



The Impact of Firm-level Covid Rescue Policies: Evidence for Wallonia

Glenn Magerman
ECARES, ULB, CESifo & CEPR

Dieter Van Esbroeck
VIVES, KU Leuven

June 2025

ECARES working paper 2025-09

The Impact of Firm-level Covid Rescue Policies: Evidence for Wallonia*

Glenn Magerman

ECARES, ULB
CEPR and CESifo

Dieter Van Esbroeck

VIVES, KU Leuven

April 23, 2025

Executive summary

This paper evaluates the impact of Covid-19 support measures on firms in Wallonia. Using a rich set of administrative data, we analyze the allocation and effects of firm-level subsidies implemented in 2020–2021 in response to the pandemic. We find that support programs were taken up by mostly small, young firms, and in sectors most affected by lockdowns, such as retail, food services, and construction. We find no evidence of misallocation of resources towards ‘zombie firms’, firms which tend to not contribute value added to the economy. Firms that received support experienced an 8–9% increase in labor productivity relative to firms that applied for, but did not obtain support. The impact on firm productivity persists at least one year after support. Moreover, receipt of support is associated with a 19% reduction in the likelihood of firm exit. These findings suggest that the support measures were effective in maintaining economic activity and avoiding mass firm failures during the crisis. These results are also consistent with findings for Flanders, reinforcing the evidence base for the design of crisis-response policies.

*We gratefully acknowledge support from the BELSPO BRAIN 2.0 grant B2/233/P3/HAIOPOLICY. We thank Yannick Bormans and Bart Capéau for their valuable comments. We thank the Service Public de Wallonie - Économie, Emploi, Recherche (SPW EER) to make enterprise-level data on support measures available for this research. The views and results expressed are those of the authors only, and do not necessarily reflect those of the SPW EER or any of the related institutions. Glenn Magerman: glenn.magerman@ulb.be. Dieter Van Esbroeck: dieter.vanesbroeck@kuleuven.be.

1. Introduction

The Covid-19 pandemic triggered a massive contraction in economic activity worldwide. In 2020, gross domestic product (GDP) declined by five to ten percent in most advanced economies ([World Bank, 2022](#)). In Belgium, the pandemic triggered the largest economic downturn since the second World War, as real GDP declined with 4.8% in 2020, or three times as much as during the global financial crisis in 2008-2009.¹ There was also substantial regional variation within Belgium: while Flanders saw a decrease of 4.5% in its regional GDP, Wallonia and Brussels faced a decrease of respectively 5.5% and 5.1% ([Hermreg, 2024](#)).

This massive downturn resulted from a combination of lockdowns, forced business closures, and increased uncertainty for both short- and long-term economic outlooks over most of 2020-2021. To avoid a further economic meltdown, several firm-level support measures have been implemented to flank the stringent sanitary measures in Belgium.² These included direct subsidies, wage compensation schemes, and state-backed loan guarantees ([OECD, 2021](#)). By far the largest financial support programs to firms have been developed and implemented by the regional governments of Flanders, Wallonia, and Brussels ([Rekenhof, 2024](#)). However, little is known about the impact of these policies on firm performance.

In this paper, we study the economic impact of these firm-level support measures for Wallonia. Our analysis draws on firm-level administrative data covering all enterprises in Wallonia that applied for Covid support in 2020 or 2021, and their performance before and after the support measures. The data contains information on the amount of premium applied for, whether it was granted, and if granted, the amount being paid out to each enterprise for each of the different support premia. We supplement this data with information on firm performance from the annual accounts of firms from the National Bank of Belgium (NBB) and Belfirst, and data on the employment of firms from the National Social Security Office (NSSO).

First, we describe the characteristics of firms that have obtained such support. The total amount paid out is 478 million euros over this period, with an average value of 4,807 euros per enterprise. The largest part of the support was paid out through support premium 1 (almost 150 million euros), which paid a flat allowance of 5,000 euros to firms that were either forced to close because of Covid health measures, or that were largely hindered in their activities. Supported firms are mostly small (0-10 FTEs) and young (0-9 years old). Most of the support went to the food and beverages sector, wholesale and retail trade, and specialized construction activities, which were naturally most strongly affected by the lockdown measures. For most firms, the amount of the support was small relative to their value added, and accounted for less than 30% of their value added in 2019. Still, 9% of the firms received support in 2020 and 2021 that exceeded their value added in that year. However, we find no evidence that the support disproportionately benefited ‘zombie firms’, defined as enterprises that report negative value added in a given year: while the share of businesses with a negative added value is 14.5% of all companies in Wallonia, this share is only 9.5% among supported enterprises.

Next, we evaluate the impact of the firm-level support measures on firms’ productivity and probability of survival. We implement a difference-in-differences method to estimate the causal differential impact of firms that obtained support, compared to firms that applied to, but did not obtain such support, and this for a panel of firms that are active between 2015 and 2021. Firms that received support on average had 8-9% higher labor productivity, compared to firms in the control group. This effect was persistent in the year after receiving support. The support also helped keep firms in the market, as the probability of exit decreased by 19% on average from the support, compared to firms that applied for, but did not receive support.

¹ GDP growth statistics are obtained from [NBBStat](#).

² Potential GDP losses in the absence of such measures have been estimated to be as much as 12% for Flanders ([Zegel et al., 2021](#)).

These findings suggest that the firm-level support measures in Wallonia had a significant effect on firm outcomes and their survival in the market, underwriting their usefulness during the Covid crisis. Our results are very similar to comparable subsidy programs in Flanders, which have been extensively evaluated (see among others [Zegel et al. \(2021\)](#); [Konings et al. \(2023b,a\)](#)). More generally, other studies on Belgian firms and their performance during the Covid crisis include [Tielens et al. \(2020\)](#); [Dhyne & Duprez \(2021\)](#); [Tielens & Piette \(2022\)](#). Studies on the impact of policy support in other countries include [Freeman et al. \(2021\)](#) for the Netherlands, [Harasztosi et al. \(2022\)](#) across the EU, [Bighelli et al. \(2021\)](#) for four EU countries, and [Hurley et al. \(2021\)](#) for the UK.

The remainder of the paper is structured as follows. In [Section 2](#), we describe the data sources and sample selection. In [Section 3](#), we provide descriptive statistics on the enterprise-level Covid support measures in Wallonia. [Section 4](#) reports the estimated causal impact of the support measures on firm-level productivity and survival. [Section 5](#) concludes.

2. Data sources and construction

We combine three administrative datasets to analyze the impact of firm-level Covid support measures on productivity growth and exit.³ First, we use information on all Walloon enterprises that applied for Covid-19 support in 2020 or 2021. This dataset is confidential, and courtesy of SPW EER that administered and distributed these support mechanisms. The dataset contains information on each application submitted by an enterprise, with the date of application, the sector of economic activity that applies to the support mechanism, whether or not the application was approved, and if granted, the date and amount of the payment. Second, we combine this information with firms' annual accounts, sourced from the National Bank of Belgium for 2015 and from Belfirst for the period 2016-2021, and contain data on variables such as value added, sales, age and the principal sector a firm operates in (NACE Rev. 2 2-digit and 4-digit levels).⁴ Third, the dataset from the National Social Security Office (NSSO) contains information for 2015-2021 on employment by firm in terms of full-time equivalents (FTEs). The NSSO dataset is also used to identify firm exit, defined as the absence of compulsory social security statement submissions until the end of the panel. Across these datasets, all enterprises are identified by a unique VAT number, allowing for unambiguous merging.

We retain enterprises across all market activities, spanning NACE (Rev. 2, 2008) 2-digit codes 01-82, thus including primary, secondary and tertiary sectors. We exclude NACE sector 78 (employment activities), which contains mostly temporary employment agencies: enterprises in this sector record large numbers of workers and FTEs, but those are not part of the production of these enterprises themselves, as they are rented out to other firms. See [Appendix A](#) for a list and description of these sectors. For the main analysis, we restrict the data to enterprises that report strictly positive sales, value added, and employment. If one of these variables is missing in period t , we interpolate its value using a simple average of $t - 1$ and $t + 1$. We do not impute gaps of more than one period. The final dataset contains an unbalanced panel of firms over the period 2015-2021.

³We use 'enterprise' and 'firm' as synonyms throughout. In fact, the vast majority of support measures applies to enterprises in various services sectors, such as retail, wholesale, restaurants, accommodation etc., rather than to classic manufacturing firms.

⁴Enterprises are only required to submit annual accounts if they exceed certain size thresholds. Micro and small enterprises may provide abbreviated accounts that omit sales and input expenditures, whereas large enterprises must submit full accounts. You can find the size criteria [here](#).

3. Enterprise-level support measures in Wallonia

We focus on the firm-level Covid support that was applied for at the height of the pandemic in 2020 or 2021.⁵ The regional government of Wallonia has devised several subsidy programs in the years 2020 and 2021, which are mostly indicated with numbers (1 to 23, and 'cheques'). These subsidy programs consist of either lump-sum subsidy amounts, subsidy amounts dependent on the number of employees, or *ad valorem* support as a percentage of the sales of last year. More information on the specificities of the different support programs can be found in [Appendix B](#).

There were 99,398 applications granted, and 17,387 applications that were declined support. The total amount of supports paid out amounts to 478 million euros. The average premium granted to an enterprise was 4,807 euros.⁶ [Figure 1](#) shows the different support premia and the total support paid out per premium. Premium 1 is by far the largest program, with close to 150 million euros paid out and almost 30,000 successful applications. This premium entails a compensatory allowance of 5,000 euros, eligible to businesses that are (i) shut down because of Covid-19 measures, and (ii) operate in a sector or part of a sector listed by decree of the Walloon government. Apart from premium 1, the five largest premiums both in terms of amount paid and number of payments are premium 2, 6, 14, 10a and 5. These support programs involve approximately €40 million and 5,000 to 15,000 recipients. The amount of subsidies paid out for these is generally fixed, mostly based on the number of employees.

Next, we classify firms along several dimensions to see which type of firms were the recipients of the support programs. In [Figure 2](#), firms are classified by size, as denoted by FTE bins. These bins also closely align with the support amounts allocated to firms in most premia. While larger firms can obtain larger support, most of the support ultimately went to smaller firms. Self-employed (up to 1 FTE) received 268 million euros, while micro-firms (up to 10 FTE) received 173 million euros, jointly accounting for more than 90% of the total support. These patterns are very similar to the subsidy programs in Flanders ([Zegel et al., 2021](#); [Konings et al., 2023b](#)).

[Figure 3](#) shows the distribution along the age dimension. Support mainly went to younger firms, with 192 million euros to firms of less than 10 years old and 120 million euros to firms between 10 and 20 years old. Together, the amount paid to firms of less than 20 years old amounts to 65% of total support, similar to the 60% of total support measures for Flanders [Konings et al. \(2023b\)](#).

In [Figure 4](#), firms are sorted by NACE Rev. 2 (2008) sectors. The top panel shows the distribution of support by broad NACE 2-digit industries. The largest recipient is the "Food and beverage service activities (NACE 56)" (130 million euros), followed by the "Retail and wholesale trade (NACE 45-47)" (102 million euros) and the "Specialised construction activities (NACE 43)" (19 million euros). These sectors account for more than half of the support. The sectors represent activities that are close to final demand and depend highly on physical presence. Due to social distancing rules, these sectors were mostly subject to general closures and limited activities. The industrial sector is largely absent in this support scheme, but was supported through other means, such as the temporary unemployment measures. The bottom panel shows the distribution of support by more granular NACE 4-digit sectors. Here, the food and beverage service activities remain dominant with the "Restaurants and mobile food service activities (NACE 5610)" (94 million euros), the "Beverage serving activities (NACE 5630)" (25 million euros), and "Event catering activities (NACE 5621)" (10 million euros) among the top sectors. Two sectors that did not appear in the top 5 of broad sectors are the "Hairdressing and other beauty treatment sector (NACE 9602)" (15 million

⁵While some support continued into 2022, only 3.3% of the total support value was paid out in 2022.

⁶This is comparable to Flanders, where the average premium amounted to 5,353 euros over the same period.

Figure 1: SPW EER support, by premium.

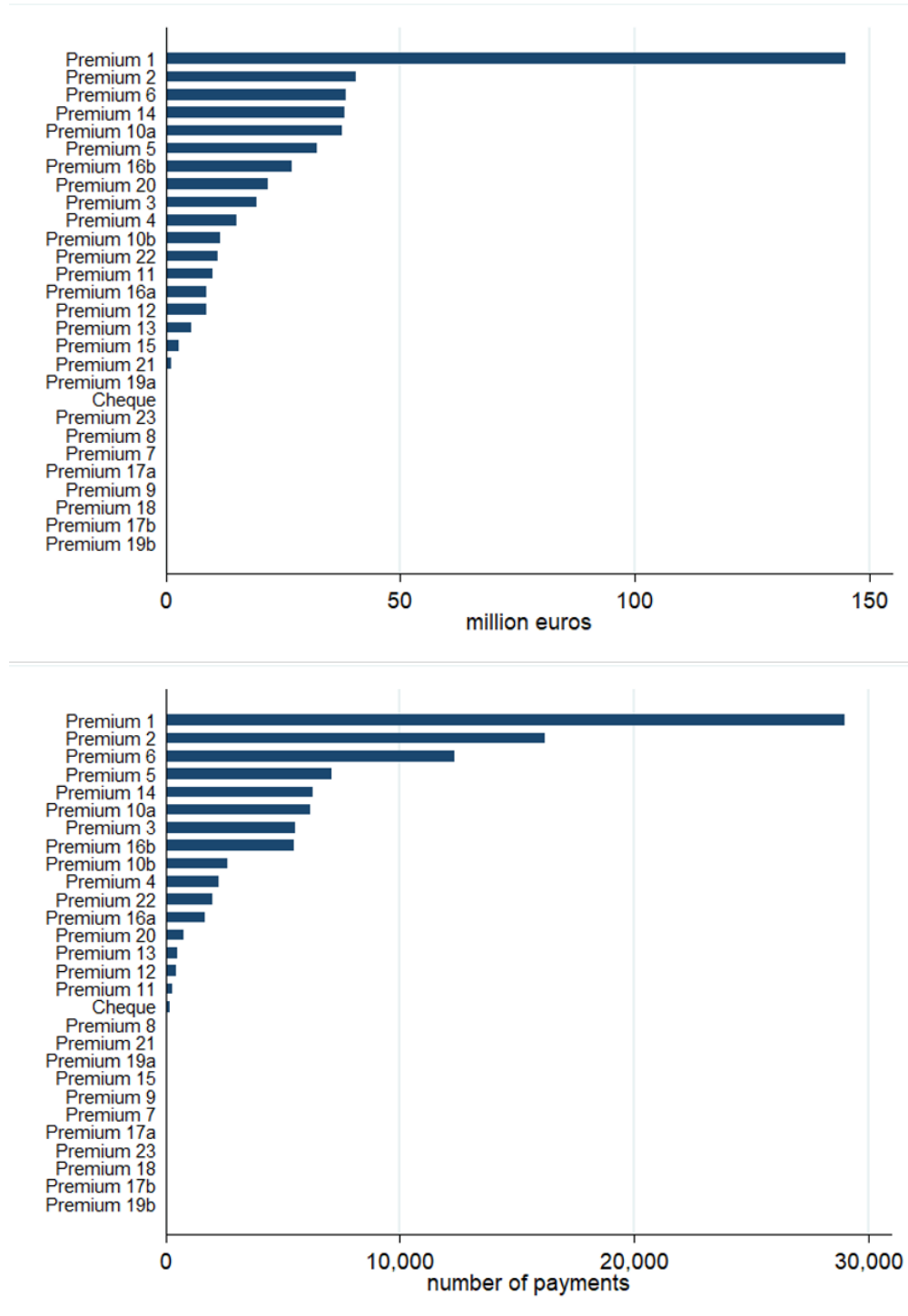


Figure 2: SPW EER support, by firm size.

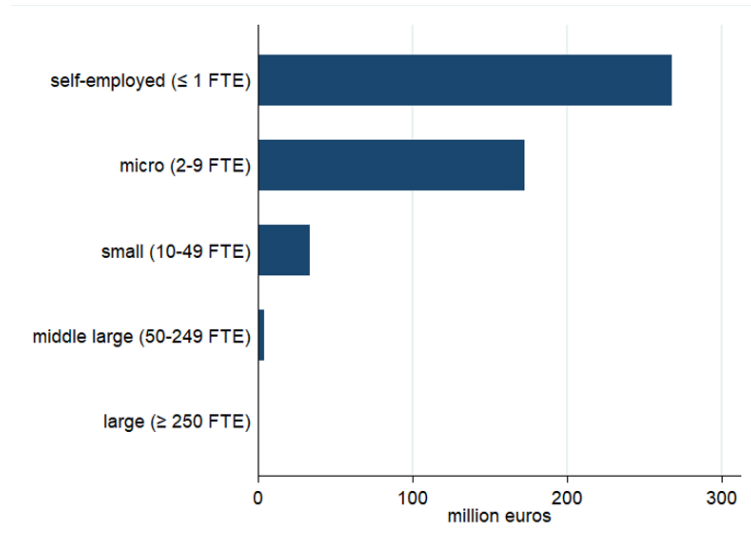
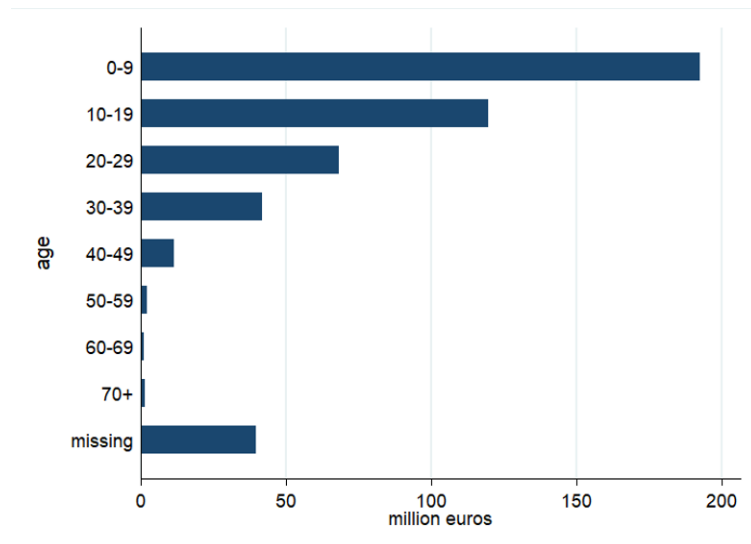


Figure 3: SPW EER support, by firm age.



euros) and the “Hotels and similar accommodation sector (NACE 5510)” (14 million euros). Also in this respect, the support programs rolled out in Wallonia are very similar to the programs in Flanders. The top 5 sectors at the 2-digit level are overall the same in Flanders, with retail trade and food and beverage service activities trading places (Konings et al., 2023b).

Next, we investigate whether the support was proportional and reached the desired companies. We use the ratio of support received by a firm over its value added in 2019 as a measure of proportionality: if a firm received more support than it usually generates value added, this can be an indication of over-subsidizing these particular firms. This turns out to be the case for 9% of the firms in the data. Then, Figure 5 shows a histogram for the firms for which the ratio is below one and above zero, i.e., the firms that received less than their value added in 2019 and for which value added was not negative. The distribution is right-skewed, such that there are fewer firms for which the total amount of support came close to their value added. This suggests that most firms obtained a support that represents a small fraction of their regular value added in normal times.

Another potential problem with extensive, quasi blanket, support programs is that they might provide subsidies to underperforming firms, disrupting the standard process of creative destruction and preventing resources from being reallocated to more productive companies. Several studies have pointed towards the danger of “zombification” of the economy, referring to the lacking productivity growth because of resources stuck at companies that are artificially kept alive, so-called zombie firms Andrews et al. (2017). Given the data available to us, we define zombie firms as firms with negative value added in 2019. Figure 6 then shows the ratio of zombie firms among the supported firms compared to the share of zombie firms in all of Wallonia. Reassuringly, the share of zombies among supported companies (9.5%) is smaller than in the whole economy (14.5%), suggesting that support was allocated more than proportionally to healthy firms. These results are again in line with results for Flanders, where the share of zombie firms among supported companies was 8.8% (Zegel et al., 2021).

4. The Impact of Covid Support Measures on Firm Performance

In this section, we analyze the impact of the Covid support measures on firm-level performance. We start with a standard difference-in-differences model of two periods and two groups. We then estimate a yearly event study. Finally, we estimate the impact of treatment on the probability of firm exit.

4.1 Identification strategy

First, we estimate the causal impact of of firm-level support measures on firm performance. To do so, we exploit data on the population of enterprises that applied for support in 2020 or 2021, and their performance before and after support over the period 2015-2021 for an unbalanced panel of firms. We measure the performance of firms, using labor productivity following two definitions: value added over FTEs, and sales over FTEs. The impact of the support is then estimated using a difference-in-differences methodology. In particular, we compare enterprise outcomes before and after treatment (first difference) with enterprises that applied for but did not obtain support (second difference).

The goal is to find a control group of firms that did not obtain support, but would have evolved similarly, or in parallel, with supported firms. We use as a control group the firms that applied for support but did not obtain it. These firms might have either failed to submit a required document or just failed to satisfy

Figure 4: SPW EER support, by NACE 2- and 4-digit sectors (top 20).

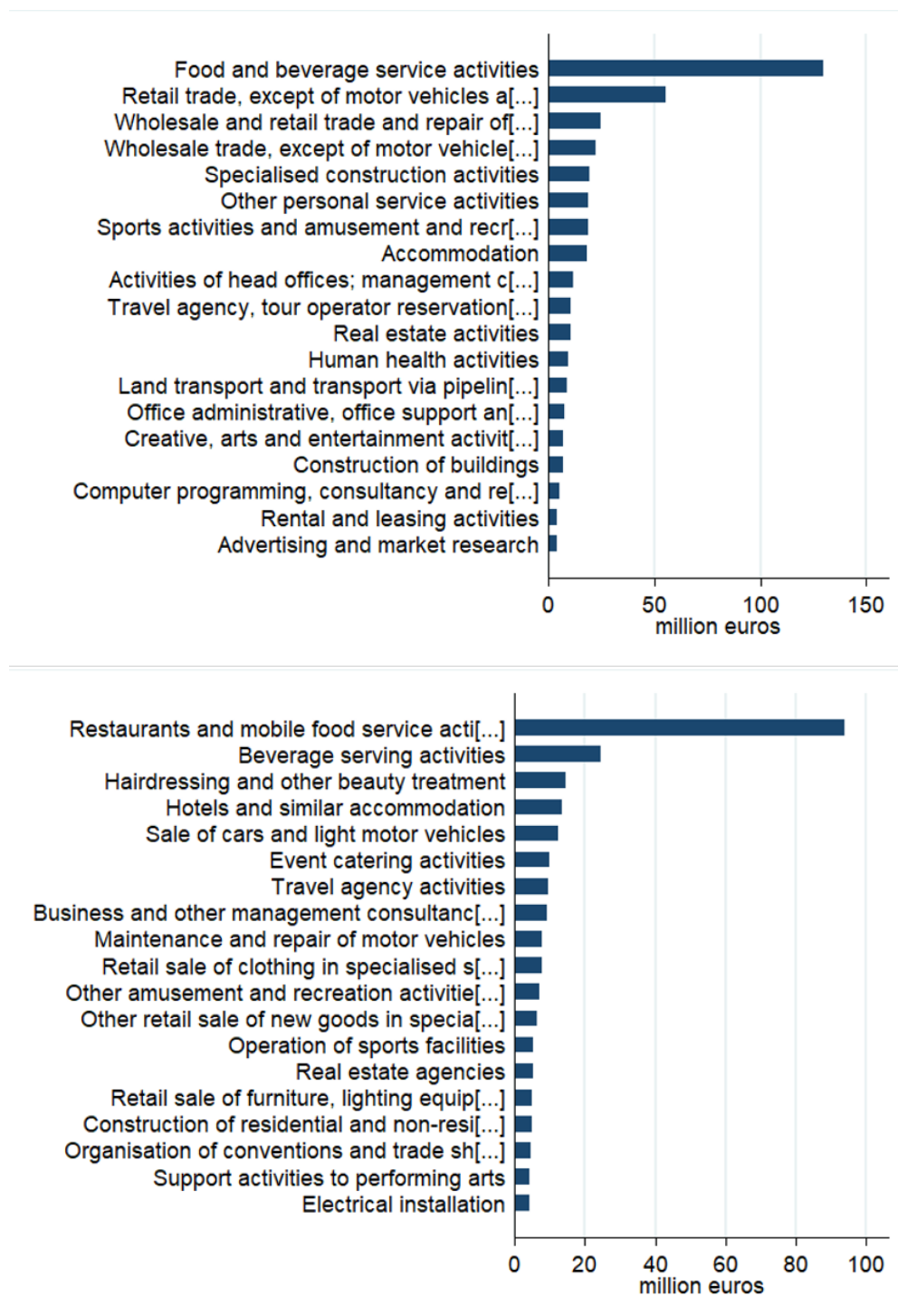


Figure 5: Support amount over value added.

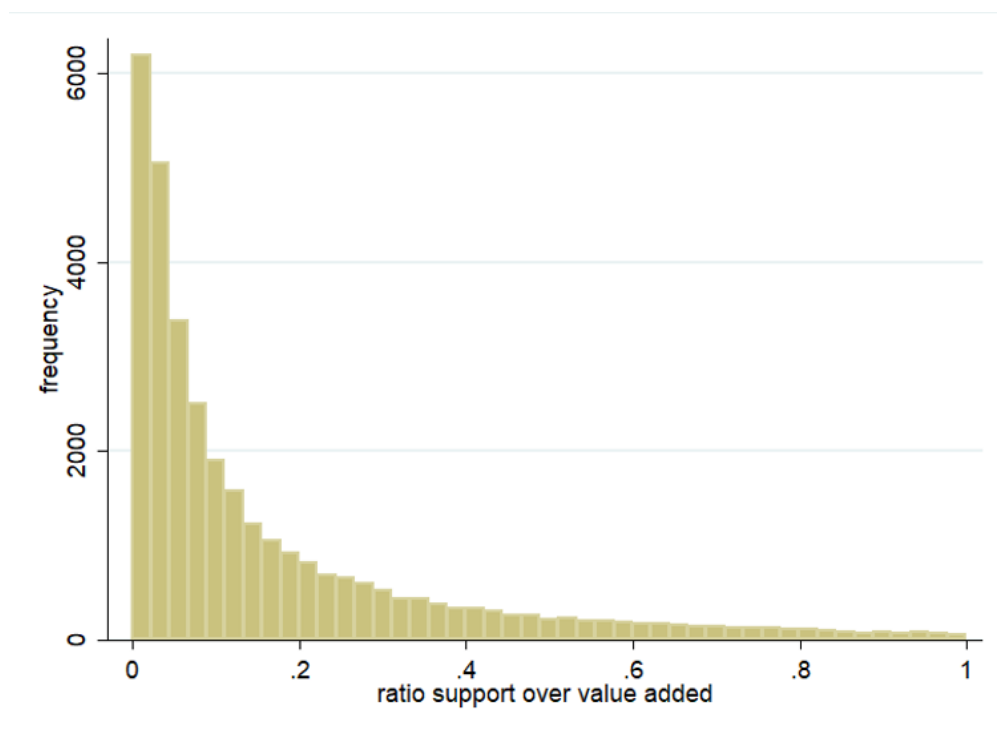
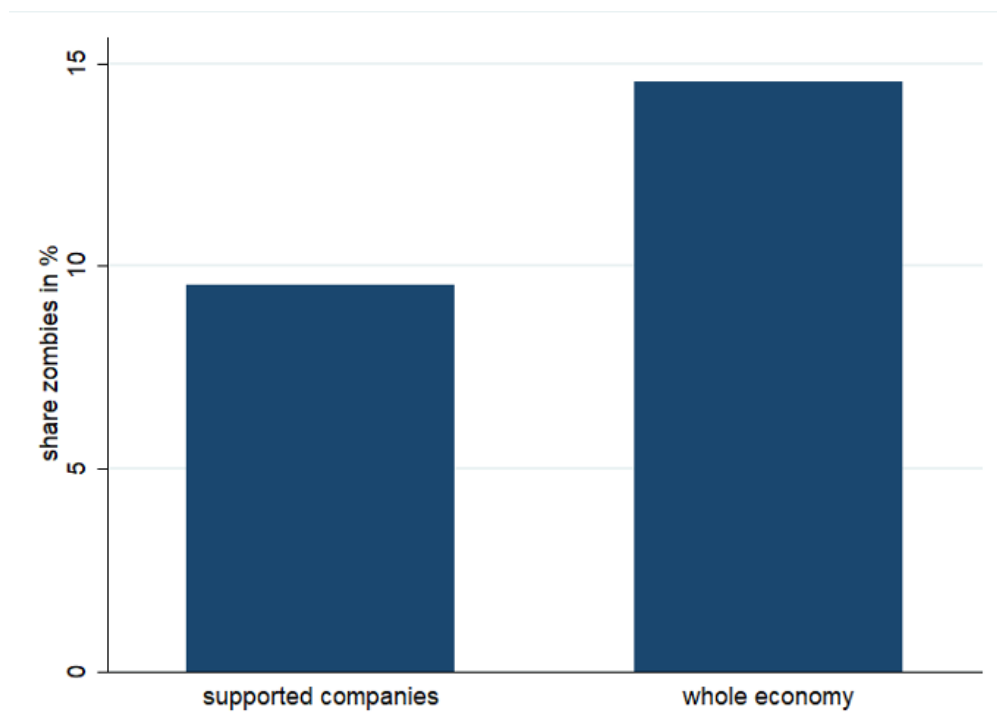


Figure 6: Share of zombie firms: supported firms vs the economy.



the eligibility requirements such as just falling short of the necessary sales drop. In fact, potential non-random selection into treatment, e.g. enterprises that were rejected because they could remain open, or faced smaller drops in turnover than those in the treated group, would attenuate the difference in the averages across treated/untreated groups, thus if anything, biasing *downwards* our estimates of the true impact of the support measures on enterprise outcomes.

To plausibly estimate causal effects in this setting, three key assumptions need to hold: (i) the parallel trends assumption, (ii) no anticipation effects, and (iii) the stable unit treatment value (SUTVA) assumption. The first implies that, absent any treatment, on average the outcome of interest, productivity growth, of the groups of treated and non-treated enterprises would have evolved in parallel, conditional on both observable and unobservable characteristics. As a balancing test, [Figure 7](#) shows the kernel density plot of the growth rates in labor productivity for the treated and the untreated in the year before receiving the support. This assumption does allow for the *levels* of untreated potential outcomes to differ across groups. We test for pre-trends to validate this assumption empirically. Second, the assumption on no anticipation effects implies that, for both treated and untreated, firm outcomes are not affected in periods before treatment. Since the pandemic did not hit Wallonia until March 2020, rescue policies were issued in a matter of days, and the structure of these measures changed over time without announcements, the non-anticipation assumption is plausibly justified. Finally, the SUTVA assumption states that one, and only one, potential outcome is observed for each unit in the population. In practice, this implies that potential outcomes for each unit are unrelated to the treatment status of other units. It is possible that there are partial and general equilibrium effects (e.g. equilibrium price responses and input-output linkages) that might induce such cross-unit spillovers. Unfortunately we do not have sufficient data to quantify such effects in our setup. Finally, SUTVA also implies that it does not matter if there is a difference in the size (number of observations) of the treated or untreated group.

A final concern is the potential impact of the large temporary unemployment scheme. Since both supported firms and the control group had equal access to the use of temporary unemployment, the assumption is that both groups are affected by the scheme and there is no distortion of the results for subsidies.⁷

4.2 Impact on firm productivity

We first estimate the overall effect of the Covid support mechanisms in 2020-2021 on firms' productivity. Under the stated identifying assumptions, and for two periods and two groups, the average treatment effect on the treated (ATT) can be consistently estimated using a Two-Way Fixed Effects (TWFE) regression of the following form ([Roth et al., 2022](#)):

$$Y_{it} = \beta D_{it} + \alpha_i + \gamma_{jt} + \varepsilon_{it} \quad (1)$$

where we measure labor productivity Y_{it} for firm i at time t either as log sales per FTE or log value added per FTE. There are two periods: $t = 0$ for the years *pre* treatment and $t = 1$ for the years *post* treatment. D_{it} is a 0/1 dummy if firms have received support in t , and zero otherwise. Firm fixed effects α_i control for firm-level unobservables that are constant *ex ante* and *ex post* treatment, and allow to evaluate the within-firm effect of treatment on productivity outcomes. We also include industry-year fixed effects γ_{jt} , where j indexes the industry of enterprise i at the 2-digit NACE level. If one sector is harder hit than another, this will thus show up in the industry-year fixed effects. These fixed effects control for common aggregate

⁷This assumption is also empirically tested for Flanders in [Konings et al. \(2023b\)](#).

Figure 7: Distribution of growth rates in value added per FTE for treated versus never treated (2019).

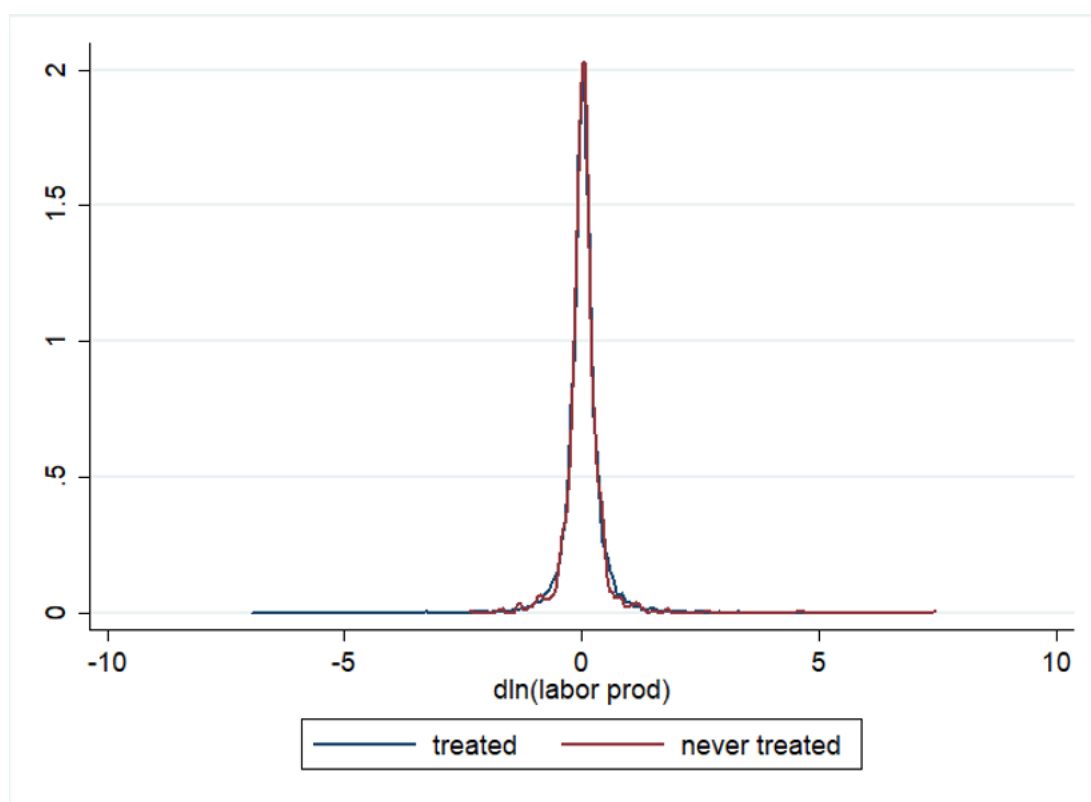


Table 1: The impact of support measures on productivity.

	ln(value added/FTE)	ln(sales/FTE)
Treatment D_{it}	0.090*** (0.015)	0.079*** (0.037)
Industry-year fixed effects	Yes	Yes
Firm fixed effects	Yes	Yes
Adj. R^2	0.66	0.82
N	145,685	12,663

Notes: Heteroscedastic robust standard errors are clustered at the firm level.
Significance: * < 10%, ** < 5%, *** < 1%.

trends, such as the massive Covid shock in 2020, potential recovery in 2021, as well as heterogeneity in industry growth rates, due to e.g. variation in the stringency of imposed sanitary policies and recovery rates afterwards. Finally, ε_{it} indicates remaining unobserved heterogeneity, assumed to be uncorrelated with the regressors.

Table 1 shows the results of estimating eq(1). Relative to untreated firms within the same sector, enterprises that received Covid support experienced a positive and significant impact on productivity: The effect size for value added is 0.090, implying that receiving support for a firm is estimated to lead to an increase of labor productivity of 9%. For labor productivity based on sales, the effect is slightly smaller at 8%. Compared to firms that did not receive support, the effect of the support programs on firm performance was thus on average positive and quite substantial. This suggests that enterprises that received support have been able to increase their labor productivity more *ex post* than the control group of enterprises that did not receive support within the same sector. It is possible that all firms experienced a strong negative shock to labor productivity. To the extent that enterprises receiving support were also hit more by a negative shock than untreated firms, this would suggest that the overall policy helped treated enterprises to catch up again with others that were *ex ante* similar in terms of productivity growth.⁸

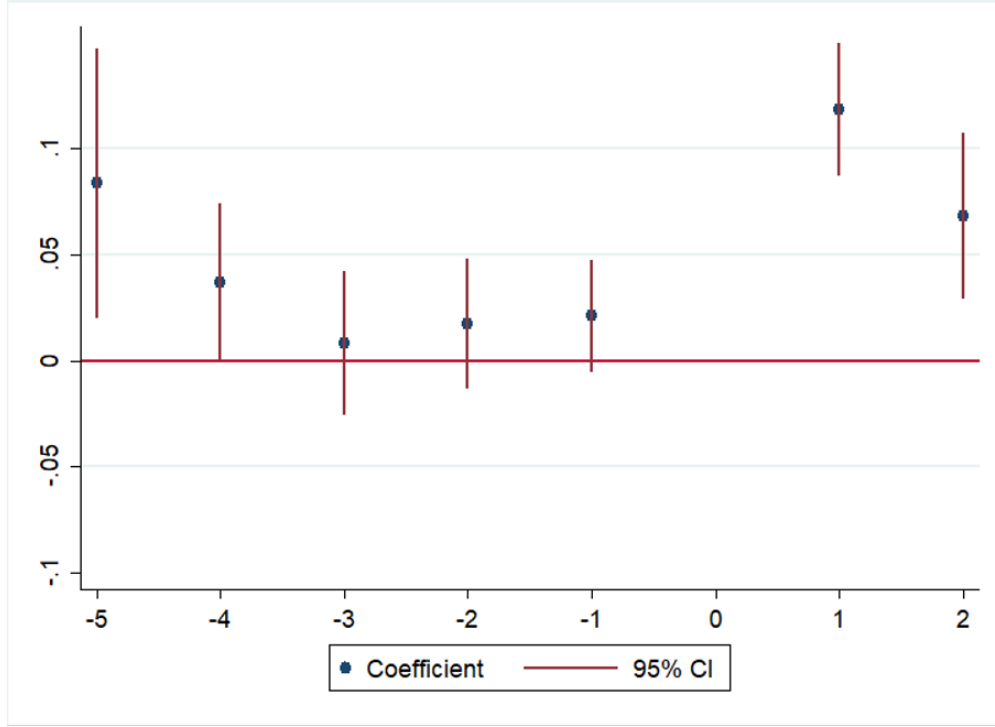
Next, we look at the impact of the policy in more detail, using an event study approach. This event study allows to account for potential heterogeneous treatment effects over time (see e.g. Callaway & Sant’Anna (2021)). In particular, some enterprises might receive support for the first time in 2020, others only in 2021, and still others receive no support at all in either 2020 or 2021. Therefore, the heterogeneous effects of the support in the periods after receiving support are separately estimated. In particular, we estimate the following TWFE model:

$$Y_{it} = \sum_{k=-5}^{-1} \beta_k D_{ik} + \sum_{k=1}^2 \beta_k D_{ik} + \alpha_i + \gamma_{jt} + \varepsilon_{it} \quad (2)$$

The support dummies are split into a pre-support period ($k = -5, \dots, -1$) and a period where firms receive support or have received support ($k = 1, 2$). Coefficients are normalized to zero in $k = 0$, the year before an

⁸For comparison, the effect size in Flanders of the support programs has been estimated at 4% and 4.7% -depending on the productivity measure used- for the support in 2020 Konings et al. (2023b), and at 9.2% for the support in 2021 Konings et al. (2023a)

Figure 8: Impact of support measures on productivity, event study.



Notes: The x-axis refers to the years before and after receiving support, where for instance period 1 refers to the year a firm receives support for the first time. The blue dots are the estimated effects and the red lines the 95% confidence intervals.

enterprise received support. Like before, we control for firm fixed effects and industry-year fixed effects.

Figure 8 plots the coefficients from estimating eq(2) for all periods k , together with 95% confidence intervals. Estimated coefficients are very similar to the pre-post comparison above. Additionally, the support effects on firm performance tend to be persistent in the next year after treatment. Finally, point estimates for the pre-treatment years are not statistically significant different from zero for the four years before treatment, supporting the parallel trends assumption in this observed time frame. The coefficient in period $k = -5$ is estimated with quite some uncertainty, as there are few newly supported firms in 2021 that did not receive support in 2020.

4.3 Firm survival effects

Next, we estimate the impact of the support on firm survival. One of the rationales for the support program was to avoid firm exit as a direct consequence of the sanitary restrictions imposed by the government. During most of 2020 and for parts of 2021, there was a moratorium on bankruptcies in Belgium, i.e. bankruptcy procedures were temporarily suspended by the ruling courts. In fact, firm exit in 2020 and 2021 was at the lowest rate since the financial crisis in 2008. Firms could still be liquidated voluntarily though, e.g. when experiencing liquidity or solvency issues. Hence, firm exit was still positive, albeit much lower than in normal times. Liquidation or bankruptcy can take several years before administrative closure. We therefore define exit as firms that stop reporting in the NSSO dataset, up until the end of the panel. The intuition is

that firms stop fulfilling their social security requirements, as a proxy for firm exit.

Table 2 shows the results of a logit regression of firm exit on the treatment status of firms, controlling for standard variables that are known to predict exit: bigger, older, more productive enterprises are generally known to have lower exit rates. We estimate the model using two control groups: in column two, we use the same control group as before (firms that applied to, but did not receive support), while in column three we include all firms in the data to enlarge the set of potentially exiting firms. Conditional on these controls, the effect of support on the probability that a firm exits was negative and significant, so the Covid subsidies have effectively lowered the chances of exit and helped firms stay in the market. It is useful to express the estimated coefficient into average marginal effects.⁹ Receiving support then induces an average decrease in the exit probability of 0.7 percentage points. Compared to an unconditional exit probability of 3.7%, this implies a 19% decrease on average in the chances of exiting the market because of the Covid subsidy in Wallonia.

Table 2: Probability of exit.

	Pr(exit)	Pr(exit)
Treatment D_{it}	-0.225** (0.088)	-0.229*** (0.025)
ln(value added/FTE)	-0.457*** (0.023)	-0.392*** (0.031)
ln(FTE)	-1.105*** (0.048)	-0.940*** (0.041)
ln(age)	0.055*** (0.021)	0.076*** (0.013)
Unconditional exit probability	3.7%.	
Quarter fixed effects	Yes	Yes
Sector fixed effects	Yes	Yes
Control group	Failed applications	All firms
N	109,024	817,752

Notes: Heteroscedastic robust standard errors are clustered at the firm level.
Significance: * < 10%, ** < 5%, *** < 1%.

⁹The marginal effect of support for a firm is the derivative of the probability of exit with respect to receiving support based on the firm's covariates. When y is the exit variable (1 if a firm exits, 0 if not), X is the vector of covariates and β that of estimated logit coefficients, the marginal effect of X_1 on exit can be described as $\frac{d\Pr(y=1)}{dX_1} = \frac{\beta_1 \exp\{-X'\beta\}}{(1+\exp\{-X'\beta\})^2}$. The average marginal effect follows as the average over all firms.

5. Conclusion

In this paper, we assess the causal effects of Covid-19 firm-level support in Wallonia on productivity and firm survival. To this end, we have combined administrative data on the universe of firms' support in Wallonia with firm-level operational information on employment, value added, and sales. Firms that received support increased productivity by 8-9%, compared to firms that applied for, but did not obtain support. This effect is persistent in the next year after treatment. The propensity to exit the market was 19% lower when a firm received support. Support reached mostly small and young firms in a few specific sectors that are highly dependent on physical presence. We do not find signs of helping zombie firms disproportionately. The support programs in Wallonia generally resemble quite closely the similar support programs in Flanders, and reinforce the idea that these policies had a strong impact on firm performance and survival, allowing them to weather this massive crisis.

References

- Andrews, D., McGowan, M., & Millot, V. (2017). *Confronting the Zombies: Policies for Productivity Revival*. Technical Report 21, OECD. 7
- Bighelli, T., Lalinsky, T., & compnet Data Providers (2021). *Covid-19 Government Support and Productivity: Micro-based Cross-country Evidence*. Technical Report 14, Compnet. 3
- Callaway, B. & Sant’Anna, P. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, 225(2), 200–230. 12
- Dhyne, E. & Duprez, C. (2021). Belgian firms and the covid-19 crisis. *National Bank of Belgium Economic Review*, (2). 3
- Freeman, D., Bettendorf, L., & Lammers, S. (2021). *Analysis of Covid Support Policy 2020 with Firm Level Data*. Technical report, CPB. 3
- Harasztosi, P., Maurin, L., Pál, R., Revoltella, D., & van der Wielen, W. (2022). Firm-level policy support during the crisis: so far so good? *International Economics*, 171, 30–48. 3
- Hermreg (2024). Regionale economische vooruitzichten 2024–2029. 2
- Hurley, J., Karmakar, S., Markoska, E., Walczak, E., & Walker, D. (2021). *Impacts of the Covid-19 Crisis: Evidence from 2 million UK SMEs*. Technical report, Bank of England. 3
- Konings, J., Magerman, G., & Van Esbroeck, D. (2023a). The impact of firm-level covid rescue policies on productivity growth and reallocation. *European Economic Review*, 157, 104508. (b). 3, 12
- Konings, J., Magerman, G., & Van Esbroeck, D. (2023b). *Impactevaluatie VLAIO Coronamaatregelen 2021*. Technical report, VLAIO. (a). 3, 4, 7, 10, 12
- OECD (2021). Covid-19 government financing support programmes for businesses 2021 update. 2
- Rekenhof (2024). Support measures for businesses and individuals in the context of the covid-19 crisis. <https://recherche.wallonie.be/actualites/actualites/indemnites-covid-19.html>. 2
- Roth, J., Bilinski, A., & Poe, J. (2022). What’s trending in difference-in-differences? a synthesis of the recent econometrics literature. *Working Paper*. 10
- Tielens, J. & Piette, C. (2022). How belgian firms fared in the covid-19 pandemic? *National Bank of Belgium Economic Review*, (7). 3
- Tielens, J., Piette, C., & De Jonghe, O. (2020). Belgian corporate sector liquidity and solvency in the covid-19 crisis: a post-first-wave assessment. *National Bank of Belgium Economic Review*. 3
- World Bank (2022). Gdp growth (annual). 2
- Zegel, S., van der Graaf, A., Karsten, E., Konings, J., Magerman, G., & Van Esbroeck, D. (2021). *Evaluatie Coronamaatregelen VLAIO: Impact van de Steunmaatregelen*. Technical report, VLAIO. 2, 3, 4, 7

Appendix

A. Description of NACE sectors

[Table 3](#) shows a description of the 2-digit NACE codes (Rev. 2, 2008) and a verbal description of these sector activities.

B. Firm-level support measures in Wallonia

[Table 4](#) below lists the different premia that were paid out in 2020 and 2021 by the Regional Government of Wallonia.

Table 3: NACE industry descriptions.

Industry Code NACE Rev. 2	Description	Industry Code NACE Rev. 2	Description
1	Crop and animal production, hunting and related service activities	45	Wholesale and retail trade and repair of motor vehicles and motorcycles
2	Forestry and logging	46	Wholesale trade, except of motor vehicles and motorcycles
3	Fishing and aquaculture	47	Retail trade, except of motor vehicles and motorcycles
5-9	Mining and quarrying	49	Land transport and transport via pipelines
10	Manufacture of food products	50	Water transport
11-12	Manufacture of beverages and tobacco products	51	Air transport
13	Manufacture of textiles	52	Warehousing and support activities for transportation
14	Manufacture of wearing apparel	53	Postal and courier activities
15	Manufacture of leather and related products	55	Accommodation
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	56	Food and beverage service activities
17	Manufacture of paper and paper products	58	Publishing activities
18	Printing and reproduction of recorded media	59	Motion picture, video and television programme production, sound recording and music publishing activities
19-21	Manufacture of coke, refined petroleum products, chemicals and chemical products, basic pharmaceutical products and pharmaceutical preparations	60	Programming and broadcasting activities
22	Manufacture of rubber and plastic products	61	Telecommunications
23	Manufacture of other non-metallic mineral products	62	Computer programming, consultancy and related activities
24	Manufacture of basic metals	63	Information service activities
25	Manufacture of fabricated metal products, except machinery and equipment	64-66	Financial and insurance activities
26	Manufacture of computer, electronic and optical products	68	Real estate activities
27	Manufacture of electrical equipment	69	Legal and accounting activities
28	Manufacture of machinery and equipment n.e.c.	70	Activities of head offices; management consultancy activities
29	Manufacture of motor and vehicles, trailers and semi-trailers	71	Architectural and engineering activities; technical testing and analysis
30	Manufacture of other transport equipment	72	Scientific research and development
31	Manufacture of furniture	73	Advertising and market research
32	Other manufacturing	74	Other professional, scientific and technical activities
33	Repair and installation of machinery and equipment	75	Veterinary activities
35	Electricity, gas, steam and air conditioning supply	77	Rental and leasing activities
36-39	Water supply; sewerage, waste management and remediation activities	79	Travel agency, tour operator reservation service and related activities
41	Construction of buildings	80	Security and investigation activities
42	Civil engineering	81	Services to buildings and landscape activities
43	Specialised construction activities	82	Office administrative, office support and other business support activities

Table 4: Inventory of the different support premia (2020-2021).

Premium	
1	Support: €5000 lump sum. First application: March 27, 2020. Requirements: (i) completely closed due to sanitary measures, and (ii) operating in a (part of a) sector listed by decree of the Walloon government.
2	Support: €2500 lump sum. First application: June 1, 2020. Requirements: (i) self-employed conducting their activity in the Walloon Region who can prove they substantially interrupted their activity; OR (ii) businesses that can prove they substantially interrupted their activity in the Walloon Region, OR (iii) businesses whose manager is not a self-employed worker, to those that can prove that the majority of their employees were on temporary unemployment due to force majeure. This allowance cannot be combined with the allowance in premium 1, or with grants awarded by another region in the context of the crisis. Support: €3500 lump sum. First application: September 9, 2020.
3	Requirements: businesses that have received premium 1, provided they are still affected by the sanitary measures in July 2020 and operate in one of the sectors listed by decree of the Walloon government.
4	Support: 30% of sales last year, with min €3000, max €5000 (0 FTE), €10000 (1-10 FTE), €20000 (11-50 FTE) and €40000 (50+ FTE). First application: November 11, 2020.
5	Requirements: Sales should be less than 40% of year before for third or fourth trimester of 2020. Support: €3000 (0 FTE), €5000 (1-5 FTE), €7000 (6-10 FTE), €9000 (10+ FTE). First application: November 16, 2020.
	Requirements: Hotel and catering industry.
6	Support: €2250 (0 FTE), €3750 (1-5 FTE), €5250 (6-10 FTE), €6750 (10+ FTE). First application: December 16, 2020.
7	Support: 30% of sales last year, with min €3000, max €5000 (0 FTE), €10000 (1-10 FTE), €20000 (11-50 FTE) and €40000 (50+ FTE). First application: February 24, 2021.
	Requirements: Sales should be less than 40% of year before for third or fourth trimester of 2020.
8	Support: €3000 (0 FTE), €5000 (1-5 FTE), €7000 (6-10 FTE), €9000 (10+ FTE). First application: February 24, 2021.
	Requirements: Non-profit associations.
9	Support: €2250 (0 FTE), €3750 (1-5 FTE), €5250 (6-10 FTE), €6750 (10+ FTE). First application: February 24, 2021.
	Requirements: Non-profit associations.
10a	Support: €4000 (0 FTE), €6500 (1-5 FTE), €9500 (6-10 FTE) and €12000 (10+ FTE). First application: March 10, 2021.
10b	Support: €3250 (0 FTE), €5500 (1-5 FTE), €7500 (6-10 FTE) and €9750 (10+ FTE). First application: March 10, 2021.
11	Support: between €6000 - €321000. First application: April 22, 2021.
12	Support: between €6000 - €130000. First application: June 16, 2021.
13	Support: between €4500 - €75000. First application: May 27, 2021.
14	Support: €4000 (0 FTE), €6500 (1-5 FTE), €9500 (6-10 FTE), €12000 (10+ FTE). First application: May 27, 2021.
15	Support: between €825 - €493911. First application: June 8, 2021.
16a	Support: €4000 (0 FTE), €6500 (1-5 FTE), €9500 (6-10 FTE), €12000 (10+ FTE). First application: May 12, 2021.
16b	Support: €3250 (0 FTE), €5500 (1-5 FTE), €7500 (6-10 FTE), €9750 (10+ FTE). First application: May 12, 2021.
17a	Support: €4000 (0 FTE), €6500 (1-5 FTE), €9500 (6-10 FTE), €12000 (10+ FTE). First application: October 1, 2021.
17b	Support: €3250 (0 FTE), €5500 (1-5 FTE), €7500 (6-10 FTE), €9750 (10+ FTE). First application: October 1, 2021.
18	Support: €4000 (0 FTE), €6500 (1-5 FTE), €9500 (6-10 FTE), €12000 (10+ FTE). First application: October 2, 2021.
19a	Support: €4000 (0 FTE), €6500 (1-5 FTE), €9500 (6-10 FTE), €12000 (10+ FTE). First application: September 30, 2021.
19b	Support: amounts of €5500, €7500, €9750. First application: October 4, 2021.
20	Support: between €34 - €150000. First application: August 25, 2021.
21	Support: between €3000 - €65000. First application: August 23, 2021.
22	Support: between €4000 - €18000. First application: July 28, 2021.
23	Support: amounts of €8000, €12000, €18000. First application: November 24, 2021.
Cheques	Support: between €1500 - €10000 First application: September 30, 2021