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Potential Liquidity Stress in Sweden during the Pandemic

By Willem J. Kooi and Ronald Albers

Abstract

The Covid-19 pandemic threated squeezing companies' liquidity as cash inflows fell with the sudden drop in sales and cash got locked up, for instance in inventories. At the same time, companies still had to service their payment obligations, with trade credit exposures We examine the potential for liquidity stress due to cross-exposures in key parts of non-financial corporations and firms that can occur in the face of adverse and asymmetric aggregate demand and supply shocks. Companies are exposed to these differently depending on their activity, level of human interaction, degree of automation and digitalisation, integration in vulnerable (cross-border) supply chains, and, crucially, their access to finance. We take the case of Sweden, where such corporate asymmetric cross-exposures are relatively large in an EU perspective. For this purpose, we develop a new indicator of potential liquidity stress with an assessment of possible cascading effects across sectors using an input-output framework to gauge the risk of liquidity shortages in the most directly affected branches rippling through the supply chain. We conclude that potential for liquidity stress and significant cascading effects was present at the onset of the Covid-19 pandemic but that forceful policy action prevented such risks from materialising, However, we argue that part of the pass-through via such financial cross-exposures might happen with a delay as policy support is withdrawn, and/or as new major disturbances hit the economy.

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Introduction[1]

Across the EU, the Covid-19 pandemic caused a sudden drop in sales and inventory adjustments thus locking up cash. At the same time, non-financial corporations and firms still had to pay their bills: wages, rents, capital costs, as well as commodity inputs and intermediate purchases, among other costs. Many also had investment projects or other business plans to pursue, which needed financing – be it internal or external. Furthermore, trade credit exposures had to be covered. The pandemic affected companies differently, depending on their branch of activity, the possibility to respect physical distance or work remotely, and, crucially, their access to financing sources. In all, the resulting pressure on corporate finances markedly increased the risk of a shortfall in liquid corporate assets.

Authorities reacted with a variety of direct and indirect support measures (ranging from temporary unemployment support schemes to compensation for turnover losses, to guarantees and credit support) which aimed to cushion the impact of the Covid-19 crisis on firms. Although the support measures have often been quite successful in maintaining liquidity and shielding corporate finances after the start of the pandemic, delayed negative effects may reveal themselves once support measures are progressively lifted (Banerjee, Noss and Vidal Pastor, 2021).

This Economic Brief discusses the liquidity risks that non-financial corporations and firms run through trade credit and to what extent these liquidity dependencies between companies can become a transmission channel propelling economic and financial stress, with wider economic implications. Liquidity shortages can affect corporations and firms within industries but also across industries as disruptions originating in the industries most directly affected by an adverse shock can ripple through the supply chain. This paper uses Sweden as a case study for the potential impact of such cascading effects and the impact of mitigating policies. Sweden is representative of other developed, highly open economies with businesses in all size classes.

Several papers pointed at sizable liquidity risks emanating from the pandemic crisis on corporate balance sheets for the entire EU (European Commission, 2020). Acharya and Steffen (2020) analyse the Covid-19-induced impact of credit risk on corporate cash holdings and the role of financial markets in providing immediate liquidity. They find that, while all corporations significantly increased their cash holdings, those with the lowest investment grade increased them most. IMF (2020) offers a similar perspective. However, these analyses do not take into account 'cascading effects' of the drop in sales in certain business sectors on other business sectors.

Given its high degree of financial maturity and comparatively large reliance on external financing, including non-bank finance, Sweden is a country where this transmission channel could be relatively strong both within and across business sectors. Amberg et al. (2021a) analyse the reaction of trade credit throughout the supply chain following the bankruptcy of Swedish cash-in-transit firm Panaxia in 2012 and found relatively sizeable effects on the broader corporate sector. The Swedish central bank (Riksbank, 2020a) examined knock-on effects of funding difficulties for the most severely affected branches on the wider economy. Our approach complements this research and aims to shed more light on the potential strength of cascading effects as a transmission channel, placing a particular emphasis on cross-industry impacts. The Covid-19 pandemic is used as an example but transmission via liquidity stress may (re)surface as policy support is withdrawn and/or as other major economic disturbances occur.

Potential liquidity stress

Covid-19 crisis impact large but different across sectors/companies

The Covid-19 crisis had an immediate yet differential impact on liquidity of the corporate sector and firms, depending on the company characteristics and branch of activity (see table 1). The pandemic can be characterised as a major aggregate shock with an asymmetric impact across companies and industries, depending on their prior characteristics, degree of diversification and integration, and exposure of the industry concerned.

[1] The authors thank Christian Buelens, William Connell Garcia, Patrick D'Souza, Norbert Gaal, Szabolcs Klubuk, Massimo Suardi, Windy Vandevyvere, d Septimiu Szabo and Hauke Vierke for their critical reviews and contributions to the drafting of this Economic Brief. Szabolcs Klubuk's statistical support is gratefully acknowledged. Errors remain the responsibility of the authors.

Financial linkages were a powerful channel through which the pandemic impacted the macro-economy. Indicative of this is the risk premiums for corporate bonds that increased sharply in March 2020, at the same time as the liquidity in the Swedish bond market deteriorated rapidly due to a flight to quality (Wollert, 2020). More generally, funding, in particular in financial markets, became significantly more difficult during the initial phase of the crisis as shown by sequential lending surveys (Finansinspektionen, 2020). Large firms had to change their funding sources as the liquidity on the corporate bond market dried up, even though spreads on government bonds started narrowing again in the months after the initial spike. Overall, there was a shift from bond to loan financing, with the latter supported by various policy measures to help avoid a credit crunch (see below).

The impact of the Covid-19 crisis, at the same time, was different across branches of economic activity. Contact-intensive services were hit particularly hard. In manufacturing, disruptions to supply chains, often highly correlated, reduced or even stopped production in many undertakings and, hence, interrupted cash flows. Table 1 reports output losses by sector between March 2020 and the trough in output loss, i.e. the largest accumulated loss in output from the pandemic. This differentiated impact on production and liquidity can imply that disruptions in one sector, regardless of an overall manageable size, can cause macroeconomic instability in the wider economy. This approach of an event spreading through a network is similar to recent work on the granular origins of macroeconomic shocks (Gabaix, 2011) with a range of factors that might either dampen of amplify propagation.

Table 1: **Production value and domestic gross turnover (March 2020-to-trough, y-o-y change)**[2]

	Production value	**Turnover**
Mining and quarrying	n.a.	-7% (Feb 21)
Manufacturing	-36% (Jul 20)	-18% (Jul 20)
Services	-15% (Jul 20)	n.a.
- Retail trade	-7% (Feb 21)	1% (Jan 21)
- Wholesale trade	-36% (Jul 20)	-37% (Jul 20)

Source: Macrobond/SCB.

The above illustrates both the depth of the Covid-19 induced fall in overall economic activity and the vast differences in impact across branches.

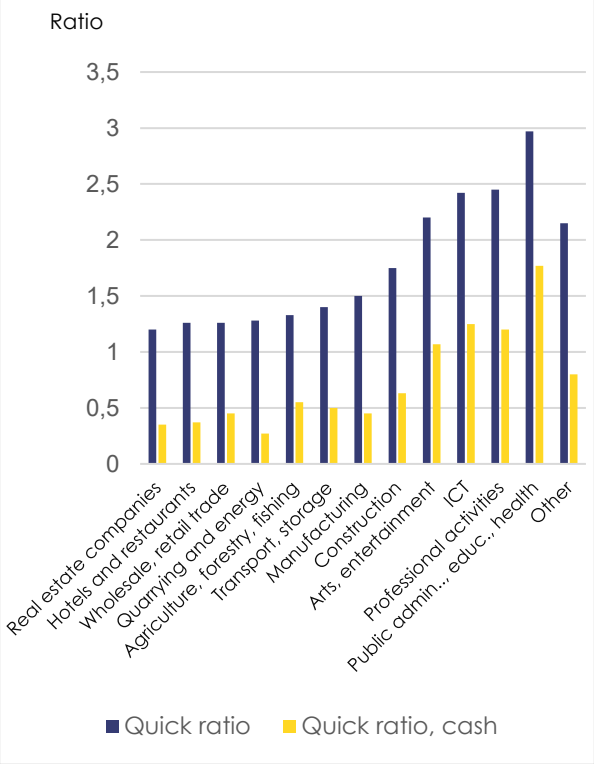
The liquidity created between firms

Liquidity is a key parameter for the immediate survival chances of firms when facing a sudden drop in demand. In corporate finance, the "quick ratio" is the classical gauge for corporations' ability to service their short-term obligations. It is defined as the ratio of short-term assets (excluding inventories and pre-paid expenses) over short-term liabilities with a maturity of up to one year. Graph 1, below, shows the quick ratio for Swedish companies in different sectors and the quick ratio with cash as the only asset to balance short-term obligations. Importantly, the quick ratio cash was below one for most sectors before the pandemic. Cash alone, then, did not suffice to meet short-term obligations but the servicing of these obligations was dependent on other corporations meeting their payment obligations. This reflects the liquidity created

[2] The differences between these two measures are mostly attributable to price changes and to the inclusion of trade margins ("profit") in production value. Although the volume indices behind the production data co-move stronger for the same sector, we report nominal figures of production value because of our focus on liquidity (as nominal amounts matter for trading and financing).

between companies of which the ratio to cash, that is another type of 'money multiplier', depends on factors like information asymmetry, market power and, amongst others, turnover dynamics.

Graph 1: **Quick ratios for Swedish companies in different sectors (2018)**



Source: Riksbank (2020).

Both quick ratios had sizable variations between industries already before the pandemic started. This shows how industries differed already in their starting position. The low quick ratios for hotels and restaurants are particularly striking in this respect. As a consequence, with the pandemic impact differing between industries, cross-linkages related to heterogeneity create the potential for a larger aggregate impact than the sum of individual impacts. This holds for any cross-exposure across companies but arguably led to the potential for sizeable negative knock-on effects of stress in some of the most affected industries on other industries, even though the latter at first sight would appear to have been shielded from much of the direct impact of the pandemic. This could well have been present during the Covid-19 pandemic and lockdown.

The quick ratio, however, does not focus on the most liquid assets – those needed to overcome the first acute phase of the drop in demand caused, in this case, by the pandemic. The most liquid assets on a corporate balance sheet are, first, cash and demand deposits (that is, including cash held in bank accounts) and, second, accounts receivable. Counterbalancing the accounts receivable on the asset side are the accounts payable on the liabilities side of the corporate balance sheet. Judging by their size, accounts receivable/payable are of macro relevance. For the whole Swedish economy accounts receivable and payable equal around half of the narrow money supply (M1) and close to 30 times the monetary base (M0). These accounts are of very short-term and revolving nature. The major constituent of accounts payable is trade credit that typically is extended for one month. Failure by a company to repay its trade credit will absorb cash from the creditor or be passed on to the next creditor in the supply chain. Depending on the structure of the supply chain, such payment failures risk triggering cascading effects on firms in other parts of the economy that were initially less affected, thereby aggravating the macroeconomic impact of any initial default.

The determinants of liquidity created between firms are, in part, under the influence of monetary policy. However, in part they also depend on variables outside the direct influence of monetary policy, e.g. bankruptcy risks. While accounts payable are a liability for one company, they represent at the same time an asset for another company. This feature can become crucial during drops in demand such as in the acute phase of a pandemic. Notably in the event of a lockdown firms get confronted with severe falls in demand and/or production shortfalls against the backdrop of restrictions imposed aggravating various forms of supply chain disruptions. Thus, a sudden drop in sales for one company could lead not only to reduced demand directly through the supply chain but could also lower other companies' liquidity position. Because of the importance of intercompany finance, this affects firms' solvability. A closer analysis of company data from Bureau Van Dijk/Orbis reveals that in Sweden (as is customary for other advanced economies) small-sized companies, tend to hold more cash relative to accounts receivable than larger companies, suggesting a larger buffer among smaller companies.

An indicator for liquidity stress

We use the Bureau Van Dijk/Orbis database, one of the most populated corporate databases, to develop our indicator for corporate liquidity stress. We add accounts receivable to the "cash or equivalent" assets. This should be a useful gauge of liquidity as accounts receivable typically have a short duration of up to one month and, thus, resemble cash and cash-like instruments. The indicator for potential liquidity stress then becomes the sum of accounts receivable and cash divided by the accounts payable.

Liquidity stress is most likely to follow from a sudden halt in cash inflows that limits the immediate ability of companies to service their accounts payable. This, subsequently, leads to a shortage of cash inflow from accounts receivable for the company having sold the service or good.

In our study, data availability constrains the scope of branches covered. Firms active in the contact-intensive branches most directly hit by COVID-19 – restaurants, hotels recreational and cultural activities – are weakly represented in the database. Therefore, the analysis focuses on the manufacturing and the wholesale/retail trade sector, for which the Orbis database has the best data coverage across company sizes. The macro-relevance of the analysis should still be maintained, however, as the branches covered reflect the most capital-intensive and credit-intensive ones among non-financial businesses and firms.

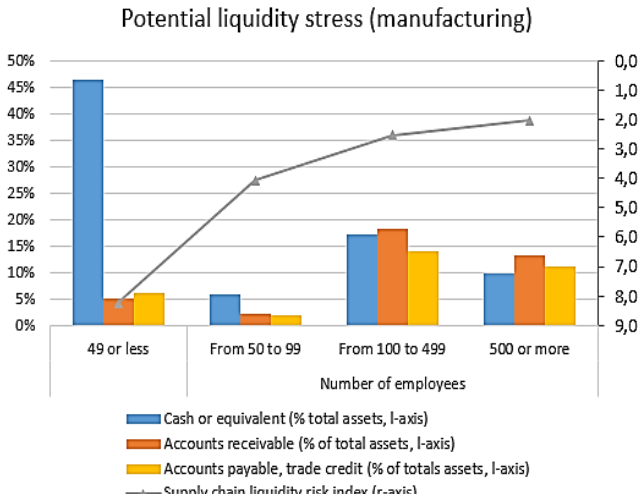
The characteristics of the database, though, still has a more limited coverage of small company accounts. For Sweden, the Orbis database covers 1 221 manufacturing (trading: 2 695) companies with less than 50 employees out of 50 249 (trading: 124 964), roughly about 2% (3%) of such small-sized business entities. This percentage rises to 14% (18%) for companies with 50 – 99 employees, to 20% (25%) for those with 100 – 499 employees and to 73% (39%) for companies with more than 500 employees. This is unsurprising as a bigger share of large companies tend to publish their accounts.

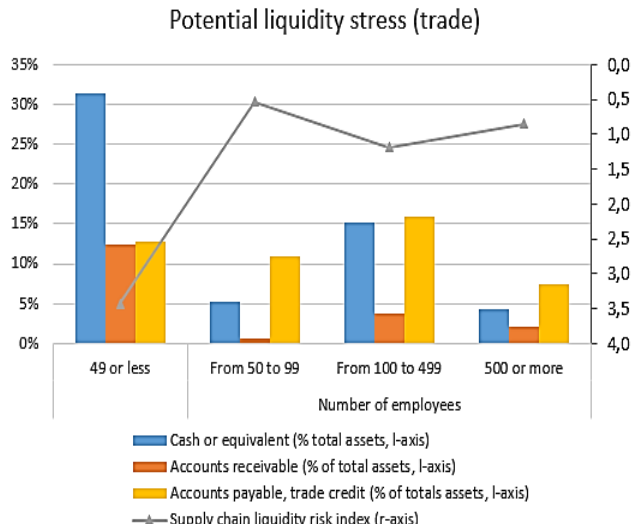
Against the background of a need to limit our analysis to two sectors, the focus on manufacturing and trade in our analysis also has advantages. It allows to link the quantities and prices in company accounts to key metrics in national accounts because of the association with goods flows in the input-output tables (instead of services flow for which the reliance is more heavily on hours worked in determining their value added) and, in particular manufacturing, the larger disaggregation under the NACE industry classification which facilitates to illustrate the scope of potential cascading effects.

Another advantage of a focus on manufacturing and retail and wholesale trade is their particular position during the pandemic. The manufacturing sector is the most integrated business sector with the largest amount of liquidity in the form of cash and accounts receivable. In Sweden, it also has the highest turnover and capital stock – a characteristic likely also found for other advanced economies. Retail trade was among the most exposed branches in the initial phase of the pandemic, characterised by restrictions of various nature, changes in customer behaviour as well as supply disruptions, which resulted in changed consumer spending by shifts between expenditure categories, falling demand and a shift to online retail services.

Graph 2 shows different liquidity metrics for companies and firms in Swedish manufacturing and trading for 2018 in the bars of the graph. Because the "liquidity stress indicator" is the ratio of cash and accounts receivable to accounts payable, a higher ratio implies lower potential for liquidity stress (line in the graph). For ease of reading the secondary y-axis with the values of the potential liquidity stress indicator is, therefore, inverted.

Graph 2: **Liquidity stress indicators and their constituting components for the manufacturing and trading sectors (2018, differing scales on y-axes)**





Source: Orbis database, Commission services.

A first observation from graph 2 is that the smallest Swedish manufacturing and trading companies hold a large share of their assets in cash or equivalent and these cash holdings well supersede the accounts receivable and payable. Consequently, they score lower on the potential liquidity stress indicator. This is not to say that these smaller corporates run the lowest risk of liquidity stress as it may reflect characteristics that change with size like lower turn-over, higher prevalence of leasing rather than outright capital investment and lower capacity for cash management in a dedicated treasury department.

The leverage of the trade sector between accounts payable and receivable is much larger than in manufacturing. Accounts payable can reach up to 16 times the accounts receivable in the case of trading companies with between 50 and 99 employees. For these relatively small trading companies, the available cash is not enough to pay one month of accounts payable. Interestingly, the smallest trading companies seem to be best placed to service their accounts payable. Larger trading companies in our database also have a large mismatch between accounts receivable and payable and limited immediately available cash buffers to make up for short-falls in revolving trade credit but are expected to have more opportunities to increase liquid assets temporarily, for instance through overdraft facilities or other credit lines that are not so easily available to smaller sized companies.[3] Moreover, large undertakings with sizeable fixed assets as well as multinational companies have opportunities to access multiple sources of finance to cushion cascading effects, e.g. from bank credit lines, but also from direct capital market access. In Sweden, the degree of direct access to capital markets is high in an EU perspective. However, such direct access channels tend to dry up rapidly during phases of acute stress and uncertainty. In all, the exposed network of suppliers/vendors for large companies could imply appreciably wider ramifications of liquidity stress transmission.

Trading companies appear generally more susceptible to pass on liquidity shocks by these metrics. Other assets, however, could offer a further buffer to liquidity shocks. In the case of manufacturing, larger fixed assets can serve as a collateral to temporarily raise cash. Trading companies' assets, on the other hand, consist of more working capital and their fixed assets might be less specific to the company and its production line (buildings, IT equipment, cars and trucks), offering more options to draw liquidity from these assets. Along a similar line of reasoning, in case liquidity shortfalls should lead to a solvability issue, such fixed assets for trade might be transferred easier to another company.

Cascading effects

The potential liquidity stress indicator gives the 'open position' of companies and firms but does not indicate the counterparty. It is, nonetheless, clear that every account receivable on one company's balance sheet is an account payable on another company's balance sheet. Thus, non-payment by the debtor company will either reduce the cash balance of the creditor company or lead to the creditor company not fulfilling its payment obligations, either.

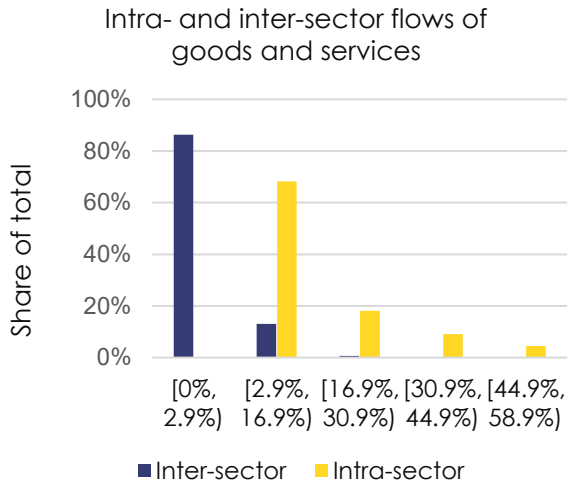
To gain a better understanding of the counterparties and how the exposures develop across industries, we consider the input-output table for the Swedish economy. The accounts payable/receivable, on which our potential liquidity stress indicator is based, is the financial counterweight to goods delivered and services provided. The flows of goods and services are recorded in the input-output tables on an annual basis. These tables aggregate all types of goods and services – from iron ore smelters to coffee services – and the frequency of the turnover is unknown. As a consequence, the input-output tables do not mirror one-on-one the exposure of firms

[3] Under normal circumstances this would be standard business practice, as the working capital thus provided via suppliers can be expected to be cheaper than alternative financing sources.

through accounts payable/receivable; a capital investment has a different cash flow than coffee filters. Still, they do provide an indication of counterparty risk through accounts payable/receivable and possible cascading effects (see also Amberg et al, 2021b).

A first observation from the input-output tables for the manufacturing and the trading sectors show that in a vast majority of cases trade *within* a NACE 2 digit industry is larger than trade *with* other sectors (for our sectors: trade and manufacturing). Graph 3 shows the distribution of flows of goods and services within a sector (intra-sector, e.g. manufacturing of food products, beverages and tobacco) and between sectors (inter-sector, e.g. from manufacturing of food products, beverages and tobacco to the manufacturing of textiles, wearing apparel and leather products). In three quarters of the cases, the intra-sector 'exposure' – given by the share of trade with the other sector - is between 3 % and 17 % (second interval on the x-axis of graph 3). Most commonly (median), the intra-industry trade represents 13 % (average: 16 %) of total trade in goods and services by the manufacturing and trade sector.[4]

Graph 3: **Histogram for flows of goods and services within and between sectors ("branches") in manufacturing and trading (2017, % of total flows)**



Source: Statistics Sweden, European Commission.

A second observation is that goods and services trade with other industries is generally much lower in manufacturing and trade, with a median of 1 % (average 2 %) of all trade recorded between industries in the manufacturing and trading industries (excluding other branches of economic activity in the economy). Notable exceptions are the flows from the branch 'manufacture of fabricated metal products (except machinery and equipment)' to the 'manufacture of machinery and equipment n.e.c. (22 %)' and the supply from wholesale trade to the 'manufacture of machinery and equipment n.e.c.' (26 %). Manufacturing and trade jointly account for the majority of goods trade but in some cases major users of the goods produced is outside these two NACE categories. For instance, the major user of manufactured food, beverages and tobacco is the accommodation and food services industry (NACE category "I").

In all, the above suggests that risk of macro-economically significant cascading effects appear to be highly concentrated within each branch of industry itself. However, there are a few notable exceptions where non-financial corporations and firms have important financial exposures to other branches. Not surprisingly, these exceptions happen to be major industries which have a large share of economy-wide value added and important links to highly integrated branches of activity, such as machinery production, fabricated metal products as well as vehicle production. This underlines how risk stemming from cascading effects due to company liquidity stress could become macro-relevant. Potentially, it could lead to liquidity shortages that occur in a rather limited set of industries spilling over to other parts of the economy during episodes such as a pandemic. This could have significant consequences for the economy as a whole.

So far, it appears that for Sweden liquidity stress in the direct wake of the Covid-19 pandemic, even where it did materialise, has not led to a wave of corporate failures. Furthermore, a broad credit crunch seems to have been avoided, whereas banks did not witness a significant rise in non-performing loan ratios. To a large extent, this is due to forceful policy action to which we now turn.

[4] Industry structure will arguably also have an influence on the risk of cascading effects.

Policies reducing potential liquidity stress

The Swedish authorities have reacted to the pandemic with a significant economic policy response. Many of the implemented measures directly and indirectly targeted the liquidity needs of the non-financial corporate sector thus helping to reduce financial cascading risk. The policies, described below per policy institution chiefly responsible, have in all helped to reduce liquidity stress (IMF, 2021). In particular, they helped to maintain the foundation for the rapid rebound in economic activity, including by liquidity risks from becoming solvency risks and by enabling the continued financing of investment. The exact impact is difficult to quantify and compare across instruments, partly because of their heterogeneity and partly because of the notional nature of some liquidity measures.

Riksbank

The Riksbank engaged in unprecedented monetary and financial policy action in response to the Covid-19 crisis. This is very likely to have reduced potential liquidity stress in the Swedish supply chain in the immediate aftermath of the start of the pandemic. Over and above maintaining a low policy interest rate, by its own estimates (Riksbank, 2022), the Riksbank stood ready to provide up to SEK 1,200 bn (around EUR 120 bn, equivalent to more than 20% of GDP) to the economy by purchasing securities (including direct purchases of corporate bonds), through funding to banks to support lending to corporates, giving the opportunity to borrow against collateral, and via US dollar loans worth USD 60 bn swap facility agreed with the US Federal Reserve system. Of course, this was a notional maximum amount and chiefly served to underpin confidence, while actual use through e.g. bond purchases, albeit sizeable, was far less.

Alleviating the financing conditions for larger companies has proven more straightforward than for smaller firms. Larger companies, in normal times, mostly attract funding in the capital markets and smaller companies are mostly dependent on banks for their funding. This pattern is more pronounced in Sweden than in most other EU countries. Easing the financial conditions for larger companies could thus be achieved both through the extension of the bond purchase programme to corporate bonds and through supporting bank lending. Indeed, in the initial stages of the Covid-crisis, spreads on corporate bonds did increase markedly, which did impede direct market financing and initiated a shift to bank borrowing as the main funding channel for firms and corporations (Finansinspektionen, 2021) at the same as cash inflows dropped due to a sudden stop in demand. Especially in the initial phase of the crisis, banks played a crucial intermediary role in passing on the liquidity provided by the Riksbank. As corporate spreads declined subsequently, capital market funding opportunities again improved for larger corporations.

Finansinspektionen

The Swedish Financial Supervisory Authority (Finansinspektionen) lowered prudential buffers and eased other regulatory requirements to support lending by financial institutions, which made additional liquidity available to the corporate sector. Measures taken by Finansinspektionen included the release of the counter-cyclical capital buffer of 2.5%; allowing banks to temporarily suspend amortisation requirements for households and lifting of liquidity coverage ratio requirements for a range of currencies. The immediate effect of these measures was to help banks maintain credit exposures. In the longer run, however, there could be adverse effects from easing macro-prudential requirements on bank profitability and the capital base of banks, should creditors run into difficulties to service their loans. This, however, would take time to materialise and would require a more severe and longer-lasting macroeconomic downturn than the Covid-shock.

Swedish fiscal authorities

The government used its fiscal space for a wide array of measures (adding up to around 3.4% of GDP in 2020, 2.7% of GDP in 2021 and 1.5% in 2022 according to Commission services estimates) addressing issues in health and elderly care, the labour market, support of companies and of municipalities and regions. Companies received the largest share of the support although often their employees were the ultimate beneficiaries. The immediate impact was, thus, an improvement of the liquidity position of non-financial corporations. The high growth of corporates' bank deposits at the outbreak of the pandemic when policy measures were designed and implemented, testifies of a boost in liquid assets of corporations. For instance, the part-time unemployment scheme took over the wage burden for employers, who continued paying wages

and did not have to dismiss workers. The employers' wage costs could thus be reduced by up to 72 percent while, at the same time, working hours could be reduced by up to 80 per cent.

Major fiscal measures taken to counter the Covid impact which also, directly or indirectly, supported the liquidity position of Swedish non-financial corporations include:

- Aid to firms based on loss of turnover, depending on the share of turnover loss, calculated on the basis of fixed costs. Legal entities could benefit as well as natural persons who run a business liable to taxes.
- Temporary reduction of employers' social security contributions.
- Temporary discount for rental costs for firms in branches with considerable difficulties as a direct result of Covid-19, notably for producers of durable consumer goods, hotels and restaurants.
- Delayed tax payment through tax accounts. Companies could defer a maximum three months' payment of employers' social security contributions, preliminary tax on salaries and value-added tax that are reported monthly or quarterly. The new regulations could be applied retroactively from 1 January 2020. The measure was aimed to immediately reinforce liquidity stress; taxes due will ultimately have to paid
- Deference of the annually reported value-added tax.
- Possibility for SMEs to claim back certain preliminary tax advances paid in 2019 or pay them later or set them off against future losses.
- A central government loan guarantee to make it easier for companies to access bank financing, targeting primarily SMEs. The maximum threshold for loans to individual companies was set at SEK 75 million with the risk shared between the government and banks (70/30 percent).

In terms of crisis support, the full ranges of all these measures are generally accepted as having been supportive of the corporate sector and the economy at large. They helped reduce potential liquidity stress. In fact, they could be seen as neutralising to a significant degree the direct cascading effects that are the focus of this paper. However, the financial transmission mechanisms, including of cross-exposures of firms and branches, remain relevant and indirect effects may become visible with a delay, especially after the phasing out of public support measures. Moreover, the ultimate welfare impact of fiscal support measures is still to be evaluated. For that a longer time period needs to be assessed, covering also a period during which support measures already were phased out.

Further analysis along such lines could assess the success of fiscal support by identifying survival rates of firms on the basis of the firms' characteristics pre-dating the Covid-19 crisis. Connel Garcia and Ho (2021), for instance, use firm level data for France to analyse liquidity risks and find that liquidity risk diminishes across the board. That could suggest less creative destruction during the Covid-crisis and risks to future productivity growth hampering the ability to return to the pre-crisis growth path. However, one could point at the possibility for a more benign outcome. For instance, with the smallest companies holding the largest share of assets in the most liquid forms, the liquidity backstop offered could also have allowed these small companies to dedicate larger parts of their assets to investments. Thus, future research will have to determine the overall welfare impact of the various support measures during the Covid-crisis.

Policy considerations

In response to the Covid-19 pandemic, the Swedish authorities have taken swift action, which not only helped cushion the immediate fall-out on income and employment, but also supported firms directly and reduced liquidity stress among companies through various measures to support liquidity and credit supply. Policy intervention has been instrumental in limiting risks from second-round, cascading effects of the crisis on corporates. The strong financial starting position of Swedish corporates and the overall resilience of the economy (European Commission, 2022) has, of course, also played an important role in limiting downside risks of the Covid-19 crisis.

This notwithstanding, financial transmission channels may play a role in determining longer-term impacts of the crisis, especially as support measure are withdrawn. In this respect, different feedback loops and transmission mechanisms both across companies and firms and across industries will likely lead to divergent outcomes. Most of such adverse effects, whether intra or inter-industry, so far have been prevented or at least cushioned to a significant degree by the extent and wide coverage of policy

support both in Sweden and, largely, in the EU as a whole.

However, the full impact of financial feedback mechanisms may come with a delay at the revocation of support measures. It is likely that this will lead to a pronounced differential impact across sectors and branches. Such an impact may well interact with other sources of financial stress, amplifying the overall effect. A more detailed assessment, which goes beyond the scope of this paper, could provide further insights into the impact across sectors of the economy. In this paper, it is reasoned that an input-output framework could provide for indications of exposures.

Currently, the Swedish economy is witnessing a phasing out of crisis support measures at the same time as price and cost pressures increase sharply. In such an environment with weakening growth prospects and tightening financial conditions, liquidity stress might reappear for other reasons than the pandemic. For instance, indebted companies may face rising costs of debt service due to higher interest rates. These in turn could lead to localised payment difficulties or bankruptcies, which could propagate across branches and companies via linkages as discussed in this paper. Were this to occur, our approach offers a gauge of possible cascading effects that propel liquidity shortages through the economy. Our findings suggests that it is instructive to delve into sectors and branches in designing a differential policy response – with a close look not only at fiscal costs, financial sector health, or direct financial support, but also with a good appreciation of indirect cross-sectoral cascading effects that might chiefly operate through liquidity created between companies.

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