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Reverse trade credit - the use of prepayments by French firms

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Abstract

This paper provides the first detailed empirical study on the use of prepayments by firms. Our results based on large panels of French firms support the Daripa and Nilsen (2011) production subsidy theory of prepayment, according to which customers prepay their suppliers when these would otherwise delay production and input supply. However, we also find that advance cash payments may arise as a response to corporate default risk. Our findings show that both firm characteristics (profitability, liquidity, bank funding, and size) and industry characteristics such as the type of traded goods and industry concentration measures influence the volume of prepayments.

Keywords: prepayment, trade credit, inventories

JEL classification: G31, G32

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Introduction

A vast literature provides both theoretical explanations and empirical evidence on the reasons why firms use trade credit (delayed payment for the transfer of goods to the downstream firm). However, the reasons why firms advance liquid cash to their suppliers have been the object of little scrutiny. Only recently, Daripa and Nilsen (2011) have provided a theoretical model of prepayment showing that downstream firms may optimally decide to advance liquid cash to their upstream suppliers when the latter would otherwise delay production.[1] On the empirical side, a handful of works have linked the use of prepayments to customer default risk or with the high risks associated with international trade. In the context of transition economies, Raiser et al. (2008) use the level of prepayment as a measure of business trust, arguing that supplier firms demand advance payment from their perceived high default risk customers. Antras and Foley (2011) provide evidence that importers located in a country with weak contractual enforcement or in a country that is further from the exporter's country are more likely to be required cash advance payments. This paper conducts the first thorough empirical investigation of the determinants of prepayments. It jointly tests the production continuation hypothesis in Daripa and Nilsen (2011) and the hypothesis that prepayment arises as a solution to firm default risk.

As prepayment can be seen as reverse trade credit, our paper is related to several empirical studies analysing trade credit. Our empirical modelling strategy is close to the one in Mateut et al. (2011), but we focus on prepayments (transfers of liquid cash to the upstream input provider) as opposed to trade credit (delayed payment on the transfer of inputs to downstream firms). We expect prepayments to suppliers, just like sales on credit, to be correlated with firms' stocks of inventories as predicted by the theoretical model in Daripa and Nilsen (2011). We use the same source of data as Mateut et al. (2011), the Diane dataset provided by Bureau van Dijk. Our large panel dataset of French manufacturing and construction firms records about 300,000 observations over the period 1999-2007. We have detailed balance sheet information, including customer prepayments (received by upstream firms) and prepayments to suppliers (paid by downstream firms). Our rich dataset allows us also to distinguish inventories at different stages of fabrication and to test whether prepayments, just like trade credit, are correlated with the degree of differentiation of the

[1] Similarly, their model explains the use of trade credit as an upstream firm optimal strategy to induce the downstream firm not to delay production.

traded goods. This way we relate our work with the study by Giannetti et al. (2011), which shows that trade credit extension is correlated with the characteristics of the traded goods.

We start our analysis from the point of view of the upstream firm and look at the relationship between prepayments received and suppliers' stocks of inventories, the types of goods produced and other firm level characteristics such as profitability, liquidity, risk, and size. We then take the viewpoint of a downstream firm and explain prepayments to suppliers with the types of inputs used by the firm by controlling for the proportion of differentiated, standardized and service inputs in an approach similar to Giannetti et al. (2011) and Mateut et al. (2011). A number of key results emerge from our analysis.

First, the use of prepayments is associated with higher stocks of inventories both for subsidized upstream firms and for downstream firms aiming to keep the production chain going. Downstream firms keen to meet their uncertain final demand prepay their upstream suppliers inducing them to produce. At the same time, they also start their own production process and increase their own stocks of inventories in an attempt to avoid being caught out of stocks when a customer arrives.[2]

Second, customer prepayments are more frequent and larger as a share of total sales in the differentiated goods and in the construction sector than in the standardized manufacturing sector. These findings provide evidence supporting the prediction of Daripa and Nilsen (2011) that customers will subsidize production and inventory storage of their suppliers of specialized inputs. The results also support the diversion theory in Burkart and Ellingsen (2004) and are in line with the findings in Giannetti et al. (2011) that trade credit extended is correlated with the characteristics of the traded goods.

Third, higher profit margin in the downstream market leads to larger amounts of liquidity being transferred to upstream suppliers. Similarly, higher industry concentration in the downstream market, which could proxy higher downstream profits, is correlated with larger prepayments to suppliers. This finding supports the prediction in Daripa and Nilsen (2011) that high downstream incentive in immediate production leads to cash advances to upstream suppliers.

Finally, our results suggest that prepayments arise as a solution not only when the upstream firm considers delaying production but also in cases of firm default risk. We find that riskier suppliers are offered less advance payments relative to sales than suppliers with

[2] This is in line with the stock-out avoidance motive for holding inventories. Sales uncertainty and increased stock-out risk may lead to an increase in the level of inventories. See for instance, Lee and Koray (1994), Bo (2001), and Caglayan et al. (2011).

lower default risk. This means customers are only willing to make prepayments if they trust their suppliers. At the same time, suppliers will demand their newer customers to make larger payments in advance.

To summarize, the stronger the incentives of the downstream firms to ensure continued production, the larger the volume of prepayments to their upstream suppliers of specialized inputs. These results are robust to the choice of estimator and provide support both to the production subsidy theory in Daripa and Nilsen (2011) and to the default risk hypothesis tested by a small empirical literature (Raiser et al., 2008, Antras and Foley, 2011).

The rest of the paper is structured as follows. Section 2 presents the theoretical background and the hypotheses we are testing. Section 3 describes the data and summary statistics. Section 4 presents the model and the methodology used. In Section 5, we present our empirical findings and in the final section we conclude.

2. Theoretical background and hypotheses

Many of the theoretical hypotheses tested in this paper are drawn from the model by Daripa and Nilsen (2011). In their model, an upstream firm produces an intermediate good which a downstream firm uses as input, and converts into a final consumption good. There are an infinite number of periods. Each firm requires exactly one period of time to produce one unit. The downstream firm has the capacity to hold one unit of final good in inventory. The demand for the final consumption good is stochastic. If the downstream firm holds the final good in inventory and a customer arrives, a successful sale occurs. If the downstream firm does not stock the final good, the customer may return the following period but will not return after two periods.

Both firms can choose between immediate production and delayed production for one or more periods. If both firms follow an immediate production strategy a sale occurs at the arrival of a final customer. If both firms follow a “wait-and-see” strategy, production never gets started as it takes two periods to produce the final good and a non-satisfied customer does not return after two periods. If non-production is optimal for one of the firms, a negative externality arises. If the downstream firm finds it profitable to follow a waiting strategy, it might lose some sales, generating a negative externality for the upstream firm. By selling on trade credit (delayed payment), the upstream firm subsidizes the downstream firm’s inventory holding and induces it to internalize the externality. Similarly, reverse trade credit, i.e. prepayment, arises whenever the upstream firm wants to wait, generating a negative

externality for the downstream firm. Therefore, the downstream firm prepays (part of) inputs giving the upstream firm an incentive to start production and deliver the inputs.

The paper leads to several similar empirical predictions for trade credit extended and prepayments to suppliers. Empirical evidence supporting the predictions regarding trade credit can be found in the existing literature (e.g. Giannetti et al., 2011, and Mateut et al., 2011). Therefore, in this paper, we focus only on prepayment. The rest of this section develops the theoretical hypotheses we will test in the empirical analysis.

Prepayment arises whenever the downstream firm needs to offer the upstream supplier an incentive to continue production. On receipt of advance payment, upstream firms will start their production processes and therefore increase their stocks of inventories. Interestingly, we would also expect to find a positive correlation between prepayments to suppliers and downstream firms' inventories. Downstream firms with better credit terms are willing to prepay their suppliers and also hold stocks of inventories as they have a strong incentive to meet their uncertain demand.

Hypothesis 1 (Prepayments and inventory stocks): *Customer prepayments are positively correlated with the upstream firms' inventories. Prepayments to suppliers and downstream firms' inventories are also positively correlated.*

In the context of trade credit, Giannetti et al. (2011) and Fabbri and Menichini (2010) build on the diversion theory in Burkart and Ellingsen (2004) and link the use of trade credit with the characteristics of the transacted good or service. As a product becomes more specialized in nature, it has fewer alternative uses and fewer suppliers, and this ensures that the relationship between customer and supplier becomes stronger. Therefore, producers of differentiated goods are more likely to sell on credit than producers of standardized goods. However, if upstream producers consider delaying production as in Daripa and Nilsen (2011), companies requiring specialized inputs will prepay their suppliers of differentiated goods or services with a long cycle of production to give them an incentive to continue production. As a consequence, prepayments should also be correlated with the characteristics of the traded goods.

Hypothesis 2 (Prepayments and goods characteristics): *Upstream firms producing differentiated goods or services with a long cycle of production receive higher customer prepayments than producers of standardized goods. Downstream firms' prepayments to their suppliers increase with the proportion of specific inputs used in their production.*

Using financial rationing arguments, many theoretical models suggest a positive relationship between sales on credit (trade credit extended) and bank loans (e.g. Burkart and

Ellingsen, 2004, Bougheas et al., 2009). Starting with Petersen and Rajan (1997), the empirical literature has shown that the availability of finance is an important consideration in determining whether suppliers extend trade credit. Similarly, trade credit received has been shown to be negatively correlated with the availability of bank loans. In Daripa and Nilsen (2011), there is no credit rationing but upstream and downstream firms face different credit terms from outside lenders. Better credit terms in the upstream market will lead to sales on credit and conversely, better credit terms in the downstream market will result in prepayment. Focusing on prepayments, the receipt of advance payment from their customers could reduce the need of upstream firms to use bank loans. At the same time, downstream firms have to use their internal funds and may need more external funding in order to prepay their input suppliers. Being a transfer of liquid cash to the upstream firm, prepayments should have a contrasting impact on the liquidity of the upstream and of the downstream firm.

Hypothesis 3 (Prepayments and bank loans): *Customer prepayments are negatively correlated with the upstream firms' use of bank loans. The opposite holds for downstream firms.*

Hypothesis 4 (Prepayments and liquidity): *Customer prepayments are positively correlated with the upstream firms' liquidity. The reverse effects hold for downstream firms.*

As their profit margin increases, downstream firms have a higher incentive to prepay their suppliers and ensure continued production. At the same time, we would expect lower profitability upstream firms to receive more prepayments from their customers. When customer-seller relationships are strong, buyers facing better credit terms help out their less profitable suppliers. In a similar vein, Giannetti et al. (2011) and Petersen and Rajan (1997) use survey data to find that suppliers are more likely to deny trade credit to their more profitable customers, which are also less likely to offer trade credit.

Hypothesis 5 (Prepayments and profit margin): *Prepayments to suppliers increase with the profit margin in the downstream market. Low profitability upstream firms receive more customer prepayments.*

Customer-seller relationships may be influenced by industry characteristics such as the industry concentration in the product market. If industry concentration proxies the degree of competition in the product market, it can also provide a measure of firm profitability. Thus, most literature postulates a positive relationship between industry concentration and firm profitability. In the model of Daripa and Nilsen (2011), the probability that the final customer arrives could be linked to industry concentration. In a more concentrated industry, the probability that the final customer arrives should be higher. This implies that the downstream

firm's incentive to hold goods on stock in order to meet final demand is higher. We then expect to find a positive correlation between downstream market concentration and prepayments to suppliers. Looking at the upstream market now, an input supplier in a more concentrated industry has a lower incentive to delay production and therefore it is less likely to receive prepayments from its downstream buyer. Hypothesis 6 presents the expected relationship between industry concentration and prepayments.

Hypothesis 6 (Prepayments and industry concentration): *Lower upstream market concentration is correlated with higher customer prepayments. Prepayments to suppliers increase with the industry concentration in the downstream market.*

A small empirical literature suggests that prepayment is used, mainly in developing countries, as a response to default risk. Raiser et al. (2008) use a large survey of firms across 26 transition economies in Eastern Europe and the former Soviet Union and measure the extent of trust in business relationships with the level of prepayment. In their paper, a higher level of prepayment demanded by firms indicates a lower level of trust in their customers. At the same time, Antras and Foley (2011) find that cash advance payments are more likely to be required when importers are located in a country with weak contractual enforcement or in a country that is further from the exporter's country.[3] On the supply side (downstream market), both in developing economies and in the context of international trade, customers should only be willing to make prepayments if they trust their suppliers will not default.

Hypothesis 7 (Prepayments and default risk): S*uppliers with lower default risk receive larger customer prepayments (upstream market). Prepayments to suppliers increase with the extent of customer default risk (downstream market).*

The following section describes the data we will use to test our empirical hypotheses.

3. Data and summary statistics

The main data source used in this study is gathered by Bureau Van Dijk Electronic Publishing in the DIANE database, which provides a nationally representative sample of financial information about French companies. The vast majority of the firms in our sample are not quoted on the stock exchange. The firm level data from Diane is complemented with industry level information extracted from the input-output tables available from INSEAD. According to Daripa and Nilsen (2011), their theory suits best manufacturing and service

[3] Antras and Foley (2011) show that a US based exporter of frozen and refrigerated food products was more likely to demand cash in advance terms when trading with new customers.

industries requiring a long production process, such as construction.[4] Therefore, our sample includes firms operating in manufacturing and construction industries.

The database provides detailed industry specific information that allows us to identify the characteristics of the traded products. In line with Giannetti et al. (2011) and Mateut et al. (2011) we separate manufacturing firms into differentiated and standardized. The matching of industry codes to the two sectors can be found in the appendix. The largest single sector in our database is construction, which comprises roughly 46% of our total observations, and the manufacturing sector is made up of differentiated (34%) and standardized (20%) firms, as recorded in Table 1. Firms with less than three consecutive yearly observations and the one percent tails for each of the regression variables are dropped to control for the potential influence of outliers. The final sample includes about 300,000 observations for manufacturing and construction firms observed over the period 1999-2007. Panel B of Table 1 presents the structure of the whole panel and separately by sectors.

<Table 1 about here>

Inter-firm payments are generally complex and bi-directional as firms are often in the middle of a credit chain. On the one hand, there is delayed payment for the shipment of goods to downstream firms. Firms sell on credit to their downstream customers, but they also receive trade credit from their suppliers. This is trade credit (extended and received), which has been the object of study of numerous works. On the other hand, downstream firms advance liquid cash to their upstream suppliers. Firms both receive advance payments from their downstream customers and also prepay their suppliers. Prepayment has not been thoroughly studied before and we aim to fill this gap in the literature.

Table 2 shows that, on average, about 28% of the firms in our sample receive prepayments from their customers. The percentage is higher for construction firms (33%) and for firms producing differentiated manufacturing goods (28%) than for firms producing standardized manufacturing goods (17%). This provides some first evidence for our hypothesis that prepayments are correlated with the characteristics of the traded goods. Producers of differentiated goods and of services with a long production cycle are likely to receive higher prepayments from their customers whose production depend on these specialized inputs. Prepayments received as a fraction of total sales are higher in the differentiated goods and in the construction sectors than in the standardized goods sector.

[4] See Daripa and Nilsen (2011) p.248-249

Customer prepayments represent, however, a small proportion of the average upstream firms' total sales (less than 1%).

<Table 2 about here>

The bottom half of the table gives details from the downstream firm's viewpoint. A large proportion of the firms in our sample (72%) do not make prepayments to their suppliers. By contrast to customer prepayments, prepayments to suppliers do not differ much across manufacturing sectors and are lowest in the case of construction firms. This is not unusual as prepayments to suppliers depend on the characteristics of the inputs used, i.e. the proportion of differentiated versus standardized and service inputs.

Note that the recorded customer prepayments figures are the result of the equilibrium between the customers' offer to prepay and the sellers' demand for (partial) payment before delivery. Prepayments to suppliers are similarly a combination of supply and demand factors. While the demand and supply may vary across individual firms, the size of our sample means that we have a large enough number of observations within each sector for idiosyncratic effects to have little impact on the sector averages. Any systematic differences between sectors will later be picked up by industry dummies.

Summary statistics for the main control variables used in this study are presented in Table 3 Panel A for the whole sample and also separately for each industrial sector. Panels 3B and 3C report correlation coefficients separately for the upstream and the downstream market. Standardized goods manufacturers are larger on the basis of real assets and older compared to differentiated goods manufacturers and construction firms. Standard deviations within the sub-samples are large suggesting that there is a mixture of smaller and larger firms of different ages in each sector. Standardized goods manufacturers have a higher ratio of bank loans to turnover. Stocks and stocks excluding raw materials show that the construction sector has lower inventories than other sectors, while manufacturers of all types of products have very similar levels of stocks.

<Table 3 about here>

Other characteristics of the firms reported are profitability, liquidity, and a measure of risk. Profitability is measured as profit over turnover, and liquidity as cash and bank deposits over turnover. The risk measure takes ten values, with higher values indicating a higher likelihood of corporate failure in the next 12 months. The factors that contribute to the risk score include operating cash flow excluding extraordinary items, interest, dividends and royalties divided by total debt, long term capital over total assets, current assets and cash over total assets, interest expenses over turnover, and personnel expenses over value added. The

details of the aggregation procedure are reported in the appendix. The aggregated risk score is then translated into a probability of default measure on a ten point scale representing deciles of the risk distribution. Manufacturers of standardized goods have lower profitability and liquidity than other sectors. The probability of default implied by the average risk measures is slightly higher for producers of standardized goods.

4. Empirical model and methodology

Our empirical investigation starts with the analysis of customer prepayments received by upstream firms. We follow the empirical model in Mateut et al. (2011) to test the hypotheses described above but we focus on prepayments rather than on trade credit. The model is as follows:

$$CustomersPrepay_{it} = \alpha_i + \beta_1 Stocks_{it} + \beta_2 BankLoans_{it} + \beta_3 Liquidity_{it} + \beta_4 Profits_{it} + \beta_5 Risk + \\ + \beta_6 Size_{it} + \beta_7 Differentiated_i + \beta_8 Construction_i + d_t + u_{it} \quad (1)$$

where $CustomersPrepay_{it}$ is prepayments received from downstream customers; α_i is a firm-specific component, β's are coefficient values, and u_{it} is the idiosyncratic error component. We explain customer prepayments with the total stock of inventories ($Stocks_{it}$); the amount of bank loans ($BankLoans_{it}$); $Liquidity_{it}$ represents firm's gross liquid assets (cash and bank deposits) and $Profits_{it}$ gives the firm's profit (or loss) for the period. $Risk_{it}$ is a measure of the likelihood of company failure in the near future. With the exception of $Risk_{it}$, all variables are scaled by total sales. Finally, we include the logarithm of firms' book value of assets to control for size effects ($Size_{it}$). Briefly, stocks measure the incentives firms face to increase production when receiving prepayments from their customers; bank loans control for external sources of finance that might allow firms to continue production; measures of risk, profit, and liquid assets indicate the financial condition of the firm, and size indicates the effect of scale of the firm on prepayments received from customers. We control for firm-specific (α_i), time-invariant (d_t) and sector specific effects ($Differentiated_i$ and $Construction_i$).

We then model prepayments to suppliers from the downstream firm's perspective by estimating the empirical model below:

$$PrepaySuppliers_{it} = \alpha_i + \beta_1 Stocks_{it} + \beta_2 BankLoans_{it} + \beta_3 Liquidity_{it} + \beta_4 Profits_{it} + \beta_5 Risk + \\ + \beta_6 Size_{it} + \beta_7 Pdiff_{it} + \beta_8 Pserv_{it} + d_t + u_{it} \quad (2)$$

where the variables are similarly defined to the previous model but they are now scaled by firm's total assets instead of turnover. $PrepaySuppliers_{it}$ is prepayments to suppliers and $Pdiff_{it}$ is the proportion of differentiated goods inputs used by the firm, and $Pserv_{it}$ the proportion of service inputs used by the firm (defined as inputs from non-manufacturing industries over total inputs). In line with Giannetti et al. (2011), we control for the proportion of specialized inputs firms use in their production. If upstream firms have the option to delay production as in Daripa and Nilsen (2011), we expect downstream firms to make larger prepayments to their suppliers the larger the proportion of differentiated and service inputs used in their production processes.

In both equations (1) and (2), we experiment with replacing the variable *Stocks* with a measure of inventories at different stages of fabrication. Our hypothesis is that receiving prepayment from their buyers will induce upstream firms to start their production and hold larger stocks of work in progress and finished goods (*Wifs*), i.e. inventories close to final stages of production that will soon become the input in the downstream market. Excluding raw materials from total stocks gives us a measure of inventories that matches better the characteristics of the final traded goods by the upstream firms. Similarly, we replace the total stock of inventories in the downstream market specification with the stock of basic materials purchased from other firms to be used in the firm's production operations (*Raws*). Downstream firms with better credit terms prepay their input suppliers and are also willing to hold larger stocks of inputs to be used in the firms' production operations.

As documented in Table 2, a large proportion of the firms in our sample do not use prepayments. Moreover, a number of regressors in our equations, such as inventories, bank loans and liquid assets, are potentially endogenous. These considerations motivate us to use an instrumental variables approach for Tobit models which is due to Smith and Blundell (1986). Lagged values of the endogenous regressors are used as instruments. The estimation of Tobit models with endogenous regressors involves two steps: (i) running a linear regression of each endogenous regressor on the instrumental variables and all other exogenous regressors, and (ii) estimating the Tobit model by including the residual terms from step (i) in the list of covariates. The residuals are correction terms for the endogeneity problem, and jointly significant coefficients on these terms can be taken as evidence in favour of the hypothesis that the relevant regressors are indeed endogenous.

To ensure robustness to the choice of estimator, we employ a number of alternative estimation strategies. Besides the maximum-likelihood estimator we report results using the Newey's minimum chi-squared estimator. Morever, as the instrumental variables estimators

do not take into account the panel structure of our data, we also report the results obtained from a random effects Tobit model. Finally, we define two new dependent variables as dummies taking value 1 if customer prepayments (equation 1) and prepayments to suppliers (equation 2) are positive, and 0 otherwise. We then estimate our models using a random effects Probit estimator. The endogenous variables are replaced with their first lags in both panel estimators to correct for endogeneity.

5. Econometric results

5.1 Upstream market

We start our analysis from the point of view of the upstream firms. The marginal effects from our estimates of equation (1) are reported in Table 4 for total stocks of inventories (columns 1-4) and inventories at advanced stages of fabrication (columns 5-8). Equation (1) is estimated using a number of estimators. The marginal effects from the IV Tobit estimation of equation (1) are presented in Table 4, columns 1 (for *Stocks*) and 5 (for *Wifs*). We also report the parameter estimates from the two step Newey minimum chi squared estimator in columns 2 (for total stocks) and 6 (for work in progress and finished goods). The null hypothesis of the exogeneity of regressors is emphatically rejected, vindicating the use of the instrumental variables estimator. Nevertheless, we report in the rest of the columns the marginal effects from the random effects Tobit and the random effects Probit estimators. We believe that if all our estimators deliver similar results, then they can be considered reliable.

<Table 4 about here>

Receiving advance payments from their customers increases the stocks of inventories of upstream firms. The significantly large marginal effects (parameter estimates in columns 2 and 6) presented in Table 4 suggest that there is a strong positive correlation between inventories and customer prepayments. These results are not sensitive to the choice of estimator and support our first hypothesis (*H1*): downstream firms subsidize storage costs for upstream firms and induce them to hold more inventories and continue production. The correlation is even stronger in columns 5 to 8 when we replace total stocks with inventories closer to final stages of production (*Wifs*).

Our results support the hypothesis that customer prepayments are correlated with the characteristics of the traded goods (*H2*). Both the dummy for the differentiated goods sector and the dummy for the construction sector attract positive and highly significant coefficients. These findings are in line with the summary statistics presented in Table 2. Our results suggest that differentiated goods producers are likely to receive higher prepayments from

their customers than standardized goods producers. The impact is twice larger in the case of construction firms. These suppliers receive higher advance payments because they produce more specialised products and services than manufacturers of standardized goods and downstream firms are more dependent on these specific inputs.

The next two rows in Table 4 provide evidence supporting our third and forth hypotheses: the transfer of liquid cash from the downstream firms reduces the need of bank loans (*H3*) and increases the liquidity (*H4*) of the receiving upstream firms. The negative relationship between prepayments received from customers and the use of short term bank loans is confirmed by the large and highly significant estimates produced by all estimators. The table also reports positive marginal effects (Newey parameter estimates in columns 2 and 6) for the liquidity variable (insignificant in the panel estimators though).

We also find evidence that low profitability upstream firms facing a low probability of future default receive higher prepayments from their downstream customers (*H5*). This is evidenced by the negative and highly significant impact exerted by the variables *Profitability* and *Risk*. These results are in line with the survey data evidence provided by Giannetti et al. (2011) and Petersen and Rajan (1997), who find that more profitable firms are likely to be offered less trade credit. Similarly, downstream firms subsidize the production of their suppliers of specialized inputs when the latter have lower profitability as long as they do not face an increased risk of failure. Finally, larger upstream firms are likely to receive more prepayments from their downstream customers.

5.2 Downstream market

We turn now our attention to the downstream market and investigate prepayments to suppliers from the buyer's point of view. In order to link prepayments to suppliers with the input characteristics, we construct the variables *Pdiff*, defined as the proportion of differentiated goods inputs used by the firm, and *Pserv,* the proportion of service inputs from non-manufacturing industries over total inputs. The information is derived from the input-output tables from INSEAD in a similar way that Giannetti et al. (2011) extracted this information from US input-output tables. Mateut et al. (2011) use the same approach in their analysis of trade credit taken by French firms.

< Table 5 about here >

As in the case of customer prepayments in the upstream market, we report in Table 5 our results for the IV Tobit, the Newey estimator, the random effects Tobit, and the random effects Probit estimator for total stocks (columns 1-4) and for raw material inventories

(columns 5-8). Our findings are very similar across estimators and definition of the stocks variable in terms of sign and significance of the coefficients on our variables.

We find that prepayments to suppliers and buyers' stocks of inventories are positively correlated. This is a prediction of the Daripa and Nilsen (2011) model: prepayment arises whenever the downstream firm has better credit terms and thus finds it optimal to subsidize inventories of the upstream supplier to ensure continued production. Moreover, as the aim of the downstream firm is to be able to meet its uncertain final demand it, therefore, holds higher stocks of inventories. The result is also consistent with the storage cost theory in Bougheas et al. (2009) and provides evidence supporting our first hypothesis regarding the relationship between prepayments and inventories in the downstream market. The positive correlation between prepayments and inventories is confirmed by all estimators and appears to be stronger when inventories are inputs from upstream firms (*Raws*).

Table 5 confirms that prepayments to suppliers are related to input characteristics. Firms requiring a higher proportion of differentiated inputs prepay more their suppliers. Similarly, a higher proportion of service inputs relative to standardized inputs increases the volume of prepayments to suppliers. In other words, downstream firms requiring more specialized inputs are more likely to prepay their suppliers. These results confirm the prediction in Daripa and Nilsen (2011) and are in line with the findings in Giannetti et al. (2011) and Mateut et al. (2011) for trade credit taken.

Contrary to our findings for the upstream firms, prepayments to suppliers imply a lower liquidity and may mean a stronger reliance on external funding for downstream firms. These are reflected by the negative sign for *Liquidity* and the positive sign for *BankLoans* in Table 5 as opposed to the signs reported in Table 4. Being a transfer of liquid cash from downstream to upstream firms, prepayments to suppliers have opposing effects on the liquidity and bank funding ratio of the two firms. These results provide evidence for the third and fourth hypotheses.

Confirmation of the theoretical prediction in Daripa and Nilsen (2011) that higher profit margin in the downstream market leads to prepayments to suppliers is found in Table 5. The variable *Profits* has larger marginal effects on the likelihood that the downstream firm prepays its suppliers than any other firm characteristic (*H5*). Profits gauge the incentives of the downstream firms to subsidize their suppliers and sustain continued production.

Our results also suggest that larger firms in terms of real assets are more likely to prepay their suppliers. Daripa and Nilsen (2011) use the observation that often large firms in developed economies prepay their suppliers to show that prepayment is not a response to

default risk but rather arises as a solution when the upstream firm considers delaying production. We investigate this issue further in section 5.4.

5.3 Industry concentration

In our estimations so far we have not controlled directly for the industry concentration in the supplier's market. Table 6A (for *Stocks*) and Table 6B (for *Wifs*) report results using all four estimators when we include a two-digit industry concentration measure and / or the share of the supplier's sales into its own two-digit industry total sales in equation (1). While our previous results remain, we find that suppliers in less concentrated industries are more likely to receive prepayments from their customers, when we use instrumental variables estimators. Similarly, firms with a higher share in total industry sales are likely to receive lower prepayments from their buyers. These results support the hypothesis that suppliers in more concentrated industries have a lower incentive to delay production and therefore their customers need to make lower advance payments (*H6*).

< Tables 6A and 6B about here >

The direct impact of the downstream market concentration on prepayments to suppliers is captured by the inclusion of the two industry concentration measures in equation (2). These results are reported in Table 7A (for *Stocks*) and Table 7B (for *Raws*). While the share of the firm's sales into its own two-digit industry sales has no impact on the incidence of prepayments to suppliers, higher concentration in the downstream market increases prepayments to suppliers. This result is suggested by the positive and significant impact exerted by the industry concentration variable irrespective of the choice of estimator. Besides profit margin, industry concentration could proxy the probability that a final customer arrives and a successful sale occurs in Daripa and Nilsen (2011). Increased probability that a final sale occurs gives the downstream firm an incentive to prepay its supplier to ensure continued production. The results thus support the hypothesis that industry concentration is positively correlated with prepayments to suppliers (*H6*).

< Tables 7A and 7B about here >

5.4 Company default risk

In all specifications, we have controlled for the probability that the firm defaults in the near future by including the variable *Risk*. The results presented in Table 4 and Tables 6 suggest that lower risk suppliers receive more prepayments from their customers (when we use instrumental variables estimators). In other words, the supply of advance payments is

negatively correlated with the perceived risk that suppliers will eventually deliver the inputs. At the same time, our results suggest that suppliers demand their riskier buyers to make larger advance payments as evidenced in Table 7B (instrumental variables estimators). We investigate the default risk hypothesis of prepayment further and re-estimate all our models including the age of the firm among the explanatory variables.

Controlling for firm age allows us to investigate whether prepayments are correlated with default risk. Firm age could proxy one the one hand, the strength of the relationship between supplier and buyer. On the other hand, the age of the firm provides a proxy for the likelihood of firm failure as it has been shown that younger firms have a higher mortality rate (Disney et al., 2003). As the observed prepayment figures are the result of the equilibrium between the demand by upstream firms to be paid in advance and the supply of prepayment by downstream firms, our findings suggest that both default risk and length of relationship matter. While our previous findings remain, the new sets of results, reported in Table 8 only for the main specifications for brevity, suggest that younger firms facing a low default risk receive higher prepayments from their customers. In other words, downstream firms support their younger suppliers of specialized inputs as long as the latter face a low default risk (negative sign for *Risk* in the IV estimations). In the downstream market, in line with Antras and Foley (2011), younger firms prepay more than their older counterparts as suppliers are more likely to demand advance cash payment terms from their newer customers. Interestingly, the *Risk* variable loses significance when we control for downstream firm age. Overall, the results presented in Table 8 suggest that firm default risk is also a key determinant of prepayments.

< Table 8 about here >

To summarise, our results suggest that prepayments to upstream suppliers of inputs are influenced by the incentive of downstream firms to meet their uncertain final demand. The strength of the supplier-customer relationship, the use of specialized inputs (differentiated goods or services requiring a long production cycle), higher profitability in the downstream market, and company default risk are factors that induce downstream buyers facing better credit terms to subsidize inventory costs for their upstream suppliers.

6. Conclusions

This paper provides, to the best of our knowledge, the first detailed empirical study on the determinants of prepayments by firms. We have used detailed information on large panels of French manufacturing and construction firms to show that there is a positive correlation

between prepayments and stocks of inventories. This finding provides support for the theoretical prediction in Daripa in Nilsen (2011) that downstream firms facing better credit terms prepay (part of) their inputs whenever their upstream suppliers would otherwise delay production and delivery of inputs. Receiving advance payment from their customers gives upstream firms an incentive to continue production. At the same time, downstream firms increase their stocks of inputs and produce, in an attempt to meet their stochastic final demand. Moreover, our results show that prepayments are used also in cases of firm default risk. Riskier firms receive lower prepayments from their customers and are demanded to make larger advance payments to their suppliers. Our other findings suggest that both firm characteristics including profitability, liquidity, access to bank funding, and size, and industry characteristics such as the type of the traded goods and competition measures exert an impact on the volume of prepayments and are in line with the results obtained by recent empirical works (Giannetti et al., 2011, and Mateut et al., 2011) on the related aspect of delayed payment for the transfer of inputs to downstream firms (trade credit extended).

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Appendix

The classification of the manufacturing firms into differentiated or standardized follows Giannetti et al. (2011) and is based on Rauch (1999).

UK SIC 2003	Manufacture of	Differentiated
15	Food products and beverages	0
16	Tobacco products	0
17	Textiles	0
18	Wearing apparel; dressing and dyeing of fur	0
19	Tanning and dressing of leather; luggage, handbags, saddlery harness and footwear	0
20	Wood and products of wood and cork, except furniture; articles of straw and plaiting materials	0
21	Pulp, paper and paper products; publishing and printing	0
22	Publishing, printing and reproduction of recorded media	1
23	Coke, refined petroleum products and nuclear fuel	0
24	Chemicals and chemical products	0
25	Rubber and plastic products	1
26	Other non-metallic mineral products	0
27	Basic metals	0
28	Fabricated metal products, except machinery and equipment	1
29	Machinery and equipment not elsewhere classified	1
30	Office machinery and computers	1
31	Electrical machinery and apparatus not elsewhere classified	1
32	Radio, television and communication equipment and apparatus	1
33	Medical, precision and optical instruments, watches and clocks	1
34	Motor vehicles, trailers and semi-trailers	1
35	Other transport equipment	1
36	Furniture, manufacturing not elsewhere classified	1

Firms in the two-digit SIC code 16, Tobacco products, are excluded due to the low number of observations.

Definition of variables

CustomersPrepay = prepayments received from customers scaled by firm turnover

PrepaySuppliers = prepayments to own suppliers scaled by firm turnover

BankLoans = bank borrowings scaled by turnover

Stocks = total stocks of inventories scaled by turnover

There are four types of stocks in the French accounting system:

1. raw materials and consumables = the basic materials purchased from other firms to be used in the firm's production operations,

2. work in progress = low partially finished goods requiring (important) additional work before they become finished goods (more than 50% of the production process remains to do),

3. semi-finished and finished goods= high partially finished goods requiring (weak) additional work before they become goods for sale (less than 50% of the production process remains to do)

4. goods for sale= goods on which the production has been totally completed but that are not yet sold.

Wifs = the sum of work in progress, semi-finished and finished goods, and goods for sale scaled by turnover

Raws = raw materials and consumables (the basic materials purchased from other firms to be used in the firm's production operations) scaled by turnover

Profits = profit/loss for the period scaled by turnover

Liquidity = liquid assets include cash and bank deposits scaled by turnover

Risk = measures the probability that the firm will be in default in the near future. It takes 10 values (1-10), with higher values indicating higher risk.

Risk = 10 if NPC < -4, i.e. a 90% probability of default in a near future,
= 9 if -4 <= NPC < 0, i.e. there is 80% probability of default in a near future,
= 8 if 0 <= NPC < 2, i.e. there is 70% probability of default in a near future,
= 7 if 2 <= NPC < 5, i.e. there is 60% probability of default in a near future,
= 6 if 5 <= NPC < 6, i.e. there is 50% probability of default in a near future,
= 5 if 6 <= NPC < 8, i.e. there is 40% probability of default in a near future,
= 4 if 8 <= NPC < 10, i.e. there is 30% probability of default in a near future,
= 3 if 10 <= NPC < 13, i.e. there is 20% probability of default in a near future,
= 2 if 13 <= NPC < 16, i.e. there is 10% probability of default in a near future,
= 1 if NPC >= 16.

Size = logarithm of real total assets

Age = number of years since the firm was established

Differentiated = 1 if the manufacturing firm produces differentiated goods, 0 otherwise. See Sector classification of firms.

Standardized = 1 if the manufacturing firm produces standardized goods, 0 otherwise. See Sector classification of firms.

Construction = 1 for firms operating in industry SIC code 45, 0 otherwise.

Pdiff = proportion of differentiated inputs in total inputs used by firms in the same industry. Values calculated using data from the input-output tables with 117 entries available from INSEAD.

Pserv = proportion of service inputs in total inputs used by firms in the same industry. Values calculated using data from the input-output tables with 117 entries available from INSEAD.

Ind. concentration = market share of the eight largest firms in the firm’s two-digit industry

Ind. share = share of own sales to total two-digit industry sales

Table 1

Panel A. Sector composition

Sector	Freq.	Percent	Cum.
Differentiated	103,285	34.28	34.28
Standardized	61,120	20.29	54.57
Construction	136,884	45.43	100.00
Total	301,289	100.00	

Panel B. Structure of the panel data

	Total		Differentiated		Standardized		Construction	
No years	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
4	4,236	1.41	1,264	1.22	816	1.34	2,156	1.58
5	6,480	2.15	2,077	2.01	1,532	2.51	2,871	2.1
6	9,384	3.11	2,980	2.89	2,229	3.65	4,175	3.05
7	13,389	4.44	4,362	4.22	2,988	4.89	6,039	4.41
8	30,116	10	10,406	10.08	6,415	10.5	13,295	9.71
9	237,684	78.89	82,196	79.58	47,140	77.13	108,348	79.15
Total	301,289	100	103,285	100	61,120	100	136,884	100

Table 2. Use of prepayments by sector

Variable	Total		Differentiated		Standardized		Construction	
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
	Upstream firms							
Dummy customer prepayments	0.2819	0.4499	0.2785	0.4483	0.1738	0.3790	0.3327	0.4712
Customer prepayments	0.0074	0.0309	0.0060	0.0252	0.0019	0.0123	0.0108	0.0390
Observations	301289		103285		61120		136884	
	Downstream firms							
Dummy prepayments to suppliers	0.2783	0.4482	0.3029	0.4595	0.2983	0.4575	0.2501	0.4331
Prepayments to suppliers	0.0011	0.0035	0.0012	0.0038	0.0012	0.0036	0.0009	0.0032
Observations	294204		102982		59165		132057	

Note: The table reports means and standard deviations. The dummy variables take value 1 if customer prepayments and prepayments to suppliers, respectively, are positive and 0 otherwise. Customer prepayments denote prepayments received from customers scaled by upstream firms' turnover. Prepayments to suppliers are scaled by downstream firms' total assets.

Table 3A. Summary statistics of main variables

	Total		Differentiated		Standardized		Construction	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
BankLoans	0.0520	0.0713	0.0569	0.0743	0.0703	0.0909	0.0402	0.0552
Stocks	0.0756	0.0757	0.0983	0.0805	0.0969	0.0864	0.0490	0.0556
Wifs	0.0408	0.0545	0.0526	0.0589	0.0493	0.0594	0.0280	0.0453
Risk	2.1783	1.7503	2.1736	1.8069	2.2452	1.8688	2.1519	1.6485
Profits	0.0335	0.0406	0.0336	0.0436	0.0296	0.0424	0.0353	0.0371
Liquidity	0.0556	0.0623	0.0533	0.0618	0.0495	0.0584	0.0601	0.0640
Assets (ln)	2.5223	1.2586	2.8109	1.2296	2.9607	1.4791	2.1087	1.0245
Age	19.1609	14.1431	20.2674	14.6914	21.5293	15.7379	17.2820	12.6552
Ind. concentration	0.1680	0.1366	0.2243	0.1853	0.2188	0.0943	0.1028	0.0582
Ind. share	0.0003	0.0014	0.0004	0.0019	0.0006	0.0019	0.0002	0.0005

Note: The table reports means and standard deviations. *Differentiated* denote firms in manufacturing differentiated goods sector, *Standardized* are firms in manufacturing standardized goods sector, and *Construction* denotes firms in construction. *BankLoans* represents short-term bank loans; *Stocks* stands for total stocks inventories, while *Wifs* excludes raw materials from total stocks; *Risk* measures the likelihood of company failure, where a higher value indicates that the firm is more risky. *Profits* gives the firm's profit (or loss) for the period; *Liquidity* represents firm's liquid assets (cash, bank deposits, and other current assets). With the exception of *Risk* all other variables are scaled by total sales. *Assets* denote the logarithm of firms real assets. *Ind. concentration* is the market share of the eight largest firms in the firm's two-digit industry. *Ind. share* is the share of own sales in total two-digit industry sales.

Table 3B. Correlation coefficients – Upstream market

	Customers Prepay	*BankLoans*	*Stocks*	*Wifs*	*Risk*	*Profits*	*Liquidity*	*Assets (ln)*	*Age*	*Ind. conce.*
BankLoans	-0.0454*	1								
Stocks	0.1932*	0.1470*	1							
Wifs	0.2605*	0.0966*	0.8058*	1						
Risk	0.0129*	0.0965*	0.2102*	0.1775*	1					
Profits	-0.0038*	-0.1210*	-0.1288*	-0.1084*	-0.5533*	1				
Liquidity	0.0239*	-0.1189*	-0.1334*	-0.1022*	-0.2821*	0.3129*	1			
Assets (ln)	0.0445*	0.0292*	0.2698*	0.2456*	-0.0552*	-0.0029*	-0.0800*	1		
Age	0.0058*	-0.0432*	0.1819*	0.1641*	-0.0439*	-0.0640*	0.0126*	0.3162*	1	
Ind. conce	-0.0451*	0.0344*	0.2354*	0.1525*	0.0224*	-0.0140*	-0.0465*	0.2182*	0.0543*	1
Ind. share	-0.0056*	-0.0117*	0.0823*	0.0752*	-0.0021*	-0.0219*	-0.0566*	0.3564*	0.0861*	0.1452*

Note: The table reports correlation coefficients. *BankLoans* represents short-term bank loans; *Stocks* stands for total stocks inventories, while *Wifs* excludes raw materials from total stocks; *Risk* measures the likelihood of company failure, where a higher value indicates that the firm is more risky. *Profits* gives the firm's profit (or loss) for the period; *Liquidity* represents firm's liquid assets (cash, bank deposits, and other current assets). With the exception of *Risk* all other variables are scaled by total sales. *Assets* denote the logarithm of firms real assets. *Ind. concentration* is the market share of the eight largest firms in the firm's two-digit industry. *Ind. share* is the share of own sales in total two-digit industry sales.

* indicates significance at 5% level.

Table 3C. Correlation coefficients – Downstream market

	Prepay Suppliers	*BankLoans*	*Stocks*	*Wifs*	*Risk*	*Profits*	*Liquidity*	*Assets (ln)*	*Age*	*Ind. conce.*
BankLoans	0.0113*	1								
Stocks	0.0446*	0.0563*	1							
Raws	0.0263*	0.0869*	0.5405*	1						
Risk	0.0217*	0.1539*	0.2754*	0.1616*	1					
Profits	-0.0130*	-0.1901*	-0.2002*	-0.1123*	-0.5543*	1				
Liquidity	-0.0334*	-0.2196*	-0.2192*	-0.1441*	-0.2549*	0.2842*	1			
Assets (ln)	0.0432*	-0.0754*	0.1771*	0.0360*	-0.0380*	-0.1140*	-0.1951*	1		
Age	-0.0061*	-0.0769*	0.1407*	0.0642*	-0.0454*	-0.1072*	-0.0318*	0.3026*	1	
Ind. conce	0.0349*	0.0172*	0.1960*	0.2210*	0.0124*	-0.0557*	-0.0898*	0.2404*	0.0665*	1
Ind. share	0.0236*	-0.0129*	0.0768*	0.0567*	-0.0051*	-0.0322*	-0.0661*	0.3150*	0.0777*	0.1709*

Note: The table reports correlation coefficients. *BankLoans* represents short-term bank loans; *Stocks* stands for total stocks inventories, while *Raws* are the basic materials purchased from other firms to be used in the firm's production operations; *Risk* measures the likelihood of company failure, where a higher value indicates that the firm is more risky. *Profits* gives the firm's profit (or loss) for the period; *Liquidity* represents firm's liquid assets (cash, bank deposits, and other current assets). With the exception of *Risk* all other variables are scaled by total assets in the downstream market specifications. *Assets* denote the logarithm of firms real assets. *Ind. concentration* is the market share of the eight largest firms in the firm's two-digit industry. *Ind. share* is the share of own sales in total two-digit industry sales.

* indicates significance at 5% level.

Table 4. Upstream firms – customer prepayments

VARIABLES	(1) IV Tobit	(2) Newey	(3) Random effects Tobit	(4) Random effects Probit	(5) IV Tobit	(6) Newey	(7) Random effects Tobit	(8) Random effects Probit
Stocks	0.0639***	0.275***	0.0211***	2.812***				
	(0.0008)	(0.0027)	(0.0007)	(0.101)				
Wifs					0.0869***	0.372***	0.0242***	2.972***
					(0.0011)	(0.0035)	(0.0008)	(0.127)
Liquidity	0.0045***	0.0195***	0.000615	-0.100	0.0027***	0.0117***	0.0003	-0.152*
	(0.001)	(0.0042)	(0.0006)	(0.0919)	(0.001)	(0.0042)	(0.0006)	(0.0920)
BankLoans	-0.0195***	-0.0840***	-0.0056***	-0.619***	-0.0163***	-0.0700***	-0.0048***	-0.489***
	(0.0008)	(0.0033)	(0.000594)	(0.0862)	(0.0007)	(0.0032)	(0.0006)	(0.0858)
Risk	-0.0002***	-0.0007***	-1.92e-05	-0.0017	-8.42e-05***	-0.000361***	-2.21e-06	0.0010
	(2.81e-05)	(0.0001)	(2.45e-05)	(0.0037)	(2.78e-05)	(0.0001)	(2.45e-05)	(0.0037)
Profits	-0.00420***	-0.0181***	-0.0083***	-0.671***	-0.0029**	-0.0123**	-0.0085***	-0.713***
	(0.0012)	(0.0051)	(0.00105)	(0.156)	(0.0012)	(0.005)	(0.0011)	(0.156)
Size	0.0016***	0.007***	0.00301***	0.341***	0.0015***	0.0064***	0.003***	0.344***
	(3.44e-05)	(0.0001)	(6.16e-05)	(0.0086)	(3.36e-05)	(0.000135)	(6.17e-05)	(0.00862)
Differentiated	0.0057***	0.0237***	0.0068***	0.870***	0.0054***	0.0222***	0.0068***	0.865***
	(0.0001)	(0.0005)	(0.0003)	(0.0320)	(0.0001)	(0.0005)	(0.0002)	(0.0321)
Construction	0.0136***	0.0563***	0.0136***	1.604***	0.0120***	0.0498***	0.0131***	1.539***
	(0.0001)	(0.0005)	(0.000257)	(0.0321)	(0.0001)	(0.0005)	(0.0003)	(0.0320)
Observations	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619
Chi(2)	35.87	50.14			49.11	81.49		
p	2.10e-09	7.46e-11			0	0		
No. uncensored	74654	74654	74654		74654	74654	74654	
No. left-censored	188965	188965	188965		188965	188965	188965	
No. of firms			37,670	37,670			37,670	37,670
Rho			0.732	0.777			0.732	0.779
Log Likelihood			76616	-103084			76553	-103196

*** p<0.01, ** p<0.05, * p<0.1

Note: All dependent and independent variables are defined in Tables 2 and 3. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 and 5) in parentheses. Columns 2 and 6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1, 2, 5, and 6. In the panel estimations (columns 3, 4, 7 and 8), the variables *Stocks*, *Wifs*, *BankLoans*, and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.

Table 5. Downstream firms – prepayments to suppliers

VARIABLES	(1) IV Tobit	(2) Newey	(3) Random effects Tobit	(4) Random effects Probit	(5) IV Tobit	(6) Newey	(7) Random effects Tobit	(8) Random effects Probit
Stocks	0.000892***	0.00369***	0.000486***	0.374***				
	(4.76e-05)	(0.000201)	(6.05e-05)	(0.0504)				
Raws					0.00136***	0.00564***	0.000902***	0.700***
					(8.86e-05)	(0.000366)	(0.000117)	(0.0975)
Liquidity	-0.000707***	-0.00292***	-0.000183***	-0.175***	-0.000779***	-0.00322***	-0.000209***	-0.194***
	(8.97e-05)	(0.000368)	(6.08e-05)	(0.0489)	(8.97e-05)	(0.000367)	(6.05e-05)	(0.0486)
BankLoans	0.000298***	0.00123***	1.92e-05	0.0853	0.000262***	0.00108***	5.11e-06	0.0747
	(5.51e-05)	(0.000229)	(6.63e-05)	(0.0541)	(5.52e-05)	(0.000229)	(6.63e-05)	(0.0541)
Risk	2.44e-06	1.01e-05	-4.08e-06	-0.0125***	1.12e-05***	4.62e-05***	-2.57e-06	-0.0114***
	(3.85e-06)	(1.57e-05)	(4.20e-06)	(0.00345)	(3.80e-06)	(1.54e-05)	(4.19e-06)	(0.00344)
Profits	0.000529***	0.00219***	0.000202**	0.0973	0.000507***	0.00210***	0.000194**	0.0916
	(9.40e-05)	(0.000386)	(9.84e-05)	(0.0798)	(9.39e-05)	(0.000386)	(9.84e-05)	(0.0798)
Size	0.000260***	0.00108***	0.000264***	0.339***	0.000272***	0.00113***	0.000271***	0.344***
	(4.08e-06)	(1.79e-05)	(7.37e-06)	(0.00642)	(4.07e-06)	(1.79e-05)	(7.35e-06)	(0.00640)
Pdiff	0.000321***	0.00133***	0.000294***	0.336***	0.000356***	0.00147***	0.000313***	0.351***
	(4.25e-05)	(0.000178)	(8.24e-05)	(0.0713)	(4.26e-05)	(0.000178)	(8.24e-05)	(0.0712)
Pserv	0.000100**	0.000414**	-0.000103	0.112	0.000111***	0.000461**	-7.91e-05	0.131*
	(4.18e-05)	(0.000178)	(8.09e-05)	(0.0694)	(4.26e-05)	(0.000180)	(8.14e-05)	(0.0698)
Observations	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754
Chi(2)	25.63	27.71			24.81	26.46		
p	4.13e-07	9.60e-07			6.33e-07	1.79e-06		
No. uncensored	70545	70545	70545		70545	70545	70545	
No. left-censored	182209	182209	182209		182209	182209	182209	
No. of firms			36,404	36,404			36,404	36,404
Rho			0.518	0.643			0.519	0.643
Log Likelihood			185294	-114459			185291	-114461

*** p<0.01, ** p<0.05, * p<0.1

Note: See Tables 2 and 3 for variables definition. Variables are scaled by total assets in the downstream market specification. *Raws* are the basic materials purchased from other firms to be used in the firm's production operations. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 and 5) in parentheses. Columns 2 and 6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1, 2, 5, and 6. In the panel estimations, columns 3, 4, 7, and 8, the variables *Stocks, Raws* and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.

Table 6A. Industry concentration - Upstream firms

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IV Tobit			Newey			Random effects Tobit			Random effects Probit		
Stocks	0.0642***	0.0639***	0.0642***	0.277***	0.275***	0.277***	0.0210***	0.0211***	0.0210***	2.788***	2.812***	2.789***
	(0.000804)	(0.000798)	(0.000805)	(0.00269)	(0.00268)	(0.00269)	(0.000648)	(0.000647)	(0.000648)	(0.101)	(0.101)	(0.101)
Liquidity	0.00451***	0.00451***	0.00449***	0.0194***	0.0194***	0.0194***	0.000615	0.000614	0.000614	-0.0985	-0.0994	-0.0978
	(0.00102)	(0.00101)	(0.00101)	(0.00423)	(0.00423)	(0.00423)	(0.000612)	(0.000612)	(0.000612)	(0.0919)	(0.0919)	(0.0919)
BankLoans	-0.0197***	-0.0195***	-0.0197***	-0.0847***	-0.0840***	-0.0847***	-0.00562***	-0.00562***	-0.00561***	-0.610***	-0.619***	-0.610***
	(0.000776)	(0.000772)	(0.000774)	(0.00332)	(0.00331)	(0.00332)	(0.000594)	(0.000594)	(0.000594)	(0.0862)	(0.0862)	(0.0863)
Risk	-0.000153***	-0.000156***	-0.000154***	-0.000660***	-0.000670***	-0.000661***	-1.92e-05	-1.92e-05	-1.92e-05	-0.00178	-0.00165	-0.00177
	(2.82e-05)	(2.82e-05)	(2.82e-05)	(0.000116)	(0.000116)	(0.000116)	(2.45e-05)	(2.45e-05)	(2.45e-05)	(0.00370)	(0.00370)	(0.00370)
Profits	-0.00411***	-0.00421***	-0.00412***	-0.0177***	-0.0181***	-0.0177***	-0.00827***	-0.00827***	-0.00827***	-0.671***	-0.671***	-0.670***
	(0.00121)	(0.00121)	(0.00121)	(0.00508)	(0.00508)	(0.00508)	(0.00105)	(0.00105)	(0.00105)	(0.156)	(0.156)	(0.156)
Size	0.00164***	0.00163***	0.00164***	0.00705***	0.00701***	0.00707***	0.00301***	0.00301***	0.00301***	0.338***	0.341***	0.338***
	(3.46e-05)	(3.45e-05)	(3.47e-05)	(0.000137)	(0.000137)	(0.000138)	(6.18e-05)	(6.17e-05)	(6.19e-05)	(0.00862)	(0.00860)	(0.00862)
Differentiated	0.00573***	0.00572***	0.00573***	0.0237***	0.0237***	0.0237***	0.00683***	0.00683***	0.00683***	0.868***	0.870***	0.868***
	(0.000119)	(0.000119)	(0.000119)	(0.000498)	(0.000498)	(0.000498)	(0.000259)	(0.000259)	(0.000259)	(0.0320)	(0.0320)	(0.0320)
Construction	0.0133***	0.0136***	0.0133***	0.0554***	0.0563***	0.0554***	0.0136***	0.0136***	0.0136***	1.642***	1.604***	1.642***
	(0.000146)	(0.000145)	(0.000146)	(0.000543)	(0.000524)	(0.000543)	(0.000268)	(0.000257)	(0.000268)	(0.0336)	(0.0321)	(0.0336)
Ind. concentration	-0.00188***		-0.00185***	-0.00809***		-0.00795***	5.89e-05		6.70e-05	0.343***		0.340***
	(0.000295)		(0.000295)	(0.00131)		(0.00131)	(0.000635)		(0.000636)	(0.0885)		(0.0886)
Ind. share		-0.0739***	-0.0650***		-0.318**	-0.280**		-0.0150	-0.0152		7.131	6.176
		(0.0206)	(0.0211)		(0.131)	(0.131)		(0.0461)	(0.0462)		(6.288)	(6.281)
Observations	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619
Chi(2)	37.23	35.99	37.27	52.30	50.15	52.28						
p	1.05e-09	1.98e-09	1.03e-09	0	7.41e-11	0						
No. uncens.	74654	74654	74654	74654	74654	74654	74654	74654	74654			
No. left-cens.	188965	188965	188965	188965	188965	188965	188965	188965	188965			
No. of firms							37,670	37,670	37,670	37,670	37,670	37,670
Rho							0.732	0.732	0.732	0.777	0.777	0.777
Log Likelihood							76616	76616	76616	-103077	-103084	-103077

*** p<0.01, ** p<0.05, * p<0.1

Note: See Tables 2 and 3 for variables definition. Variables are scaled by turnover in the upstream market specifications. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 to 3) in parentheses. Columns 4-6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1-6. In the panel estimations, columns 7- 12, the variables *Stocks*, *BankLoans*, and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.

Table 6B. Industry concentration - Upstream firms

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IV Tobit			Newey			Random effects Tobit			Random effects Probit		
Wifs	0.0869***	0.0869***	0.0869***	0.373***	0.372***	0.373***	0.0242***	0.0242***	0.0242***	2.953***	2.972***	2.953***
	(0.00114)	(0.00114)	(0.00114)	(0.00349)	(0.00349)	(0.00349)	(0.000797)	(0.000796)	(0.000797)	(0.128)	(0.127)	(0.128)
Liquidity	0.00273***	0.00272***	0.00272***	0.0117***	0.0117***	0.0116***	0.000318	0.000313	0.000317	-0.149	-0.152*	-0.149
	(0.000996)	(0.000999)	(0.000998)	(0.00416)	(0.00416)	(0.00416)	(0.000612)	(0.000612)	(0.000612)	(0.0919)	(0.0920)	(0.0920)
BankLoans	-0.0163***	-0.0163***	-0.0163***	-0.0701***	-0.0700***	-0.0701***	-0.00474***	-0.00475***	-0.00474***	-0.479***	-0.489***	-0.479***
	(0.000746)	(0.000747)	(0.000748)	(0.00324)	(0.00323)	(0.00324)	(0.000591)	(0.000591)	(0.000591)	(0.0858)	(0.0858)	(0.0858)
Risk	-8.38e-05***	-8.45e-05***	-8.41e-05***	-0.000359***	-0.000362***	-0.000360***	-2.47e-06	-2.23e-06	-2.49e-06	0.000831	0.00103	0.000839
	(2.78e-05)	(2.78e-05)	(2.78e-05)	(0.000114)	(0.000114)	(0.000114)	(2.45e-05)	(2.45e-05)	(2.45e-05)	(0.00369)	(0.00369)	(0.00369)
Profits	-0.00284**	-0.00287**	-0.00286**	-0.0122**	-0.0123**	-0.0122**	-0.00852***	-0.00852***	-0.00852***	-0.711***	-0.713***	-0.711***
	(0.00119)	(0.00119)	(0.00119)	(0.00500)	(0.00500)	(0.00500)	(0.00105)	(0.00105)	(0.00105)	(0.156)	(0.156)	(0.156)
Size	0.00150***	0.00151***	0.00151***	0.00644***	0.00646***	0.00647***	0.00300***	0.00301***	0.00301***	0.341***	0.344***	0.341***
	(3.38e-05)	(3.37e-05)	(3.39e-05)	(0.000136)	(0.000136)	(0.000136)	(6.19e-05)	(6.18e-05)	(6.20e-05)	(0.00865)	(0.00863)	(0.00866)
Differentiated	0.00537***	0.00537***	0.00537***	0.0222***	0.0222***	0.0222***	0.00675***	0.00675***	0.00675***	0.864***	0.866***	0.864***
	(0.000116)	(0.000116)	(0.000116)	(0.000490)	(0.000490)	(0.000490)	(0.000258)	(0.000258)	(0.000258)	(0.0321)	(0.0321)	(0.0321)
Construction	0.0120***	0.0120***	0.0120***	0.0497***	0.0498***	0.0497***	0.0131***	0.0131***	0.0131***	1.588***	1.539***	1.587***
	(0.000135)	(0.000132)	(0.000135)	(0.000523)	(0.000500)	(0.000523)	(0.000266)	(0.000254)	(0.000266)	(0.0336)	(0.0320)	(0.0336)
Ind. concentration	-0.000237		-0.000200	-0.00102		-0.000859	0.000627		0.000636	0.429***		0.425***
	(0.000289)		(0.000289)	(0.00128)		(0.00128)	(0.000635)		(0.000635)	(0.0888)		(0.0889)
Ind. share		-0.0748***	-0.0739***		-0.321**	-0.317**		-0.0147	-0.0165		7.267	6.078
		(0.0225)	(0.0218)		(0.129)	(0.129)		(0.0462)	(0.0462)		(6.296)	(6.286)
Observations	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619	263,619
Chi(2)	49.36	49.19	49.33	81.66	81.48	81.61						
p	0	0	0	0	0	0						
No. uncens.	74654	74654	74654	74654	74654	74654	74654	74654	74654			
No. left-cens.	188965	188965	188965	188965	188965	188965	188965	188965	188965			
No. of firms							37,670	37,670	37,670	37,670	37,670	37,670
Rho							0.732	0.732	0.732	0.779	0.779	0.779
Log Likelihood							76553	76553	76553	-103185	-103195	-103184

*** p<0.01, ** p<0.05, * p<0.1

Note: See Tables 2 and 3 for variables definition. Variables are scaled by turnover in the upstream market specifications. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 to 3) in parentheses. Columns 4-6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1-6. In the panel estimations, columns 7 - 12, the variables *Wifs*, *BankLoans*, and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.

Table 7A. Industry concentration - downstream firms

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IV Tobit			Newey			Random effects Tobit			Random effects Probit		
Stocks	0.000870***	0.000890***	0.000870***	0.00360***	0.00368***	0.00360***	0.000470***	0.000484***	0.000469***	0.366***	0.372***	0.365***
	(4.79e-05)	(4.76e-05)	(4.78e-05)	(0.000203)	(0.000201)	(0.000203)	(6.07e-05)	(6.06e-05)	(6.07e-05)	(0.0506)	(0.0504)	(0.0506)
Liquidity	-0.000707***	-0.000707***	-0.000707***	-0.00292***	-0.00292***	-0.00292***	-0.000183***	-0.000183***	-0.000182***	-0.175***	-0.175***	-0.175***
	(9.04e-05)	(8.99e-05)	(8.98e-05)	(0.000368)	(0.000368)	(0.000368)	(6.08e-05)	(6.08e-05)	(6.08e-05)	(0.0489)	(0.0489)	(0.0489)
BankLoans	0.000291***	0.000297***	0.000291***	0.00120***	0.00123***	0.00120***	1.66e-05	1.98e-05	1.71e-05	0.0842	0.0862	0.0851
	(5.51e-05)	(5.51e-05)	(5.51e-05)	(0.000229)	(0.000229)	(0.000229)	(6.63e-05)	(6.63e-05)	(6.63e-05)	(0.0541)	(0.0541)	(0.0541)
Risk	2.87e-06	2.39e-06	2.82e-06	1.19e-05	9.91e-06	1.17e-05	-3.99e-06	-4.08e-06	-3.99e-06	-0.0125***	-0.0125***	-0.0125***
	(3.86e-06)	(3.86e-06)	(3.85e-06)	(1.57e-05)	(1.57e-05)	(1.57e-05)	(4.20e-06)	(4.20e-06)	(4.20e-06)	(0.00345)	(0.00345)	(0.00345)
Profits	0.000532***	0.000527***	0.000530***	0.00220***	0.00218***	0.00219***	0.000205**	0.000201**	0.000204**	0.0992	0.0966	0.0984
	(9.39e-05)	(9.40e-05)	(9.39e-05)	(0.000386)	(0.000386)	(0.000386)	(9.84e-05)	(9.84e-05)	(9.84e-05)	(0.0798)	(0.0798)	(0.0798)
Size	0.000257***	0.000257***	0.000255***	0.00106***	0.00106***	0.00106***	0.000260***	0.000260***	0.000258***	0.337***	0.335***	0.334***
	(4.12e-06)	(4.30e-06)	(4.31e-06)	(1.81e-05)	(1.87e-05)	(1.88e-05)	(7.43e-06)	(7.67e-06)	(7.70e-06)	(0.00647)	(0.00665)	(0.00668)
Pdiff	0.000231***	0.000322***	0.000236***	0.000955***	0.00133***	0.000975***	0.000156*	0.000296***	0.000162*	0.263***	0.338***	0.271***
	(4.69e-05)	(4.25e-05)	(4.70e-05)	(0.000196)	(0.000178)	(0.000196)	(9.04e-05)	(8.24e-05)	(9.05e-05)	(0.0782)	(0.0713)	(0.0783)
Pserv	0.000222***	0.000101**	0.000217***	0.000920***	0.000416**	0.000899***	9.05e-05	-0.000102	8.49e-05	0.216***	0.114	0.208**
	(5.00e-05)	(4.18e-05)	(5.01e-05)	(0.000210)	(0.000178)	(0.000210)	(9.62e-05)	(8.09e-05)	(9.64e-05)	(0.0828)	(0.0694)	(0.0829)
Ind. concentration	0.000200***		0.000192***	0.000829***		0.000793***	0.000309***		0.000299***	0.165**		0.150**
	(4.37e-05)		(4.41e-05)	(0.000183)		(0.000184)	(8.34e-05)		(8.40e-05)	(0.0721)		(0.0726)
Ind. share		0.00643**	0.00476*		0.0266**	0.0197		0.00823	0.00597		10.15**	9.036*
		(0.00284)	(0.00280)		(0.0126)	(0.0128)		(0.00558)	(0.00564)		(4.874)	(4.909)
Observations	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754
Chi(2)	24.86	25.57	24.95	26.97	27.61	26.93						
p	6.18e-07	4.26e-07	5.87e-07	1.39e-06	1.01e-06	1.42e-06						
No. uncens.	70545	70545	70545	70545	70545	70545	70545	70545	70545			
No. left-cens.	182209	182209	182209	182209	182209	182209	182209	182209	182209			
No. of firms							36,404	36,404	36,404	36,404	36,404	36,404
Rho							0.518	0.518	0.518	0.643	0.643	0.643
Log Likelihood							185301	185295	185301	-114457	-114457	-114455

*** p<0.01, ** p<0.05, * p<0.1

Note: See Tables 2 and 3 for variables definition. Variables are scaled by total assets in the downstream market specifications. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 to 3) in parentheses. Columns 4-6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1-6. In the panel estimations, columns 7 - 12, the variables *Stocks* and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.

Table 7B. Industry concentration - Downstream firms

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IV Tobit			Newey			Random effects Tobit			Random effects Probit		
Raws	0.00131***	0.00136***	0.00131***	0.00542***	0.00561***	0.00540***	0.000855***	0.000896***	0.000852***	0.678***	0.693***	0.673***
	(9.04e-05)	(8.87e-05)	(9.02e-05)	(0.000371)	(0.000366)	(0.000371)	(0.000118)	(0.000118)	(0.000118)	(0.0981)	(0.0976)	(0.0981)
Liquidity	-0.000779***	-0.000779***	-0.000779***	-0.00322***	-0.00322***	-0.00322***	-0.000209***	-0.000209***	-0.000208***	-0.194***	-0.194***	-0.194***
	(8.95e-05)	(8.97e-05)	(8.98e-05)	(0.000367)	(0.000367)	(0.000367)	(6.05e-05)	(6.05e-05)	(6.05e-05)	(0.0486)	(0.0486)	(0.0486)
BankLoans	0.000257***	0.000261***	0.000257***	0.00106***	0.00108***	0.00106***	3.26e-06	5.68e-06	3.73e-06	0.0740	0.0756	0.0748
	(5.52e-05)	(5.52e-05)	(5.52e-05)	(0.000229)	(0.000229)	(0.000229)	(6.63e-05)	(6.63e-05)	(6.63e-05)	(0.0541)	(0.0541)	(0.0541)
Risk	1.15e-05***	1.11e-05***	1.15e-05***	4.75e-05***	4.61e-05***	4.74e-05***	-2.48e-06	-2.56e-06	-2.48e-06	-0.0113***	-0.0114***	-0.0113***
	(3.80e-06)	(3.80e-06)	(3.80e-06)	(1.54e-05)	(1.54e-05)	(1.54e-05)	(4.19e-06)	(4.19e-06)	(4.19e-06)	(0.00344)	(0.00344)	(0.00344)
Profits	0.000510***	0.000505***	0.000509***	0.00211***	0.00209***	0.00210***	0.000198**	0.000193**	0.000197**	0.0936	0.0911	0.0929
	(9.38e-05)	(9.39e-05)	(9.39e-05)	(0.000386)	(0.000386)	(0.000386)	(9.84e-05)	(9.84e-05)	(9.84e-05)	(0.0798)	(0.0798)	(0.0798)
Size	0.000270***	0.000270***	0.000268***	0.00112***	0.00112***	0.00111***	0.000267***	0.000268***	0.000265***	0.342***	0.341***	0.339***
	(4.12e-06)	(4.28e-06)	(4.31e-06)	(1.81e-05)	(1.87e-05)	(1.88e-05)	(7.42e-06)	(7.65e-06)	(7.70e-06)	(0.00646)	(0.00664)	(0.00667)
Pdiff	0.000276***	0.000357***	0.000280***	0.00114***	0.00148***	0.00116***	0.000186**	0.000315***	0.000190**	0.286***	0.352***	0.293***
	(4.71e-05)	(4.26e-05)	(4.72e-05)	(0.000196)	(0.000178)	(0.000197)	(9.04e-05)	(8.24e-05)	(9.06e-05)	(0.0782)	(0.0712)	(0.0783)
Pserv	0.000216***	0.000111***	0.000212***	0.000895***	0.000460**	0.000878***	9.67e-05	-7.86e-05	9.16e-05	0.221***	0.132*	0.213**
	(5.02e-05)	(4.26e-05)	(5.03e-05)	(0.000210)	(0.000180)	(0.000210)	(9.64e-05)	(8.14e-05)	(9.65e-05)	(0.0829)	(0.0698)	(0.0830)
Ind. concentration	0.000177***		0.000170***	0.000733***		0.000705***	0.000286***		0.000277***	0.145**		0.132*
	(4.45e-05)		(4.48e-05)	(0.000185)		(0.000186)	(8.38e-05)		(8.43e-05)	(0.0724)		(0.0728)
Ind. share		0.00530*	0.00388		0.0219*	0.0161		0.00744	0.00541		9.496*	8.544*
		(0.00278)	(0.00276)		(0.0127)	(0.0128)		(0.00560)	(0.00564)		(4.878)	(4.911)
Observations	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754	252,754
Chi(2)	23.69	24.68	23.59	25.36	26.28	25.27						
p	1.13e-06	6.75e-07	1.19e-06	3.12e-06	1.96e-06	3.25e-06						
No. uncens.	70545	70545	70545	70545	70545	70545	70545	70545	70545			
No. left-cens.	182209	182209	182209	182209	182209	182209	182209	182209	182209			
No. of firms							36,404	36,404	36,404	36,404	36,404	36,404
rho							0.519	0.519	0.519	0.643	0.643	0.643
Log Likelihood							185297	185292	185297	-114459	-114459	-114457

*** p<0.01, ** p<0.05, * p<0.1

Note: See Tables 2 and 3 for variables definition. Variables are scaled by total assets in the downstream market specifications. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 to 3) in parentheses. Columns 4-6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1-6. In the panel estimations, columns 7 - 12, the variables *Raws* and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.

Table 8. Impact of age

VARIABLES	(1) IV Tobit	(2) Newey	(3) Random effects Tobit	(4) Random effects Probit	(5) IV Tobit	(6) Newey	(7) Random effects Tobit	(8) Random effects Probit
	Upstream market				**Downstream market**			
Stocks	0.0650***	0.280***	0.0214***	2.828***	0.000946***	0.00391***	0.000519***	0.396***
	(0.000819)	(0.00273)	(0.000657)	(0.103)	(4.80e-05)	(0.000203)	(6.07e-05)	(0.0506)
Liquidity	0.00462***	0.0199***	0.000351	-0.130	-0.000681***	-0.00282***	-0.000175***	-0.170***
	(0.00102)	(0.00427)	(0.000619)	(0.0934)	(9.00e-05)	(0.000369)	(6.08e-05)	(0.0489)
BankLoans	-0.0202***	-0.0872***	-0.00590***	-0.627***	0.000266***	0.00110***	-6.34e-06	0.0677
	(0.000783)	(0.00336)	(0.000603)	(0.0880)	(5.51e-05)	(0.000229)	(6.63e-05)	(0.0542)
Risk	-0.000196***	-0.000846***	-3.16e-05	-0.00214	-1.41e-06	-5.84e-06	-5.65e-06	-0.0135***
	(2.87e-05)	(0.000118)	(2.47e-05)	(0.00374)	(3.88e-06)	(1.58e-05)	(4.20e-06)	(0.00346)
Profits	-0.00559***	-0.0241***	-0.00878***	-0.622***	0.000418***	0.00173***	0.000151	0.0653
	(0.00123)	(0.00518)	(0.00106)	(0.158)	(9.46e-05)	(0.000389)	(9.86e-05)	(0.0800)
Size	0.00169***	0.00729***	0.00310***	0.340***	0.000270***	0.00112***	0.000275***	0.347***
	(3.61e-05)	(0.000144)	(6.42e-05)	(0.00899)	(4.19e-06)	(1.85e-05)	(7.59e-06)	(0.00663)
Differentiated	0.00554***	0.0230***	0.00665***	0.856***				
	(0.000120)	(0.000505)	(0.000261)	(0.0324)				
Construction	0.0134***	0.0557***	0.0134***	1.597***				
	(0.000146)	(0.000528)	(0.000258)	(0.0325)				
Pdiff					0.000298***	0.00123***	0.000268***	0.318***
					(4.25e-05)	(0.000178)	(8.24e-05)	(0.0713)
Pserv					0.000103**	0.000428**	-0.000107	0.109
					(4.18e-05)	(0.000178)	(8.08e-05)	(0.0694)
Age	-2.87e-05***	-0.000124***	-3.26e-05***	4.25e-05	-3.78e-06***	-1.56e-05***	-4.46e-06***	-0.00307***
	(2.81e-06)	(1.21e-05)	(5.89e-06)	(0.000820)	(3.63e-07)	(1.54e-06)	(6.93e-07)	(0.000598)
Observations	258,433	258,433	258,433	258,433	252,751	252,751	252,751	252,751
Chi(2)	44.70	61.90			28.19	30.55		
p	0	0			1.10e-07	2.32e-07		
No. uncensored	73074	73074	73074		70544	70544	70544	
No. left-censored	185359	185359	185359		182207	182207	182207	
Number of firms			37,006	37,006			36,403	36,403
Rho			0.732	0.777			0.518	0.642
Log Likelihood			75070	-101061			185312	-114443

*** p<0.01, ** p<0.05, * p<0.1

Note: See Tables 2 and 3 for variables definition. Variables are scaled by turnover in the upstream market specifications and by total assets in the downstream market specifications. All specifications control for time effects. The table reports marginal effects and standard errors (robust standard errors in columns 1 and 4) in parentheses. Columns 2 and 6 report parameter estimates using the two-step Newey estimator. Chi(2) and p represent the χ^2 statistic and the corresponding probability for the exogeneity tests in columns 1, 2, 5, and 6. In the panel estimations (columns 3, 4, 7 and 8), the variables *Stocks*, *BankLoans* and *Liquidity* are replaced by their first lags. The table also reports the number of uncensored and left-censored observations, the number of firms in the panel specifications, Rho, the fraction attributable to the panel element, and the Log Likelihood.