

The highly heterogeneous impact of the Covid-19 crisis on French firms



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Keywords: Covid-19, business dynamics, micro-simulation, non-financial corporations, cash holding, debt.

The outbreak of the COVID-19 pandemic in 2020 and the restrictive sanitary measures taken to contain it had a major impact on the activity of non-financial corporations. In this policy brief, we present the main findings of two recent studies (Bureau et al. 2021a & 2021b). These studies estimate the activity shock experienced by French firms in 2020 by leveraging granular real-time observed data, and evaluate the success of policy responses in mitigating the liquidity shock induced by plummeting revenues. We show that the public measures implemented in 2020 have substantially reduced negative cash flow shocks while leaving acute liquidity stress on some firms. In addition, we shed light on the highly heterogeneous impact of both activity and liquidity shocks between but also within sectors. These findings may be useful in public policy approaches, as the sector cannot be the sole criterion used to define policies to exit the crisis. As the economy fully re-opens and fiscal support is revised downwards, the heterogeneity and diversity of firms' situations calls for a fine-tuning of policy tapering.

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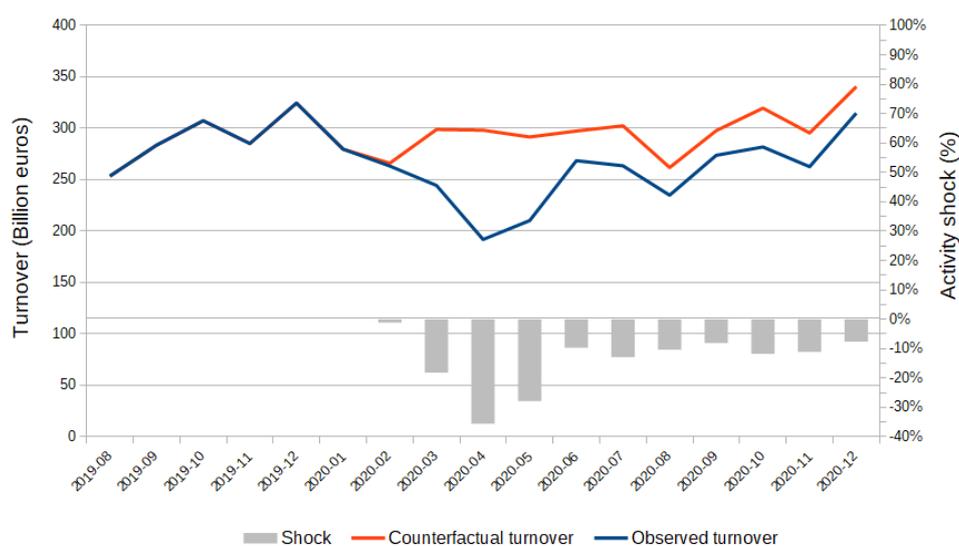
A brutal shock to economic activity that varies significantly across sectors

Business sectors have been affected in different ways by the sanitary restrictions – both in the cross-section and over time – depending on the intensity and duration of lockdown policies and of legally mandated business closures. However, even *within* a given business sector, subject to the same level of activity restrictions, firms have not been uniformly impacted by the Covid-19 shock. Quantifying the exact extent of this heterogeneity *between* and *within* sectors is critical to improve our understanding of the Covid-19 crisis and to shape more efficient policy responses.

Using the real turnover data of individual firms (measured using monthly VAT returns) for a sample of more than 645,000 French companies, we build individual monthly series of corporate sales throughout 2020. We then quantify the *activity shock* suffered by each firm by comparing this observed level of turnover in 2020 with the level that would have been expected in the absence of a crisis, referred to as the *counterfactual*¹.

On average, we see a substantial drop in turnover – of around 27% – during the first lockdown in France between March and May 2020, followed by a partial recovery from June to September, a small shock induced by the second lockdown in Fall and a relative stabilization at the end of year.

Figure 1: Evolution of the aggregate shock to activity over 2020



Source: Bureau et al. (2021a)

In addition to differing in terms of intensity, the first and second lockdowns also differ with respect to the number of sectors affected. The first lockdown (March-April) is a widespread shock that hit all sectors, although to differing degrees. The most affected sector is by far *Accommodation and Food Services*, followed by the *Manufacture of Transport Equipment*, while the least affected one was *Information and Communication Technology (ICT)*. For the second lockdown (October-November), during which restrictions were more localized,

¹ See Bureau *et al.* (2021a) for a presentation of the method used to estimate such a counterfactual at the individual level.

the findings are very different. Apart from *Accommodation and Food Services*, and *Personal Services*, most sectors experience only a slight decline in activity. This divergence mostly relates to the more limited restrictions of this lockdown, but corporate flexibility also plays a part, as some businesses have managed to successfully adapt to new operating conditions.

Sector-level shocks hide significant differences in firm situations

Moving beyond sectoral breakdown, we assess how individual trajectories differed in 2020, compared with what would have prevailed in a “normal” year. Note that, even in normal times, in absence of major shocks, trajectories vary widely (across sectors and) across firms within sectors. However, the 2020 crisis strongly amplifies these divergences: the dispersion *within* each sector is wider in 2020 than in a “normal” year.

To capture the nature and extent of the sectoral heterogeneity at a very granular level, the overall variance in individual shocks is broken down into an *inter-sectoral* component (reflecting the dispersion between sectors at a granular level, which maps the level at which legal restrictions applied) and an *intra-sectoral*, residual component. At the peak of the crisis (April 2020), the sectoral dimension “only” explains 23% of the variance in shocks (up to 48% when weighted by firm employment). It plays a much bigger role though than during a “normal” year: indeed the sectoral dimension explains less than 2.5% of the overall variance in any given month in 2019, and even less when we weight by firm employment.

This increased *intra-sectoral* disparity between activity shocks in 2020 may reflect a higher prevalence of large shocks, or uneven exposures or adaptation capabilities to the crisis within sectors. It may also stem from the fact that, in certain sectors, not all firms are subject to the same constraints in 2020².

The ambiguous role of business reorganization

To better understand the factors underlying the diversity of individual situations, we use an auxiliary survey about the consequences of the sanitary crisis on business organization and activity (Duc and Souquet, 2020). We show that the business sector is the dominant factor explaining firms’ activity shock trajectory in 2020. However, conditional on the business sector, other dimensions are associated with significant changes in the probability of having a “distressed” profile of activity³. In particular, we show that exporters have a higher probability to belong to the group of the most distressed firms, probably because of the negative spillovers induced by the trade channel. Reorganization of activity and pooling of resources with other companies is linked to a higher probability of belonging to both the least affected group of firms and the most affected group. This result may highlight the fact that firms with a quick reorganization process are better able to maintain their turnover. On the other hand, pooling resources or reorganizing the production process may be a *consequence* of economic difficulties for some other firms.

² In the retail sector, for example, the authorities’ decision on which shops to close was based on a more refined sectoral breakdown than the one used in this variance analysis.

³ Beforehand, we perform a dynamic analysis of these shocks at firm level and we classify the various shock trajectories using time series clustering. This leads us to identify 4 representative profiles of shock trajectories during the year 2020: (i) the “unaffected” firms (36% of firms and 42% of aggregate employment), (ii) the “resilient” firms (38% of firms and 44% of the aggregate employment), the “lockdown sensitive” firms (20% of firms and 12% of aggregate employment) and the “distressed” firms (6% of firms and 2% of aggregate employment).

From activity shock to liquidity shock ...

Using the above activity shocks, we now examine how these *real shocks* translate into *cash flow shocks* and whether French firms can cope with them. Doing so, we turn to a key policy question: how efficient was fiscal policy to help non-financial corporations stay afloat?

A micro-simulation model to assess the financial consequences of the Covid crisis

We develop a micro-simulation model to assess, on an individual basis, the impact of the Covid crisis on the financial situation of more than 645,000 companies in France in 2020 (Bureau *et al.*, 2021b) with a particular focus on the offsetting impact of government support measures. To this end, we combine a wide range of observed individual company data including monthly 2020 VAT returns, use of short-time work in 2020, deferred social security contributions in 2020, company financial statements in 2018 and pre-crisis Banque de France credit rating.

Our analysis focuses on liquidity and our main indicator is the “cash flow shock” (*before* or *after* public support measures). It corresponds to cash flow from operations after taking into account investments, dividends and interest payments but before any additional increase in debt or exhaustion of cash buffers. At constant level equity and excluding asset disposals, the pre-financing cash flow therefore corresponds to a *change in net financial debt*⁴.

At the aggregated level, the impact of the crisis on corporate net debt in France is relatively limited: 0.8% or EUR 17 billion at the end of 2020, compared with an increase of EUR 51.5 billion in 2019 (Banque de France, 2021). This results from an extremely sharp increase in the gross debt of non-financial corporations (NFCs) - which rises by 12.2% (EUR 217 billion) - and to an equally strong and offsetting increase in liquidity holdings (28.6% or EUR 200 billion). To the extent that different firms make up the debt and liquidity amount, this macro picture can be very misleading. Our objective is to go beyond the macroeconomic picture and shed light on the dispersion of this financial impact among companies.

Cash flow shocks experienced by non-financial companies were very heterogeneous

In our simulations, companies experiencing a negative cash flow shock see their total net debt increase by around EUR 200 billion whereas those recording a positive shock see their total net debt decrease by about the same amount.

The heterogeneity of cash flow shocks is marked between sectors (*before* and *after* public support measures) as well as *within* each sector. For example, even within *Accommodation and Food Services* – the hardest-hit sector during the crisis – nearly 20% of NFCs see an increase in liquidity holdings in 2020 after support measures. The substantial share of companies recording a positive cash flow shock in each sector can be primarily attributed to the organizational ability of some companies to adapt, for example by using remote selling or developing their online presence, thus mitigating the initial impact of Covid on their activity. These findings may be useful in public policy approaches, as the sector cannot be the sole criterion used to define policies to exit the crisis.

⁴ It should not be confused with the actual change in liquidity holdings: a negative cash flow shock will not result in a decrease in liquidity holdings if it is accompanied by an at least equivalent increase in gross financial debt.

Figure 2: Share of companies with a positive or negative cash flow shock in 2020. Sectoral breakdown.

Note: % of companies, weighted by employment, with a strong (> 30 days of sales) or moderate (< 30 days of sales) deficit (or increase) in cash flow in 2020. Source: Bureau et al. (2021b).

The occurrence and intensity of negative cash flow shocks at the end of 2020 is also correlated with the company's pre-crisis credit risk (as measured by the Banque de France internal credit rating). Lower-rated companies not only experience more negative cash flow shocks but also "larger" ones (more than one month of turnover). Companies' size, however, appears to be a secondary determinant of negative cash flow shocks.

To sum up, our analysis sheds light on the highly heterogeneous impact of both activity and liquidity shocks between but also *within* sectors. As the economy fully re-opens and fiscal support is revised downwards, the heterogeneity and diversity of firms' situations calls for a fine-tuning of policy tapering.

Support measures reduce negative cash flow shocks ... but without a return to normal

In 2018, the distribution of companies experiencing negative or positive liquidity shocks was balanced (50% vs 50%), which reflects the "normal" life of companies. Net financial debt increases or decreases as a function of the company's business activity or asset purchases and disposals without necessarily determining its financial situation. The crisis alters this distribution. We estimate that some 60% of the shocks would be negative, and 40% positive, without government interventions and without adjustments to investment spending and dividends. These adjustments in the behavior of companies are however insufficient on their own to absorb the shock.

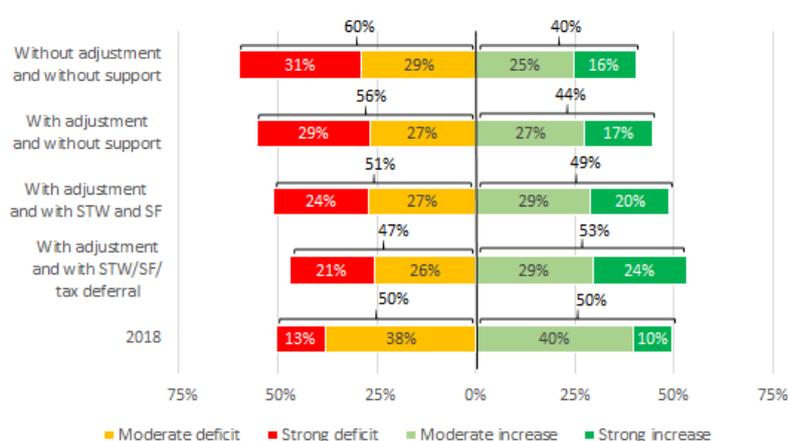
Next, we take into account the most widely used policies that have been implemented in France to support corporate liquidity: cash grants to companies under the short-term work scheme, cash advances related to corporate and social taxes deferral, and subsidies to hardest hit small firms ("Solidarity Fund"). We estimate that once the support measures are taken into account, the relative share of companies recording a positive cash flow shock is no longer significantly different from a normal year (53% in 2020 vs 50% in 2018). However, the dispersion of these shocks is greater. While, in 2018, 13% of companies experience a "strong" increase in net debt

(more than one month of turnover), this figure reaches 21% in 2020. Conversely, while only 10% of companies see a “strong” reduction in their net debt in 2018, this figure reaches almost 25% in 2020.

Skewing of the distribution tails is even more pronounced for the most fragile companies, assessed on the basis of their credit rating at the start of the crisis. The share of these companies experiencing an increase in net debt reaches 28% in 2020, compared with 15% in 2018, suggesting that the situation of vulnerable companies became even more precarious.

Overall, our analysis contributes to a better understanding of the magnitude and the scope of real activity shocks experienced by firms, the distribution of the resulting cash-flow shocks across firms and finally the extent to which public support measures help firms to cope with these liquidity shocks.

Figure 3: Share of companies with a positive or negative cash flow shock in 2020 under various scenarios and in 2018.



Note: % of companies, weighted by employment, with a strong (> 30 days of sales) or moderate (< 30 days of sales) deficit (or increase) in cash flow in 2020. Source: Bureau et al. (2021b).

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