



Belgian corporate sector liquidity and solvency in the coronavirus crisis: a post-first-wave assessment¹



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ABSTRACT

The COVID-19 crisis has taken its toll on the Belgian corporate sector. A sudden drop in revenues and imperfect downscaling of costs has put considerable pressure on firms' cash buffers. In this article, we document the pockets of corporate liquidity and solvency risk and examine the role of various policy measures taken to keep businesses afloat. We show that the support measures taken have successfully dampened cash outflows of firms. Despite these interventions, approximately one out of six non-financial firms are estimated to remain with pressing cash deficits attributable to the pandemic prior to the start of the second wave. Our analysis documents a non-trivial rise in solvency risk. Losses caused by the COVID-19 crisis have severely eroded many firms' equity in the most affected sectors and replenishing their cash reserves would involve a substantial rise in their indebtedness in the absence of alternative financing sources.

1 Acknowledgements

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Introduction

The coronavirus pandemic has led to a sharp fall in economic activity in Belgium. Many businesses have been forced to suspend (or severely downscale) their activities due to public health measures, supply chain disruptions, or the slump in demand for their products and services. Despite the fall in turnover, financial commitments (e.g. with respect to suppliers, employees, tax authorities, etc.) largely remain, depleting firms' liquidity buffers. Moreover, the accumulation of losses and growing indebtedness risk turning liquidity stress into a solvency problem.

With a view to getting a better grasp of the economic magnitude of these risks, the NBB has developed an extensive monitoring framework to appraise the liquidity and the solvency concerns of Belgian non-financial corporations. The purpose of this framework is threefold. First, to quantify the pockets of liquidity and solvency risk in the real economy. Second, to provide relevant indicators to the public authorities in their efforts to design and calibrate possible support measures (and conduct an *ex-post* policy assessment). Third, to monitor the implications for financial sector stability.

While the NBB is continuously updating and extending this framework, an intermediate summary of the analyses up to September 2020 was published as an NBB Economic Review article. The current article presents the main take-aways of that comprehensive study. For more detailed results and a thorough discussion of the methodology, we refer the interested reader to Tielens et al. (2021).

This article is structured as follows. In the first section, we present a high-level narrative of the impact of the COVID-19 crisis on firms' business operations. Throughout this document, firms refer exclusively to non-financial corporations. We leverage VAT returns which document monthly firm-level data on sales, procurement of intermediate goods and services, as well as acquisitions of investment goods. We highlight an important mismatch between revenue and cost dynamics as firms fail to downscale the latter in the face of declining revenues. This imbalance puts considerable pressure on firm liquidity and profitability in the short and medium run. In that context, we proceed with a quantitative assessment of the liquidity problems faced by firms. We first delineate the key features of the liquidity estimation framework and elaborate briefly on the data sources underlying the estimation. Based on a sample of around 400 000 non-financial corporations, we summarise the heterogeneous impact of the COVID-19 crisis on the cash position of Belgian firms in comparison to a business-as-usual counterfactual.

In the face of the heightened liquidity risk, a wide range of crisis measures were taken by public authorities to support firms' cash positions. In section 2, we investigate the extent to which (a sub-set of) policy interventions attenuated cash shortfalls of firms and assess the size of the remaining liquidity deficit. Finally, as liquidity support to businesses is often provided through debt, it leads to increased leverage and default risk, leaving firms vulnerable with little room to invest and to grow. This predicament places solvency concerns at the top of the policy agenda. Therefore, section 3 investigates solvency risk arising from the initial (liquidity) impact of the crisis. The final section concludes and provides a set of policy implications.



1. COVID-19 and its impact on firm liquidity

1.1. The shock to firms' turnover and firms' pre-pandemic liquidity position

In March 2020, the rising number of infections prompted the Belgian authorities to take several measures to contain the COVID-19 outbreak and prevent a saturation of the health care system. Like in many other countries, a lockdown was put into effect and containment measures were kept in place until early May and were gradually lifted for most sectors. The containment measures brought about an economic shock of unprecedented magnitude. According to the firm-level VAT return data, the decline in economic activity was the most severe in April, when the median shock to firms' turnover amounted to -32%, on a year-on-year basis. However, the shock was not evenly distributed across sectors: those most affected by the lockdown recorded the steepest sales decline. For establishments serving food and beverages, for instance, the median decline in turnover was 94% compared to April 2019. The drop was also significant for firms active in the cultural sectors (-86%), sport and recreation (-94%), as well as for hairdressers and beauty and wellness centres (-87%). The biggest impact was felt by accommodation businesses (-96%), as travel bans were imposed by other countries as well. Economic activity began to recover in June, thanks to the easing of the lockdown. While sales seemed to return to their pre-crisis levels in many sectors, a significant number of businesses were still running below capacity as the authorities maintained, and even reinforced, certain health and safety measures related to social interactions during the summer. These measures have clearly hindered a full recovery in the cultural and recreative sectors.

Overall, the economic activity shock has been broad-based within the most impacted industries. For some sectors, however, the extent of the shock was more heterogeneous across firms. This was, for example, the case in the construction sector and among retail businesses selling non-food products. As far as the latter is concerned, this is related to the fact that not all the businesses included in that sector were affected to the same extent by the containment measures while others benefited from a change in consumption patterns (e.g. higher demand for teleworking equipment, gardening tools, bicycles and/or substitution towards firms with online shopping solutions).

The heterogeneity in the magnitude and persistence of the shock to economic activity, both across and within sectors, also leads to a pattern in which some businesses may find themselves running out of cash while others are not. But there are at least two other factors that determine whether firms might, at some point, experience a cash shortage, preventing them from meeting regular payments to their suppliers and their employees. These two factors are a firm's liquidity buffer prior to the shock and its capacity to downscale costs in the face of a decline in sales.

Regarding the first factor, it appears that a relatively large fraction of firms exhibits a narrow liquidity ratio below one, meaning that their short-term debt exceeded their liquidities at the closure of their last annual accounts. Pre-pandemic liquidity positions are relatively weak in those sectors that were most affected by the containment measures, even among profitable businesses. One very plausible explanation for this lies in the limited working capital requirements of the firms active in these sectors, i.e. the cash reserves they need for



remunerating their staff and settling their suppliers' invoices, among other things, before they can deliver their production to their customers and receive their payment. Such requirements are generally lower for business-to-consumer services like, for instance, in restaurants where the time lapse between the delivery of fresh food products and customers' payment is short. By contrast, liquidity ratios appear higher in industries characterised by longer production cycles, and therefore by higher working capital requirements, such as the manufacturing and the construction sector.

As far as firms' capacity to adjust their expenses is concerned, adjustments of expenses to turnover fluctuations are not instantaneous, irrespective of the sector considered. We find low (contemporaneous) correlation coefficients between the annual percentage changes in three types of expense categories – namely investment, consumption of services and purchase of intermediate goods – and sales. Consumption of intermediate goods turns out to be the most flexible expenditure component, while investment does not react to current sales.

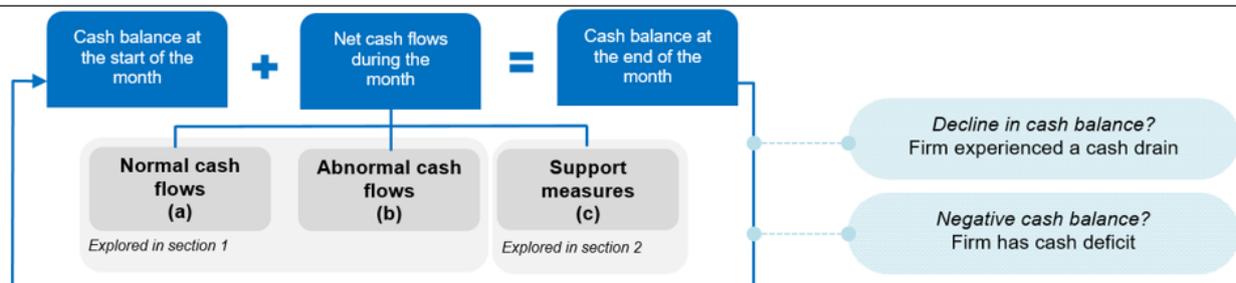
1.2. Liquidity concept: cash requirements

In our framework, we focus on the firms' cash position as the key indicator of liquidity stress. More specifically, we produce an estimate of “free cash” at the end of each month, which reflects the cash balance that an individual firm has available after it has covered all of its operating costs, interest payments, taxes, debt repayments, etc. We refer to a company as having a “cash deficit” if its free cash turns negative, which we throughout also refer to as a cash “requirement” or “shortfall”. Note that a cash deficit does not mean that the firm is bankrupt. It means that the firm currently has insufficient cash at its disposal to meet its current financial obligations and must resort to payment extensions and/or an additional funding.

Such a metric is straightforward to interpret, transparent and quantified by other institutions (see e.g. OECD (2020); European Commission (2020a,b); Bank of Italy (2020)). Furthermore, this liquidity concept is a more relevant (and uniform) benchmark to a policymaker seeking to dampen the initial impact of the pandemic rather than to fully repair lost liquidity (and beyond).

To quantify this cash requirement, we use the standard cash flow accounting identity depicted in Chart 1. Starting from an initial cash position at the beginning of the month, we add the estimate of the evolution of cash flows during that month to arrive at a stock of free cash at the end of the month. Iterating across months (where the cash position at the end of the previous month equals the cash position at the start of the next month) enables us to flag, on a monthly basis, whether an individual firm has experienced a cash drain. A cash drain means that the firm was forced to consume part of its pre-pandemic liquidity buffer. Moreover, firms that have fully consumed their liquidity buffer are tagged to have a “cash deficit”. While the technical details of the framework can be found in the NBB Economic Review article, a summary of the general logic is both instructive and instrumental for a correct interpretation of the quantitative results presented below.

Chart 1 - Law of motion of the monthly cash balance



Source: Tielens et al. (2021).

The monthly cash flows have three components: (a) cash flows that would accrue in normal (non-crisis) times, (b) abnormal cash flows that arise due to the COVID-19 crisis and (c) support measures received. Distinguishing normal cash flows (a) from abnormal cash flows (b) enables us to produce a counterfactual business-as-usual scenario. In this counterfactual scenario, firms sell, buy, borrow, invest, etc. at pre-pandemic rates. Assuming that many businesses will face cash deficits irrespective of the COVID-19 crisis, this counterfactual scenario makes it possible to isolate the marginal level of cash deficits caused by the pandemic. Component (c) enables us to identify the success of support measures in alleviating cash constraints.

How does one measure the various cash components (a), (b) and (c) in the face of lagged data availability? First, the no-COVID-19 crisis cash flows in (a) for 2020 are estimated using standard techniques and represent a projection of historical incoming and outgoing cash flows into 2020. To quantify the support measures in (c), we rely on various confidential and granular data sources set out in section 2. Measuring (b), however, is more challenging. We take advantage of timely, confidential firm-level VAT declarations made available to us. In this data source, we directly observe monthly firm-level sales, procurement of intermediates/services and investment up to September 2020. This sidesteps the need to estimate these flows, as is typically done².

In order to ensure a correct interpretation of the quantitative results below, we close this section with a discussion of the sample selection. First, as the estimation of the framework requires information from the annual accounts, we focus exclusively on firms that file such accounts. This, by definition, excludes the self-employed who are not required to file annual accounts by Belgian generally accepted accounting principles (GAAP). Second, we exclude certain sub-sectors if their behavior is not properly accounted for by our framework. These sectors include, *inter alia*, financial and insurance activities, public administration,

² One prominent approach is to rely on a shock to firm revenues (e.g. taken from survey evidence) and simulate the impact of this revenue shock to all incoming and outgoing cash components (see Schivardi & Romano (2020) for a discussion). This perturbation procedure is prone to error:

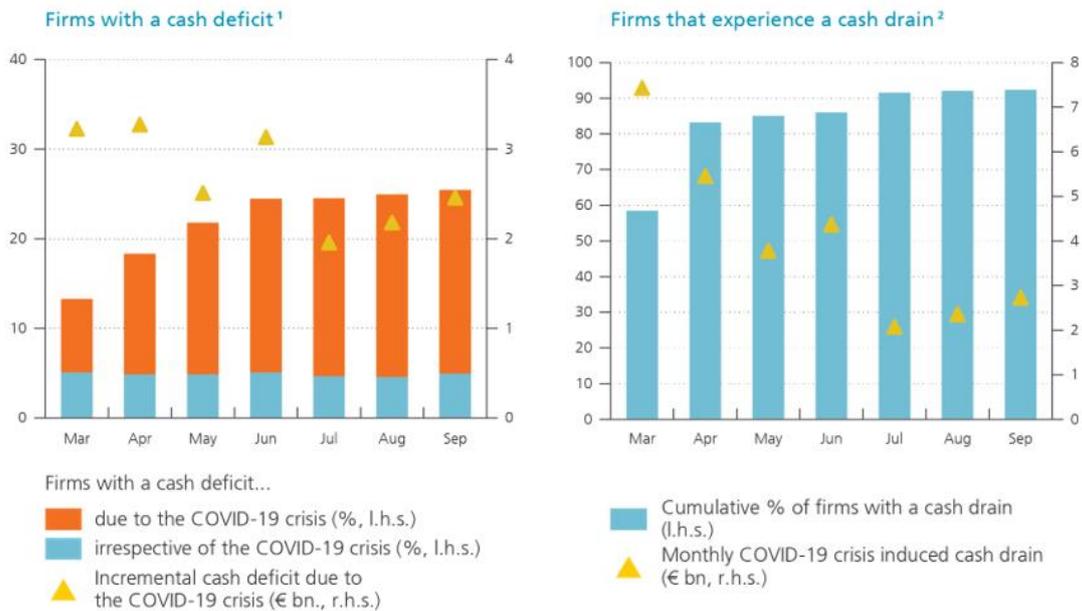
education, human health and social work activities. Moreover, we exclude ‘dormant’ firms from the analysis (i.e. firms that have not filed VAT declarations in the last two years while legally required to do so) and drop companies as soon as they are formally declared bankrupt (so as not to mechanically compound liquidity needs of firms that no longer exist). The above selection criteria resulted in a sample of 403 770 non-financial corporations in March 2020.

1.3. Quantitative results (before taking into account policy measures)

This sub-section summarizes the main quantitative results. It first takes an aggregate perspective, followed by a set of micro-level results. The monthly estimates run from March 2020 up to September 2020. They disregard policy support measures and therefore sketch the impact of the pandemic on firm liquidity needs in the absence of any attenuating policy measures.

Chart 2 (left panel) depicts, on a monthly basis, the share of firms shown to have a cash deficit in the absence of policy interventions. The figure distinguishes between (a) the marginal cash flow deficit due to the COVID-

Chart 2 - Impact of the COVID-19 crisis on firm-level cash deficits (before taking support measures into account)



Source: Tielens et al. (2021).

¹ A firm has a cash deficit if its estimated cash balance turns negative.

² A firm has experienced a cash drain if it had to draw down its pre-pandemic cash position.



19 crisis (in red) and (b) the counterfactual cash flow deficit that would have existed irrespective of the COVID-19 crisis (in blue). Under the latter scenario, chart 2 documents that around 5% of the total number of firms will feature cash deficits irrespective of the COVID-19 crisis. Due to the pandemic, however, an additional 20% of firms have drained their cash reserves to the point where they have a need for additional liquidity (by September 2020). These cash concerns built up very quickly during March and April and levelled off during the summer (the observed plateau is consistent with the ERMG survey responses).

Note that a cash requirement is a very narrow indicator of liquidity stress. It excludes firms for which liquidity is tight, but still sufficient to meet current liabilities. While the left-hand side figure remains mute on this issue, the right panel of chart 2 shows that, by September 2020, 90% of the firms have, at least once during the period of analysis, dipped into their pre-pandemic cash reserves. A little over 80% of businesses had already addressed their reserves two months into the crisis. Quantitatively, the total drop in liquidity due to the COVID-19 crisis accumulates up to €28.2 billion by September 2020.

The aggregate scenario conceals a significant amount of heterogeneity at the micro level. For instance, many firms already exhibited a fragile liquidity position prior to the COVID-19 crisis. Given a weaker buffer, these firms are more likely to be cash-deprived due to the pandemic. How much more likely? We find that the 10% of firms with the least comfortable initial level liquidity were almost twice as likely to end up with cash problems than the median firm in that sector. Importantly, having a more solid cash position than the sector peers does not guarantee avoiding a cash shortfall: +/-15% of firms with an above median liquidity position still faced cash shortage. Were the illiquid firms hit especially hard by the COVID-19 crisis? At first, it seems that the exceptional, unanticipated nature of the crisis makes this unlikely. However, we find that, on average, firms with a weaker initial liquidity position also reported larger declines in turnover during the March-September period. Potentially a dire liquidity position constrained them in taking corrective action compared to their more liquid sector peers (e.g. set up an online web shop, invest in health and safety measures, etc.). Alternatively, it could indicate that poor pre-pandemic liquidity-management correlates with poor (crisis) management.

Inspecting heterogeneity in cash deficits due to COVID-19 on a sector-level basis (in the absence of policy measures), it turns out that 46% of businesses operating in the personal service sectors, such as Hairdressing, beauty and wellbeing, had cash requirements in September 2020. Dire liquidity positions were also present in the Food and beverage service sector (44%), Sports and recreation (37%), Accommodation (36%) and Creative activities, arts and culture (33%). Not surprisingly, these sectors had experienced the largest (cumulative) drop in turnover by September. But this is not the whole story. The relatively large discrepancy between the cumulative turnover decline and cumulative drop in costs also highlights that these sectors were the least able to scale down the cost side of operations (e.g. because they have a larger fixed cost structure, non-negotiable long-term contracts, etc.). Other sectors (e.g. Manufacturing, Agriculture, Retail trade of food products) not only experienced smaller fallbacks in turnover, they were also more able to restrain their costs in line with turnover. Finally, cash-constrained sectors significantly reduced their investment. While this strategy saves on cash, it is likely to put a drag on future growth and productivity of firms within these sectors.



Finally, the experience of the global financial crisis and sovereign debt crisis has shown that large-scale government interventions may enable firms to survive, but may also create ‘zombies’ – i.e. firms that in normal circumstances would exit due to poor performance (De Jonghe *et al.*, 2020). While there are arguments for limiting business failures at least in the short run (supply chain disruptions, knock-on effects in banks’ credit portfolios, massive unemployment), long-run unconditional blanket support measures can generate misallocation. When classifying firms according to their pre-pandemic labor productivity, we find that the 10% least productive firms within the sector were more than twice as likely to face cash problems than the median firm in that same sector. This indicates that exit of the most illiquid firms on average would imply exit of the least productive firms, which suggests some room for creative destruction.

2. The impact of policy measures

Belgian authorities have taken swift and decisive measures to alleviate the liquidity shortfall of non-financial firms. We first discuss three broad classes of Belgian support measures (financial sector measures, outright transfers and fiscal interventions). The second subsection is devoted to a quantitative evaluation of the support packages. We subsequently take stock of the residual, post-intervention, liquidity problem.

2.1. Policy Measures

2.1.1. Financial sector policy measures

Upon the initiative of the Minister of Finance and with the support of the National Bank of Belgium, the federal government has drawn up an agreement with the financial sector to help attenuate the financial impact of the coronavirus pandemic on firms through the introduction of two support schemes: a debt moratorium (for pre-COVID-19 existing credit facilities) and State-guaranteed loans (for new credit lines). Uptake of the latter has remained relatively limited. Concerning the former, the debt moratorium, viable firms can apply to their institutional lenders for a deferral of repayments on their business loans for a maximum of six months, but important eligibility criteria apply. From its inception in mid-April, this instrument was often solicited by Belgian firms. Already by the end of April, 86 000 debt facilities were placed under moratorium which concerned a total amount of €15 billion (excluding self-employed and public entities). Near the end of September 2020, 115 000 loans were under moratorium, with a total worth of €22.5 billion. More extensive details on financial sector policy measures can be found in NBB (2020).

2.1.2. Outright transfers

Firms forced to cease operations by law were eligible to receive a one-off nuisance premium. Moreover, businesses that were not legally required to halt operations but nonetheless experienced a significant decline in turnover (i.e. more than a 60% decline in sales) were entitled to a one-off compensation premium. Both premiums are mutually exclusive. In addition, in the context of the COVID-19 crisis, a simplified procedure for temporary lay-offs was approved by the government on 20 March 2020.

2.1.3. Fiscal measures

For the first time in Belgian tax history, a general one-off carry-back regime was introduced by law for losses incurred by Belgian firms. Provided that certain conditions are met, this crisis measure enables taxpayers to speed up the use of their losses, by offsetting (estimated) COVID-19 losses against taxable profits (if any) from the prior financial year, i.e. the "pre-COVID-19 year". Furthermore, in severely affected industries that had to resort to temporary unemployment, firms are granted a partial exemption from payment of withholding taxes. This provides an incentive to have employees, who are currently temporarily laid off, returning to their workplace. Finally, to encourage investment, firms subject to corporate taxes are usually eligible for an investment deduction. In the context of the COVID-19 crisis, the standard investment deduction has been raised from 8 % to 25 % for investment made between 12 March 2020 and 31 December 2020.

2.2. Quantitative results

The first panel of chart 3 extends the analysis of the previous section and quantifies the share of firms that are no longer cash-constrained after they have benefited from policy interventions. While the COVID-19 crisis caused an acute cash deficit for 20% of all firms in September 2020 (blue bars), 15% have a cash shortfall after receiving policy support. The bulk of the measures are documented to have a benign effect early in the crisis (underscoring the speed of the intervention), which persisted over the summer. Moreover, policy support only marginally solves the cash deficit of firms that would have developed cash shortages irrespective of the COVID-19 crisis (red bars). This is true, both because these firms proportionally receive less aid (as they are not eligible) or have developed too large a cash shortfall that cannot be dampened by the level of support made available in the COVID-19 crisis.

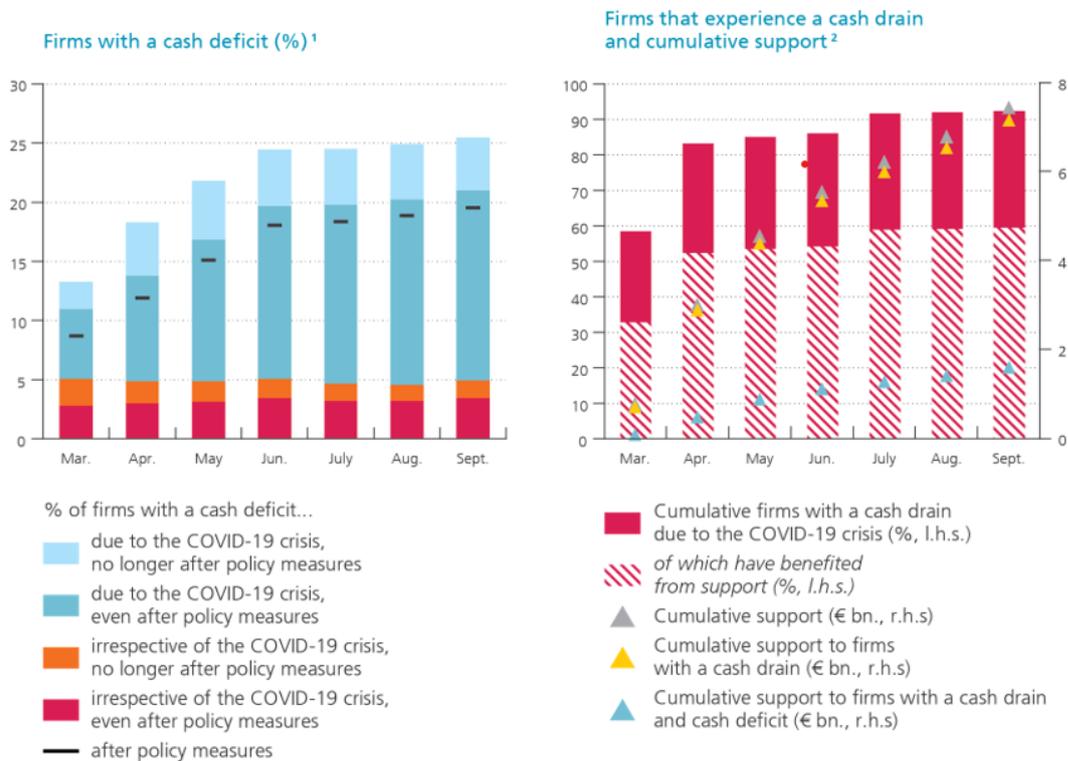
The second panel of chart 3 shows that, by the end of September 2020, €7 billion of policy support was provided to the business population under consideration (markers in grey). Importantly, the minor discrepancy between the grey and yellow markers reveals that virtually all of this support accrues to firms that effectively experienced a cash drain. This follows naturally from the fact that most of the support measures are conditional on being negatively affected by the COVID-19 crisis. Not surprisingly, only a fraction of total support accrues to firms with a cash shortfall as none of the studied support measures require the firm to have an effective cash deficit.

Finally, while 90% of the firms under consideration had experienced a cash drain by September (red bars), approximately two out of three firms with a cash drain have benefited directly from (at least one type of) support measures (shaded red area). So, support either solves or reduces the size of a cash deficit (as shown in the first panel of chart 2), or, in the absence of a cash deficit, it strengthens the liquidity position of those that experienced a cash drain, potentially preventing a cash shortfall in the future (as is clear from the second panel of chart 2).

The upper-left-hand panel of chart 4 documents that policy interventions have had heterogenous effects across sectors. While the severely impacted sectors (Creative activities, arts and culture, Accommodation, Sports and recreation, Food and beverage services and Hairdressing, beauty and wellbeing) would have developed more severe cash shortfalls without any intervention, policy support has successfully attenuated

liquidity concerns in a large number of establishments in these sectors (disproportionately more so compared to other sectors). These highly affected sectors are typically populated by relatively small firms, with – on average – a limited nominal cash shortfall, albeit substantial relative to their size. In that case, support measures that are not tailored to firm size (such as the nuisance or discomfort premiums) succeed in alleviating cash concerns of many small entities in these sectors. We find that liquidity stress was attenuated proportionally more in smaller firms than large firms.

Chart 3 - Impact of support measures



Source: Tielens et al. (2021).

¹ A firm has a cash deficit if its estimated cash balance turns negative.

² A firm has experienced a cash drain if it had to reduce its pre-pandemic cash position.

The bottom left panel decomposes the total support received within each sector by type. It documents that most aid is provided through temporary unemployment and nuisance or compensation premiums. Financial sector support measures are of second-order importance (with debt moratorium typically more important

than State-guaranteed loans). Finally, fiscal measures are of marginal importance and mainly reflect the exemption of withholding taxes. As higher investment deductibility only works if firms effectively invest, this package is of limited size in an environment of falling investment. Moreover, the carryback tax system is only expected to improve liquidity in the last quarter of 2020, which falls outside the scope of the analysis.

Chart 4 - Impact of the COVID-19 crisis on firm-level cash deficits and policy mix decomposition



Source: Tielens et al. (2021).

¹ A firm has a cash deficit if its estimated cash balance turns negative.



Finally, the bottom right panel unveils the obvious message that firms with more employees relied disproportionately more on temporary unemployment, it also indicates that nuisance premiums were the second source of support obtained by small firms. For large firms, alongside the temporary unemployment scheme, financial sector support was the key source of liquidity relief.

2.3. Who has received what type of support?

A budget-constrained policymaker should aim to support firms that (a) have been deprived of cash by the pandemic and (b) have business models that are sustainable after the COVID-19 crisis. The first criterion implies that scarce resources should target firms with a cash drain that is attributable to the pandemic (and not replenish liquidity needs existing prior to/irrespective of the crisis). The second objective should avoid zombification and allow for some degree of creative destruction so that firms with non-viable business models are either reorganized or liquidated. It is insightful to investigate to what extent the policy measures taken meet these two criteria.

With respect to the first dimension, we find that debt moratoria are disproportionately used by firms that faced a cash deficit due to the pandemic: while 20% of the corporate population flagged up a cash requirement due to COVID-19, these firms reflect 32% of total firms that benefited from the moratorium and 47% of the total moratorium volume. In terms of volume, virtually all debt under moratorium is held by firms that have experienced a cash drain. The observation that firms without a cash drain have close to zero usage is hardwired in the eligibility criteria: it is only available to firms with payment problems clearly attributed to the COVID-19 crisis. A similar message applies to State-guaranteed loans, where the liquidity deprived firms reflect 35% of all State-guaranteed loans and 33% of its volume. Moreover, while nuisance and discomfort premiums by and large accrue to firms which experienced a cash drain, 8% of its volume flows to firms that have not experienced a decline in its cash position since the start of the pandemic.

With respect to the second dimension, we investigate whether support was channeled to pre-pandemic productive and profitable firms, respectively. When sorting firms based on pre-pandemic labor productivity or profitability, we find that debt moratoria were used disproportionately more by productive and profitable firms. The 40% most unproductive firms account for only 15% of the total debt moratorium volume. Similarly, while we classify 8% of currently cash-deprived firms as non-profitable before the crisis, they only represent 0.7% of total volume of State-guaranteed loans. This pattern follows naturally from the eligibility criteria. As nuisance/discomfort premiums are received irrespective of whether the firm is productive or profitable, they accrue to these firms in proportion to their size in the population. Temporary unemployment, by construction, is received more by the relatively unproductive (measured by labor productivity) firms in each sector.

In sum, State-guaranteed loans and debt moratoria disproportionately accrue to firms that need cash due to the COVID-19 crisis. Moreover, the volume of debt moratoria and State-guaranteed loans is asymmetrically provided to profitable and productive firms. Compensation premiums have some leakage to firms that do not need it. It is a brute force policy measure which aims to keep firms afloat, irrespective of the viable nature of the beneficiary. While good arguments exist for such measures (avoid supply chain disruptions, knock-on effects in banks' credit portfolios, slump in demand due to high unemployment), additional conditionality

might be warranted. Finally, even with policy measures, acute liquidity problems due to the COVID-19 crisis remain for 15% of firms. This residual cash shortfall can be addressed through various mechanisms that are not part of our estimation framework, such as (i) intra-group mobilization of cash, (ii) access to external non-bank financing, (iii) trade credit, etc. They are discussed in detail in the NBB Economic Review article.

3. Solvency problems in the making?

Beyond the liquidity shortfalls discussed in the previous section, the COVID-19 crisis will undoubtedly have a strong negative impact on many firms' financial health, hampering their future ability to bear their interest charges and amortise the principal. These concerns are discussed in this section.

3.1. Firm profitability during the COVID-19 crisis

Based on the VAT returns filed between March and September 2020, we estimate and show in the upper panel of chart 5 that - without support measures - around 26% of firms incurred losses over that period, in the sense that their earnings before interest payment, taxes, depreciation and amortisation (EBITDA) would be either negative or insufficient to cover their financial charges. This is 8 percentage points more than during the corresponding period in 2019 (note that this number remains mute on the numerous firms that saw their revenue decline while remaining profitable). At the same time, 6 percent of the total firm population became profitable in 2020 after they incurred losses in 2019, which emphasises the fact that, while some sectors and businesses have been severely impacted by the COVID-19 crisis, others continued their development. Additionally, 48% of total employment resides with firms that incurred losses during March up to September 2020.

Chart 5 furthermore illustrates the impact of the various support measures on firms' profitability. According to our estimates, 2% of the total number of firms (i.e. approximately 8 000 businesses) became profitable in 2020 due to the combination of tax exemptions, premia, and an easier recourse to temporary unemployment. These firms account for around 1% of the total employment of the population of non-financial corporations considered in this exercise.

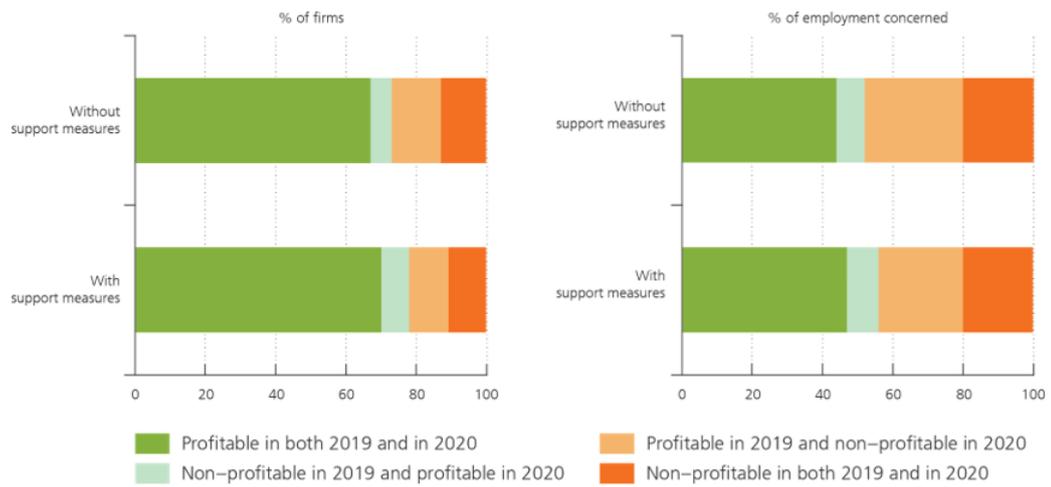
3.2. Solvency position in September 2020

Measuring the impact of COVID-19 on firms' solvency is a challenging task as it is not straightforward to assess, at the time of writing this article, how firms have addressed their liquidity problems. For instance, as discussed in section 2, some of them might have sold real or financial assets to meet their most immediate liquidity needs, while others could have made an agreement with the landlord of the premises they occupy to reduce or postpone rent payments. Likewise, we do not have indications on the extent to which firms belonging to a Belgian or a multinational group – which account for 69% of the estimated total amount of liquidity needs in September 2020 – have tapped cash pooling arrangements with related companies to obtain the funds they need to cope with the crisis

Chart 5 - Impact of the crisis on firms' profitability and solvency

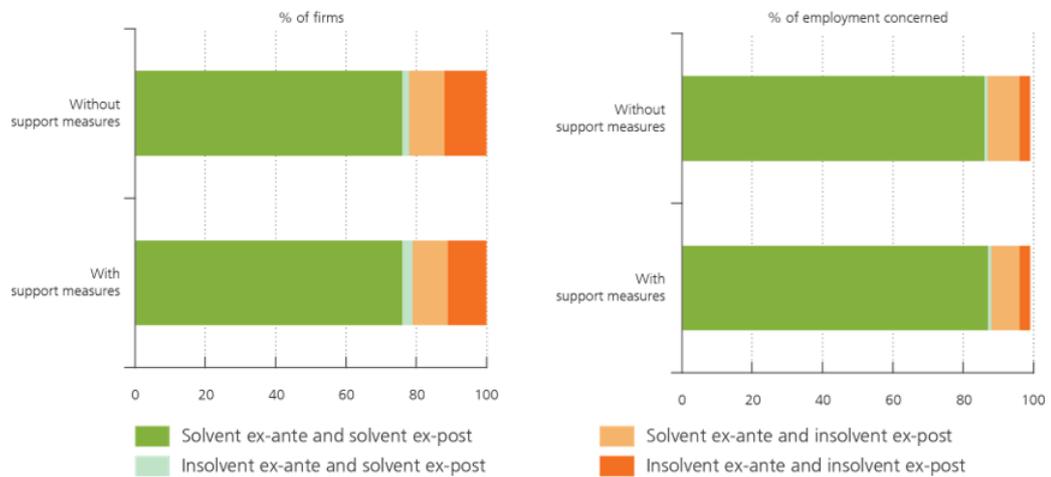
Population of profitable and non-profitable firms in 2019 and in 2020¹

(estimates for the period spanning from March to September 2020, and the corresponding period in 2019)



Solvent and insolvent firms before the crisis and in September 2020²

(ex-ante values are based on the most recent annual account data; ex-post values for September 2020 are projections assuming cash deficits are solved by means of a debt instrument)



Source: Tielens et al. (2021).

¹ A firm is considered profitable if its interest coverage ratio, i.e. the ratio of the EBITDA over the interest payment, is equal to or larger than 1, and non-profitable if it is lower than 1. If a firm does not report any interest payment in its income statement, then it is considered non-profitable if its EBITDA is negative

² A firm is considered solvent if its debt-to-assets ratio is equal or less than 1 and insolvent if it is more than 1.

With this caveat in mind, we assume, as in Crouzet and Gourio (2020), that any cash shortfall in September is addressed by taking out additional debt, for instance a bank credit or a subordinated loan from private or public investors. We then assess firms' solvency based on a hypothetical balance sheet for September (see Tielens et al., 2021, for more details). Chart 5 documents that such a funding scenario would entail many firms with a debt-to-asset (DTA) ratio exceeding unity. In other words, the amount of their total debt – i.e. their pre-existing debt plus the debt incurred since the onset of the crisis and the hypothetical debt taken out to close the cash deficit – would be larger than the book value of their total assets, which is equivalent to negative equity. This does not necessarily mean that they would all run an immediate bankruptcy risk, insofar as the equity might be replenished with retained earnings at some point in the future, provided that the firms concerned manage to regain their profitability. It nonetheless implies that they would be in fact hardly eligible for the hypothetical additional debt financing we simulate here, since they would not have enough collateral to pledge, making them insolvent in the event of a default.

Quantitatively, our results suggest that the magnitude of this debt overhang problem resulting from the COVID-19 crisis would be sizeable: 21% of firms would end up with a DTA ratio higher than 1 under the assumption of a debt financing of their liquidity needs at the end of September 2020. This is 7 percentage points more than the ex-ante situation such as reflected in the most recent annual account data. Moreover, this impact is barely alleviated by the support measures, which were devised to patch up firm liquidity without the goal of addressing solvency. Even before the onset of the COVID-19 crisis, most firms recording structural losses (i.e. firms with structurally negative earnings, measured by EBITDA, or earnings that persistently do not cover their financial charges) are characterised by a DTA ratio larger than 1 (i.e. their equity has been entirely consumed by accumulated losses). However, one significant consequence of the crisis is that even businesses that used to be profitable in the previous years and require a large amount of additional financing to offset their liquidity shortfall, would become insolvent. In fact, only a relatively limited part of the firms projected to lack the liquidities needed to meet their regular payments in September 2020 – around 6 600 out of 79 000 – may be considered non-profitable and therefore not able to sustain additional debt.

The fact that a liquidity shortfall might turn into a solvency problem for numerous profitable and, by extension, viable firms is clearly a major economic policy issue. Indeed, in addition to the immediate rise in unemployment and the defaults on trade and bank credits they might cause, bankruptcies of otherwise healthy businesses would also harm the productive fabric of the economy and, ultimately, its potential growth and job creation.

Conclusion

The COVID-19 crisis has taken its toll on the Belgian corporate sector. A sudden drop in revenues and imperfect downscaling of costs has put considerable pressure on firms' cash buffers. To alleviate liquidity concerns, Belgian policymakers have acted swiftly to support the corporate sector and stepped up efforts as the pandemic unfolded.



In this article, we document the pockets of corporate liquidity and solvency risk and examine the role of various policy measures taken to keep businesses afloat. We show that the support measures taken have successfully dampened cash outflows of firms. Technical unemployment alleviated liquidity stress across the board. Nuisance/compensation premia mostly relieved liquidity concerns of small firms whereas financial sector support (mainly through debt moratoria) principally supported larger firms. While the support measures successfully patched up liquidity concerns in the short run, part of this aid has leaked to firms that strictly did not need support or did not run viable business operations prior to the pandemic. Despite these observations, approximately one out of six non-financial firms are estimated to remain with pressing cash deficits attributable to the pandemic prior to the start of the second wave. These firms had to resort to payment extensions and/or additional non-bank funding (e.g. through intra-group mobilization of funds through cash pooling).

Our analysis documents a non-trivial rise in solvency risk. Losses caused by the COVID-19 crisis have severely eroded many firms' equity in the most affected sectors and replenishing their cash reserves would involve a substantial rise in their indebtedness in the absence of alternative financing sources. Importantly, even profitable firms with a solid balance sheet prior to the pandemic are not immune to this concern and might spiral into bankruptcy should they not obtain additional financing. It is therefore very likely that a large share of Belgian firms will start the recovery period with deleveraging pressures, which can have negative consequences on these companies' ability to carry out investment plans, dragging down productivity and growth. In this context, and in the face of the second wave of the pandemic, the policy focus should gradually shift from safeguarding firms' liquidity to maintaining their solvency. The purpose should be to secure debt restructuring where it is appropriate and/or access to external long-term financing they might need for the continuation of their operations, as well as for their future development.

Furthermore, to effectively accompany the recovery phase, current policies in place to ease access to credit should be matched with enhanced instruments for (long-term) equity-type financing. However, in the Belgian context, it is not straightforward to find effective equity instruments, especially for SMEs whose owners are often reluctant to allow external ownership. Alternative financing vehicles and instruments such as long-term subordinated loans can be considered for strengthening viable firms' solvency and enabling them to invest and grow further. In that regard, the initiatives recently taken by Regional governments to increase the lending capacity of their investment vehicles are a first step in that direction. Moreover, in order to stimulate equity investment, the current notional interest deduction framework could be revisited.

Finally, from an economic policy point of view, there is scope for a more discretionary approach to ensure an effective use of the public funds intended to support businesses: on the one hand, in order to avoid allocating real and financial resources to non-viable firms – a phenomenon known as 'zombification' – and, on the other hand, to support viable businesses that would not be able to obtain the funds they require from other financing channels, such as traditional bank lending, due to a potential debt overhang. Support could also be tailored in such a way that it is larger for firms injecting additional capital and firms that have business plans anchored to the new normal. Such 'smart conditionality' – linking support to steps that enhance firms' longer-term resilience, like digitalization or the adoption of new business processes – can be a way to preserve activity while strengthening firms' perspectives going forward.

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