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Firms' expectations on access to finance at the early stages of the Covid-19 pandemic

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Abstract

This paper provides novel information on the propagation of the pandemic-induced real shock to firms' financial conditions. It uses firm-level survey data from end February to early April 2020 for a large sample of euro area SMEs and large firms. Firms' expectations on the availability of credit lines, bank loans and trade credit deteriorated significantly in the first half of March. Firms mostly expected to be affected if they had previously difficulties in securing finance, had higher indebtedness and, hence, less capacity to deal with a liquidity shock. Conditional on these factors, firm size does not seem to matter, except for trade credit, in which case SMEs had more positive conditional expectations. Together with the overall deterioration of expectations, there seems to have also been a reallocation of opportunities to access finance amidst the crisis. Small firms were more likely to have conditional expectations of improvement in their access to finance.

JEL Classification: C83, D22, D84, E65, L25.

Keywords: COVID-19, expectation formation, survey data

Non-technical summary

The COVID-19 induced demand and supply shock is thought to have resulted to severe short term funding problems for many firms necessitating substantial sources of external finance. Firms that fail to secure the necessary external finance in the coming months may be forced to bankruptcy or to substantial long term reductions in their assets and employment even if they are otherwise viable.

Using data from the ECB Survey on the Access to Finance of Enterprises (SAFE), this paper investigates the possible channels of propagation of a demand and supply shock to the financial conditions of firms. From the firms' point of view, a propagation of a real shock to the financial conditions would seem highly probable even if bank credit supply were to remain loose. This is because of the effect of such a shock on the firms' balance sheets, sales and profits. An additional channel could be via the trade credit, as trade partners get less willing to extend credit to each other in the presence of a macro-economic shock.

Firms' expectations of future availability of credit lines, bank loans and trade credit deteriorated significantly in the first half of March, shortly after the declaration of the pandemic by the World Health Organization. For some firms, the macroeconomic shock is likely to have been compounded by the previous weakening of their income and profits, working capital and indebtedness. Liquidity, created for example through the use of factoring, also seemed to matter. Conditional on the macro-environment and the financial history of the firm, firm size or other structural characteristics do not seem instead to have had a significant impact on its expectations of future bank credit availability. For trade credit, instead, small and medium enterprises seem to have had less negative expectations than large ones.

The evidence suggests that the pandemic shock may have created a generalised short term liquidity problem and a major challenge for many firms, but it may have also created business opportunities and redistributed the opportunities for access to bank credit across firms. Small enterprises were more likely than large ones to be among those expecting an improvement of access to external finance amidst the crisis.

Finally, to gain some further insight on how the intensification of the pandemic may have affected expectations, we considered firms in two groups of countries, those that experienced an above average deterioration of expectations and those with below average deterioration. Our results suggest that firms of the first group that had seen their debt to asset increase were more likely to expect a deterioration in bank lending. Firms in countries with below average deterioration in expectations, on the other hand, were more likely to expect an improvement if their turnover had recently increased and they had used factoring (and hence managed their liquidity).

1. Introduction

The information available so far suggests that the COVID-19 pandemic has resulted to a grave demand and supply shock that may still turn out to be an existential threat for many non-financial companies. Even if the shock proves to be short-lived, as one hopes that it is, the sudden drop in activity is feared to have created severe liquidity problems to many firms necessitating substantial sources of external financing (Famiglietti and Leibovici, 2020, Fahlenbrach et al., 2020). Failing to secure the necessary funds for the coming months may result to bankruptcies or to substantial, long term reductions in the activity of otherwise viable firms. In the long run the effects of the demand/supply shock may turn out to differ substantially across firms. While many of the surviving firms may see their financial conditions deteriorate, some firms may even end up benefiting from possible long term changes of tastes, production processes and trade arrangements. For example, Hassan et al. (2020) found that, in their first quarter conference calls, a small subset of publicly listed companies could see opportunities arising from the disruption of competition in their markets.[1] Based on the transcripts of the conference calls, listed firms tended to be more concerned of decreasing demand, disruption of supply chains and the closure of production facilities rather than their financing position. On the other hand, a survey of US smaller enterprises found that many small businesses were financially fragile due to the COVID-19 induced crisis (Bartik et al., 2020 and OECD, 2020 for several other countries).

In this paper, we exploit new information from the ECB Survey of Access to Finance of Enterprises (SAFE) in order to analyse how non-financial companies in 12 euro area countries expect the financing conditions to develop in the coming months. The emphasis is on structural characteristics and firm idiosyncratic factors that may have compounded or cushioned against the pandemic induced macro-economic shock. In line with the above considerations, the focus is on both companies that expect their access to finance to deteriorate and on those that expect this to improve. Though the survey information is only qualitative in nature, it has certain advantages compared to market based information. First, the firms in our sample span all size classes. Second, the information refers to all the main types of financing used by firms in our sample, including trade credit. Third, the expectations of firms, whether right or wrong, form presumably the basis of the firms' production and investment decisions and are therefore of interest over and above market based forecasts. Last, the firms' own view of the nexus between their real and financial activities is in itself of interest in understanding corporate decisions.

[1] Similarly, about 30% of 690 small US businesses surveyed by Veem, a global payments network, "..were more optimistic, suggesting that some industries were better positioned to thrive in the current environment" [of the COVID-19]. See https://www.reuters.com/article/us-health-coronavirus-usa-business/over-80-of-u-s-small-businesses-expect-longer-impact-of-pandemic-survey-idUSKBN22N1AV

The paper first investigates the possible channels of propagation of a real shock to the financing conditions of firms on the basis of the firms' answers to questions about financing availability in the last six months and the factors having affected this. This backward looking analysis confirms, on the one hand, the important role of bank credit supply ("willingness of the banks to provide credit") and, on the other hand, the possibility that a real shock can affect the financial conditions faced by firms even if credit supply were to remain unchanged. The latter channel is primarily through the effects of the real shock on the income and on the balance sheets ("own" capital) of the non-financial corporations and therefore on their credit worthiness. A potential additional channel that has received less attention in the literature is through trade credit, a source of funds much used by many euro area companies. Unlike the case of bank credit, changes in trade credit are not associated with any balance sheet effects, but depend instead on the credit history of a company, its current activity and the willingness of its trade partners to provide trade credit. The latter also means that a real shock may propagate within the non-financial sector even if it initially affects some parts of the real sector only.

In the second part of the paper, we focus on firms' expectations of financial availability in the six months following the SAFE fieldwork. The fieldwork took place in the month of March, when the pandemic intensified in Europe. Using the daily information from the survey, we document how firms' expectations deteriorated sharply in the first half of March, shortly after the declaration of the pandemic by the World Health Organization (WHO). While the pandemic induced economic shock was widespread, the question we investigate is whether some firms have weathered it better than others, depending on their previous performance and/or structural characteristics. Concerning the first, the focus is on factors that would have affected the liquidity of a firm and its ability to withstand a sudden stop of income as signs that firms were indeed expecting that liquidity problems would hinder their access to external finance after the immediate shock of the pandemic. As for the structural characteristics, the focus is on the firm size (measured by the number of its employees), which continues to be in the spotlight of many policy discussions related to COVID-19.

For many firms, the macroeconomic shock is likely to have been compounded by a number of idiosyncratic factors related to their recent credit history. The credit history (past change in the availability of external finance) is found to be particularly important for firms that faced previously a deterioration in their access to finance. The liquidity indicator ("use of factoring") and the ability to withstand a liquidity squeeze (previous change in "debt-to-assets ratio") are also found to have the expected effect on the expectations of a future change in the access to external finance. One finding specifically related to the access to trade credit is that the conditional expectations of SMEs were better than those of large firms. This suggests that SMEs may have been intending to use trade credit as a substitute to other sources of finance at times of crisis (Carbò-Valverde et al., 2016).

Together with the deterioration of expectations in the first half of March, there seems to have also been a reallocation of firms' prospects to access to external finance. During the latter part of the survey fieldwork, more companies than before reported expectations of improvement in the access to bank credit notwithstanding the fact that they had experienced an "unchanged" or "deteriorating" access in the six months prior to the survey. Contrary to what one might have expected, micro firms (below 10 employees) were more likely to have expectations of improvement of external finance, conditional on their credit history. Splitting the sample into two groups of different countries, we find that a reallocation of prospects to access bank finance may have been present with different degrees across countries. This would suggest that, similarly to a sectoral shock, a reallocation of prospects could be the result of a common pandemic shock and its impact on some activities and organisational structures across countries. There may have been however also country-specific factors affecting the impact of such shock, for example, concerning the starting position of firms and different expectations about the policy reactions.

The rest of the paper is organised as follows. In the next section we describe the firm-level database and the econometric specifications used in the analysis. Section 3 reviews the main factors affecting firms' availability of finance during the six months prior to the survey as perceived by the firms. In section 4 we focus on the pandemic-induced shock on firms' expectations of future availability of finance by analysing firm idiosyncratic factors contributing to it. In section 5 the emphasis is on the best performers, while the last section concludes.

2. Data and models

The data at our disposal comes from the "Survey on the Access to Finance of Enterprises" (SAFE) run jointly by the ECB and the European Commission.[2] Firms in the survey sample are randomly selected from the Dun and Bradstreet database. The sample is stratified by firm-size class, economic activity, and country. There are four size classes defined by the number of employees - ([1-9], [10 to 49], [50 to 249], [250 or over]) - and four economic activities ("sectors"): manufacturing, construction, trade and services[3]. The specific individual that is surveyed in each firm is a top-level executive, usually a CFO or CEO. In smaller enterprises, this is often the owner. The questionnaire is administered in the local language.

[2] The survey is carried out partly through telephone interviews and partly through the internet. The survey's main results are published in the ECB website every six months. For more information on the survey and its individual rounds, see http://www.ecb.europa.eu/stats/money/surveys/sme/html/index.en.html.

[3] These four groups cover the Nave 2 rev. sections mining, manufacturing, electricity, gas and water supply, wholesale and retail trade, repair of motor vehicles and motorcycles, transport, and other services to businesses or persons, such as hotels, restaurants or IT services. It excludes businesses operating in agriculture, public administration and financial services.

The fieldwork of the latest SAFE survey started on 26 February and finished on 8 April 2020, though in the first and last days the daily sample was reduced.[4] On average, each day, a sample of about 390 firms was interviewed by telephone or contacted by internet from the 12 largest euro countries, namely, Austria, Belgium, Germany, Spain, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal and Slovakia. The overall sample for the entire period includes 11236 firms.[5] Depending on the model in question, we have between approximately 7000 and 3000 of non-missing observations (firms).

The main variables of interest in this paper concern the (past) change in the availability of external finance over the six months before the survey and the (future) expectations of change of external finance in the following six months. The change in the (past) availability of external finance for company i, R_i, can be modelled as a linear function of a set of explanatory factors as reported by the firms and a number of structural characteristics of the firm:

$$(1) \qquad R_i = f\{ X_i, F_i, \theta_{c,d}, u_i\}$$

The factors in X_i are those reported by the firms as having affected the availability of external finance in the last six months. They include the perceptions/opinions of the firms on how macro-economic factors, including the credit supply, may have affected the availability of external finance for their own firm. A detailed description of these factors is provided below. The firm characteristics, F_i, refer to ownership (family-owned), operational autonomy status, firm size and age as well as the main sector (industry) the firm is operating in. As the model is based on perceptions/opinions of respondents, we allow that these may be "tainted" by the macro-environment at the time of the interview. We thus introduce a set of dummies, $\theta_{c,d}$, one for each country, c, and for each day of the SAFE fieldwork, d, when the "interview" was carried out, while u_i, is the error term.

Turning to the change of expectations on the future availability of external finance, E_i, these are modelled as a linear function of the (past) change in the availability of external finance R_i, a set of independent variables Z_i concerning the performance of the company in the last six months prior to the last SAFE round and the firm specific structural characteristics, F_i.

$$(2) \qquad E_i = g\{ R_i, Z_i, F_i, \theta_{c,d}, v_i\}$$

[4] Below, we combine the data collections of Thursday 26/2 and Friday 27/2 and report these as if they all had happened on 27/2.

[5] It should be mentioned that as the overall sample is stratified, the daily samples may not be fully independent from each other. In particular, towards the end of the fieldwork, as the various quotas of country/sector/size have been completed, the probability of drawing a specific typology of firm in a specific country changes depending on the type of firms interviewed earlier. The main impact of this concerns the estimated time effects, particularly in the last period of the sample, which may as a result capture also part of the country or size effect.

Unlike (1), Z_i, refer to observable firm-specific independent variables reported by the firm of changes in the income statement and in balance sheet items of firms, such as the change in turnover or of debt to assets. A more detailed description is provided below. The $\theta_{c,d}$ dummies control for the macro-economic developments (shocks) separately for each country and v_i is the error term. The (past) change in the availability of external finance, R_i, plays here a role similar to a lagged dependent variable in a cross sectional model. As such, R_i is not independent of F_i, as can be seen also from (1), and may well be correlated also with some of the variables in Z_i, as discussed below.. On the other hand, R_i controls for unobserved factors that may not be orthogonal to the other independent variables, for example the credit history of the firm and, unlike a true lagged dependent variable, a priori it is not correlated to v_i, the error in the expectations model. Below we present both estimates with and without R_i.

The information in the survey is qualitative. Firms are typically asked if a specific variable has "deteriorated/stayed the same/improved" (denoted as -1/0/1). Instead of the continuous (latent) variables R_i and E_i and independent variables X_i or Z_i, we observe the respective trinary variables r_i, e_i, x_i, z_i. We thus estimate the probability of r_i and e_i taking one of the three values on the basis of logistic transformations of (1) and (2), having also replaced the independent variables X_i and Z_i by their discrete representations x_i and z_i. The models are then estimated by ordered logit regressions.

A second specification used throughout the paper is based on "collapsing" the trinary variables r_i, e_i, x_i, z_i into two binary variables each. In particular, we may define two new variables

$$r_{i-} = 1 \quad if \quad r_i = -1$$
$$= 0 \quad if \quad r_i \neq -1$$

and

$$r_{i+} = 1 \quad if \quad r_i = 1$$
$$= 0 \quad if \quad r_i \neq 1$$

In the first, we recode the r_i into a binary variable (r_{i-}) by merging the categories "stayed the same" and "improved" into a new category 0 ("not deteriorated") and vice versa for r_{i+-}.[6] The other trinary variables, e_i, x_i, z_i, can similarly be recoded as a set of binary variables. We can then estimate the two following logit models

(3) $$Prob(r_{i-} = 1|x_{i-}, F_i) = \Lambda(x_{i-}, F_i, \theta_{c,d})$$

(4) $$Prob(r_{i+} = 1|x_{i+}, F_i) = \Lambda\{x_{i+}, F_i, \theta_{c,d}\}$$

[6] Note that by "collapsing" r_i to the binary variable r_{i-} the sign of "deterioration" also changes from -1 to 1.

where $\Lambda\{\ \}$is a logistic transformation of the linear model in (1). Similarly, for the model in (2) we may write

(5) $$Prob(e_{i-} = 1|z_{i-},\ F_i) = \Lambda\{\ z_{i-},\ F_i,\ \theta_{c,d}\}$$

(6) $$Prob(e_{i+} = 1|z_{i+},\ F_i) = \Lambda\{\ z_{i+},\ F_i,\ \theta_{c,d}\}$$

The advantage of "collapsing" the trinary variables to a set of binary ones is that the interpretation and presentation of the estimates are much easier. It also allows for the possibility that the effect of the independent variables is different when the (expected) availability of finance is improving or when it is deteriorating. Such asymmetric effects have been considered in various models, for example, because of balance sheet constraints that bind only during credit tightening.

The ordered logit model of (1) and (2) and the binary logit versions of (4) to (6) are all estimated separately for three types of external finance, namely credit lines, bank loans and trade credit. The SAFE survey includes also information on market-based finance, such as issuance of debt securities and equity capital as well as on subsidised loans, leasing, factoring and loans from business and friends. In our sample, credit lines and bank loans were the most common sources of finance used by both large firms and SMEs (Figure 1). In particular, 60% of large firms and 53% of SMEs reported that credit lines were for them "relevant" as a source of financing and 62% and 55% respectively for bank loans. Trade credit is also a common source of external finance in Europe, with 33% of large firms in our sample and 32% of SMEs reporting this as relevant. Factoring is also found attractive by large firms and SMEs as well, though it is more often reported by large companies (23% versus 10%) (ECB, 2020b).

[FIGURE 1]

Table 1 below presents summary statistics. European Central Bank (2020a) provides more detailed information on the latest SAFE survey.

[TABLE 1]

3. The last six months: firms' views on what affects financial availability

The link between macro (real) fluctuations and the cost and availability of external finance for non-financial firms has long been a central piece of the explanation of business cycles in economic literature. Essentially, the argument has been that real shocks have an impact on the balance sheet and net worth of companies by either affecting their profits and income or the net worth of their assets

(through the asset prices) and hence also their creditworthiness (see for instance Bernanke and Gertler, 1989 and Kiyotaki and Moore, 1997). Additionally, there is an even longer literature on the indirect channel that goes via the financial system, as fluctuations in the net worth of non-financial corporations also affect the assets of banks and of other financial institutions and hence also the supply of credit (see surveys by Gertler and Gilchrist, 2018 and the Basel Committee on Banking Supervision, 2011).

While credit lines and bank loans often feature in financial accelerator models, the literature on trade credit has been somewhat separate. Trade credit is however an important source of mainly short term finance for companies in many countries in Europe and, as such, it may be particularly important in the presence of a liquidity shock (see McGuiness et al., 2018 and Ferrando and Mulier, 2013). As Carbò-Valverde et al. (2016) argue, to assess the possible impact of a credit crunch all (main) sources of external finance must be considered. One type of lending may substitute for another and a shock in one may propagate to others. In particular, a deteriorating macro environment can cause the break of the usual demand and supply chains drying up trade credit funds across a wide range of companies.

The SAFE survey asks firms directly about the factors they consider to have affected the availability of finance in the last six months, separately, for credit lines, bank finance and trade credit. Firms report whether these factors have deteriorated, remained unchanged or improved.[7] The factors (independent variables x_i in (3) and (4)) refer to changes in (1) the general economic outlook, (2) the willingness of the counterparty (business partner or bank) to provide credit to the enterprise, (3) the enterprise-specific outlook with respect to the sales and profitability or business plan, (4) the enterprise's own capital (capital provided by the owners or shareholders of the enterprise) and (5) the enterprise's credit history. In short, the two first factors refer to the macro-environment and, in particular, (2) refers to changes in the supply of credit from banks or business partners, and (1) is a "catch-all" category that aims at capturing the effects of changes in the macroeconomic environment on the credit conditions faced by a firm, for example, through the fluctuations of asset prices or the sovereign debt risk. The remaining factors are firm specific. Specifically, (3) refers to changes in sales and profit flows that affect the income statement and (4) and (5) refer directly to changes in the firm's balance sheet and history. All variables reflect the perception/opinion of what the firm considers as having been relevant to the availability of external finance in the six months from October 2019 to March 2020. Additionally, there is information on a number of firm structural characteristics, F_i, as described in the previous section.

Table 2 presents the estimates from the ordered logit version of model (1) where the continuous dependent and independent variables have been replaced respectively by the trinary variables, r_i and x_i, as discussed in section 2. Table A1, in the Annex, reports the respective estimated average

[7] This is question Q11 in the SAFE questionnaire.

marginal effects. Estimated coefficients of all independent variables, x_i, are statistically significant with the only exception being the change of own capital in the model of trade credit. The effect is in all cases positive, i.e. an improvement in any of the independent variables, x_i, reduces the probability of a firm reporting "deterioration" or "unchanged" availability of finance and increases correspondingly the probability of improvement in financial availability (see table A1). The impact of the general economic environment and the willingness of banks and trade partners to supply credit dominates the marginal effects, but idiosyncratic factors, such as the firm's sales and profits, own capital and credit history have on occasion also statistically significant effects. A Brant test rejects the hypothesis underlying the ordered logit model that the estimated coefficients of the general economic outlook and of the willingness of banks to lend are the same when financial availability is deteriorating or when is improving (Brant, 1990). The same is true for credit history in the bank lending regression.

[TABLE 2]

In Table 3, we look separately at these two cases, i.e. deterioration or improvement of external finance availability. The Table shows the estimated margins, i.e. by how much the probability of financial availability would change if an independent variable were to change in the same direction. For example, other things being equal, the first estimate in the Table 3 shows that a perceived worsening of the general economic outlook raises the probability of a firm reporting a deterioration in the availability of credit lines by about 8%.

The results largely confirm what was found in the ordered logit regression. From the point of view of the firms, the macro-economic environment plays a predominant role, either directly or through the credit supply. A perceived worsening in the macro-environment, including in the credit supply, results to approximately 25% to 30% higher probability that a firm will report a deterioration in the availability of external finance (of credit lines, bank loans and trade credit) no matter what the firm specific conditions are. Though of a lower magnitude, the estimated margins for the firm specific factors (changes in sales, profits, own capital and firm credit history) are also statistically significant at the 1% or 5% confidence interval. The only exception to this concerns the enterprise's own capital (capital provided by the owners or shareholders of the enterprise), which does not seem to be associated with improvements in the financial availability from any of the three types of finance. This may reflect the fact that, during credit expansions, lenders are much more willing to tolerate high leverage ratios and, therefore, the availability of own capital becomes less of a determining factor. The same is not true however in times of deteriorating financial conditions (Gebauer et al., 2018). For trade credit, in particular, changes in the own capital do not seem to have a statistically significant effect in either improving or contracting phases.

[TABLE 3]

There is only scattered evidence, instead, that firm size matters. Small and medium enterprises (SMEs), and in particular "micro"-firms with less than 10 employees (not shown in Table 3), are more likely to face a deterioration in credit lines than larger companies. Apart from that, evidence suggests in general that small firms face less favourable conditions, but estimates are not statistically significant. There is also no strong evidence that other structural characteristics have a statistically significant effect, such as ownership (family-owned), operational autonomy status and age (results not shown in Table 3).

The perceived predominance of the effect of macroeconomic conditions, including the credit supply, on the availability of external finance is interesting in its own right, but might be specific to the period under consideration. In the period since early Autumn 2019, the attention was on macro-events, such as Brexit, trade relations and later the COVID-19 outbreak in China, and their impact on economic and financial conditions. For the purposes of this paper, a more interesting point is that, on the basis of firms' "opinions", even if bank credit supply were to remain unchanged, a demand/supply shock would still affect the availability of finance of a number of firms. The transmission channel goes in part through the effects of a shock on income and on the balance sheet (own capital) of firms, as theory would suggest. But the estimated margins for the variables referring to sales and profit and own capital are relatively low and not always statistically significant.

Two other potential channels seem to be important in this context. First, a deterioration of the general (macro-) economic outlook can have a significant direct effect on external finance availability, for example, through a sharp fall in asset prices. Second, and even more important, is the question of what happens to trade credit. Following a severe demand/supply shock, trade credit can contract fast if trade partners are unwilling to extend credit to each other (Deutsche Bundesbank, 2012). The estimated margin of trade credit supply (willingness of business to lend) on trade credit availability is high. While the net result of a contraction of trade credit on the balance sheet of non-financial corporations may be limited if, for example, trade receivables and trade payables were both to reduce, the ensuing difficulties in supply chains and trade arrangements could further contribute to the downturn in firms' activity and creditworthiness.

On the basis of these results, the likelihood of a liquidity squeeze and/or credit crunch following the pandemic shock depends on a number of macroeconomic developments (bank credit supply and asset price developments) as well as microeconomic factors that affect how the shock may propagate within the non-financial industries. In the next sections we examine what firms' expectations at the start of the pandemic tell us in this respect.

4. The pandemic-induced shock and firm idiosyncratic factors

There were isolated cases of persons infected by COVID-19 in Europe already in January 2020 (and perhaps even earlier), but the first larger clusters were reported in Italy in the latter part of February. By 26 February, when the SAFE fieldwork started, Italy had reported over 500 cases of COVID-19 and 14 deaths. By then, cases were also reported in all other countries in our sample. A key date during the period of the fieldwork is the 11th of March, when the World Health Organization (WHO) declared a pandemic, followed by a quick succession of announcements of "lockdowns" and border controls across Europe (in Italy, the lockdown had already been in place as of 8-9 March). As of 13 March 2020, when the number of new cases became greater than those in China, the WHO began to consider Europe the active centre of the COVID-19 pandemic.[8] In terms of economic policy, on 18 March, the ECB announced the Pandemic Emergency Purchase Programme (PEPP), while a series of fiscal measures were taken by single Member States since about 16 March. Many of the economic policy initiatives that followed, also at the EU level, fall outside the period of the SAFE fieldwork that ended on 8 April (OECD, 2020).

The disruption of economic activity by the pandemic in Europe is reflected in the expectations of the last round of SAFE. Compared to the previous SAFE round that took place in September-October 2019, the deterioration in the expectations for all three types of credit are clearly evident. In the last round of the survey, a weighted 32% of firms expected a deterioration in the availability of trade credit compared to 12% in the previous SAFE round. The equivalent percentages for bank loans were 31% up from 14% and for credit lines 28% up from 12%. Depending on which source of finance one is looking at, Portugal, Italy, Ireland, Spain and Slovakia tended to have the highest percentages of firms expecting a deterioration (see Figure 2). On the other extreme, Finland, Germany and for short term finance also the Netherlands had the lowest such percentages.[9]

[FIGURE 2]

Expectations of a deterioration were already relatively high at the start of the survey fieldwork, reflecting an already uncertain international environment. As the pandemic progressed, the number of firms expecting a deterioration increased sharply. In Figure 3, the daily responses are shown throughout the fieldwork of SAFE. These are conditional on the single country effects. The number of firms expecting a deterioration started to rise sharply around 12 March, shortly after the pandemic was declared by WHO, and would seem to have stabilised after 18 March, in the second part of the

[8] See https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Europe.

[9] The country and time effects for Figures 2 and 3 are estimated on the basis of the aggregated data (per day/country) with grouped logistic regressions, which use weighted least squares taking into account the number of firms covered in each country/day (see Baum, 2008). Both the country and the time effects are statistically significant.

SAFE fieldwork. The deterioration of expectation on trade credit availability has continued for longer. From 13 March to the end of the fieldwork, the weighted average percentage of firms expecting a deterioration in the availability of credit lines and bank loans was around 38%, that for trade credit 45%. Compared to September 2012, at the previously recorded maximum, these were between 8 and 16 percentage points higher.

[FIGURE 3]

It should be said at this juncture that the survey fieldwork finished early in April, when the full picture of the fiscal and monetary policy reaction may not have been clear yet to all survey participants. Also, there is evidence that expectations may initially overreact to a shock (see Bordalo et al. 2017). Evidence of such overreaction has been observed also in the SAFE data in the past (Ferrando et al. 2020). Even so, the all-time low in expectations reached in the second half of the fieldwork clearly shows that non-financial companies considered a coming liquidity/credit squeeze as highly likely.

Going beyond the macroeconomic shock, we are interested in the firm structural characteristics and idiosyncratic factors that may have compounded or cushioned firms against the pandemic shock. The aim is to infer these factors looking at how the expectations of firms with different characteristics and past performance changed during the crisis. Had the shock not taken place, the simplest model of the expectations on the change of the availability of external finance, E_i, would have been one based on the change of the same variable up to that point, R_i.[10] If there is a lagged impact between the performance of the firm and the approval of its loan application – because creditors evaluate firms on past performance –, then the expectations of future credit availability may also depend on a number of performance indicators from the last period, such as change in turnover, profits, interest payments, the sale of assets/retention of earnings and the debt to assets ratio. The last three indicators may a priori have a positive or a negative effect on the expectations of future access to external finance. Additional to the above, we consider structural or "conjectural" factors expected to have been of particular relevance in the context of the pandemic shock.

Concerning first the structural characteristics, F_i in equation (2) section 2, we focus in particular on firm size measured by the number of employees. If, as is often argued, a credit crunch were to affect smaller companies more (Holton et al., 2013, Faccia and Corbisiero, 2020), one would expect to see this reflected in their expectations on the availability of finance at the time of the pandemic shock,

[10] This ignores the fact that, in the long run steady state, the change in availability of external finance will tend towards the "unchanged" category. Financial availability for a firm cannot permanently improve or deteriorate. In the context of the cross-sectional model examined below, this would imply a firm specific error (error correction term) related to the longer run credit history of the firm. Firms that had seen their access to external finance consistently improve (deteriorate) over the past, should eventually see some stabilisation (or drop out of the market). This "error correction term" may not be independent across firms in the same country, and hence it will also be reflected by the country specific dummies in our models. It may also be correlated with some of the balance sheet variables discussed below, such as the past change in debt to assets ratio, or flow variables, such as the change in interest expenses, as discussed.

even though firm size did not seem to matter prior to the shock, as argued in the previous section. The roles of other structural factors (family-owned, operational autonomy status, firm age) were also tested. As these factors were not found to have a statistically significant effect, they are not reported below. The model also includes sector specific fixed effects, as the prospects of different activities may have been affected differently from the pandemic crisis.

Turning to the "conjuctural" factors (z_i), we hypothesize that if a liquidity shock was expected by the firms following the pandemic, this would have affected more strongly the financing of firms with high debt obligations and little liquid assets. Their expectations on the availability of finance would have been more negative as a result. Following this line of reasoning, we consider two balance sheet variables that could affect liquidity and "financial flexibility", i.e. the ability of the firm to withstand a sudden stop of income (Fahlenbrach et al., 2020). The two variables are changes in working capital and changes in debt to assets in the last six months. One more variable considered in this respect is whether the firm has used factoring. To recall, factoring is a financial transaction in which the company sells its accounts receivable (e.g. invoices) to a third party. It is part of liquidity management of a firm with typically no implications on the productive capacity and credit worthiness of the firm (Mol-Gómez-Vázquez et al., 2018).

Table 4 reports the results from the ordered logit versions of the model (2) of section 2, including all of the above variables, namely the past availability of external finance, r_i, the change of "flow" variables (turnover, profits and interest expenses) and the change of balance sheet variables (working capital, debt to assets ratio, sales of assets/retained earnings) as well as the binary variables on "use of factoring", firm size and sector. All models are estimated with robust standard errors and include a set of dummies, one per country for each day of the fieldwork, ($\theta_{c,d}$), to control for the evolution of the country specific macro shock, as discussed in section 2. The first three columns exclude, r_i, the change in the external finance availability in the last six months, while columns 4 to 6 include it. The estimated average marginal effects of the ordered logit model including r_i are reported in Table A2 of the Annex. [11]

[TABLE 4]

When the past availability of external finance, r_i, is not included in the ordered logit model (columns 1-3 in Table 4), then all "flow" variables have the right sign and a statistically significant effect on expectations other than the case of interest rate expenses on the expectations of trade credit. The estimates for the "balance sheet" variables give somewhat more mixed results. A fall in the working capital or the sale of assets/retention of earnings have a negative effect on expectations, as one would

[11] Variables concerning market based finance (equity and bonds), leasing and funds from "family, friends or related business" were also tested, but found not to have a statistically significant effect. They are therefore not reported below.

expect, but the estimated coefficients are not statistically significant in most cases. A fall in debt to total assets and the use of factoring have the expected signs and are statistically significant in the case of the expectations on bank loans and trade credit, suggesting that liquidity considerations may have been important in the mind of firms when forming their expectations.

In columns 4-6 of Table 4, the same models are re-estimated with the addition of the past change in the availability of finance, r_i. As mentioned above, this has a similar role as a lagged dependent variable and, as such, may better control for unobserved factors like the firm's credit history The main difference from the previous results (of columns 1-3) is the loss of explanatory power of the "flow" variables, turnover, profits and interest expenses. Instead, debt to assets and use of factoring continue to have a statistically significant effect for bank loans and trade credit and sales to assets/retained earnings have a negative and significant effect to both the expectations of bank loan availability and trade credit. Table A2 in the Annex further suggests that the estimated average marginal effect of r_i dominates quantitatively the effects of all other independent variables.

Overall, these results suggest that the firm's recent history, measured by the change of turnover, profits and interest payments as well as the change in the availability of external finance, plays an important role on the expectations of access to external finance. Additionally, a change in the debt to assets ratio and the use of factoring impacted the expectations of access to bank loans and trade credit, most likely because these were relevant to the ability of the firm to withstand a sudden stop of income and to have enough liquidity to continue operations, as argued by Fahlenbrach et al. (2020). The sales of assets/retained profits had instead a negative effect on expectations.

Conditional on the above firm-idiosyncratic effects and the macro-environment, firm size and other structural characteristics do not seem to matter when it comes to expectations on the availability of external finance. This is true for both the models with or without r_i. The one somewhat surprising exception concerns the expectations of micro and small firms (with less than 50 employees) on trade credit. Small firms were more likely to have positive (or less negative) conditional expectations on trade credit availability than was the case with large companies, possibly because small firms expected that, during the downturn following the pandemic, they were more likely to achieve longer "grace period" in delaying payments for goods and services from their suppliers.

Table 5 reports the estimates of the logit model (5), i.e. focusing on the expectations of firms that reported a future deterioration in the availability of external finance. Note that, by construction, the estimated coefficients of the logit model in Table 5 and those of the ordered logit model in Table 4 are expected to be of opposite signs (see section 2). Table 5 shows the estimated margins. For example, the first estimate in the first column of Table 5 is an increase of 6.7% in the probability of an expected deterioration in the availability of credit lines if a firm's turnover has fallen in the last six months.

[TABLE 5]

The results from the logit model in Table 5 confirm much of what was found in the more general ordered logit model in Table 4. In particular, as before, the estimated margins of the "lagged dependent" variable, r_{i-}, suggest a strong "hysteresis". A firm that experienced a fall in the availability of finance in the last 6 months is found to be about 30% more likely to expect a fall also in the future. A recent fall in the turnover or profits (the latter in the case of bank credit) had an additional effect on expectations, as did also two variables related to liquidity, the change of debt to assets and the use of factoring (the latter excluding the credit lines).

There are two notable differences between the logit models in Table 5 and the ordered logit models of Table 4. First, medium-sized firms were less likely to have negative (conditional) expectations on the availability of trade credit than large firms, possibly for the same reasons as mentioned above for the small firms. Second, firms in services reported more often expectations of deterioration, particularly for bank credit, presumably because they are less likely to be able to recoup any income lost during the lockdown and they expected to be worst hit by any future social distancing measures (Mann, 2020).

In conclusion, seen through the lenses of firms' expectations, the pandemic induced macro-shock could bring severe disruption to firms' access to external finance, more so for some firms than others. Firms that had difficulties accessing external finance during the previous period were clearly mostly at risk of a further deterioration. In particular, firms seemed to expect a liquidity shock as the lack of liquidity and low financial flexibility has a statistically significant effect on the expectations of deterioration. Expectations of access to external finance moved more or less in tandem for different types/sources of finance, including trade credit. Were a squeeze of trade credit to realise, the effects of the initial shock could propagate within the non-financial sector, as was argued in the previous section. Conditional on the macro-environment and the other idiosyncratic variables of a firm, structural differences such as firm size, age and type of ownership do not seem instead to have had a significant impact on firms' expectations. This is true also when excluding the "lagged dependent" variable, r_i, which is expected to be correlated with such structural characteristics. The exception to that concerns trade credit, where small and medium firms held less negative (or more positive) expectations than larger companies.

5. High performers and the reallocation of financial availability

As mentioned in the introduction, not all companies have seen their long term prospects deteriorate from the pandemic shock, though most are facing some type of short term disruptions. Approximately 20% of the enterprises in our sample reported an expected improvement of financial availability in the coming six months (Figure 4). This figure was somewhat higher for bank loans and somewhat lower for trade credit. As before, the percentages shown are conditional on country effects.[12]

[FIGURE 4]

It is notable that the (conditional) percentage of companies expecting an improvement has stayed relatively stable throughout the fieldwork of the survey. While the percentage of firms expecting a deterioration has clearly increased after 12 March, there was no mirror change observable in the upper tail of the distribution, as one might have expected. For bank loans, in particular, there seems to have even been an increase of the upper tail after 12 March to over 20% of all firms. The opposite seems to have happened to trade credit.

Concerning the idiosyncratic factors affecting the expectations of these firms, Table 6 reports the estimates of the logit model in equation (6) (section 2). This focuses on the expectations of improvement in the access of external finance. The independent variables closely mirror those in the models of the previous section concerning the firms with expectations of deterioration.

[TABLE 6]

There are few differences compared to the estimated models of the previous section. First, the past fall in interest expenses did not have a statistically significant effect on expectations of improved access to external finance. This may suggest that interest expenses may be associated with financial fragility if access to external finance is deteriorating, but may not be particularly informative on the creditworthiness of the firm if access to external finance is improving. More generally, "flow" variables, including changes in turnover and profits, tended to have less explanatory power when it comes to expectations of improvement in the access to finance. Second and perhaps contrary to what one might have expected, micro firms (below 10 employees) and in some cases also small and medium-sized firms (less than 250 employees) were more likely than large firms to have conditional expectations of an improvement in the access to external finance.

Subject to the caveats of comparing estimates across two different non-linear models, one may also note that the estimated margins of the past availability of external finance, r_{i-} and r_{i+} respectively, were lower in Table 6 compared to Table 5. A firm which had experienced an improvement of bank credit availability (credit lines or bank loans) the previous six months is estimated to be about 18%-

[12] The country and time effects are estimated on the basis of the aggregated data (per day/country) with a grouped logistic regressions, which use weighted least squares taking into account the number of firms covered in each country/day (see Baum, 2008).

19% more likely to report expectations of a further improvement in the future (compared to about 30% for firms that experience a deterioration and expected a deterioration). For trade credit, this was closer to 25% (compared to about 33% for firms expecting a deterioration). In other words, for firms with positive expectations, the recent credit record is less good as a guide for future expected access to finance compared to firms expecting a deterioration.

These estimates suggest that the apparent stability at the top of the distribution that one sees in Figure 4 could be misleading, as it says nothing about the characteristics and history of the firms at the top quantile. To see this point more clearly, consider Table 7 that shows (in rows) the percentage of firms that reported a "deterioration/ unchanged/ improvement" in the past availability of external finance and (in columns) the percentage of those that expected a "deterioration/ unchanged/ improvement" in the future. The Table shows these percentages separately for the three types of finance and splitting the sample until March 12 and thereafter. The cut-off point of March 12, a day after the WHO pandemic was declared, is chosen on the basis of Figure 4 as an approximate time when the expectations started deteriorating sharply in Europe due to the intensification of the pandemic. It should be mentioned, however, that very similar results are found if one were to arbitrarily choose as a cut-off point 19 March, the mid-point of the SAFE fieldwork.[13]

[TABLE 7]

Comparing the entries until and after 12 March, one clearly sees the shift of the distribution of expectations towards "deterioration" in all three types of finance. The shift concerns all parts of the distribution. For example, until 12 March only about 7% of companies that had experienced an improvement in credit lines in the previous six months expected a deterioration in the future (3rd row, 1st column). The equivalent percentage was over 28% after 12 March (3rd row, 4th column). This was true also for bank loans and trade credit. More interesting, as mentioned above, the overall percentage of firms at the top of the distribution increased or remained roughly the same after 12 March. These were not only firms that had experienced previously an improvement of access to finance. Firms that had been less successful in accessing finance before, expected to do better in the future, more so after the intensification of the pandemic. For example, before 12 March about 9% of firms that experienced a deterioration in their access to credit lines in the last six months reported expectations of improvement (1 row, 3rd column). After 12 March, the equivalent percentage rose to about 13%. The same was true for bank loans. Only for trade credit availability did the overall percentage of firms expecting an improvement fall slightly after 12 March.

The mobility observed in Table 7 in and out of the top of the distribution can be tested for in a multivariate context. In Table A3 in the Annex, we re-estimate the model in Table 6 allowing for the

[13] We are grateful to an anonymous referee for suggesting to compare and to check whether the results hold when choosing another, arbitrary cut-off point, such as the mid-point of the fieldwork.

estimated margins to change after 12 March. The main results of this exercise affect and can best be described by looking at the change after 12 March of the estimated coefficient of r_{i+}. Changes post 12 March of the estimated margins of other independent variables are not statistically significant, particularly when r_{i+} is included and are not reported in Table A3 in the Annex.[14] As before, the results also hold for the case where the cut-off point is the 19th of March.

Figure 5 summarises the main results. The three panels show the estimated margins for r_i before and after the intensification of the pandemic on 12 March. In the positive quadrant the bars represent the estimated marginal probability of a company expecting an improvement in finance when availability has increased in the previous six months (r_{i+}). The first bar shows the estimates for the period up to 12 March and the second one thereafter. Both are conditional on the country-specific macro-environment and on the other firm-specific variables (see Table A3). The bars in the negative quadrant present the other side of the story, namely how unlikely (less likely) it is that a company, who has experienced "unchanged" or "deteriorating" availability of finance in the last six months, reports expectations of improvement for the next six months. Also these probabilities are conditional on the macro-environment and the firm specific variables examined above.

[FIGURE 5]

Almost all estimated probabilities are lower for the period after 12 March, in many cases significantly so. This means that, conditional to the macro-effects and the idiosyncratic variables in the model, firms were more likely to transition to or from the top quantile after the 12th of March, when the pandemic crisis intensified in Europe. As suggested by Table 7, firms that had experienced "unchanged" or "deteriorating" finance availability were more likely than before to report expectations of improvement and *vice versa*. The exception to this concerned trade credit, where there is no statistically significant change post March 12 in the estimated probability of a company transitioning to "improved" expectations from a previous "deteriorating" or "unchanged" access to finance. These estimates confirm in a multivariate setting what one could see in Table 7. The credit history of the firm and its recent performance, captured by the lagged dependent variable r_i, became less important with the intensification of the pandemic pointing to a possible reallocation of opportunities to access finance.

The above suggests that the impact of the pandemic macroeconomic shock may have been very heterogeneous for companies. In particular, some companies may have been relatively unscathed - at least for what concerns their access to finance - and a small number of them may have even seen their prospects of accessing external finance improve in the midst of the crisis. This would confirm what

[14] The two statistically significant changes in the estimated margins post-March 12 when r_{i+}.is not included in the model concern, first, the fall (close to zero) of the estimated margin for the change in profits and, second, the increase in the estimated (positive) margin of micro-firms on expectations of trade credit.

Barrero et al. (2020) found for the US. Based on firm-level expectations at a one-year forecast horizon from the Survey of Business Uncertainty (SBU), they find that their measures of forward-looking reallocation for jobs and sales across firms have increased sharply after February 2020, suggesting a strong reallocative impact from pandemic-related developments. There is additionally a host of indirect and anecdotal evidence that this may have been the case for specific companies in specific markets. Prospects would have improved for example for companies with strong presence in some markets (such as internet based retail distribution) or for companies with specific organisation of production (e.g. being able to work off-site) (Papanikoloau and Schmidt, 2020).[15] An additional element could have been the targeted fiscal and industrial policies that were expected to benefit some companies rather than others.

The analysis of the factors behind this heterogeneous reaction of expectations to the pandemic shock requires far more detail information on the firms than what we have at our disposal. To gain some further insight on the nature of these factors, we split our sample into two sets of countries of equal number, those that experienced an above average deterioration of expectation (as reported in Figure 2) and those with below average deterioration. For ease of presentation, we focus only on the expectations of bank loans. The two groups are respectively G1: {BE, ES, IE, IT, PT, SK} and G2: {AT, DE, FI, FR, GR, NL}.[16] Table 8 reproduces Table 7, separately for the two sets of countries and focusing only on bank loans.

[TABLE 8]

The overall patterns observed in Table 8 are the same as above when looking at the full sample of countries. But the country split also offers some new insights. Before 12 March ("Pre-WHO announcement"), the distribution of firms on the basis of their expectations was somewhat flatter in countries of the first group (G1), with more mass in both tails. The percentage of firms expecting respectively an "unchanged" access to bank loans was 60.5% in G1 countries versus 65.6% in G2. In particular, at the bottom of the distribution, there were more firms in G1 that previously had experienced unchanged or improved availability of bank loans and now reported a deterioration (in total 30.2% in G1 compared with 22.9% in G2). This is as expected, given that firms in G1 were grouped together because they had an above average deterioration in expectations. More interestingly, however, firms in G1 were also more likely to report improvement in expectations even though they previously had a deterioration (10.8% in G1 versus 5.8% in G2).

After 12 March, the distribution of expectations flattens in both sets of countries but more so in countries of G2. In both sets of countries, more companies move towards the bottom of the

[15] Dingel and Neiman (2020) estimate that about 37% of all jobs in the US can be performed entirely at home.

[16] Alternative country groupings, for example on the basis of the lockdown date, proved to be more difficult to do without subjective judgments and did not provide any additional insights.

distribution, doubling the percentage of firms expecting a deterioration. At the same time, however, the percentage of firms expecting an improvement in expectations also grew in both sets of countries, more so in G2 than in G1. After 12 March, about a fourth of the companies expected an improvement in the availability to bank loans. Of these, between one fourth (in G1) and one third (in G2) had previously experienced a deteriorating or unchanged availability of bank loans.

As discussed above, these changes suggest a degree of reallocation among firms of the prospects to access bank loans. The difference between the two sets of countries indicate that firms in G1 may had already adjusted in part their expectations prior to 12 March, possibly because they felt the results of the pandemic earlier or their foresaw a stronger impact already at an earlier stage. The flattening of the distribution in the post-WHO announcement is therefore all the more evident for firms in G2.

In Tables A4 and A5, in the Annex, we examine these changes post-WHO announcement (post 12 March) in a multivariate context, separately for the two sets of countries.[17] As before, the changes of the estimated margins for r_i after March 12 are shown keeping the rest of the coefficients constant throughout the period. Table A4 shows estimates of model (5), on deteriorating expectations, for both firms in G1 and G2. In line with what was observed in the previous descriptive tables, expectations of firms in G2 tended to be more aligned with their recent experience ("credit history mattered" more). [18] The estimated margin of r_{i-} for firms in G2 before 12 March was 0.52. In G1, it was 0.25. Equivalently, it was less likely (more unlikely) for a company in G2 to have expectations of deterioration if previously the access to bank loans was unchanged or had improved. After March 12, the absolute value of all margins for r_i fell in G2 very close to those of G1. By contrast, they did not change in a statistically significant way for firms in G1. As discussed above, this could mean that firms operating within countries of G1 may have had already adjusted their expectations, given that, at least in some cases, they were hit earlier (or harder) by the pandemic shock. The changes in the estimated margins are consistent with the proposition that the intensification of the pandemic may have reallocated the opportunities to access bank credit. It suggests moreover that important part of this reallocation is attributable to firms in countries that fared better in our sample, i.e. where firms have reported less negative expectations of bank credit overall.

The main difference in the estimated margins of other independent variables between the two groups of countries concerns the recent increase in debt. This had a significant effect on the deterioration of expectations in firms of G1 but not for G2. This could indicate in particular that firms in G1 were (are) more concerned about the balance sheet effects of the crisis either because they already had more debt on their books or because they considered a liquidity squeeze as more likely leaving

[17] Estimated margins of variables that are not statistically significant in any of the models are not shown.
[18] Comparisons between the estimated margins of the two non-linear models are only indicative.

indebted firms into more trouble. The use of factoring, on the other hand, that could alleviate some of the liquidity problems, is statistically significant for both sets of countries.

In Table A5, the estimates of model (6) on the improvements of expectations are reported again separately for the two sets of countries. The estimated margins of r_i before and after March 12 do not differ much between firms in G1 and G2. As before, they suggest some degree of reallocation of opportunities in accessing bank finance, though this effect is statistically significant only at 10% level.[19] After March 12, firms that had previously experienced an unchanged access to bank loans were more likely than before to expect an improvement in both sets of countries and *vice versa*.

The idiosyncratic factors affecting the expectations of improvement in the two sets of countries differ however. For firms in G2, the picture is broadly the same as seen in Table A3 for the entire sample of firms. Past increase in turnover, decrease of debt to assets and the use of factoring (facilitating the management of liquidity) all increased to probability of a company expecting an improvement of its access to finance. SMEs were more likely than large firms to have conditional expectations of an improvement in their access to finance in the G2 countries. This could be related to the nature of the shock but could also be because of the higher expectations by SMEs of a favourable policy reaction in these countries to overcome the short term liquidity issues and balance sheet effects of the shock. For firms in G1 countries, the only independent variables found to have a statistically significant effect are the decrease in debt to assets and (negatively) the sale of assets/retained earnings. Past performance and liquidity management, captured by increase turnover and the use of factoring, do not have a statistically significant effect, suggesting a possible bigger break with the past.

Summarising the results of this section, a significant percentage of firms had expectations of improvement of its access to finance amidst the crisis. This percentage increased at the later stages of the SAFE fieldwork, when the pandemic had intensified in Europe. In the second part of the survey, proportionally more companies reported expectations of improvement even though their access to finance had previously remained unchanged or had even deteriorated in the six months prior to the survey. In terms of firm specific factors affecting their expectations, there were no big differences between these firms and the firms that reported expectations of deterioration. As with the latter, and depending on the type of finance, a previous change in debt to assets, the use of factoring and the sale of assets/retaining of earnings mattered for expectations. In difference with the case of firms that expected a deterioration, "flow" variables, such as previous changes in turnover and profits, had less explanatory power and often were not statistically significant. Interestingly, smaller firms tended to have more often (conditional) expectations of improvement.

[19] It should be noted that these models tend to be overparametrised, including separate country-date dummies and given the low variation of the independent variable that is zero for with 70%-80% of the observations

The pattern of the (conditional) distribution expectations flattening after the WHO announcement, with more mass moving to both tails, was repeated across countries. This would suggest that this is a result of the nature of the common pandemic shock, for example, having affected less (or positively) specific activities and organisational structures in similar ways across countries as would be the case with a sectoral shock. On the other hand, some of the differences in the estimated margins also suggest that cross-country differences may have also been relevant, for example, the starting position of firms (e.g. in terms of debt to assets) or the expected reaction of country-specific policies. This is clearly an area where analysis with more detailed data could through more light at.

6. Conclusion

The pandemic induced shock is perhaps the closest one gets to a textbook exogenous shock affecting simultaneously demand and supply. Unlike the financial crisis that originated in the financial and housing markets, an important question for this real shock is whether it may give rise or may already have given rise to a generalised credit and liquidity squeeze, even if bank credit supply holds up. Using the latest ECB Survey on the Access to Finance of Enterprises (SAFE), we first consider what real and financial factors firms think were important in determining their access to finance in the last six months up to March 2020. This backward looking analysis confirms, on the one hand, the important role of bank credit supply and, on the other, the possibility that a real shock can affect the financial conditions faced by firms even if bank credit supply were to remain unchanged. It highlights different possible channels of propagation: a first one works through changes in firms' income, balance sheet and therefore credit worthiness; a second – less referred to in the literature- works through trade credit and the willingness of trade partners to continue providing credit. The firm's structural characteristics, such as its size, and the line of business (sector of activity) did not generally matter in this respect, with few exceptions.

Turning to the forward looking part of the paper, the daily information of SAFE on the firms' deterioration of expectations reflects the intensification of the pandemic shock in the first half of March. It also suggests that the financial impact of the shock was expected by the firms to be of different intensity in different countries. A weak credit history, a high debt to assets ratio and the absence of factoring (as a proxy to liquidity management) made it more likely for a firm to expect a deterioration in its access to external finance. Companies in the service sector were also more likely to have conditional expectations of a deterioration. On the other hand, SMEs were less likely to have conditional expectations of a deterioration of trade credit, potentially as trade credit offers a form of financial buffer for smaller firms.

Some firms have seen their opportunities to access external finance to improve in the midst of the crisis. During the latter part of the survey fieldwork, more companies than before reported expectations of improvement in the access to bank credit though they had experienced an "unchanged" or "deteriorating" access in the six months prior to the survey. A prior decrease of debt to assets, the use of factoring and (negatively) the sale of assets, all affected the likelihood of a firm expecting an improvement, particularly, in its access to bank loans. Small enterprises were more likely than large ones to be among those expecting an improvement of access to external finance amidst the crisis. But these factors do not account for the reallocation of opportunities of firms in accessing external finance.

Though not explicitly analysed in this paper due to the lack of detailed data, the evidence suggests that a reallocation of opportunities took place to a certain degree in different countries. This is an indication that this has to do with the nature of the cross-country pandemic induced shock. For example, the shock may have left relatively unscathed some companies in food and health markets or it may have favoured specific working arrangements and new sales channels in which some firms were more advanced than others. On the other hand, the difference in the estimated margins of some of the idiosyncratic factors may also indicate that country specific factors also played a role, for example, the timing of the shock, the prior conditions or the different expectations of the policy reaction. This is clearly an important area of follow-up work. After a sequel of public interventions with a strong focus on initiatives to sustain short-term liquidity (OECD, 2020), it would now seem to be important to look ahead for more structural interventions. Understanding better what rendered some firms more resilient than others and in which cases their prospects of access to bank credit remained good or even improved amidst the crisis may help direct these interventions.

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8. Tables and Figures

Table 1: Summary statistics

VARIABLES	N	mean	sd	min	max
Dependent Variables					
Expectations bank loans	6,833	-0.10	0.74	-1	1
Expectations credit lines	4,787	-0.13	0.71	-1	1
Expectations trade credit	3,069	-0.20	0.69	-1	1
Availability bank loans	6,735	0.079	0.55	-1	1
Availability credit lines	4,853	0.059	0.51	-1	1
Availability trade credit	3,094	0.052	0.51	-1	1
Firm Characteristics					
Micro	7,189	0.36	0.48	0	1
Small	7,189	0.30	0.46	0	1
Medium	7,189	0.25	0.43	0	1
Large	7,189	0.089	0.28	0	1
10 years and older	7,187	0.90	0.31	0	1
Autonomous	7,189	0.87	0.33	0	1
family-owned	7,175	0.83	0.38	0	1
Industry	7,189	0.26	0.44	0	1
Construction	7,189	0.13	0.33	0	1
Trade	7,189	0.23	0.42	0	1
Service	7,189	0.38	0.49	0	1
Business Conditions					
Improve turnover	7,189	0.35	0.48	0	1
Decrease turnover	7,189	0.33	0.47	0	1
Increase profits	7,189	0.26	0.44	0	1
Decrease profits	7,189	0.40	0.49	0	1
Increase interest expenses	7,189	0.17	0.38	0	1
Decrease interest expenses	7,189	0.16	0.37	0	1
Increase working capital	7,189	0.20	0.40	0	1
Decrease working capital	7,189	0.18	0.39	0	1
Increase debt to assets	7,189	0.19	0.39	0	1
Decrease debt to assets	7,189	0.25	0.43	0	1
General economic outlook	6,947	-0.29	0.68	-1	1
Sales and profit	7,004	-0.17	0.75	-1	1
Willingness of banks to lend	6,679	0.13	0.62	-1	1
Willingness of business to lend	2,943	0.062	0.54	-1	1
Own capital	7,097	0.070	0.61	-1	1
Credit history	6,927	0.15	0.59	-1	1

Note: This table presents the summary statistics for the variables used in the empirical tests. All variables are categorical ones; those that take more than 0/1values are ordered and reported averages are net percentages. *Expectations* is a firm's expectation on the availability of bank loans, credit lines and trade credit to either deteriorate (-1), remained unchanged (0) or improved (-1) in the next six months. *Availability of bank loans, credit lines and trade credit* is a firm's perception on the availability of each instrument to have either deteriorated (-1), remained unchanged (0), or improved (1) in the past six months. *Micro* is equal to 1 if the firm has between 1 and 9 employees. *Small* is equal to 1 if the firm has between 10 and 49 employees. *Medium* is equal to 1 if the firm has between 50 and 249 employees. *Large* is equal to 1 if the firm has 250+ employees. *Family-owned* is equal to 1 if the company has one owner only, or is run

by a family or entrepreneurs. *Autonomous* is equal to 1 if the company an autonomous profit-oriented enterprise, making independent financial decisions. *Industry* is equal to 1 if the company's main activity is in manufacturing or mining. *Construction* is 1 if company's main activity is in construction. *Trade* is equal to 1 if the company's main activity is in wholesale or retail trade. *Service* is equal to 1 if the company's main activity is in transport, real estate, and other services to businesses and persons. *Increase turnover/ sales and profits/ interest rates/ working capital /debt to assets* is a firm's perception that each instrument has either increased (1) or remained unchanged/ decreased (0) in the past six months. *Decrease turnover/ sales and profits/ interest rates/ working capital /debt to assets* is a firm's perception that turnover has either decreased (1) or remained unchanged/ increased (0) in the past six months. *General economy* is a categorical variable of firms' perception of the general economic outlook during the past six months, which takes values deteriorated (-1), remained unchanged (0), or improved (1). *Sales and profit* is a categorical variable of firms' perception of their sales and profits during the past six months, which takes values deteriorated (-1), remained unchanged (0), or improved (1). *Willingness of banks(business partners) to provide credit* is a categorical variable of firms' perception of the willingness of banks (business partners) to provide credit during the past six months, which takes values deteriorated (-1), remained unchanged (0), or improved (1). *Own Capital* refers to firms' perception of the state of their own capital during the past six months and takes values deteriorated (-1), remained unchanged (0), or improved (1). *Credit history* is a categorical variable of firms' perception of their own credit history during the past six months, which takes values deteriorated (-1), remained unchanged (0), or improved (1).

Table 2: Impact of financial conditions on the availability of external finance - ordered logit regressions

VARIABLES	(1) credit lines	(2) bank loans	(3) trade credit
General economic outlook	0.518***	0.435***	0.459***
	(0.065)	(0.058)	(0.086)
Willingness of banks to lend	2.118***	2.517***	
	(0.089)	(0.077)	
Willingness of business			2.792***
			(0.123)
Sales and profit	0.118**	0.092*	0.185**
	(0.060)	(0.055)	(0.081)
Own capital	0.172**	0.212***	0.098
	(0.070)	(0.067)	(0.099)
Credit history	0.478***	0.275***	0.577***
	(0.077)	(0.069)	(0.105)
SMEs	-0.131	-0.055	0.108
	(0.120)	(0.110)	(0.170)
Construction	0.101	-0.161	-0.111
	(0.124)	(0.118)	(0.182)
Trade	0.053	-0.019	0.115
	(0.104)	(0.093)	(0.135)
Services	0.006	-0.065	-0.047
	(0.094)	(0.083)	(0.130)
Constant	-3.671***	-4.387***	-4.363***
	(0.336)	(0.274)	(0.401)
/cut1	3.944***	4.938***	4.939***
	(0.620)	(0.520)	(0.353)
/cut2	9.589***	10.199***	10.871***
	(0.648)	(0.544)	(0.427)
Observations	5,206	6,061	3,359
Firm characteristics	Yes	Yes	Yes
Country x Day FE	Yes	Yes	Yes
Pseudo R2	0.29	0.31	0.35

Note: This table presents estimates of the availability of credit lines, bank loans and trade credit based on ordered logit regressions. The estimation period is 27 February – 8 April 2020. The dependent and explanatory variables take three values as explained in Table 1: deterioration (-1), remained unchanged (0), or improvement (1). All regressions include firms' characteristics: family owned, autonomous status and age. Robust standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 3: Factors affecting the availability of external finance - logit regressions
(margins)

	Deterioration (r_{i-})			Improvement (r_{i+})		
VARIABLES	(1) Credit lines	(2) Bank loans	(3) Trade credit	(4) Credit lines	(5) Bank loans	(6) Trade credit
General econ. outlook (-/+)	0.079***	0.061***	0.067***	0.087***	0.100***	0.081***
	(0.009)	(0.008)	(0.012)	(0.011)	(0.011)	(0.015)
Willingness of banks to lend (-/+)	0.182***	0.217***		0.225***	0.260***	
	(0.007)	(0.006)		(0.008)	(0.007)	
Willingness of business to lend (-/+)			0.222***			0.266***
			(0.011)			(0.010)
Sales and profit (-/+)	0.022**	0.023***	0.044***	0.025**	0.033***	0.031**
	(0.009)	(0.008)	(0.012)	(0.011)	(0.010)	(0.013)
Own capital (-/+)	0.019**	0.036***	0.022	0.013	0.013	0.015
	(0.009)	(0.009)	(0.014)	(0.011)	(0.010)	(0.015)
Credit history (-/+)	0.060***	0.027***	0.083***	0.062***	0.060***	0.069***
	(0.010)	(0.010)	(0.014)	(0.010)	(0.009)	(0.012)
SMEs	0.031**	0.003	-0.004	0.002	0.004	0.010
	(0.015)	(0.013)	(0.019)	(0.015)	(0.014)	(0.019)
Construction	-0.027**	0.012	-0.016	-0.000	-0.016	-0.015
	(0.013)	(0.013)	(0.020)	(0.014)	(0.014)	(0.019)
Trade	-0.013	-0.010	-0.020	0.004	-0.012	-0.017
	(0.011)	(0.010)	(0.015)	(0.012)	(0.012)	(0.015)
Services	0.001	0.001	-0.007	0.006	-0.012	-0.025*
	(0.010)	(0.009)	(0.014)	(0.011)	(0.010)	(0.014)
Observations	5,020	6,267	2,888	5,708	6,667	3,417
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Country X Day FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the average marginal effects of the estimates of the deterioration (improvement) in the availability of credit lines, bank loans and trade credit in columns 1-3 (columns 4-6). For the factors: - (+) indicates a deterioration (improvement) and the variable is used for the specifications in columns 1-3 (4-6). The estimation period is 27 February- 8 April 2020. All regressions include firm characteristics: family-owned, autonomous status and age. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 4: Expectations on the availability of external finance - ordered logit regressions

VARIABLES	(1) Credit lines	(2) Bank loans	(3) Trade credit	(4) Credit lines	(5) Bank loans	(6) Trade credit
Availability credit lines				1.056***		
				(0.072)		
Availability bank loans					1.078***	
					(0.060)	
Availability trade credit						1.337***
						(0.101)
Turnover	0.177***	0.154***	0.154**	0.090*	0.107**	0.075
	(0.045)	(0.040)	(0.061)	(0.047)	(0.042)	(0.063)
Profits	0.131***	0.103**	0.130**	0.116**	0.035	0.072
	(0.045)	(0.041)	(0.060)	(0.046)	(0.043)	(0.061)
Interest expenses	-0.164***	-0.106**	-0.094	-0.103*	-0.031	-0.025
	(0.053)	(0.046)	(0.071)	(0.053)	(0.047)	(0.071)
Working capital	0.032	0.038	0.058	-0.001	-0.012	0.008
	(0.051)	(0.045)	(0.063)	(0.051)	(0.046)	(0.065)
Debt to total assets	-0.065	-0.140***	-0.174***	-0.026	-0.121***	-0.116*
	(0.047)	(0.042)	(0.061)	(0.048)	(0.042)	(0.063)
Use of factoring	0.044	0.250***	0.385***	0.108	0.292***	0.381***
	(0.092)	(0.083)	(0.110)	(0.093)	(0.084)	(0.113)
Sale of assets/ retained earnings	-0.022	-0.114*	-0.123	-0.042	-0.137**	-0.184*
	(0.074)	(0.067)	(0.094)	(0.075)	(0.069)	(0.096)
Micro firms	0.069	0.029	0.512***	0.111	0.092	0.520***
	(0.109)	(0.099)	(0.151)	(0.110)	(0.100)	(0.151)
Small firms	0.037	0.092	0.427***	0.047	0.102	0.393***
	(0.101)	(0.092)	(0.142)	(0.103)	(0.093)	(0.141)
Medium firms	0.037	0.137	0.212	0.030	0.113	0.196
	(0.098)	(0.089)	(0.132)	(0.098)	(0.090)	(0.131)
Construction	0.088	0.061	0.023	0.027	0.050	-0.053
	(0.100)	(0.090)	(0.130)	(0.103)	(0.094)	(0.135)
Trade	-0.013	-0.018	-0.012	-0.036	-0.013	-0.047
	(0.083)	(0.075)	(0.102)	(0.084)	(0.077)	(0.104)
Services	-0.083	-0.071	-0.125	-0.085	-0.084	-0.117
	(0.078)	(0.068)	(0.102)	(0.079)	(0.070)	(0.105)
/cut1	-0.881*	-0.718*	-0.942***	1.162***	1.458***	1.541***
	(0.512)	(0.381)	(0.187)	(0.446)	(0.299)	(0.239)
/cut2	1.610***	1.381***	1.702***	3.774***	3.720***	4.376***
	(0.513)	(0.381)	(0.189)	(0.451)	(0.304)	(0.256)
Observations	5,552	6,660	3,257	5,693	6,387	3,175
Country x Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.05	0.05	0.09	0.08	0.09	0.13

Note: This table presents estimates of the expectations of future availability of credit lines, bank loans and trade credit based on an ordered logit. The estimation period is 27 February – 8 April 2020. The dependent and explanatory variables take three values as explained in Table 1: deterioration (-1), remained unchanged (0), or improvement (1). All regressions include firms' characteristics: family owned, autonomous status and age. Robust standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 5: Expectations on deteriorations of future availability of external finance - logit regressions *(margins)*

VARIABLES	(1) Credit lines	(2) Bank loans	(3) Trade credit	(4) Credit lines	(5) Bank loans	(6) Trade credit
Deterioration availability credit lines				0.291***		
				(0.018)		
Deterioration availability bank loans					0.313***	
					(0.016)	
Deterioration availability trade credit						0.329***
						(0.026)
Decrease turnover	0.067***	0.050***	0.059***	0.053***	0.044***	0.048**
	(0.015)	(0.014)	(0.020)	(0.015)	(0.014)	(0.020)
Decrease profits	0.037**	0.055***	0.022	0.034**	0.037***	0.011
	(0.015)	(0.013)	(0.019)	(0.014)	(0.013)	(0.019)
Increase interest expenses	0.059***	0.042***	0.034	0.030*	0.016	0.014
	(0.016)	(0.015)	(0.021)	(0.016)	(0.015)	(0.021)
Decrease working capital	0.033**	0.033**	0.055***	0.015	0.010	0.028
	(0.016)	(0.015)	(0.020)	(0.016)	(0.015)	(0.020)
Increase debt to total assets	0.055***	0.047***	0.071***	0.038**	0.036**	0.049**
	(0.015)	(0.014)	(0.020)	(0.015)	(0.014)	(0.020)
Use of factoring	0.014	-0.033*	-0.065***	0.002	-0.054***	-0.072***
	(0.020)	(0.019)	(0.025)	(0.020)	(0.019)	(0.024)
Sale of assets/ retained earnings	0.007	0.015	0.051**	0.008	0.017	0.045**
	(0.016)	(0.015)	(0.020)	(0.016)	(0.014)	(0.020)
Micro firms	0.042*	0.020	-0.086**	0.025	0.010	-0.085***
	(0.024)	(0.023)	(0.034)	(0.024)	(0.022)	(0.033)
Small firms	0.022	0.004	-0.075**	0.013	0.000	-0.069**
	(0.024)	(0.023)	(0.034)	(0.023)	(0.022)	(0.032)
Medium firms	0.021	-0.023	-0.075**	0.016	-0.023	-0.068**
	(0.024)	(0.022)	(0.033)	(0.023)	(0.022)	(0.032)
Construction	-0.012	0.007	0.021	-0.003	0.007	0.023
	(0.021)	(0.019)	(0.027)	(0.021)	(0.019)	(0.027)
Trade	0.010	0.020	0.005	0.013	0.024	0.014
	(0.018)	(0.016)	(0.022)	(0.017)	(0.016)	(0.021)
Services	0.030*	0.039***	0.040*	0.030*	0.038***	0.038*
	(0.016)	(0.015)	(0.022)	(0.016)	(0.014)	(0.021)
Observations	5,582	6,744	3,548	5,453	6,474	3,443
Country x Day FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the average marginal effects of the estimates of expectations of future deterioration in the availability of credit lines, bank loans and trade credit. The estimation period is 27 February- 8 April 2020. Robust standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 6: Expectations of future improvement in the availability of external finance - logit regressions (*margins)*

VARIABLES	(1) Credit lines	(2) Bank loans	(3) Trade credit	(4) Credit lines	(5) Bank loans	(6) Trade credit
Improvement availability credit lines				0.176***		
				(0.011)		
Improvement availability bank loans					0.190***	
					(0.011)	
Improvement availability trade credit						0.242***
						(0.014)
Increase turnover	0.024*	0.040***	0.034**	0.007	0.024*	0.008
	(0.014)	(0.012)	(0.017)	(0.013)	(0.013)	(0.017)
Increase profits	0.037**	0.017	0.037**	0.023*	0.004	0.011
	(0.015)	(0.014)	(0.018)	(0.014)	(0.014)	(0.018)
Decrease interest expenses	0.017	0.021	0.030	0.003	-0.002	0.002
	(0.015)	(0.014)	(0.020)	(0.014)	(0.014)	(0.019)
Increase working capital	0.032**	0.028**	0.024	0.019	0.012	-0.006
	(0.013)	(0.013)	(0.017)	(0.013)	(0.013)	(0.016)
Decrease debt to total assets	0.023*	0.053***	0.037**	0.012	0.040***	0.020
	(0.013)	(0.012)	(0.016)	(0.012)	(0.012)	(0.015)
Use of factoring	0.026	0.052***	0.075***	0.025	0.052***	0.060***
	(0.017)	(0.016)	(0.019)	(0.016)	(0.016)	(0.019)
Sale of assets/ retained earnings	-0.001	-0.023*	-0.005	-0.006	-0.031**	-0.019
	(0.014)	(0.014)	(0.018)	(0.013)	(0.014)	(0.017)
Micro firms	0.047**	0.033	0.100***	0.044**	0.041**	0.092***
	(0.021)	(0.020)	(0.024)	(0.020)	(0.020)	(0.023)
Small firms	0.025	0.033*	0.061***	0.022	0.028	0.051**
	(0.020)	(0.019)	(0.023)	(0.018)	(0.019)	(0.022)
Medium firms	0.027	0.039**	0.010	0.024	0.031*	0.007
	(0.019)	(0.019)	(0.021)	(0.018)	(0.019)	(0.020)
Construction	-0.005	0.007	0.016	-0.004	0.002	0.015
	(0.019)	(0.018)	(0.024)	(0.018)	(0.018)	(0.023)
Trade	-0.015	0.000	-0.000	-0.020	0.002	0.000
	(0.016)	(0.015)	(0.018)	(0.015)	(0.015)	(0.017)
Services	0.001	0.011	0.001	-0.001	0.007	0.010
	(0.015)	(0.013)	(0.018)	(0.014)	(0.013)	(0.017)
Observations	5,552	6,660	3,257	5,693	6,387	3,175
Country x Day FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the average marginal effects of the estimates of expectations of future improvement in the availability of credit lines, bank loans and trade credit. The estimation period is 27 February- 8 April 2020. All regressions include fixed effects as specified. Robust standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table 7: Transition matrix from past availability to expectation of future availability of external finance *(percentages)*

	Pre-WHO announcement			Post-WHO announcement		
	Credit lines			Credit lines		
Past Availability	Expectations			Expectations		
	deterioration	unchanged	improvement	deterioration	unchanged	improvement
deterioration	56.5	34.7	8.8	70.9	15.6	13.5
unchanged	13.9	75.3	10.8	34.5	47.5	18.0
improvement	6.9	52.5	40.6	28.6	34.0	37.4
Total	15.9	68.5	15.5	37.7	41.8	20.6
	Bank loans			Bank loans		
Past Availability	Expectations			Expectations		
	deterioration	unchanged	improvement	deterioration	unchanged	improvement
deterioration	56.4	35.0	8.6	72.6	13.6	13.8
unchanged	16.8	70.3	13.0	37.2	41.6	21.2
improvement	9.8	50.8	39.4	25.9	29.8	44.3
Total	18.9	63.0	18.1	39.7	35.7	24.6
	Trade credit			Trade credit		
Past Availability	Expectations			Expectations		
	deterioration	unchanged	improvement	deterioration	unchanged	improvement
deterioration	54.1	34.1	11.8	80.6	12.2	7.3
unchanged	16.2	75.8	8.0	41.5	46.9	11.6
improvement	8.4	41.9	49.8	31.8	32.0	36.2
Total	17.4	67.3	15.3	44.6	40.6	14.9

Note: This table presents the percentages of firms reporting future availability of credit lines, bank loans and trade credit given past availability of each financial instrument.

Table 8: Transition matrix from past availability to expectation of future availability of bank loans by groups of countries *(percentages)*

GROUP 1 : BE, ES, IE, IT, PT, SK							
		Pre-WHO announcement			Post-WHO announcement		
		Expectations			Expectations		
		Det.	Unchanged	Impr.	Det.	Unchanged	Impr.
Availability	deterioration	52.3	36.9	10.8	71.2	13.5	15.4
	unchanged	19.7	67.5	12.8	40.7	39.7	19.6
	improvement	10.5	50.0	39.5	27.4	28.5	44.1
	Total	20.9	60.5	18.6	42.2	34.1	23.8
GROUP 2: AT, DE, FI, FR, GR, NL							
		Pre-WHO announcement			Post-WHO announcement		
		Expectations			Expectations		
		Det.	Unchanged	Impr.	Det.	Unchanged	Impr.
Availability	deterioration	61.6	32.6	5.8	73.9	13.7	12.4
	unchanged	13.9	72.9	13.2	34.3	43.3	22.5
	improvement	9.0	51.7	39.3	24.6	31.0	44.4
	Total	16.8	65.6	17.6	37.6	37.1	25.4

Note: This table presents the percentages of firms reporting future availability of bank loans given past availability of bank loans for two different groups of countries: those that experienced an above average deterioration of expectations (group 1) an those with below average deterioration (group 2). The choice is based on the results reported in Figure 2.

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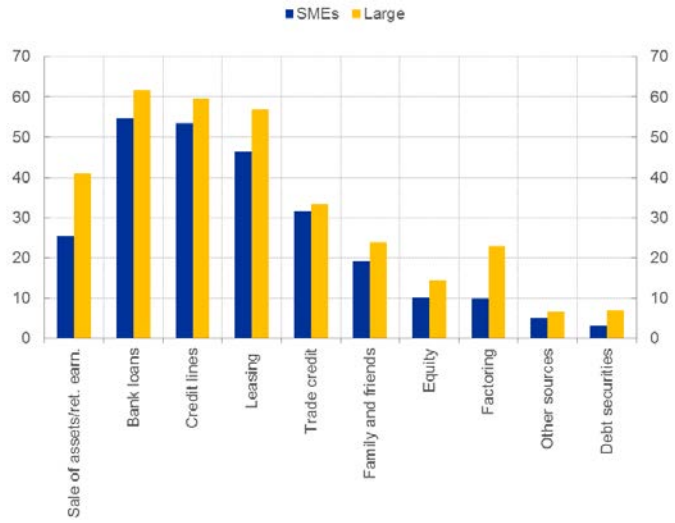
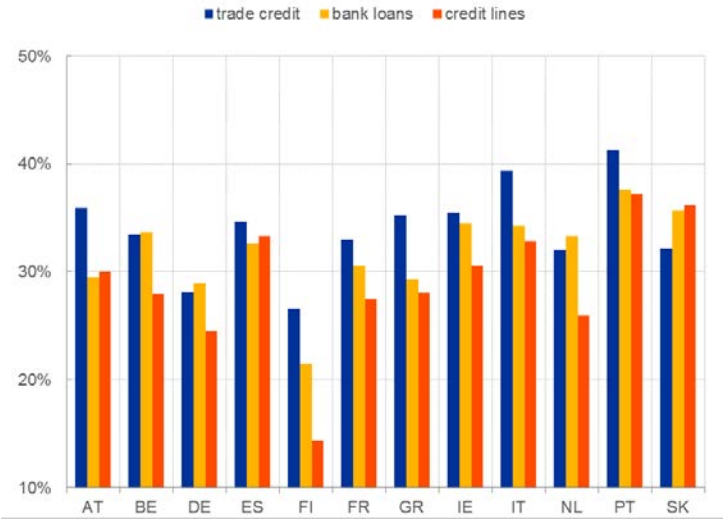
Figure 1: Relevance of internal and external funds for euro area enterprises
(percentage of respondents that considered the respective instrument relevant))



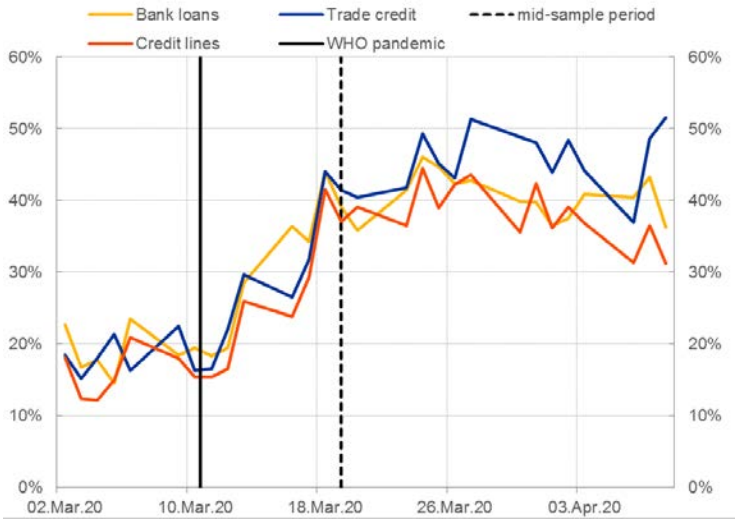
Note: This figure reports the weighted percentages of firms considering the financing instruments relevant in the period October 2019- March 2020.

Figure 2: Firms expecting deterioration in the availability of external finance
(estimated percentages per country)



Note: This figure reports country dummies fixed effects of a weighted least-squares logistic regression controlling for time and country fixed effects. The weights take into account the number of firms covered in each country/day.

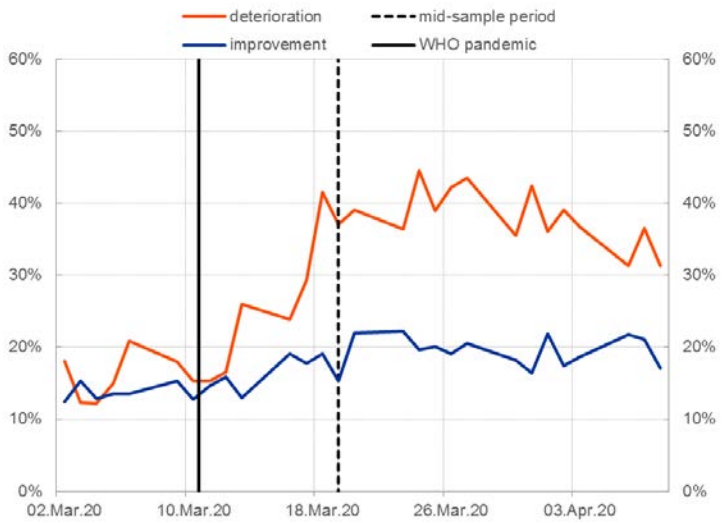
Figure 3: Firms expecting deterioration in the availability of external finance
(estimated percentages per day of SAFE fieldwork)



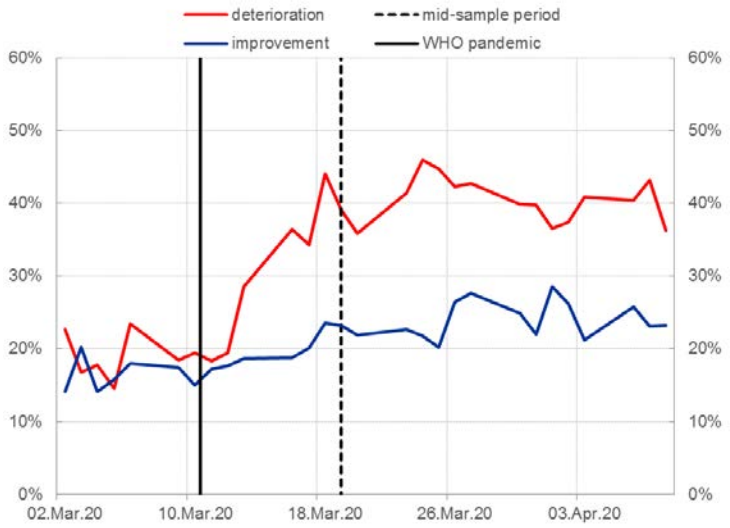
Note: This figure reports time dummies of a weighted least-squares logistic regression controlling for time and country fixed effects. The weights take into account the number of firms covered in each country/day. The last three observations (6-8 April) refer to subsample of countries (Germany, Spain, France, Greece and Slovakia) as the interviews in the remaining countries were concluded by the 3rd April.

Figure 4: Firms expecting improvement or deterioration in the availability of external finance
(percentages per day of fieldwork)

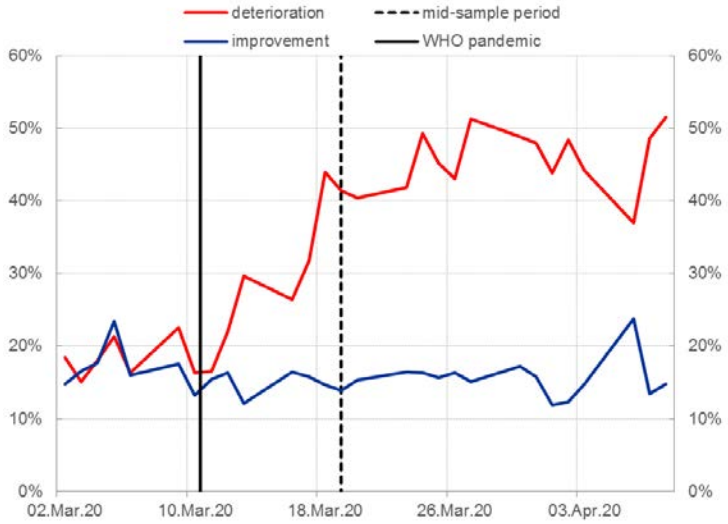
a) Credit lines



b) Bank loans



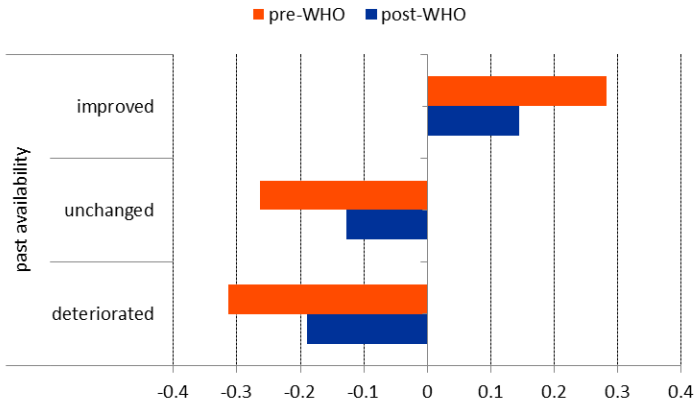
c) Trade credit



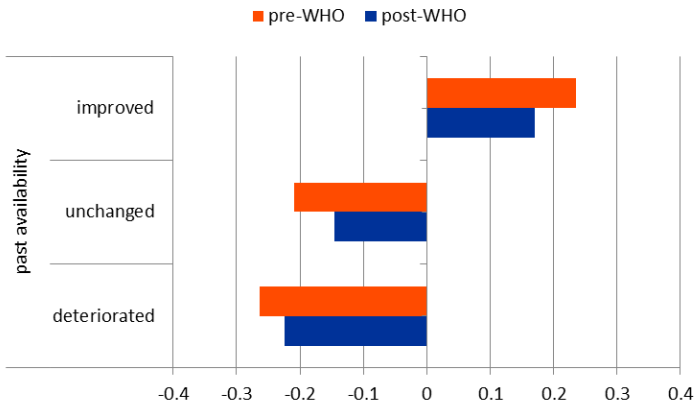
Note: The figures report the percentages of firms expecting improvement or deterioration in the availability of external finance. These are time dummies of a weighted least-squares logistic regression controlling for time and country fixed effects. The weights take into account the number of firms covered in each country/day.The last three observations (6-8 April) refer to subsample of countries (Germany, Spain, France, Greece and Slovakia) as the interviews in the remaining countries were concluded by the 3rd April.

Figure 5: Mobility from/to group of firms expecting improvement in financial availability *(estimated margins)*

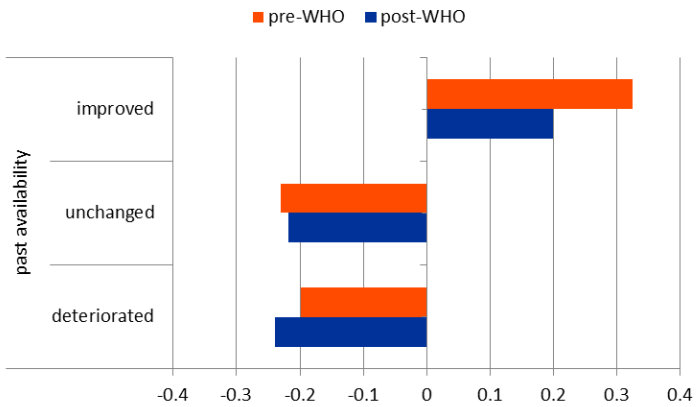
a) Credit lines



a) Bank loans



b) Trade credit



Note: These figures show the probability of expecting an improvement in the availability of each financial instrument if the past availability had deteriorated, improved or remained unchanged. They are based on the results reported in table A3.

Annex

Table A1: Average marginal effects of the availability of external finance (*ordered logit regressions*)

	Credit lines			Bank loans			Trade credit		
VALUE of	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLE *r*	-1	0	1	-1	0	1	-1	0	1
General econ. outlook	-0.034***	-0.015***	0.050***	-0.031***	-0.014***	0.045***	-0.027***	-0.011***	0.039***
	(0.005)	(0.002)	(0.006)	(0.004)	(0.002)	(0.006)	(0.005)	(0.003)	(0.007)
Willingness of banks to lend	-0.140***	-0.063***	0.203***	-0.181***	-0.079***	0.260***			
	(0.006)	(0.007)	(0.008)	(0.006)	(0.007)	(0.006)			
Willingness of business to lend							-0.167***	-0.068***	0.235***
							(0.008)	(0.011)	(0.009)
Sales and profit	-0.008**	-0.003*	0.011**	-0.007*	-0.003*	0.009*	-0.011**	-0.004**	0.016**
	(0.004)	(0.002)	(0.006)	(0.004)	(0.002)	(0.006)	(0.005)	(0.002)	(0.007)
Own capital	-0.011**	-0.005**	0.017**	-0.015***	-0.007***	0.022***	-0.006	-0.002	0.008
	(0.005)	(0.002)	(0.007)	(0.005)	(0.002)	(0.007)	(0.006)	(0.002)	(0.008)
Credit history	-0.032***	-0.014***	0.046***	-0.020***	-0.009***	0.028***	-0.035***	-0.014***	0.049***
	(0.005)	(0.003)	(0.007)	(0.005)	(0.002)	(0.007)	(0.006)	(0.003)	(0.009)

Note: This table presents the average marginal effects of the estimates of availability of credit lines, bank loans and trade credit as in Table 2 for each outcome category. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table A2: Average marginal effects of the expectations on the availability of external finance (*ordered logit regressions*)

	Credit lines			Bank loans			Trade credit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	-1	0	1	-1	0	1	-1	0	1
Availability of external finance	-0.197***	0.052***	0.145***	-0.207***	0.042***	0.165***	-0.247***	0.099***	0.148***
	(0.012)	(0.005)	(0.010)	(0.010)	(0.004)	(0.009)	(0.017)	(0.008)	(0.012)
Turnover	-0.017*	0.004*	0.012*	-0.021**	0.004**	0.016**	-0.014	0.006	0.008
	(0.009)	(0.002)	(0.006)	(0.008)	(0.002)	(0.006)	(0.012)	(0.005)	(0.007)
Profits	-0.022**	0.006**	0.016**	-0.007	0.001	0.005	-0.013	0.005	0.008
	(0.009)	(0.002)	(0.006)	(0.008)	(0.002)	(0.007)	(0.011)	(0.005)	(0.007)
Interest expenses	0.019*	-0.005*	-0.014*	0.006	-0.001	-0.005	0.005	-0.002	-0.003
	(0.010)	(0.003)	(0.007)	(0.009)	(0.002)	(0.007)	(0.013)	(0.005)	(0.008)
Working capital	0.000	-0.000	-0.000	0.002	-0.000	-0.002	-0.002	0.001	0.001
	(0.010)	(0.003)	(0.007)	(0.009)	(0.002)	(0.007)	(0.012)	(0.005)	(0.007)
Debt to total assets	0.005	-0.001	-0.004	0.023***	-0.005***	-0.019***	0.021*	-0.009*	-0.013*
	(0.009)	(0.002)	(0.007)	(0.008)	(0.002)	(0.006)	(0.012)	(0.005)	(0.007)
Use of factoring	-0.020	0.005	0.015	-0.056***	0.011***	0.045***	-0.070***	0.028***	0.042***
	(0.017)	(0.005)	(0.013)	(0.016)	(0.003)	(0.013)	(0.021)	(0.009)	(0.013)
Sale of assets/ retained earnings	0.008	-0.002	-0.006	0.026**	-0.005*	-0.021**	0.034*	-0.014*	-0.020*
	(0.014)	(0.004)	(0.010)	(0.013)	(0.003)	(0.011)	(0.018)	(0.007)	(0.011)
Micro firms	-0.021	0.005	0.015	-0.018	0.004	0.014	-0.097***	0.042***	0.055***
	(0.021)	(0.006)	(0.015)	(0.020)	(0.005)	(0.015)	(0.028)	(0.014)	(0.015)
Small firms	-0.009	0.003	0.006	-0.020	0.004	0.015	-0.074***	0.034**	0.040***
	(0.019)	(0.006)	(0.014)	(0.018)	(0.004)	(0.014)	(0.027)	(0.013)	(0.014)
Medium firms	-0.006	0.002	0.004	-0.022	0.005	0.017	-0.038	0.019	0.019
	(0.019)	(0.005)	(0.013)	(0.018)	(0.004)	(0.013)	(0.025)	(0.013)	(0.012)

Note: This table presents the average marginal effects of the estimates of availability of credit lines, bank loans and trade credit as in Table 4 columns 4-6 for each outcome category. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table A3: WHO pandemic announcement and expectations of <u>improvement</u> in the availability of external finance: Difference-in-Differences *(margins from logit regressions)*

VARIABLES	(1) Credit lines	(2) Credit lines	(3) Bank loans	(4) Bank loans	(5) Trade credit	(6) Trade credit
improved availability	0.282***		0.236***		0.325***	
	(0.022)		(0.021)		(0.027)	
improved avail. X post March 12	-0.137***		-0.065***		-0.126***	
	(0.027)		(0.025)		(0.032)	
deterioration availability		-0.313***		-0.264***		-0.199***
		(0.048)		(0.043)		(0.057)
unchanged availability		-0.264***		-0.209***		-0.231***
		(0.022)		(0.021)		(0.021)
deteriorated avail. X post March 12		0.124**		0.039		-0.044
		(0.054)		(0.048)		(0.068)
unchanged avail. X post March 12		0.136***		0.063**		0.012
		(0.026)		(0.025)		(0.025)
Increased turnover	0.001	-0.000	0.023*	0.024*	0.003	0.001
	(0.014)	(0.014)	(0.013)	(0.012)	(0.017)	(0.023)
Increase profits	0.024*	0.026*	0.003	0.005	0.006	0.046**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.018)	(0.023)
Decrease interest expenses	-0.001	0.002	-0.003	0.001	-0.005	-0.004
	(0.015)	(0.015)	(0.014)	(0.014)	(0.019)	(0.026)
Increase working capital	0.018	0.020	0.012	0.016	-0.008	-0.026
	(0.013)	(0.013)	(0.013)	(0.013)	(0.016)	(0.022)
Decrease debt	0.013	0.013	0.040***	0.042***	0.019	0.014
	(0.012)	(0.012)	(0.012)	(0.012)	(0.016)	(0.021)
Use of factoring	0.022	0.025	0.049***	0.053***	0.042**	0.053**
	(0.016)	(0.016)	(0.016)	(0.016)	(0.019)	(0.024)
Sale of assets/ retained earnings	-0.008	-0.009	-0.032**	-0.030**	-0.025	-0.020
	(0.014)	(0.014)	(0.014)	(0.014)	(0.017)	(0.023)
SMEs	0.031	0.031	0.035*	0.034*	0.049**	0.081**
	(0.020)	(0.020)	(0.019)	(0.019)	(0.024)	(0.032)
Observations	5,417	5,417	6,387	6,387	3,175	1,923
Country x Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents difference in differences on the expectations of improvement in the availability of credit lines, bank loans and trade credit, where the improvement in the availability of each instrument is interacted with a dummy equal to one after the WHO announcement of the pandemic. The estimation period is 27 February – 8 April 2020. All regressions include fixed effects as specified. Standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table A4: WHO pandemic announcement and expectations of a <u>deterioration</u> in the availability of bank loans by group of countries: Difference-in-Differences *(margins from logit regressions)*

	GROUP 1 BE, ES, IE, IT, PT, SK		GROUP 2 AT, DE, FI, FR, GR, NL	
VARIABLES	(1)	(2)	(3)	(4)
deteriorated availability	0.248***		0.524***	
	(0.045)		(0.048)	
deteriorated avail. X post March 12	0.004		-0.199***	
	(0.054)		(0.057)	
improved availability		-0.329***		-0.513***
		(0.058)		(0.064)
unchanged availability		-0.204***		-0.443***
		(0.044)		(0.044)
improved avail. X post March 12		0.038		0.196***
		(0.067)		(0.072)
unchanged avail. X post March 12		0.023		0.194***
		(0.052)		(0.052)
Decreased turnover	0.052**	0.046**	0.040**	0.040**
	(0.021)	(0.020)	(0.019)	(0.019)
Increase debt	0.069***	0.078***	-0.001	0.005
	(0.020)	(0.020)	(0.020)	(0.020)
Use of factoring	-0.069**	-0.059**	-0.048**	-0.045*
	(0.028)	(0.027)	(0.024)	(0.025)
Sale of assets/ retained earnings	0.025	0.029	0.004	0.011
	(0.021)	(0.021)	(0.019)	(0.019)
SMEs	0.031	0.031	-0.037	-0.044*
	(0.033)	(0.033)	(0.026)	(0.026)
Observations	3,073	3,073	3,401	3,401
Country x Day FE	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes

Note: This table presents difference in differences on the expectations of a deterioration in the availability of bank loans, where the availability of bank loans is interacted with a dummy equal to one after the WHO announcement of the pandemic. The two groups of countries are chosen on the basis of Figure 2.The estimation period is 27 February – 8 April 2020. All regressions include fixed effects as specified. Standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

Table A5: WHO pandemic announcement and expectations of <u>improvement</u> in the availability of bank loans by group of countries: Difference-in-Differences *(margins from logit regressions)*

	GROUP 1 BE, ES, IE, IT, PT, SK		GROUP 2 AT, DE, FI, FR, GR, NL	
VARIABLES	(1)	(2)	(3)	(4)
improved availability	0.248***		0.222***	
	(0.028)		(0.031)	
improved avail. X post March 12	-0.069**		-0.059	
	(0.034)		(0.037)	
deteriorated availability		-0.235***		-0.315***
		(0.051)		(0.078)
unchanged availability		-0.226***		-0.192***
		(0.028)		(0.031)
deteriorated avail. X post March 12		0.026		0.074
		(0.060)		(0.084)
unchanged avail. X post March 12		0.060*		0.063*
		(0.035)		(0.036)
Increased turnover	-0.007	-0.007	0.046***	0.046***
	(0.019)	(0.019)	(0.017)	(0.017)
Decrease debt	0.032*	0.033*	0.044***	0.046***
	(0.017)	(0.017)	(0.016)	(0.016)
Use of factoring	0.025	0.029	0.069***	0.073***
	(0.023)	(0.022)	(0.021)	(0.021)
Sale of assets/ retained earnings	-0.034*	-0.033*	-0.030	-0.027
	(0.020)	(0.020)	(0.019)	(0.019)
SMEs	0.016	0.017	0.049*	0.048*
	(0.028)	(0.028)	(0.026)	(0.026)
Observations	3,025	3,025	3,362	3,362
Country x Day FE	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes

Note: This table presents difference in differences on the expectations of improvement in the availability of bank loans, where the availability of bank loans is interacted with a dummy equal to one after the WHO announcement of the pandemic. The two groups of countries are chosen on the basis of Figure 2.The estimation period is 27 February – 8 April 2020. All regressions include fixed effects as specified. Standard errors appear in parentheses. *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level.

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