our figures for expenditure in table 1 show that on average 6 per cent of firms' costs were from taxes. While 60 per cent of firms were aware of this facility, only 20 per cent of enterprises report using tax warehousing. There are considerable differences across size and sector. The sectoral differences, like the TWSS, reflect the impacts on firms with the more affected sectors like hotels and restaurants reporting higher usage of tax warehousing (nearly 50 per cent). Across the firm size distribution, the usage of the policy was increasing in the number of employees: while one-in-three medium size firms used tax warehousing, only one-in-ten micro firms and fewer than one-in-twenty self-employed businesses did. Indeed, figure 8 shows that the use of tax warehousing appears to linearly increase with the number of employees.

One final aspect of the policy response which is covered in our survey is the usage of lending initiatives from the Strategic Banking Corporation of Ireland (SBCI). The SBCI acts as the state lending institution regarding the COVID lending supports (working as an onlender through bank and non-bank providers). This includes the COVID-19 Working Capital Scheme (loans from €25,000 up to €1.5 million (first €500,000 unsecured) with a maximum interest rate of 4 per cent) and the COVID-19 credit guarantee scheme which provides a total of €2bn worth of guarantees on secured and unsecured loans. Nearly one-in-two firms were aware of the SBCI but fewer than 6 per cent of firms actually used an SBCI-related product. This varied by sector with nearly 10 per cent in manufacturing and hotels and restaurants down to below 4 percent in business services. Notable differences were also evident across the size distribution of firms with few small firms drawing on these lending facilities. This final point is not necessarily an indication of a gap in the policy suite of measures as smaller loans for micro enterprises are facilitated through Micro-finance Ireland who introduced a similar COVID-19 specific loan of up to 25,000 with a six month payment and interest break period to begin with. We do not have data in our survey on these loans. One limitation of our analysis in this regard is that the SBCI has also non-COVID related facilities available and unfortunately we are not able to disentangle these activities. Given that just under 50 per cent of firms were aware of the SBCI initiatives, increased communications of the supports may be required, especially for small firms who wouldn't necessarily draw on Microfinance Ireland lending.

In terms of the general targeting of loan supports, a couple of reflections are worth making at this juncture. First, it does appear that despite the shock, demand for state lending facilities is low. This is not unsurprising if firms do not want to take on extra leverage at a time when demand is dropping. Therefore it is appropriate to have loan supports in place but more important are the bespoke instruments that address the cost side for firms. Second, and related to this, is that the use of debt instruments is not necessarily the correct policy measure if we are hoping that firms will have a chance to survive post the pandemic. Indeed, research from Japan on the expansion of credit guarantees after COVID-19 (Yamori & Aizawa, 2020) suggests that despite the rapid increase in guarantees, many of the firms that borrowed under guarantee may struggle to repay these debts. A harsh lesson from the previous financial crisis is that debt overhang causes a drag on many firm activities (such as investment, employment and outright survival), therefore the targeting of policies towards cost coverage or grants is certainly more appropriate at this stage.

Table 15: Share of firms aware about possible support policies and their uptake

	Awareness					Uptake			
	TWSS	Tax w.	SBCI	Other	None	TWSS	Tax w.	SBCI	None
Manufacturing	95.5	65.8	51.2	95.7	2.3	58.7	14.6	9.8	37.6
Construction	90.6	48.3	34.5	94.0	3.3	70.4	13.4	5.3	28.8
Wholesale	91.8	53.6	41.1	95.1	2.9	55.8	15.7	5.1	42.3
Hotels & restaurants	94.4	74.3	50.7	91.4	3.9	85.9	48.4	9.4	12.2
Business services	96.5	66.3	49.4	96.8	1.1	61.1	20.7	3.6	35.9
Other	95.0	59.0	52.3	97.1	1.8	49.1	12.8	3.8	44.4
Self-employed	85.7	38.5	23.9	94.6	3.6	27.3	3.7	1.8	71.0
Micro	90.3	49.3	40.0	93.5	4.2	53.3	11.1	4.3	43.7
Small	95.9	65.5	48.5	95.3	1.6	72.5	21.6	5.8	25.6
Medium	98.9	76.0	60.4	97.8	1.1	67.0	34.4	8.8	28.0
V. large decrease	92.3	56.8	40.2	90.9	5.5	67.1	26.3	5.9	31.4
Large decrease	92.5	61.5	43.9	94.4	2.5	71.9	29.1	8.4	25.6
Medium decrease	98.1	62.8	48.2	96.9	1.0	86.6	24.7	8.3	12.1
Small decrease	95.1	67.2	51.3	97.8	0.7	50.3	13.8	2.7	45.5
Remained	89.9	58.0	42.4	95.5	2.7	41.4	15.3	3.0	52.6
Increase	90.8	52.1	48.7	93.0	4.7	22.0	4.7	3.6	75.5
Total	93.9	60.5	46.2	95.3	2.4	61.0	19.7	5.7	36.1

TWSS=Temporary Wage Subsidy Scheme, Tax w. =Tax warehousing option, and SBCI=Strategic Banking Corporation of Ireland.
Awareness of other includes: Supporting SMEs Online Tool, Credit Guarantee Scheme, Microfinance Loan Fund, Enterprise Ireland, Local Enterprise Offices, Credit Review Office, payment breaks, non-bank finance, or other support.
Uptake of the SBCI support includes firms that applied before the pandemic. Avail of none of the policy refers only to the none of three listed policy (TWSS, tax warehousing or SBCI).

4.2 *Other notable policy instruments*

As the pandemic has progressed, further public health motivated business closures were required from September 2020 onwards. The government established a 5 level plan of varying levels of restrictions which could be introduced depending on the epidemiological situation. In line with this time varying public health plan, the Government moved to expand the range of supports available. Of particular note was the *Covid Restrictions Support Scheme* (CRSS) which provided direct payments of up to €5,000 per week to businesses forced to close due to mandated public health restrictions. However, turnover must have fallen by 75 per cent to qualify. Under the scheme, businesses operating in sectors asked to close are provided an Advance Credit for Trading Expenses from Revenue up to the eligible amount. This payment is a critical part of the policy infrastructure as it has the flexibility to be operationalised across sectors as the public health circumstances require it. The time

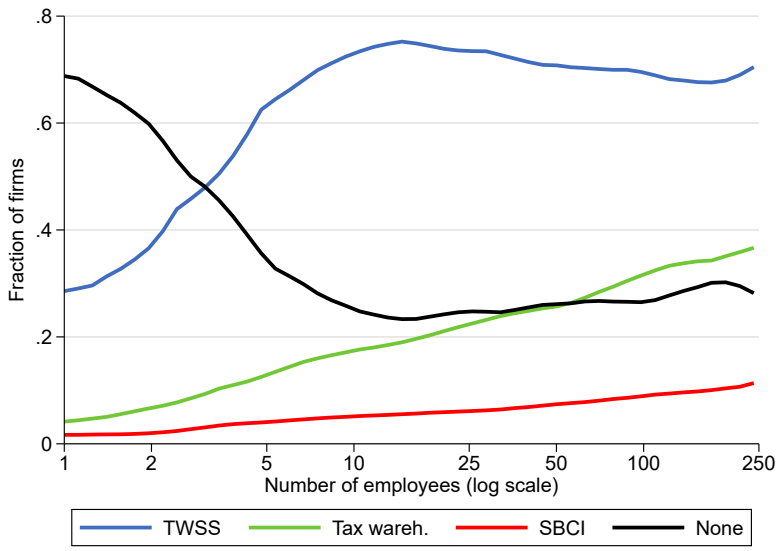

Figure 8: Support policies uptake by firm size
The relationship estimated nonparametrically using kernel-weighted local polynomial smoothing.

varying nature of the payment is critical to ensuring that businesses are provided with compensation for having to close. Keeping a mechanism like this in place should be considered until such time as it will be possible to permanently withdraw more stringent public health measures (such as when wide-scale vaccination is achieved).

Our analysis (as in figure 11 and table 16) shows that, using 2019 data, approximately 28 per cent of firms had expenditure below €5,000 per week and 76 per cent of firms had fixed costs below this point per week. This suggests that these firms can be provided with this opportunity to survive the current period using this mechanism. However, the requirement for a 75 per cent decline in turnover may be prohibitive for entry as we estimate only 11 per cent of firms experienced this magnitude of decline up to September 2020.

In addition to the above supports, a number of other instruments were also deployed. This includes a commercial rates waver provided to all firms for 2020 and for specific sectors into 2021. While commercial rates made up only 2 per cent of firms costs on average in 2021 (table 1), this is certainly a measure than can help alleviate short term cash flow pressures. Furthermore, a number of grant supports were provided to help redesign business towards COVID related products and to help address the cost of COVID-related public health changes to the business.[12] These type of instruments are useful and can play a helpful role in ensuring businesses can transition and adapt to the new environment.

[12]These include the Covid-19 Products Scheme, Covid-19 Business Financial Planning Grant, and the Lean Business Continuity Voucher.

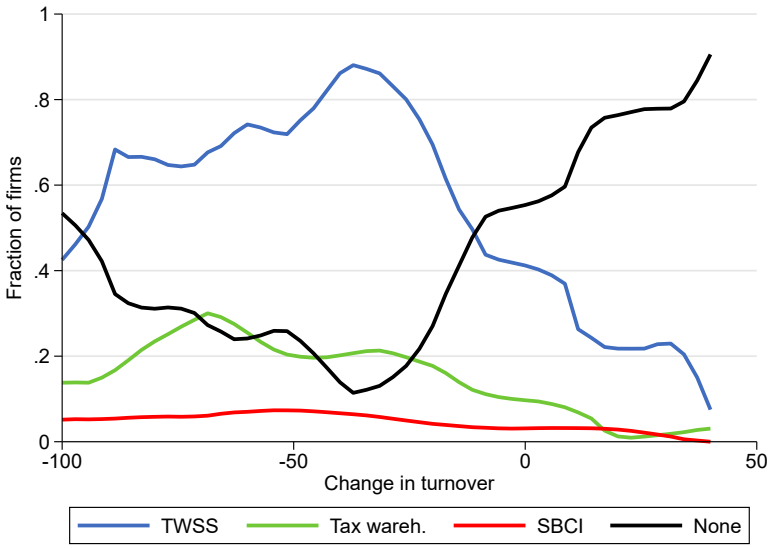

Figure 9: Support policies uptake by turnover shock
The relationship estimated nonparametrically using kernel-weighted local polynomial smoothing. Changes in turnover of 50% and above are excluded because of a small sample size.

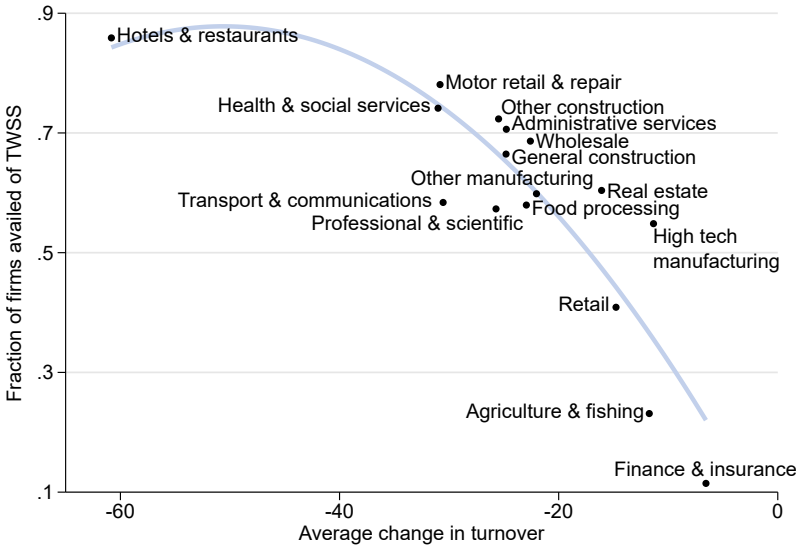

Figure 10: Avail of the Temporary Wage Subsidy Scheme (TWSS), average by detailed sector

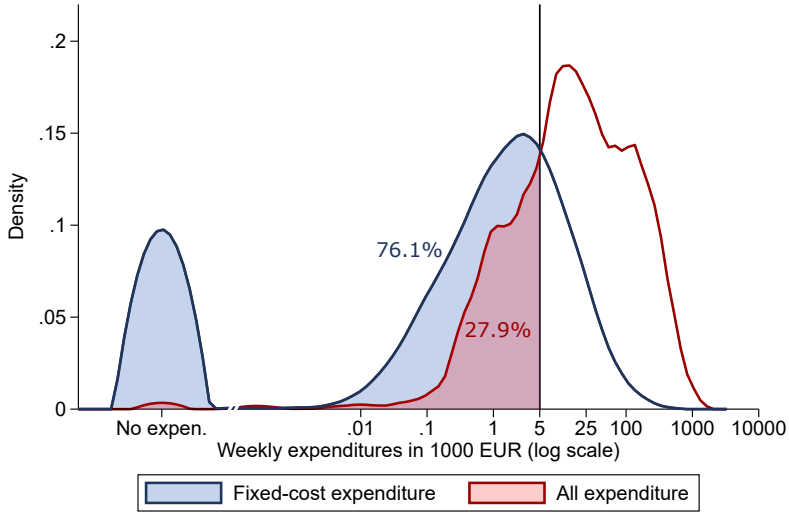

Figure 11: Average weekly fixed-costs and total expenditures in 2019
Shaded area represent firms with fixed and total expenditures below €5000 per week.
22% of the SMEs do not report any expenditures for items categorised as fixed costs. Those SMEs are shown in the density peak on the left.

Table 16: Average weekly expenditures in 1000 EUR

	Fixed-costs expenditure					Total expenditures				
	Mean	Q_1	Med.	Q_3	$Sh_{E<5k}$	Mean	Q_1	Med.	Q_3	$Sh_{E<5k}$
Manufacturing	5.8	0.1	2.3	7.2	71.8	99.9	14.4	28.8	144.2	13.1
Construction	4.3	0.0	0.7	2.9	80.8	60.7	5.8	17.3	67.3	23.0
Wholesale	5.7	0.1	1.0	4.3	76.5	75.8	2.3	14.4	86.5	32.2
Hotels & restaurants	5.9	0.0	2.0	6.7	70.2	42.4	5.7	16.3	67.3	24.4
Business services	3.0	0.1	0.6	2.3	82.4	40.7	1.9	9.6	28.8	35.7
Other	7.6	0.0	0.7	5.8	70.4	83.6	5.8	22.7	139.4	24.0
Self-employed	0.2	0.0	0.1	0.2	100.0	1.2	0.5	0.8	1.4	96.2
Micro	1.0	0.1	0.4	1.3	95.7	11.9	1.5	5.8	11.5	45.1
Small	5.3	0.1	1.7	5.1	74.7	67.4	14.2	26.9	67.3	8.1
Medium	12.6	0.2	6.3	14.4	43.9	164.9	57.7	144.2	250.0	7.5
Total	5.2	0.0	1.0	4.6	76.1	66.8	3.8	14.4	67.3	27.9

$Sh_{E<5k}$=Share of firms with expenditures under €5000.

5 Conclusion

The COVID-19 shock has been particularly unique: it was rapid, severe and exogenous to the past performance of the enterprises. This is markedly different from the previous financial crisis where the pre-crisis leverage and indebtedness position was highly correlated with the ex post performance. In the COVID-19 scenario, effectively whole sectors of the economy were shut down to achieve public health goals with very uncertain reopening paths, in particular during the initial wave. At that stage, firms faced an immediate drop in turnover, a requirement to continue covering many fixed costs, while also having to manage considerable uncertainty in purchases of their intermediate goods. Our data show that 70 per cent of firms faced turnover declines and many firms faced severe losses. Declines in expenditure have not been able to compensate for the dramatic declines in demand.

To address this unique set of economic circumstances, the initial policy response was mainly aimed at helping firms address their various cost items. This included a range of breaks and forbearance on debt, tax and commercial rate payments as well as subsidies for wage costs. The focus on non-debt supports is appropriate given the nature of the shock and the aim to ensure indebtedness levels do not hinder recovery which was a factor following the financial crisis (Lawless et al., 2015). Continuing the policy supports is important as long as strict public health restrictions continue to be required.

Nearly as difficult as the development of alleviation policies will be the tapering and withdrawal of supports. Given the extensiveness of the response, it is likely that we will not see major firm failures until such time as this occurs. Indeed, we have not seen many firm insolvencies since the crisis in Ireland (McGeever et al., 2020b). Internationally, Greenwood et al. (2020) note the high failure of small firms and the ability of the legal system to deal with this will be a considerable challenge once the public health phase of the crisis has abated. Decisions around how and when to taper the extensive support can be informed by the information in this paper, as well as ongoing assessment of SMEs' capacity for revenue recovery as publich health restrictions gradually ease from the time of writing.

Appendix 1 Sample Overview and Data Discussion

The survey underlying the credit demand report series is a telephone survey of approximately 1,500 respondents conducted twice a year. The fieldwork was undertaken by Behaviour & Attitudes, the market research firm. The survey is stratified by firm size (using the EU SME classifications) and sector (using NACE codes). The database for the overall sample is the Bill Moss SME database which contains 120,000 records. For the survey, approximately 20,000 SMEs are identified randomly subject to the size and sector classifications. Some sectors are not covered such as government firms, charities, churches, property speculation and property development, and other non-SME financial intermediaries. A full overview of the sectoral inclusions can be found in the main report on the survey (Fitzpatrick Associates, 2020). The sampling error overall is +/- 2.6 per cent on the main results at the 95 per cent level. For this particular wave, the interviews were undertaken over the period August 25th 2020 to October 12th 2020. For the COVID-specific wave, additional care was taken to ensure that the quotas by size and sector matched the previous historical waves of the survey. The main concern was that the impact of the pandemic may have caused a sample selection bias due to the closure of particular enterprises or a survivorship bias. The implication of this would be that some firms, that closed due to the economic or public health measures due to COVID-19, would be unavailable for survey leading to structural differences in the answers or a bias in the results which underestimates (or overestimates) the impact (if badly affected firms are not surveyed).

Examination of the structure of firm age and turnover (not quota variables) shows a good comparison historically. Some small differences in the age distribution are evident. The fact that the survey was undertaken mainly in early Autumn means that many firms were likely to be operating. Indeed CSO research for late August suggest that 96 per cent of enterprises were operating in some capacity in that period (CSO, 2020). However, public health measures were introduced in September 2020 and continued with regional variation until the introduction of the level 5 measures in October. They survey had stopped at that time point so will be unaffected by this. In conclusion, we do not envisage a major impact on our results of the business opening activities overall but there may be some impacts at a sub-sector, regional level. The survey was targeted at capturing the impact of the COVID-19 pandemic specifically, it does not capture the impacts of other economic shocks such as Brexit as these are outside the timeframe examined. It is possible firms' pre COVID-19

operations had been impacted by other factors such as Brexit but these are not identifiable in our survey

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