Analysis of The Covid-19 pandemic support policy 2020 with company data

The government support policy in 2020 has kept firms afloat and thus maintained many jobs. The number of firm exits was low in 2020.

Support has been widely deployed and has therefore also ended up at non-viable firms and highly solvent firms. This has disrupted the process of company formations and dissolutions.

1   Introduction

In this background document to the memorandum "Economic analysis of the support package 2020" (link) we analyse the support measures the government introduced in 2020 to support firms during the Covid-19 pandemic crisis. The focus is on support policy in 2020, the data describes the situation up to and including 31 December 2020. In doing so, we study the most important measures, in terms of total amounts spent, that were available for all industries. In addition, an analysis was also carried out for the memorandum at the macro level. The results of this can be found in the background document "Macro-economic effects of The Covid-19 pandemic support policy in 2020" (link), which was published simultaneously.

We analyse the benefits of the support policy, and we also look at the costs and risks of the policy. One of the objectives of the support policy is to preserve jobs and (by extension) to keep firms going. To do this, it is necessary that support reaches firms that need it and that this emergency support is sufficient to help these firms through the crisis.

Three types of firms can be distinguished that have received support:

1.   Firms that had a sound financial position before the crisis and that would have survived the crisis without support.
2.   Viable firms that have encountered financial difficulties due to the Covid-19 pandemic crisis.
3.   Non-viable firms that were already at high risk of bankruptcy before the crisis.

To maintain viable firms and/or employment, it was inevitable to support all these firms. The costs and risks differ for the three groups. Supporting firms in the second group helps to maintain viable firms and thus also supports employment. Support for firms in the first group contributes less to preventing bankruptcies, but it can help to keep jobs that might otherwise have been lost due to declining turnover and liquidity shortages.

Supporting firms in the third group has additional risks. Many of the firms in this group might have run into problems even without the Covid-19 pandemic crisis. For healthy economic dynamics, it is better, however painful, that non-viable firms go bankrupt so that production factors can be transferred to viable firms. Supporting these firms risks disrupting business dynamics, which could be detrimental to productivity and employment growth in the longer term.

We use firm data of the use of support measures and company characteristics. For support, we use information about whether or not firms receive support, and the amounts of support received. To get an indication to which of the three groups a firm belongs, we look at the initial solvency and labour productivity of firms.

The aim of the support policy to guarantee the survival of firms seems to have been achieved. Firms with support left the market less often in 2020 than firms without support. In addition, we see that firms that received support had more frequent and higher turnover declines than firms that did not receive support. This indicates that support has reached firms that needed it.

The support policy was set up quickly and with few conditions to support firms in a timely manner, so support also ended up with firms outside the second group. We note that support, also within industries, has often flowed to firms with low initial productivity and to firms with low initial solvency. These may be firms that were already less viable before the Covid-19 pandemic, the firms in the third group. There is therefore a risk that these firms are now only maintained through support. At the same time, firms with

high solvency have also made use of the support measures. In addition, about 40% of the firms that took advantage of tax deferrals had a turnover increase. There is a good chance that these firms would have managed just fine without support.

We analyse the support measures with the largest scope in 2020. We focus on the wage support, NOW1, 2 and 3.1, the support for fixed costs, TOGS, TVL1 and TVLq4, and tax deferral. The total outstanding amount of these measures as of 31 December 2020 was approximately 29 billion. This includes 14 billion in NOW, more than 2 billion in TOGS and TVL and 13 billion in tax deferrals. Parts of these amounts will have to be repaid (Schellekens et al., 2021a). In the next section we provide an overview of the data sources used.

2   Data

The primary source we use is Statistics Netherlands microdata on the use of support measures in 2020. These have been made available for this study by Statistics Netherlands and the relevant authorities (UWV, RVO). The final databases contain data on the use of support measures by firms. We focus on the measures: NOW1, 2 and 3.1, TOGS, TVL1 and TVLq4 and tax deferral. For a number of measures (NOW1, 2 and 3.1, TVL1 and tax deferral) we also have the amounts of support. The data we have used in this background document relate to the state of affairs up to and including 31 December 2020. The amounts we show therefore consist of advances or payment deferrals.

We link the microdata files of support measures to balance sheet data for 2019. This allows us to gain insight into the average productivity of firms that have received NOW1, for example. However, the company balance sheet data is only available for firms outside the financial industry, which means that we cannot include all firms for these analyses. Especially the smallest firms (which are more often not a company) are not taken into account.

We also use turnover data from 2020. We cannot yet obtain turnover figures for 2020 from the available balance sheet data. For this we use another microdata source with the revenue data for 2020 (DRT_BEID). Unfortunately, for these data, coverage is limited to service industries only.

Due to differences in availability, the set of firms used differs per analysis. Each figure indicates which set of firms has been used. There are three sets of firms:

1.   "All firms" – all firms from the General Business Register (ABR) of the Statistics Netherlands, including all small firms and self-employed persons.
2.   "All non-financial corporations" – All BVs and NVs outside the financial services industry, many of the small firms and self-employed persons are excluded.
3.   "All Service Industry Firms" – All firms from a subset of service industry industries.

The next section shows in more detail the descriptive statistics of all firms, in the next section we focus on the non-financial corporations.

3   All firms and support

Support use was highest among medium-sized and large firms. Table 1 shows that more than half of firms with between 10 and 250 employed persons have made use of one or more support measures. In all groups, NOW1 is the most frequently used measure, followed by tax deferral. The smallest firms made the least use of support in this overview. This is in line with OECD results (2021a) showing that small (and young) firms are less likely to receive support[1].

Table 1 - Percentage of firms receiving support per measure, number of persons employed, *all firms*

Working people	NOW1	NOW2	NOW3	TOGS	TVL1	TVLq4	Tax deferral	At least 1 measure
0-1	5.9	2.1	2.9	8.8	1.7	3.5	12.8	22.3
2-9	29.1	11.7	16.0	24.5	5.4	10.7	23.3	47.7
10-49	46.9	23.5	27.7	30.0	9.0	17.8	37.7	63.3
50-99	48.4	26.4	29.3	25.1	9.9	17.6	44.2	64.3
100-249	40.6	22.3	21.8	17.5	7.0	11.0	38.5	55.8
250-499	34.5	17.7	17.9	13.3	5.0	7.7	34.9	49.3
500+	30.1	15.4	16.1	10.1	4.0	4.9	34.2	43.8

Source: Own calculations based on Statistics Netherlands microdata.

The hotel and catering industry has the highest share of firms that have made use of support measures (see Table 2). Firms in the catering industry have suffered a lot from the lockdown and other contact-limiting measures, as a result of which they have lost a relatively large amount of turnover. As a result, many firms were eligible for the use of The Covid-19 pandemic support, with the result that firms in the catering industry made the most use of almost all support measures. At over 67%, the share of firms that have made use of one or more measures is by far the highest in the hospitality industry.

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[1] In the Netherlands, these firms often had access to the TOZO, which has not been taken into account in this analysis.

Table 2 - Percentage of firms that have received support, by industry, measure, *all firms*

|	NOW1	NOW2	NOW3	TOGS	TVL1	TVLq4	Tax deferral	At least 1 measure
Catering industry	30.5	14.8	24.5	57.3	17.5	32.8	27	67.6
Other services	8	2.1	6.1	22.4	1.4	3.9	11.2	44.5
Transport and storage	6.7	4	3.2	19.9	9.1	10.3	17.7	41.2
Culture and recreation	4.8	2.7	3.2	14.4	4.6	5.4	8.9	38.8
Water firms and waste	9.8	4.4	4.1	1.3	0.1	1.5	20.6	35.5
Trade	10.6	3.9	6.1	16	1.9	4.4	14.3	34.3
Administrative services	7.4	4.5	4.2	8.4	3.3	3.9	15	31.9
Education	2.5	1.1	1.2	12.3	1	1.5	8.6	31.2
Industry	11.4	6.3	4.8	4.9	0.8	2.6	15.3	30.9
Mineral extraction	5.9	4	3.3	0.3	0.2	1.2	12.4	25.6
Care	4.6	0.9	0.8	8.5	0.3	0.5	7.1	22.7
Information and communication	3.7	2.2	1.6	2.9	0.9	1.3	9.9	22.5
Construction industry	1.9	0.9	0.7	0.5	0.1	0.8	12.5	22.3
Professional services	2.7	1.5	1.1	1.7	0.4	1	9.3	21
Property	4.7	1.8	1.7	2.1	0.7	1.8	9.7	17.4
Agriculture	2.3	1.3	1.5	2	0.2	4.4	4.7	14.6
Financial services	1.2	0.5	0.5	0.5	0.1	0.2	8.4	9.7
Energy supply	1.8	0.9	0.6	0.1	0.1	0.5	5.3	7.6
Public Administration	2.7	1.5	1.5	1.2	0.4	0.4	2.7	5.9

Source: Own calculations based on Statistics Netherlands microdata.

In most industries, tax deferral was the most commonly used support measure. This is probably due to the fact that less strict criteria were used for this measure. For example, there was no minimum expected drop in turnover for the use of tax deferrals, as is the case with NOW and TVL.

4   Firms and support

The use of support looks different if we only consider firms. For example, the NOW schemes, especially NOW1, are relatively more important among firms. In table 1 we have shown the data on the use of support measures for all firms. This section focuses on non-financial corporations for which we have detailed balance sheet data. This means that many smaller firms and especially self-employed people are not included in the data. This leaves us with a set of approximately 216,000 firms, slightly more than 10% of the total number of firms from Table 1 and Table 2.

Figure 1 – Use of support measures by company size and age, *all non-financial corporations*.
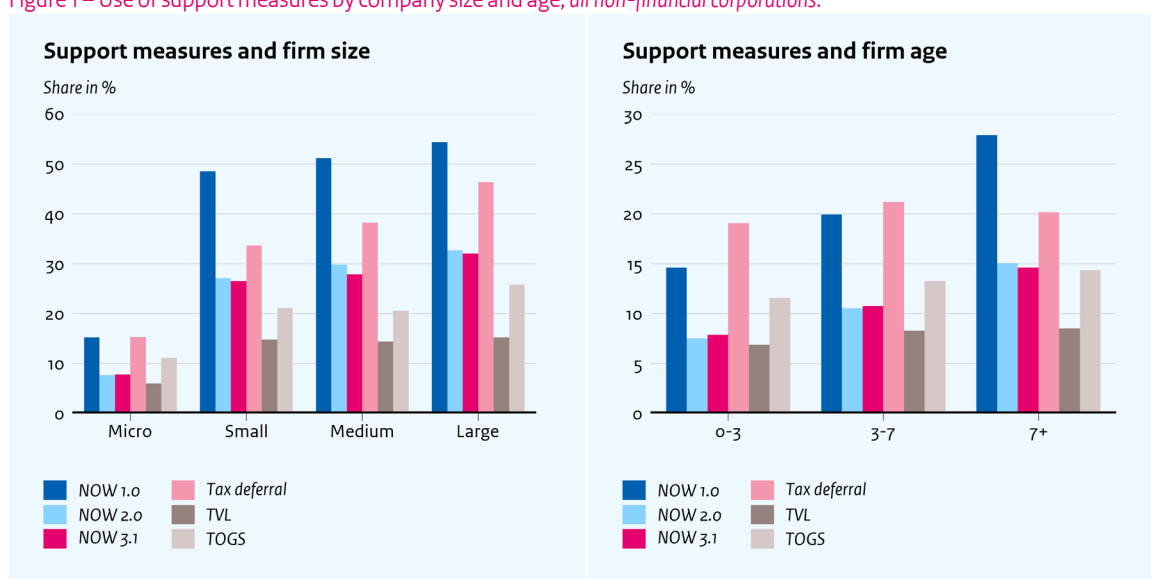
Source: Own calculation on the basis of Statistics Netherlands microdata.

Large and medium-sized firms have made more use of support measures than smaller ones (see figure 1, left). Large firms (with more than 250 employees) have made the most use of the various support measures. The differences are large: for example, 'only' about 15% of firms with up to nine employees ('micro-firms') have taken advantage of the first round of NOW, compared to 51% of firms with more than 50 employees ('medium-sized firms', less than 250 employees) and 54% of large firms (>250 employees). Or take the tax deferral, which nearly 15% of micro-firms took advantage of, against nearly 40% of medium-sized firms and 47% of large firms.

Older firms have also made relatively more use of the support measures (see figure 1, right). The use of support measures increases with the age of a company; older firms (>9 years) have generally used more of the different support measures than younger firms (5-9 years), which in turn have made more use than the youngest firms (<1 year, or between 1-4 years). This corresponds to what we see in the left figure, older firms are usually larger.

Support measures by industry
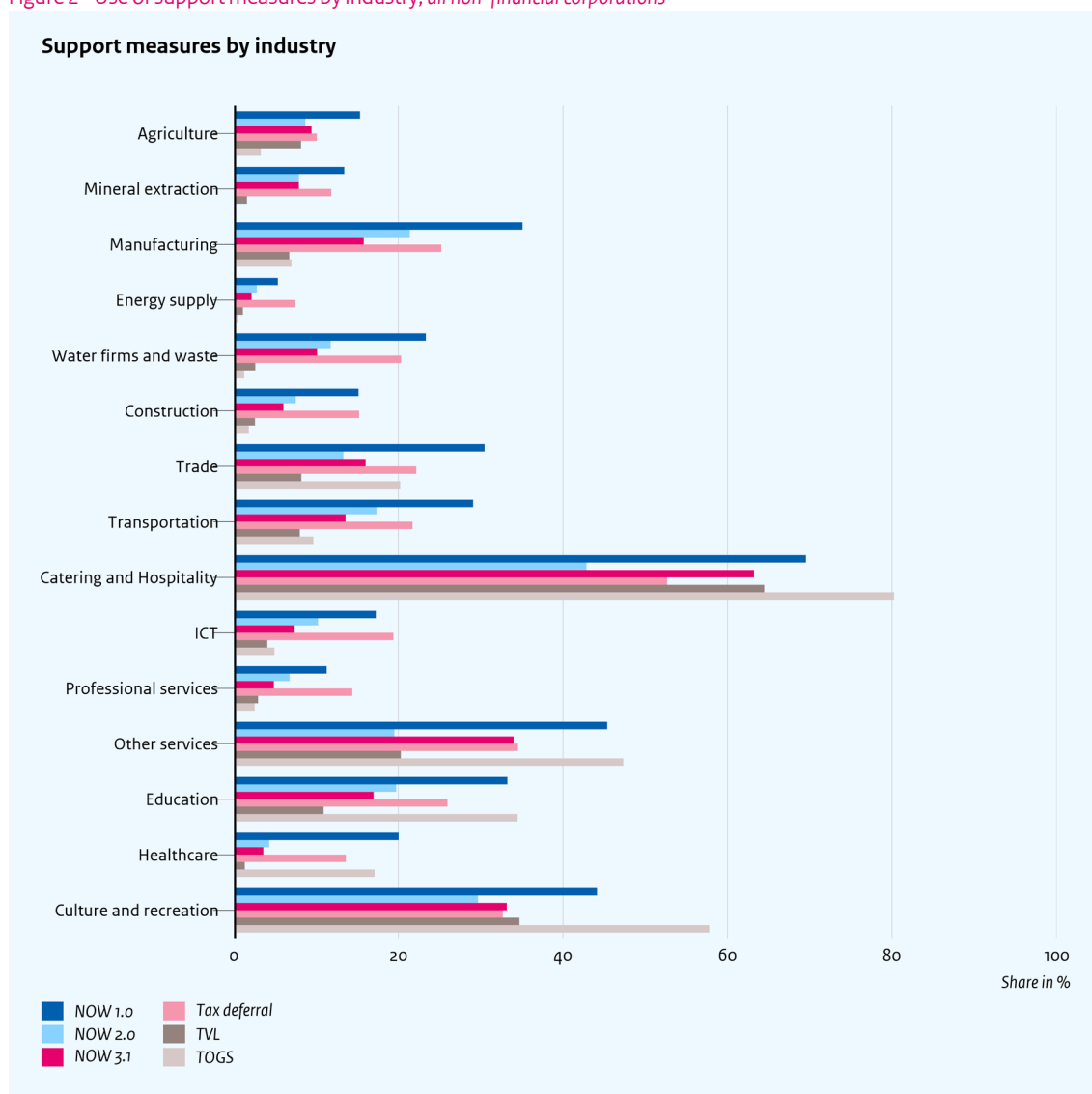
Source: Own calculation on the basis of Statistics Netherlands microdata.

The hotel and catering industry has the highest share of firms that have made use of support measures. Firms in the catering industry have also suffered a lot from the lockdown and other contact-limiting measures among firms. The use of support is therefore also highest among firms in the catering industry.

The NOW-1 scheme is the most commonly used support measure among firms, on average across industries. Table 1 shows that for the total number of firms, tax deferral is relatively more important. This difference can be explained by the fact that a higher share of firms has staff compared to the broader set of firms that also include many self-employed persons.

There are many firms that have made use of tax deferrals without using other measures (Overvest and Smid, 2021). This indicates that many firms have taken advantage of tax deferrals without qualifying for NOW. It is therefore quite possible that, in principle, these firms did not need the tax deferral. Among firms, there are approximately 18,000 firms that have never made use of one of the NOW schemes, but still had a total amount of tax deferral of approximately 2.8 billion.

The TOGS was on average the second most used scheme, followed by the tax deferral scheme and other rounds of wage subsidies (NOW-2, NOW-3). With an average of about 20% of firms across the various industries, the

TOGS was the scheme with the highest incidence after the first round of the NOW. This was followed by applying for tax deferral (about 18% on average) and the other rounds of wage subsidies (NOW-3: 16%, NOW-2: 15%).

Industries where many firms have used wage subsidies have not only been hit hard by lockdown measures, but are often also labour-intensive. Also within the successive NOW rounds, the catering industry has the highest share of firms that have made use of wage subsidies, followed by the culture and recreation industry and other services. The use of the NOW therefore appears to be highest among the more labour-intensive industries, while the use of the NOW is lower in more capital-intensive industries (such as energy supply). The use of the NOW is also lower in industries that have suffered less from the lockdowns (and partly as a result of which, had less loss of turnover).

Cumulatively, the NOW schemes covered a substantial part of firm labour costs. Although the spread between industries, but also within industries, is large, the three NOW rounds combined covered a substantial part of the labour costs of the users. This mainly applies to industries in which NOW use was also high. We have calculated per firm which part of the costs is covered by the total amount of NOW received. At 35%, this share is highest in the hospitality industry because a relatively large number of firms has applied for NOW and these applications were often accompanied by high expected loss of turnover. The figures relate to industry averages, for individual firms (especially in the catering industry) this percentage can be much higher, for example if the turnover is lost for the whole of 2020.

Figure 3 – Coverage of labour costs (based on balance sheet data from 2019) by The Covid-19 pandemic support, *all non-financial corporations*
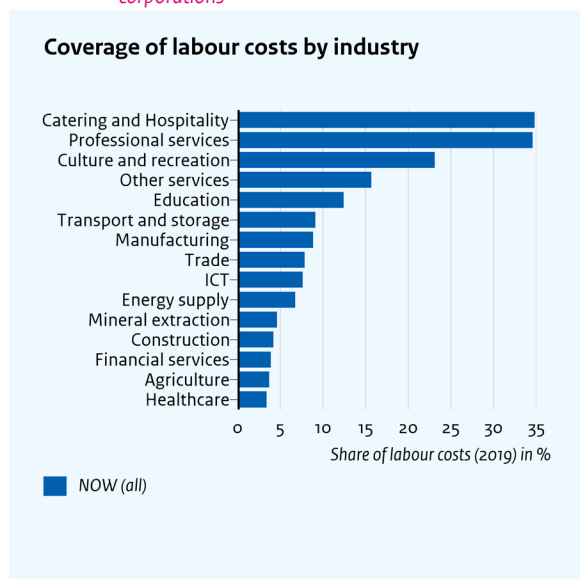
Source: Own calculation on the basis of Statistics Netherlands microdata.

For industries where more firms received support, the need for non-support financing is also greater. In figure 4 we show that in industries where firms indicated that they needed more debt capital, more support was requested. The points are broad industries that correspond to the industries in, for example, table 2. The points show the relationship between the share of firms with at least one The Covid-19 pandemic support measure and the share of firms that indicated that they needed loan capital during the Covid-19 pandemic year. The clear positive relationship shows that more firms received support in industries where more capital was needed to meet payment obligations. Support and additional external capital thus appear to be complementary, in the sense that the support received has not completely replaced the need for external capital.

Aid and external financing need

Share of firms with financing need (%)

Share of firm receiving aid (%)

• *Sectors*
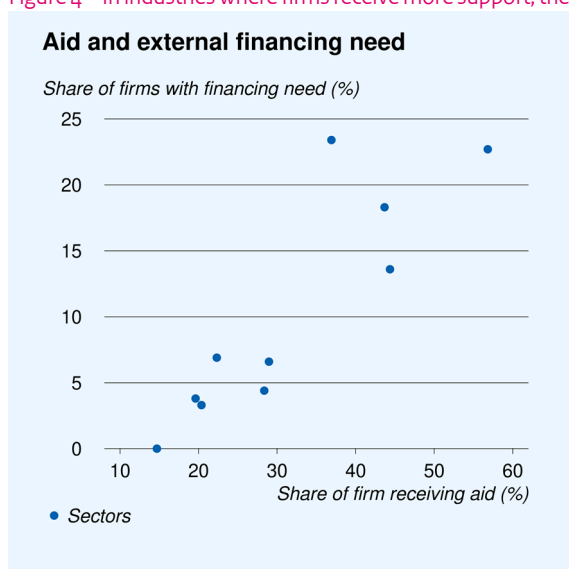
Source: Statistics Netherlands COEN business survey. Financing need is based on a survey conducted in May 2021.

This positive correlation also applies to additional debt capital required for investments. Industries where firms indicated that they needed more capital for investments also received more support. It could be that firms needed additional capital for replacement investments or that they brought forward investments during the lockdown that would normally be postponed. For example, maintenance on buildings, which would normally require a business to close, could have been brought forward by the lockdown because firms were closed anyway.
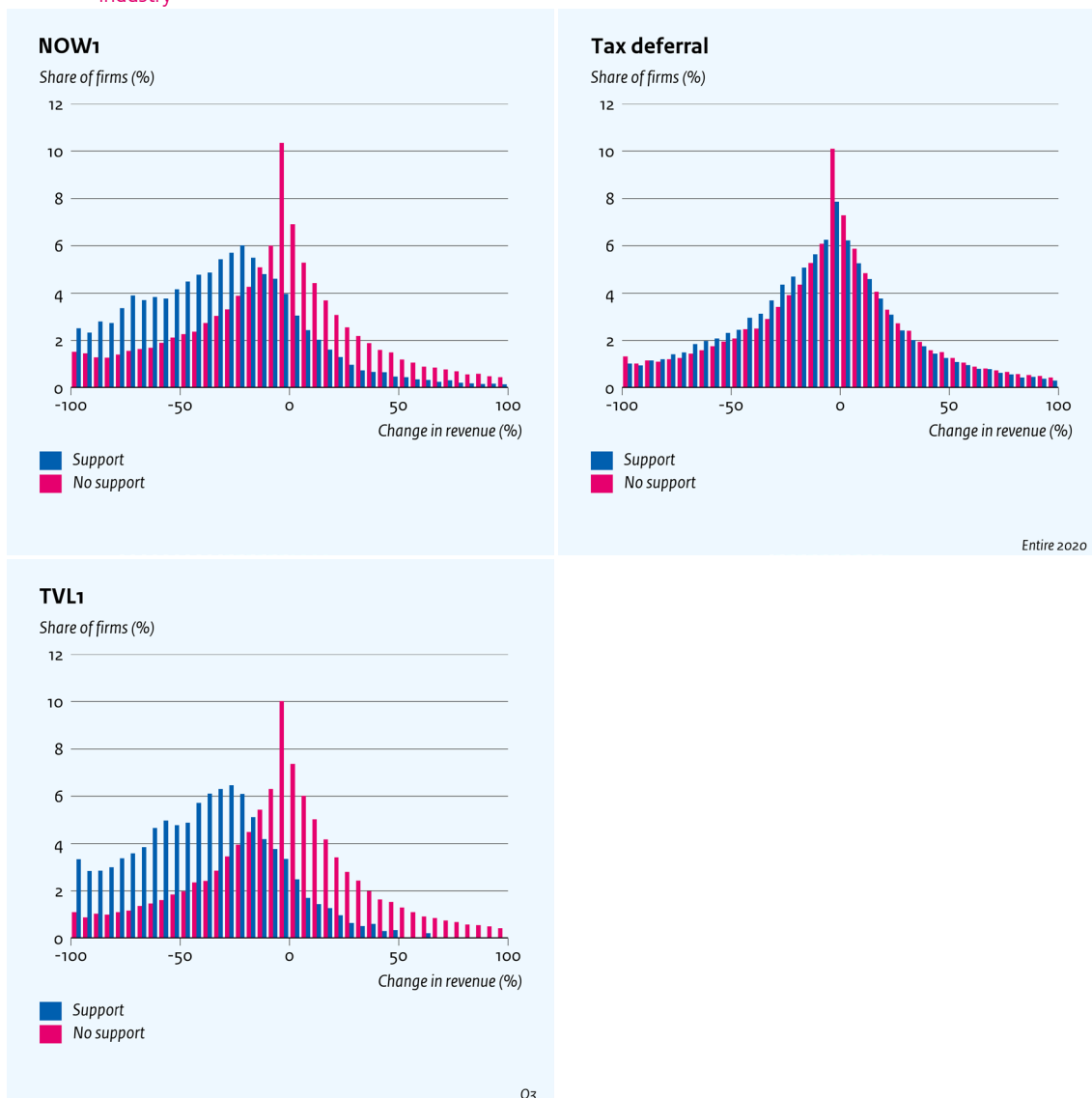
5 Turnover and support in the service industry

In the services industry[2], support has more often gone to firms that experienced stronger sales losses in the second quarter in 2020 compared to the same quarter in 2019. On average, support has more often been given to firms with an actual decline in sales. In addition, figure 5 shows that a non-negligible share of support recipients has managed to achieve an increase in turnover. These firms will probably have to repay the support received (Schellekens, Cnossen, et al., 2021b, 2021a). In addition, there is also a group of firms that did have a decrease in turnover and received support, but where the decrease in turnover is not related to the Covid-19 pandemic virus (Schellekens, Wijnen, et al., 2021).

Firms that received TVL1 most often experienced a decline in turnover. Almost all firms that received TVL1 had a decrease in turnover, the share of bars with a negative value in figure 5 is 96%. More than 80% of NOW recipients had a decline in turnover and 61% of firms with tax deferrals. By way of comparison, for all measures, the percentage of firms with a loss of turnover without support is about 60%.

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[2] 2020 revenue data from firms in other industries is not yet available.

Figure 5 - Turnover change among support recipients compared to non-support recipients, service industries, all firms in service industry[3]

NOW1

Share of firms (%)

Change in revenue (%)

■ *Support*
■ *No support*

Tax deferral

Share of firms (%)

Change in revenue (%)

■ *Support*
■ *No support*

Entire 2020

TVL1

Share of firms (%)

Change in revenue (%)
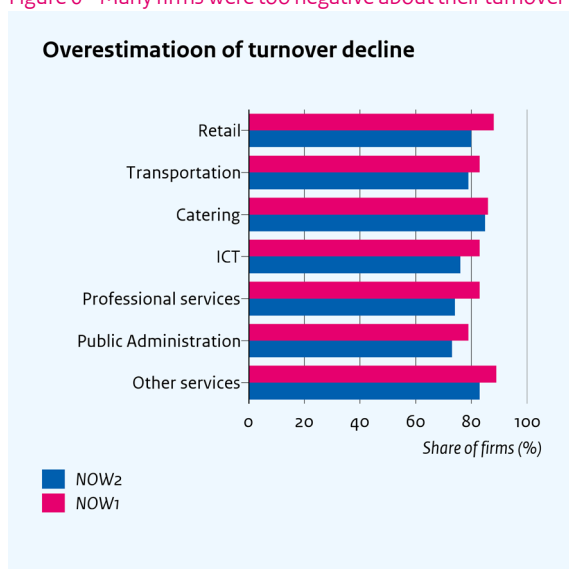
■ *Support*
■ *No support*

Q3

Source: Own calculation on the basis of Statistics Netherlands microdata.

Many firms have overestimated the decline in turnover due to The Covid-19 pandemic. Figure 6 shows that most firms, more than 80%, had too negative a turnover expectation when applying for NOW. The figure shows the difference between the actual change in turnover in quarters 2 and 3 and the expected decrease as stated in the NOW1 and NOW2 applications. The pink bars show the proportion of firms that overestimated the drop in sales during the NOW1 application. The blue bars show the share of firms that overestimated the drop in turnover in the NOW2 application. Despite the fact that NOW1 has on average ended up with firms with a decrease in turnover, the amount has often been too high because the decrease in turnover turned out to be lower than expected. This may be due to overly negative estimates by firms, or because firms in lockdown have reached customers in other ways, for example by selling online (Groenewegen et al., 2021a). The overpaid amounts will have to be (partially) repaid (see also Schellekens, Cnossen, et al. (2021a)).

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[3] In these three figures, both distributions separately add up to 100%.

Overestimatioon of turnover decline

Source: Own calculation on the basis of Statistics Netherlands microdata.

6 Support and business dynamics

In this section, we look at how business dynamics developed in 2020 and how they relate to support measures. For this we look at the fraction of new entries and exits in the total number of firms. This does not correspond to the number of bankruptcies, which is part of the exits. exits also concern firms that have been taken over or have been voluntarily closed down, without having started bankruptcy proceedings.

The stability of business dynamics in 2020 is in stark contrast to the Great Recession in 2008-2009, when dynamics did react strongly (see figure 7). In contrast to 2008-2009, the start-ups and exits of firms in 2020 have changed little compared to 2019, with the exception of the smallest firms (the pink lines, with >1wp (employed person) labels). There is even evidence that the number of bankruptcies has decreased during 2020 (Overvest and Fareed, 2021). We do not see this in the figures for exits, because bankruptcies only concern a small part of all exits.

Among firms with no more than 1 employee, the Covid-19 crisis seems to have had more of an impact on the dynamics, although this reaction remains mild compared to 2008-2009. The dynamics that we see in the blue lines (which contain all firms) in figure 7 are driven by these small firms. In 2020 we see that for "all firms" the number of exits in particular seems to have increased (light blue line), while the number of exits for firms with more than 1 employee remained stable, meaning that exits mainly consist of the smallest firms. This could be because self-employed people usually did not have access to the NOW, for example.

Figure 7 - Business dynamics have changed little in 2020, *all firms*

Source: Statistics Netherlands statline.

The share of exits is much lower in the group of firms that received support than in the group of firms that did not receive support. Figure 8 shows, per industry, the share of exits among firms that did not receive support (horizontal axis) and the share of exits among firms that made use of at least one support measure (vertical axis). The light blue 45-degree line shows where the two stocks are equal. Since almost all points are not only below this 45-degree line, but also very close to the horizontal axis, we see that the share of exits among firms with support is considerably lower than among firms without support.

Figure 8 – Exits of firms with and without support, *all firms*
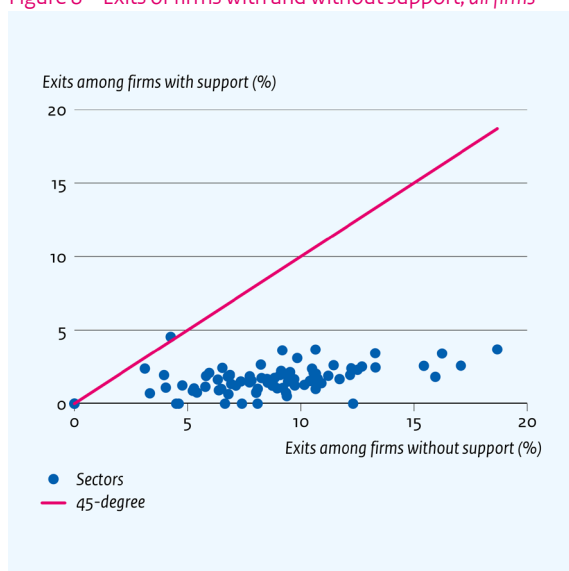
Source: Own calculation on the basis of Statistics Netherlands microdata.

The share of exits among non-support recipients was particularly high in industries hardest hit by the lockdown. These are the points on the right in figure 8. This includes sports and recreation, catering, and lotteries and gambling, all industries that have been hit hard by the lockdowns. It is precisely for these industries that the support policy seems to have helped the most in preventing shutdowns. While in some of these industries the share of exits among non-support recipients was more than 15%, it was limited to less than 4% for firms that received support, even in the hard-hit industries.

These results show the situation of the support policy in 2020, even now the support measures still apply. It remains to be seen how the dynamics will react once the support measures have ended. It is possible that some firms that have continued with the support measures will then still be closed. Little can be said about this at the moment, but the policy for phasing out the Covid-19 support will play an important role in this (Erken and Vrieselaar, 2021; Overvest and Smid, 2021). In the following sections, we look in more detail at the distribution of support between firms and how it correlates with firm characteristics.

7 Support and initial solvency

By relating the support policy to the initial solvency of firms, we paint a picture of the distribution of support among firms with different financial starting positions. We define solvency as the total equity capital divided by the total capital of a company. It is an important indicator of a firm's financial fragility and viability. Soederhuizen et al., (2020) show that a low solvency is one of the best predictors of bankruptcy. The 20% of firms with the lowest solvency have a solvency position around zero, or lower. These firms have very low, or even negative, equity. In firms with the 20% highest solvency, this position is often above 80%.

Supporting firms with medium solvency helps to sustain these firms and jobs. These firms are likely to have difficulty absorbing a major shock such as the Covid-19 crisis. At the same time, these are firms that are likely to be viable and would be in a good position without the Covid-19 shock. Supporting these firms is therefore most important for maintaining (viable) firms and employment. In addition, firms with a high solvency are probably better able to absorb negative shocks and avoid bankruptcy. For these firms, however, the support can prevent people from losing their jobs.

Supporting low-solvent firms involves more risk. Firms with a very low solvency have a limited viability and there is a good chance that these firms would have closed down in 2020 even without the Covid-19 crisis (Soederhuizen et al., 2020; Lammers et al., 2021). There is therefore a real chance that these firms will not make it during or after the crisis. When supporting these firms, there is therefore a risk that firms will go bankrupt after all and the support granted has only managed to retain jobs temporarily.

We examine how the initial solvency of firms relates to whether or not they receive support and to the amount of support received. We do this by dividing firms into equal groups according to their solvency. We then use this to get a picture of the heterogeneity in the probability of support and the average amount of support.

In total, most support went to firms with average solvency, but other groups also received much support. Figure 9 shows the total amount of support that firms have received per decile (10 equal groups) in NOW1, TVL1 and tax deferral. Decile 1 shows the firms with the lowest solvency, in decile 10 firms with the highest. In the remainder of this section, we will elaborate on these results by looking at the two components of the total amount of support: the proportion of firms that received support and the amount of support as a proportion of revenue per firm, which add up to total amounts from figure 9.

Figure 9 – Total amount of NOW1, TVL1 and tax deferral per solvency decile, *all non-financial corporations*
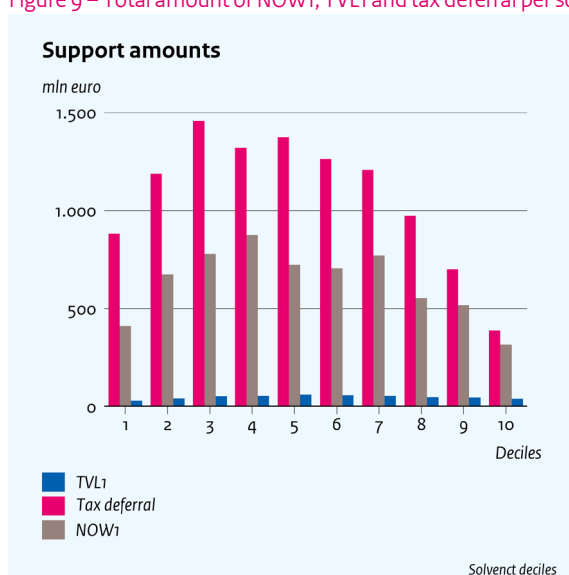
Source: Own calculation on the basis of Statistics Netherlands microdata.

We use a regression to map the heterogeneous relationship with initial solvency and to control for industry differences. We do this on the basis of equation 1:

$$Support_i^{2020} = \beta_0 + \sum_q \beta_q * Q_q^{Solv^{2019}} + \eta_c + \epsilon_i \qquad (1)$$

Where $Support_i^{2020}$ in the first regression is a dummy variable that indicates whether company i has received support or not; we estimate the share of firms that received support. In the second regression, $Support_i^{2020}$ is the amount of support, scaled with the turnover of firm i in 2019. Q_q^{solv} are dummy variables (0 or 1) that indicate whether or not the firm is in group q of the solvency distribution. In the estimation with the share of support this is ten (deciles), in the amounts this is five (quintiles). The latter because the first regression is estimated with all firms, while the second regression is estimated with only firms that have actually received support. Finally, η_c are industry *fixed effects* to adjust for industry specific effects.

The results of the OLS regressions are shown in figure 10. In the figures, each horizontal segment shows the effect for the corresponding quantile. This comes down to the average probability of support or the amount of support per euro of turnover, corrected for industry-specific differences. We show the results for the NOW1, TVL1 and tax deferral. The results for the NOW2, NOW3.1 and the TVLQ4 show very similar patterns to the predecessor measures and are therefore not shown.
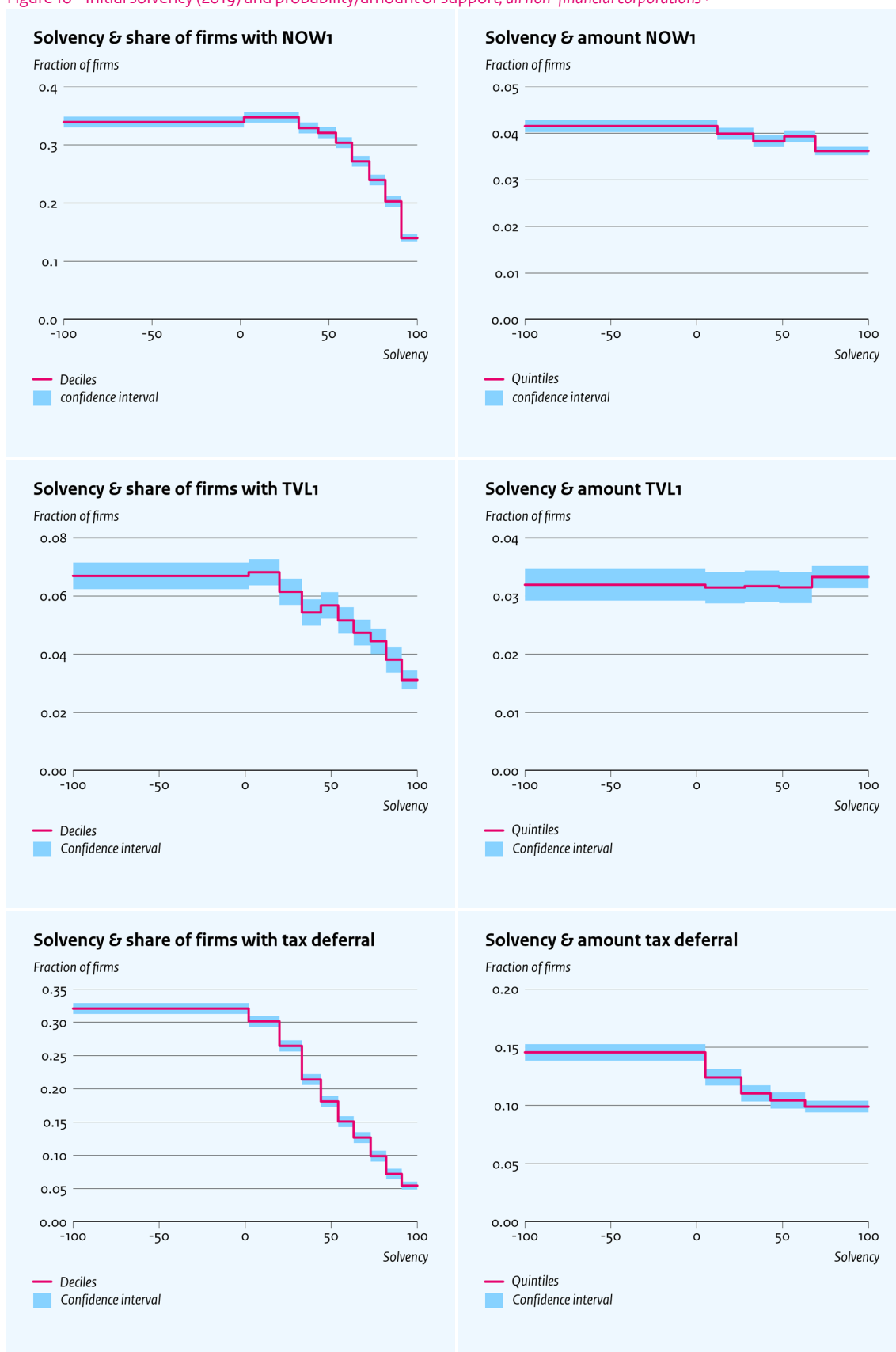
The more solvent firms are, the less often they make use of support (see left figures). The chance of support corresponds to the average share of firms that have received support per decile. For NOW1 and TVL, the probability of support among firms with low solvency is comparable and decreases from the median. With tax deferral, this relationship decreases almost linearly from the third decile. At just 5%, firms with the highest solvency are the least likely to file for tax deferrals.

For all support measures, the probability of support is highest for low solvency firms. This is consistent with results from other authors (Roelandt et al., 2021). There is therefore a risk that support has often ended up with firms that were already less solvent before the Covid-19 crisis and had an increased risk of bankruptcy. Lorié and Ciobica (2021) also point to this risk based on their analysis of bankruptcies in the second quarter of 2020.

The amount of support for all measures is relatively equal between the groups (see figures on the right). While the chance of support decreases as a company's initial solvency position improves, the amounts of support per

euro of turnover for highly solvent firms are almost equal to those of other firms. Only with tax deferral is the outstanding amount for highly solvent firms lower, but still a considerable amount with an average of 10 cents per euro of turnover (in 2019). Supporting these highly solvent firms may not have been necessary to avoid bankruptcies, but may have contributed to job retention.

Figure 10 - Initial solvency (2019) and probability/amount of support, *all non-financial corporations*[4]

Solvency & share of firms with NOW1

Fraction of firms

— Deciles
▢ confidence interval

Solvency & amount NOW1

Fraction of firms

— Quintiles
▢ confidence interval

Solvency & share of firms with TVL1

Fraction of firms

— Deciles
▢ Confidence interval

Solvency & amount TVL1

Fraction of firms

— Quintiles
▢ Confidence interval

Solvency & share of firms with tax deferral

Fraction of firms

— Deciles
▢ Confidence interval

Solvency & amount tax deferral

*Fraction of firms*

— Quintiles
▢ Confidence interval

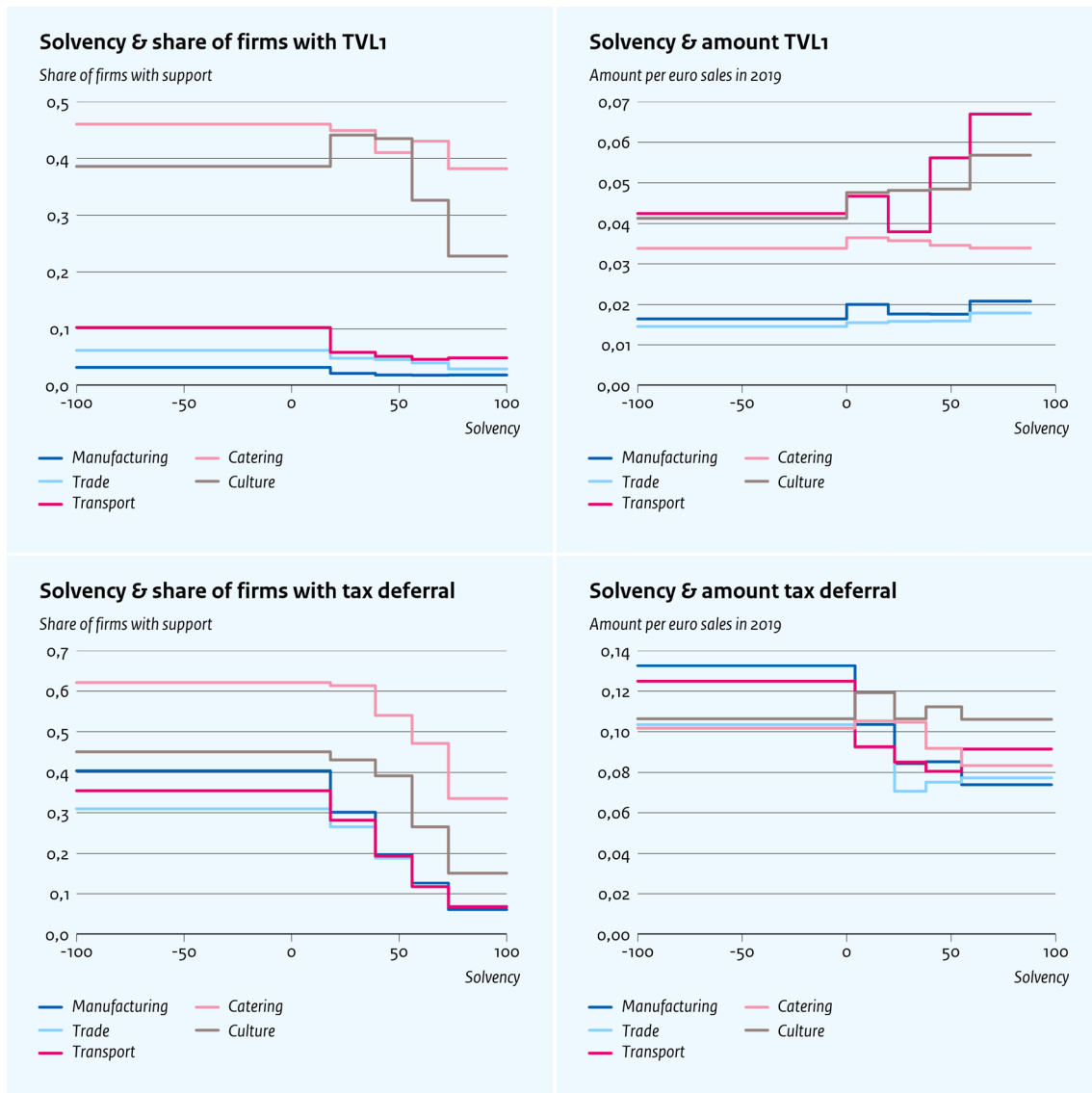Source: Own calculations based on Statistics Netherlands microdata.

The differences between the groups in figure 10 are a good reflection of differences between firms; differences between industries play only a limited role. In figure 11 we show the same estimates, but per industry. Its purpose is to illustrate that the patterns we see at the national level are not driven by industry heterogeneity. In the individual industries, the patterns are very similar to the aggregated pictures. It is clear that the level of the probability of support varies greatly per industry.

The largest differences between industries exist at the TVL. Under the measure, the average amount of support in the culture and transport industries is significantly higher for highly solvent firms than for low solvent firms. This may be due to the specific criteria of the TVL, which means that the amount can be higher if the fixed costs are higher.

Figure 11 - Initial solvency and probability/amount of support, by industry, *all non-financial corporations*
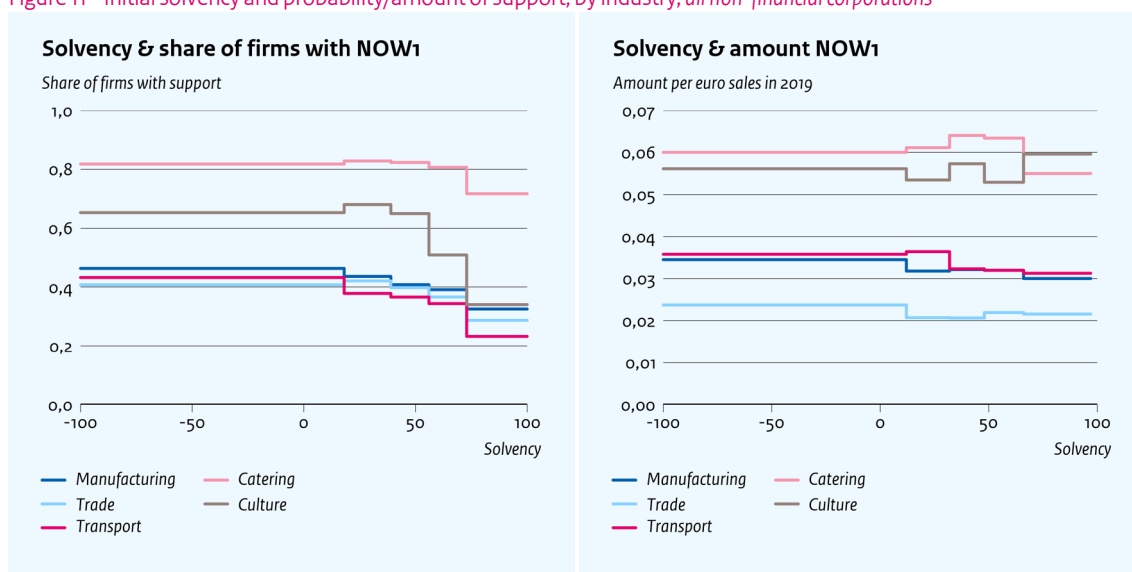
4 The vertical y-axis in the left figures shows the stated probability that a company has received support. For each group, this corresponds to the share of firms that have received support. In the right-hand figures, the y-axis shows the amount of support, scaled with the turnover achieved in 2019, that was received by support recipients. In both, the level has been corrected for industry effects by means of fixed effects and show the average effect across industries. The probability of support and the support amounts per turnover add up, given the turnover of firms, to the total support amounts shown in figure 9

Solvency & share of firms with TVL1

Share of firms with support

Solvency & amount TVL1

Amount per euro sales in 2019

Solvency & share of firms with tax deferral

Share of firms with support

Solvency & amount tax deferral

Amount per euro sales in 2019

Source: Own calculations based on Statistics Netherlands microdata.

Most of the support went to firms with an average solvency. However, we see that firms with low solvency often received support and the amount (per turnover) of support is not strongly related to solvency. There is therefore a risk that support has been given to firms that are less viable. In the next section, we further analyse the relationship between support and firm characteristics by examining the distribution across firms with different productivity levels.

8   Support and initial labour productivity

It is important for healthy business dynamics that low-productivity firms in an industry can be replaced by new and high-productivity firms. It is important that new entrants and highly productivity firms have access to production factors that were previously occupied by low-productivity firms (creative destruction) (Freeman et

al., 2021). Sustaining low-productivity firms with support for too long can disrupt these dynamics and hinder future productivity growth (Cros et al., 2021).

In 2018 and 2019, firms with the lowest productivity were by far the most likely to be liquidated, in 2020 this was different. Table 3 shows the distribution of the share of exits per productivity decile. This clearly shows that in the years before the Covid-19 crisis, 2018 and 2019, the percentage of exits for the firms with the lowest productivity is substantially higher at about 10% than the 4-5% for the rest of the distribution.[5] In 2020, on the other hand, the share of exits was lower in all groups, but the share of exits fell most sharply for the group of lowest productivity firms: by 8% points compared to the 2-4 percentage points for the other groups. This indicates that the creative destruction dynamic, where low-productivity firms make room for new and high-productivity firms, may be disrupted in 2020. This pattern also applies within individual industries.[6]

Table 3 – Percentage of exits per year per productivity decile, *all non-financial corporations.*

| Labour productivity decile	2018	2019	2020	difference 2020 and average 2018-2019
1	10.4%	9.8%	2.2%	-8.0
2	5.3%	5.5%	1.5%	-3.9
3	4.4%	4.5%	1.3%	-3.2
4	3.9%	3.9%	1.3%	-2.6
5	3.9%	3.8%	1.2%	-2.7
6	4.1%	3.9%	1.3%	-2.7
7	4.2%	4.0%	1.4%	-2.7
8	4.4%	4.1%	1.3%	-2.9
9	4.3%	4.4%	1.4%	-2.9
10	4.3%	4.5%	1.7%	-2.7

Source: Own calculations based on Statistics Netherlands microdata.

The total support amounts are fairly evenly distributed among the productivity groups. As in the previous section, we look per decile of labour productivity (value added per hour worked) at the total amount of support that firms have received. Here we see that there is no clear difference between the groups and the amount of support. This means that the group(s) with low-productivity firms received just as much support as firms in other groups (for NOW even slightly more). We zoom in on these results and in the rest of the section we look at the share of firms that received support and the amounts per turnover that firms received across the productivity groups.

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[5] Cros et al., (2021) argue that access to finance is also an important driver for the liquidation of French firms.
[6] Due to the limited number of exits in 2020, it is not possible for privacy reasons to show the results separately at industry level.

Figure 12 - Total amount of NOW1, TVL1 and tax deferral per labour productivity decile, *all non-financial corporations.*

Support amounts
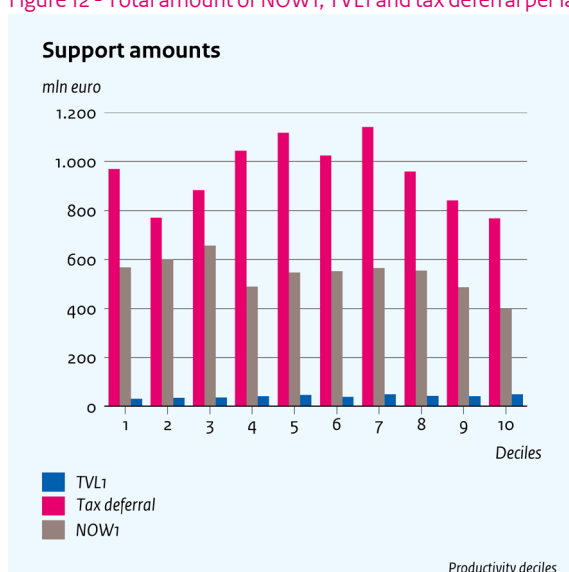
Source: Own calculations based on Statistics Netherlands microdata.

We estimate the relationship between support and the initial labour productivity of firms. We do this in a similar way to solvency:

$$Support_i^{2020} = \beta_0 + \sum_q \beta_q * Q_q^{prod^{2019}} + \eta_c + \epsilon_i \qquad (2)$$

Where $Q_q^{prod^{2019}}$ are now the quantiles, created from the distribution of initial labour productivity, or value added, per hour worked of firms. Figure 13 shows the results of this regression for the NOW1, TVL1, and tax deferral.

In all support measures, the probability of receiving support is highest for low-productivity firms. For tax deferral and TVL, the probability drops sharply at the lowest five deciles and the probability of support for medium- and high-productivity firms is more or less the same. For NOW1, the probability of support decreases across the entire distribution. In all cases, the firms with the lowest productivity seem to have received the most support. Roelandt et al. (2021) also found a significant negative relationship between the chance of support and productivity in 2019 (turnover per FTE).

Low-productivity firms received the highest amount of support per euro of turnover. This is especially true for NOW1 and tax deferral, where the average support amounts per euro of turnover are highest for the least productivity firms. In the case of the TVL, the average amounts are higher only for the lowest-productivity firms, for the rest they are almost the same. Firms with a higher labour productivity are on average more capital-intensive and therefore likely have higher fixed costs. So we would expect high-productivity firms to receive higher amounts of TVL, but this is not the case. An explanation for this could be that firms with higher productivity expected less sharp declines in sales.

Figure 13 - Initial labour productivity and the probability and amount of support, *all non-financial corporations*
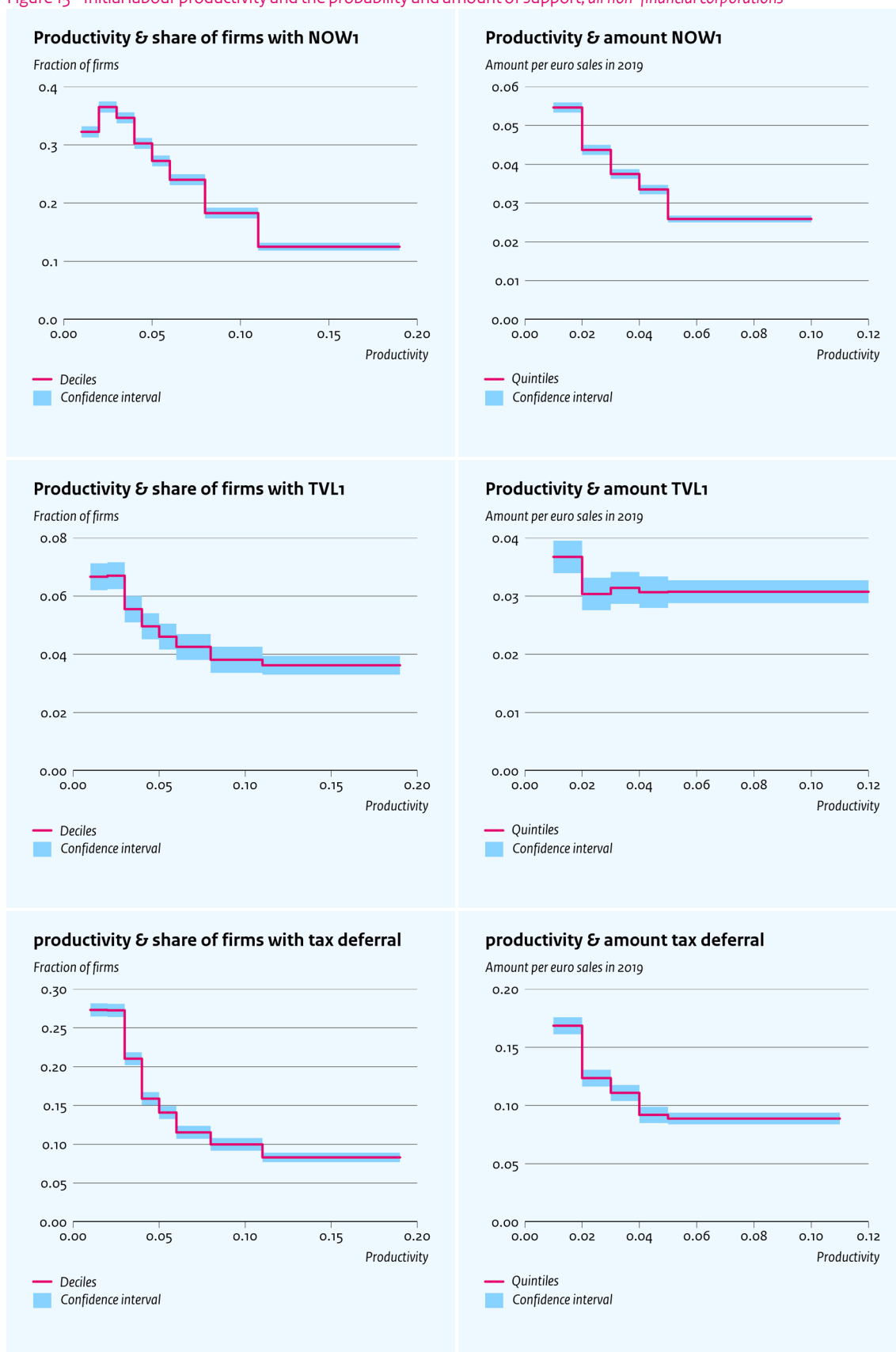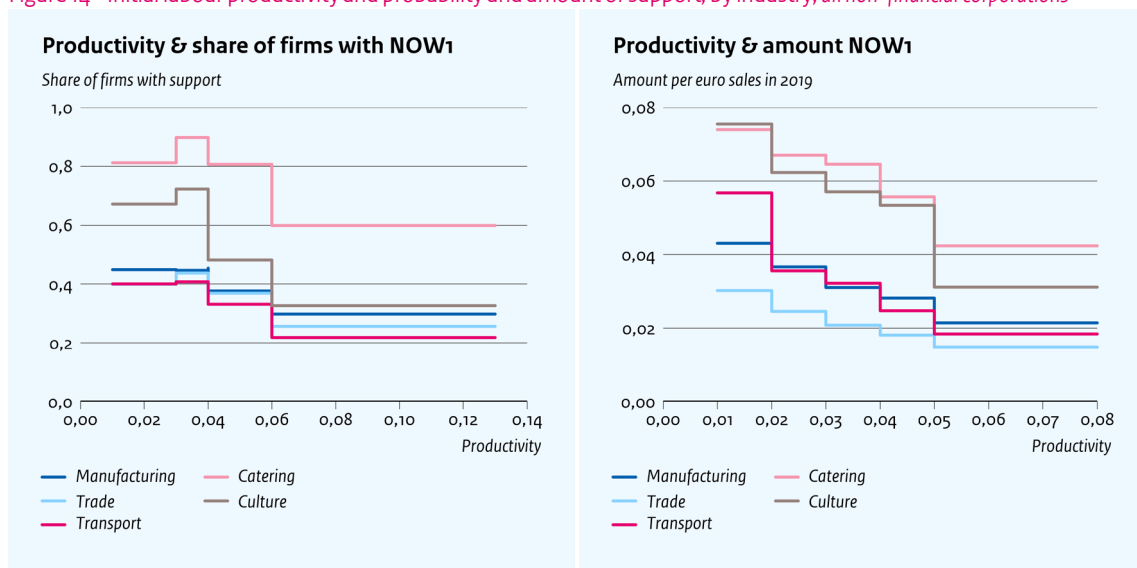
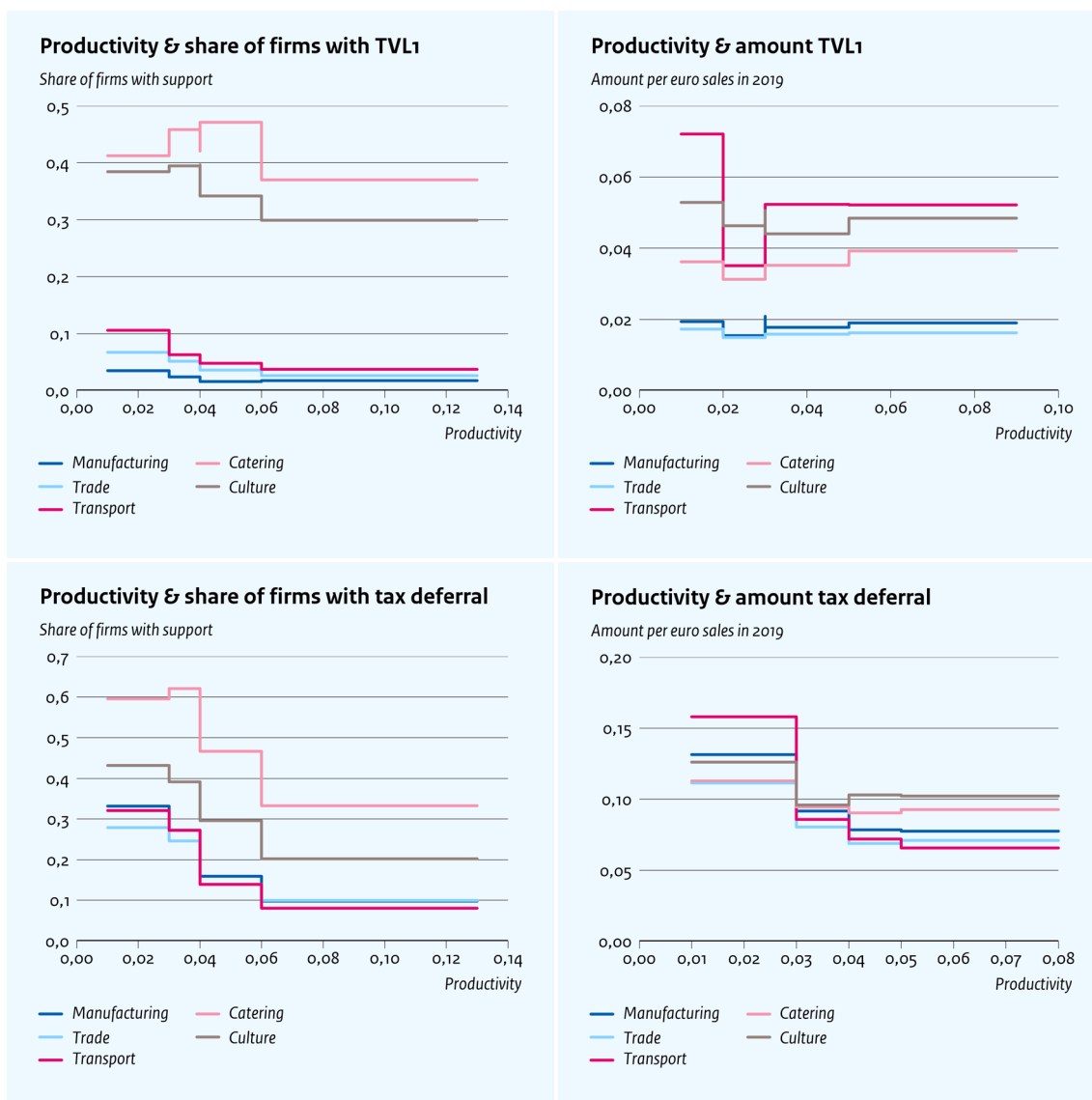Source: Own calculations based on Statistics Netherlands microdata.

Low-productivity firms receive more often and relatively more support. If the support also maintains the firms with the lowest productivity, normal business dynamics will be disrupted. This may explain the pattern we see in Table 3. Firms in the lowest productivity decile have been discontinued less often in 2020. This development can lead to production factors 'remaining stuck' in low-productivity firms. It then becomes more difficult for productive and new firms to have access to sufficient production factors.

The disruption of the dynamics seems to have occurred less strongly in other countries. Cros et al. (2021) find that French firms that went bankrupt in 2020 had on average low productivity and had more debt in 2018. They conclude that the generous support policy has not disrupted the process of creative destruction. Bighelli et al., (2021) show that for a broader set of countries, there appears to be little or no disruption in business dynamics. For the Netherlands, other authors have also examined the relationships between support and other variables such as innovation (Roelandt et al, 2021) and management quality (Groenewegen et al, 2021b). Because the data for these variables has limited coverage, we do not include them here.

For labour productivity, the industry-specific figures (figure 14) show the same patterns as the figures for all firms. This indicates that also for labour productivity the pictures with all firms give a good picture of the average ratios within industries. For support amounts to TVL, we see a higher amount for high-productivity firms in a number of industries, which corresponds to the expectation that these firms are on average more capital-intensive and therefore have higher fixed costs. This is in contrast to the general result from figure 13. This is because this effect does not apply to every industry, so it is not included in the aggregated picture.

Figure 14 - Initial labour productivity and probability and amount of support, by industry, *all non-financial corporations*

Productivity & share of firms with TVL1

Share of firms with support

Manufacturing · Catering · Trade · Culture · Transport

Productivity & amount TVL1

Amount per euro sales in 2019

Manufacturing · Catering · Trade · Culture · Transport

Productivity & share of firms with tax deferral

Share of firms with support

Manufacturing · Catering · Trade · Culture · Transport

Productivity & amount tax deferral

Amount per euro sales in 2019

Manufacturing · Catering · Trade · Culture · Transport

Source: Own calculations based on Statistics Netherlands microdata.

9 Conclusions

The main objective of the support policy has been achieved, firms and thus employment have been preserved in 2020. The schemes had to be quick and simple, contain few conditions and initially have low implementation costs. The schemes have therefore been successful. On average, support was more often given to firms that had to deal with a decline in turnover and therefore needed support. In addition, the support measures seem to have limited the number of firm exits, especially those with more staff.

Support has also often gone to firms with lower solvency and lower productivity. The support measures are so broad that much of the support has ended up with low-solvent and low-productivity firms. Many of these firms seem to have been kept afloat by the support. The risk exists that the support will end up with firms that have gone bankrupt or will go bankrupt. On the other hand, there are many firms that have received support that have not really needed it. Much of this support will have to be repaid.

There is a risk that healthy business dynamics will be disrupted by the support measures. In 2020, firms with the lowest productivity were closed less often than in previous years. These are also the firms that have received the most support and support. This interruption of the process of creative destruction, the reallocation of production factors from low- to high-productivity firms, can in the long run, have negative consequences for productivity growth.

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