How do firms fund their investment? Firm size and funding mix. *

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Abstract

We measure how firms fund their investment in fixed assets depending on their size. Relying on a unique database covering a large range of firms (more than 60,000 manufacturing firms) from small firms (less than EUR 1 million sales) to the top largest firms. We find that the average firm finances 48% of new fixed assets with new bank credit, 19% with equity and retained earnings, 15% with trade payables, 10% with other financial debt and 8% with residual liabilities. But that average funding mix covers very different situations. The 25% smallest firms rely essentially on bank credit (55% of new fixed assets) and retained earnings (14%), while the 5% largest firms rely on a diversified and balanced funding mix with an equal share of bank credit, equity and other financial debt.

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1 Introduction

In corporate finance theory, the maximization of firm's value results from a joint decision on investment and financing. Analyzing this joint decision is central to understand the allocation of funds by firms and the role of bank credit and capital markets in the funding of the real economy. There is a flourishing literature analyzing the investment behaviors of constrained (or supposedly-constrained) firms (Fazzari et al. (1988), Kaplan and Zingales (1997), Kadapakkam et al. (1998), Almeida et al. (2004), Chen and Chen (2012), Banerjee and Duflo (2014), Cenni et al. (2015)). There is also a literature about the capital structure of firms that mainly examines the variety of financing sources in relation with the relative costs and benefits of each of them (trade-off theory, agency theory or pecking order theory, see Myers (2003) for a review of these theories). In that respect, it is generally widely accepted that bank credit availability is crucial to invest. This is why so much work has emerged since the Great Financial Crisis to document the real consequences of bank credit shortage (Chodorow-Reich (2014), Paravisini et al. (2015) or Amiti and Weinstein (2018) for instance).

But surprisingly there is little work analyzing and quantifying the *contribution* of bank credit to the funding of firm's fixed assets (as well as accumulation of other assets) and how the financing mix of investment varies along with firm size. This is an important question because small firms are considered as more likely to be credit constrained and the literature often confirms that credit shortage has more detrimental consequences for small firms. Against this background, the present paper asks the following questions. (i) How do sources of funds relate to uses of funds? (ii) In particular, what is the specific contribution of bank credit to the financing of fixed assets? (iii) To what extent the role of bank credit in investment financing varies along with firm size, *i.e.* how do small firms and large firms finance their capital expenditure?

To answer these questions, we propose a simple conceptual framework adapted from Gatchev et al. (2010) to empirically investigate and quantify the various ways firms finance the accumulation of their different assets. Starting from an accounting identity, we regress the changes in each liability-side items (bank credit, equity, trade credit and other finan-

cial debts) on the changes in asset-side items (fixed assets, working capital assets[1], cash reserves...). By doing so, we estimate to what extent an *average* firm relies on bank credit, equity issuance or alternative sources of fund to finance the accumulation of new assets. Said differently, we are able to quantify the contribution of various sources of funds to the multiple uses of funds. The accounting equality ensures the consistency of the analysis (see also Gatchev et al. (2009) for a similar approcah with constraints in the estimation). However, as the funding strategy of the *average* firm may cover very different availability of external funding due to information asymmetry (Stiglitz and Weiss (1981)) or bargaining power (Wilson and Summers (2002); Giannetti et al. (2011)), we then analyze to which extent these financing patterns vary along with firm size, *i.e.* we ask whether small and large finance their capital expenditure in the same way. Even if we do not run a causal analysis, our specifications nonetheless include a wide range of control variables and fixed effects to address potential cofounding factors related to firm size.

To carry out this work, we rely on a unique firm level database that provide us with a detailed picture of both sides of the firm's balance sheet. This database covers more than two decades (1990-2016) and a large range of firms (more than 60,000 manufacturing firms) from small firms (less than €1 million sales) to the top largest firms. Importantly, we cover small firms that often fall out of the scope of most studies.

Our first finding confirms the crucial role of bank credit in the acquisition of new fixed assets. It is generally widely accepted that bank credit is central to investment decision but suprisingly, very little work provides a quantification of this importance of bank credit to our knowledge. We contribute to the literature by providing such a quantification in the case of French firms : for the average manufacturing firm in our sample, we find that the contribution of bank credit to the acquisition of fixed assets is as high as 48%. By contrast, trade payables, equity, other financial debts and residual liabilities fund respectively 15%, 19%, 10% and 8% of new fixed assets. While bank credit stock is a minor share of the liabilities of the average firm (the ratio of bank credit over total assets is only 11%), flows of new bank credit are the major funding source of capital expenditure. This contribution of

[1]The working capital assets are computed as the sum of account receivable, advance on orders to suppliers and inventories.

bank credit is roughly stable in the long run over the 1990-2016 period and tends to decrease by around 5 p.p. in period of crisis suggesting that firms seem to rely less on bank credit in period of crisis and more on gross equity. In a related way, our results suggest that bank credit plays a much more limited role for the acquisition of other assets, namely working capital assets and cash reserves.

As a point of comparison, Gatchev et al. (2009) find that fixed assets investment is funded through 51% of new long term debt, 39% of equity issuances, 19% of new short term debt and 8% of change in cash holdings in the case of large US firms. However, they do not identify properly the contribution of bank credit as we do. This is all the more important in our case as France is widely recognized as a typical *bank-based* financial system (Levine (2002) and Beck and Levine (2002)) where banks played a prominent role in the financing of the economy. Despite this important difference limiting the comparison, we nonetheless observe that equity financing contributes much more to investment in the US than in France. Our finding also contradicts the results in Beck et al. (2008) who finds that "*even after we control for various firm characteristics and country and institutional variables, smaller firms finance a lower proportion of their investment externally, in particular because they make use of bank finance to a lesser extent.*"

Our second and most important finding is that funding strategies of large (listed) and small (non-listed) firms differ a lot. In the spirit of Covas and Haan (2011), we breakdown our sample of firms into firm size classes based on selected quantiles of firm's sales : $[p0 - p25($, $[p25 - p50($, $[p50 - p75($, $[p75 - p90($, $[p90 - p95($, $[p95 - p100]$. We then estimate the contribution of bank credit to the funding of fixed assets investment within each firm size class. We find very significant discrepancies: small firms rely significantly more on bank credit to fund their investment than large firms do. The 25% smallest firms (*i.e.* those with sales between €750K and €1.5 million) fund 55% of fixed assets investment with bank credit while the 5% largest firms (*i.e.* firms with sales above €50 millions) have a significantly different and much more diversified funding strategy. Large firms finance 25% of new fixed assets with bank credit, 27% with equity and 25% with other financial debts (the remaining being financed with trade payables and residual liabilities). That discrepancy in the contribution of bank credit across size classes is robust to various definitions of

investment expenditures (gross/net, tangible/intangible) and is mainly driven by long term bank credit. It is also robust to the inclusion of various control variables and fixed effects. By contrast, we do not find such a variability in the financing of working capital investment depending of firm size.

The paper proceeds as follows. Section 2 describes the data, section 3 presents some important stylized facts, section 4 explains the methodology we use, section 5 presents the empirical results, section 6 presents some robustness checks and finally section 7 concludes.

2 Data

Firms' information comes from a database called FIBEN (*Fichier Bancaire des Entreprises*). The database gathers balance sheets and financial statements of a large set of non-financial firms operating in France. It includes small firms that generally fall out of the radar of studies (more on this in the next section).

Firm's information is yearly collected by the *Banque de France* from certified public accountants.[2] Data are available from 1989 to 2016. Firm's reporting occurs at the legal entity level (non-consolidated), through a unique national identifier called *SIREN*.

The main collection criterion is a sales threshold: information are collected for firms whose sales are over €750K. Alternative collection criteria are (i) firm's total banking debt is over €380K , or (ii) firm lost half of its capital share during the year, or (iii) firm fulfilled the €750K-sales threshold in the previous year.[3] The database thus covers a large share of the French economy. A Banque de France's internal report analyzes the database coverage in 2015: it covers 31% of individual firms in 2015, but those firms represent 86% of employment. Considering the manufacturing sectors (defined by NACE codes between 10 and 33[4]) which are key sectors in the present paper, the database covers 50% of firms in France and 92% of employment in those sectors.

An important purpose of the FIBEN dataset is to feed analysts of the Banque de France

[2]In case where the data is not provided by a certified public accountant, information comes from registers of commercial courts.

[3]Note that, in 2012, those collection criteria changed. Starting from 2013, only the first criteria on the €750K-sales threshold is kept, other criteria are removed.

[4] `http://ec.europa.eu/competition/mergers/cases/index/nace_all.html`

with quantitative and financial information on firms in order to provide an external credit rating of firms.[5] That rating scale changed around 2004 and the mapping between the old and the new rating scale is unfortunately not bijective. Hence, when we use the Banque de France rating in our analysis (in robustness tests), the sample is constrained on the most recent period.

We implement some restrictions to the database. First, we remove all firms operating in the real estate, financial and insurance sectors, as well as the holding companies. In this latter case, the motivation is to analyze the funding of corporate invesment and working capital requirements. Then, we drop observations (if any) with negative own funds, inconsistency in asset-liability accounting equality. And we keep only firms that have a positive amount of sales, a positive number of employees and a positive amount of total assets. We also remove firms for which we have less than 5 years of reporting. Finally, all our variables of interest (*i.e.* yearly changes in asset and liability components) are truncated at the 99th percentile (and at the 1st in the case where the variable can be negative): to avoid any ambiguity, we do not filter out very small and very large firms, but observations with extreme yearly changes in firm's asset or liability components.

The importance of fixed assets and working capital assets strongly depends on firm's business sector. As reported in table 2, the manufacturing sector concentrates the largest share of fixed assets and working capital assets, both in 1990 and 2010. The *manufacturing* concentrates 34% of fixed assets of the economy and 47% of working capital assets in 1990 (respectively 22% and 36% in 2010). As we seek to analyze the funding of fixed assets investment (and in a second step the funding of working capital investment), in this paper we focus the analysis on the manufacturing (NACE code between 10 to 33).

Overall, we end up with a sample of 655,688 observations, corresponding to 61,709 unique firms in the manufacturing sectors over the period 1989-2016. On average a firm is present in the sample for 15 years. A definition of each variable used in this work is provided in

[5]Indeed, the Banque of France is recognized as an External Credit Assessment Institution and the Banque de France rating can be used for prudential or monetary purpose. For more details about the Banque de France rating, see `https://entreprises.banque-france.fr/sites/default/files/media/2016/11/30/banque-de-france-mapping-table-de-correspondance.pdf` and `https://entreprises.banque-france.fr/sites/default/files/media/2017/11/14/20171110_banque_de_france_ratings_2016_performance-assesment.pdf`

appendix 11.1.

3 Stylized facts and descriptive statistics

In this section, we briefly explore the database and provide insightfull stylized facts and descriptive statistics about the balance sheets of firms. In particular, as one of the main goal of this paper is to shed light on the different ways small and large firms finance their capital expenditures, we emphasize differences in assets and liabilities composition along firm size. In addition, we discuss the main changes in these distributions having occured over the last 20 years.

We define firm size from sales reported in the financial statements of the FIBEN database. The literature on corporate finance traditionally uses the decomposition of the population of firms into *SMEs*, *ISEs* (intermediate-sized enterprise) and *large corporations*. That traditional decomposition is based on legal and administrative criteria. In this paper, we adopt an alternative perspective and rather use a distributional segmentation of the population of firms in the spirit of Covas and Haan (2011) and Crouzet and Mehrotra (2018). This methodology has the advantage of being neutral regarding the thresholds used to identify small vs large firms. This methodology also breaks down the population of SMEs and highligths the different situations that SMEs may encounter depending on their size. We choose a quartile decomposition. However, to highlight the specific patterns of the very largest firms, the top 25% is further decomposed into sub-segments. The quantile decomposition is as follows: [p0- p25(, [p25- p50(, [p50- p75(, [p75- p90(, [p90- p95(, [p95-p100].

Tables 1 reports quantile thresholds of sales in nominal terms: firms belonging to the [p0-p25(range, *i.e.* firms in the bottom 25% of the distribution of firms' sales, have their sales lower or equal to EUR 1.51 million in 2000 and lower or equal to EUR 1.48 million in 2010 in nominal terms. These quantiles are time-varying, meaning that they are conditional on the distribution of sales within a given year.[6]

How does our sample of firms compare with those used in the litterature ? We claim that

[6]In the same vein, Covas and Haan (2011) show that differences when using acyclical quantiles are not of first order importance.

a great advantage of our sample is that we can perform an analysis on firms that generally fall out of the scope of most corporate finance studies. For instance, Covas and Haan (2011) or Almeida et al. (2012), as most studies based on US data, use Compustat, which is made of listed firms. In Chodorow-Reich (2014), the median borrower has sales of about $ 500 millions and 620 employees. In Gan (2007a), the median sales is $ 165 millions. Onny papers based on European credit registers have sample of firms whose the size is comparable to ours. An exception is the recent paper by Crouzet and Mehrotra (2018) which take advantage of a census data. Their sample is very similar to our with data ranging "*from less than $ 200 K in assets for the smallest firms to $ 750 millions (real 2009 dollars) in assets for firms in the 99th percentile*"'. Overall, we think our work will bring empiricall evidence about the financing pattern of small firms that have not been extensively studied until now.

Tables 3 provides descriptives statistics over the entire period regarding the main items of firms' balance sheets (expressed as a fraction of total assets). For an average firm in our sample, the share of fixed assets is almost 24% of total assets, among which a large fraction is tangible fixed assets (17% of total assets). The largest component in the assets side is the *gross working capital investment*, equal to the sum of inventories, advance on orders to suppliers and trade receivables. The average firm holds 55% of its assets in the form of inventories (20%) and advance on orders and trade receivables (35%). Cash reserves account for slightly less than 15% of total assets of the average firm.

On the liabilities side, trade payables represent on average 25% of the total assets, bank credit 11%, and the other financial debts (mostly bonds) 8%. Equity financing accounts for 40% of the total assets, while the retained earnings represent less than 2% of the total assets.[7]

However, as our analysis shows in the next sections, it is crucial to examine investment and funding strategies of firms in relation with their size. In the table 5, we break down balance sheet components by firm size (as a fraction of total assets). First, the share of fixed

[7]Note however that since we are not using consolidated data, the figures regarding equity financing is presumably overstated as a result of cross-holdings of equity between firms belonging to the same group. However, even after restating financial debt and equity in the data to limit double counting linked to intragroup debt and shareholdings, the share equity as a fraction of total assets is as high as 39% for SME, intermediate-sized enterprise and large corporation. See `https://publications.banque-france.fr/sites/default/files/medias/documents/bulletin-banque-de-france_220-1_en.pdf` for more details.

assets grows as firm size increases, from 24% of total assets for the 25% smallest firms, to 33% for the 5% largest firms. In contrast, the share of cash reserves decreases with size: the 25% smallest firms hold 16.5% of their assets in the form of cash while this share is only 6% for the 5% largest firms. The other assets components do not varies a lot along with firm size. On the liabilities side, we observe a slightly decreasing share of bank credit as firm size increases (from 11.2% to 8.3%) and the equivalent increasing share of other financial debts as firm size increases.

Those features by firm size are illustrated with figures 1 and 2, respectively for the asset side (Figure 1) and the liability side (Figure 2). On the x-axis of both figures is firm size, by 5%-quantile unit. Figure 1 shows the increasing share of fixed assets over total assets and the decreasing share of cash holdings as firm size increases. The main divergences occur on the top of the distribution, *i.e.* for most of the distribution patterns are very similar. Figure 2 shows the diminishing share of bank credit over total assets as firm size increases.

But the main interest of these figures is to provide an overview on how these distributions of financing and investment patterns have evolved over the last 20 years. The main observation is that the distribution of the composition of assets and liabilities of firms tends to be stable over time. Nonetheless we notice small evolutions. In particular, the figures show that the shares of intangible fixed assets and cash reserves grown over time while the share of trade receivables decreased over time. On the liabilities side, the share of equity financing has increased over the last 20 years (this increase is more pronounced for the smallest firms) while the share of bank credit has diminished, especially the short term (ST) bank credit for the very largest firms. All these patterns are more pronounced as we examine the median share of the selected balance sheet items rather than the average share (see figures 8 and 9 in appendix).

Evenutally figure 3 details the share and composition of bank credit over total assets depending on firm size and time. Regarding changes over the time, we observe the overall decreasing share of bank credit between the 1990-1995 and 2010-2015 periods.The evolution is almost entirely driven by the decrease of ST bank credit (while the share of LT bank credit remains roughly stable between the periods). Regarding the discrepancies by firm size, we observe that the share of LT bank credit diminishes continuously as firm size increases (with

a significant drop for the top 5% of firms) for both the 1990-1995 and 2010-2015 periods: LT bank credit represents 80% of total bank credit for the smallest firms, but only 50% for the top 5%-largest firms.

4 Conceptual framework and empirical strategy

The goal of this paper is (i) to analyze how firms finance their fixed assets investment and their working capital investment (the sum of trade receivable, advance on orders to suppliers and inventories), (ii) to better understand the specific role played by bank credit in this process and (iii) to explore to what extent the funding strategy of these two main classes of assets depends on firm size. In order to carry out this analysis, we first elaborate a simple conceptual framework based on an accounting identity. Then we present our estimation methodology.

4.1 The conceptual framework

In a simplified balance sheet representation, the asset side of firms can be broken down into *fixed assets* (FA_t) and *inventory* (S_t), and the liability side into *bank credit* (BC_t) and *equity* (E_t).[8] The resulting accounting equality is:

$$FA_t + S_t = BC_t + E_t \tag{1}$$

The first difference operator enables to define investment (or disinvestment) as the change in fixed assets ΔFA_t ($= FA_{t+1} - FA_t$) from one period to another. The accounting equality now writes:

$$\Delta FA_t + \Delta S_t = \Delta BC_t + \Delta E_t \tag{2}$$

In this accounting equality, ΔS_t represents inventory changes, ΔBC_t represents the flow of new bank credit (or amortization if negative) and ΔE_t the flow of equity issuance (or equity buy back if negative). In this simplified framework, for each additional 1$ of investment, we denote by β (respectively $(1-\beta)$), the fraction funded through bank credit (resp.

[8] In the empirical analysis, we will consider a more granular balance sheets with additional items, but this simplified balance sheet representation is sufficient to understand the main intuitions.

equity). And for each additional 1$ of inventory, we denote by γ (respectively $(1-\gamma)$), the fraction of inventory funded through bank credit (resp. equity). We thus obtain the following decomposition:

$$\begin{cases} \Delta BC_t = \beta \cdot \Delta FA_t + \gamma \cdot \Delta S_t \\ \Delta E_t = (1-\beta) \cdot \Delta FA_t + (1-\gamma) \cdot \Delta S_t \end{cases} \tag{3}$$

In this setting, the parameters β and $(1-\beta)$ have a straightforward interpretation. They tell us that, a firm funds each additional dollar of capital expenditure through β dollar of bank debt and $(1-\beta)$ dollar of equity. Similarly, a firm funds each additional dollar of inventories through γ dollar of bank debt and $(1-\gamma)$ dollar of equity. Using this conceptual framework, we investigate the way firms finance various types of assets (fixed assets, tangible fixed assets, financial assets, inventories, trade receivables...) by the means of different funding sources (bank credit, trade payables, equity...).

If we denote by $a_{k,t}$ and $l_{j,t}$, with $k \in [1;n]$ and $j \in [1;m]$, the n assets and the m liabilities components of firms' balance sheet, the general decomposition writes as follows:

$$\begin{cases} \Delta l_{1,t} = \sum_{k=1}^{n} \beta_k^1 \cdot \Delta a_{k,t} \\ ... \\ \Delta l_{j,t} = \sum_{k=1}^{n} \beta_k^j \cdot \Delta a_{k,t} \\ ... \\ \Delta l_{m,t} = \sum_{k=1}^{n} \beta_k^m \cdot \Delta a_{k,t} \end{cases} \tag{4}$$

The accounting identity imposes the following constraints on the estimated parameters:

$$\begin{cases} \sum_{j=1}^{m} \beta_1^j = 1 \\ ... \\ \sum_{j=1}^{m} \beta_k^j = 1 \\ ... \\ \sum_{j=1}^{m} \beta_n^j = 1 \end{cases} \tag{5}$$

We could ask the reverse question: when the average firm adds one dollar of bank debt, what fraction of this new bank credit is dedicated to finance capital expenditures vs inventories ? We provide additional results to answer this question. In this paper, we aim at understanding the way firms fund their fixed assets investment and working capital investment and, to which extent these funding strategies vary with firm size. For this

purpose, we will estimate the set of parameters $\left\{\beta_k^j\right\}$ over the entire sample, and then for each firm size class.

4.2 Estimation strategy

Definition of variables Before presenting our estimation strategy, we detail the main balance sheet items that we use as well as the accounting identities linking them to each others.[9] We decompose the asset side of the balance sheet of firms into four components: (net) fixed assets (FA_t), (net) working capital assets (WC_t), cash reserves ($Cash_t$) and residual assets (RA_t).

Likewise, the liability side is broken down into five main components: equity or own funds (E_t), bank credit (BC_t)[10], trade payables (TP_t), other financial debts (OD_t) and residual liabilities (RL_t). The resulting accounting identity must hold at any time t:

$$FA_t + WC_t + Cash_t + RA_t = E_t + BC_t + TP_t + OD_t + RL_t \tag{6}$$

However, these are *stock* variables and we are interested in *flow* variables (fixed assets investment, working capital investment, flow of bank credit, equity issuance...). Because we do not have access to flow variables *per se* (as it is the case in some well known databases like Compustat[11]) we build the flow variables as the yearly first-difference of each stock variable. As a result the accounting identity states that the source of funds must equal the use of funds at any time t:

$$\Delta FA_{t+1} + \Delta WC_{t+1} + \Delta Cash_{t+1} + \Delta RA_{t+1} = \Delta E_{t+1} + \Delta BC_{t+1} + \Delta TP_{t+1} + \Delta OD_{t+1} + \Delta RL_{t+1} \tag{7}$$

We can further refine this accounting identity. The firm's net income of year t, π_t, can be divided into (i) the dividends paid out (Div_t), and (ii) the retained earnings, *i.e.* the fraction of the net income that remains in the balance sheet. This latter component can be used to invest in new assets, deleverage or to increase firm's equity. We denote by $\widetilde{\pi}_t = \pi_t - Div_t$ the fraction of current income which is not paid out in dividends, *i.e.* retained earnings. Then, if we denote by $\Delta\widetilde{E}_{t+1}$ the new equity issuance of firms (or equity buy-back if negative)

[9] In the appendix 11.1, additional information about the definition of the variables are provided

[10] Bank credit will then be furter decomposed into ST and LT bank credit.

[11] Those commercial databases have other limitations like the range of firms they cover.

between year t and $t+1$, we could write the low of motion of equity from one period to another:

$$E_{t+1} = E_t + \Delta\widetilde{E}_{t+1} + \widetilde{\pi}_t \Leftrightarrow \Delta E_{t+1} = \Delta\widetilde{E}_{t+1} + \widetilde{\pi}_t \tag{8}$$

We then inject the equation 8 into equation 7, we obtain the main accounting identity we use:

$$\Delta FA_{t+1} + \Delta WC_{t+1} + \Delta Cash_{t+1} + \Delta RA_{t+1} = \Delta\widetilde{E}_{t+1} + \widetilde{\pi}_t + \Delta BC_{t+1} + \Delta TP_{t+1} + \Delta OD_{t+1} + \Delta RL_{t+1} \tag{9}$$

This last accounting identity relates the sources of funds (on the right-hand side) to the uses of funds (on the left-hand side) between t adn $t+1$. Importantly, all the variables are deflated using the gross fixed capital formation price index as deflator.[12] And all variables are scaled using the total assets in t. Hence, a 0.01 change in the variable ΔFA_{t+1} indicates a change in deflated fixed assets corresponding to 1% of total assets.

Econometric framework Based on this conceptual framework and the accounting identities just presented, we now describe our econometric methodology. Basically, we apply the estimation strategy summarize in the system of equations 4 to the accounting identity 9. Said differently, we regress each of the source of funds on all the use of funds. From this perspective, our paper is very closely related to those of Gatchev et al. (2010) and Gatchev et al. (2009). Hereafter, we illustrate the regression framework with the change of bank credit as dependent variable but this can be transposed to any source of funds described in the accounting identity 9.

As we are mainly interested in understanding the way firms finance their capital expenditure, we start by running the following regression where we relate change in bank credit to the change in fixed assets. We then add the other possible uses of funds,*i.e.* the change in working capital assets, the change in cash reserves and the change in residuals assets:

$$\Delta BC_{t+1} = \beta^{BC}_{FA} \cdot \Delta FA_{f,t+1} + \beta^{BC}_{WC} \cdot \Delta WC_{f,t+1} + \beta^{BC}_{Cash} \cdot \Delta Cash_{f,t+1} + \beta^{BC}_{RA} \cdot \Delta RA_{f,t+1} + \epsilon_{f,t+1} \tag{10}$$

In this regression, the estimated coefficient $\widehat{\beta}^{BC}_{FA}$ indicates that an increase in the deflated net fixed assets corresponding to 1% of the total assets is associated with a change in deflated

[12] Available here `https://www.insee.fr/fr/statistiques/fichier/2832670/t_6303.xls`

bank credit corresponding to $\widehat{\beta}_{FA}^{BC}\%$ of total assets. We then run the same regression using other sources of funds as dependent variables. Year fixed effects (FEs thereafter) (α_t), business sector FEs (α_i), firm age FEs (α_a) and firm FEs (α_f) are included to control for factors likely to affect the firm funding strategy. We also include control variables.[13] Standards errors are clustered at the firm level.

As explained in the section 4.1, when we estimate the full system of equation 4, the sum of the estimated parameters $\left\{\beta_k^j\right\}$ must equal to 1 for any $j \in [1; m]$. Hence, this baseline specification allows us to quantify, for the average firm, the contribution of each source of funding to a 1% (of total assets) change in fixed assets investement and working capital investment.

In a second step, we investigate to which extent this funding strategy of fixed assets investment and working capital investment varies along with firm size. For this purpose, we estimate the contribution of each funding sources to the financing of fixed assets and working capital investment *conditional to the firm size distribution.* We define firm size classes based on quantiles of firms' sales: [p0- p25(, [p25- p50(, [p50- p75(, [p75- p90(, [p90- p95(, [p95-p100]. Precisely, we run the following regression:

$$\begin{aligned}\Delta BC_{t+1} = \; & \textstyle\sum_s \beta_{FA,s}^{BC} \cdot \Delta FA_{f,t+1} \cdot \mathbb{1}_{s,t+1} + \sum_s \beta_{WC,s}^{BC} \cdot \Delta WC_{f,t+1} \cdot \mathbb{1}_{s,t+1} + \sum_s \beta_{Cash,s}^{BC} \cdot \Delta Cash_{f,t+1} \cdot \mathbb{1}_{s,t+1} \\ & + \textstyle\sum_s \beta_{RA,s}^{BC} \cdot \Delta RA_{f,t+1} \cdot \mathbb{1}_{s,t+1} + \epsilon_{f,t+1}\end{aligned} \tag{11}$$

where s denote the size class and $\mathbb{1}_{s,t+1}$ is a dummy taking the value of one when the firm f belong to the size class s at time t. In this way (equation 11), we estimate the contribution of each funding source to the financing of investment for each size class.

In the empirical section, we provide an alternative specification where coefficients are estimated relative to a reference size that we choose to be the first quartile [p0- p25(, *i.e.* the smallest firms, without loss of generality. That latter specification enables to test if funding strategies are significantly different across firm size, *i.e.* to which extent $\beta_{k,\mathbf{s}}^j \neq \beta_{k,\mathbf{s}}^j$, for sizes s, s', fund j and asset k.

[13] These are: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets.

5 Empirical results

We start by estimating the contribution of the different liability components to the funding of fixed assets. We then investigate to which extent the contribution of each funding sources varies as the firm size changes. Then we briefly extend the analysis to the working capital investment. Finally, we provide some robustness checks and additional investigations.

5.1 How do firms finance their fixed assets investment ?

In table 8 we examine to what extent changes in firm's liability components are associated with changes in fixed assets, *i.e.* net capital expenditure. For this purpose, in table 8 we regress a simplified version of the specification 10 where we ignore for the moment the alternative use of funds:

$$\Delta Y_{t+1} = \beta_{FA}^{BC} \cdot \Delta FA_{f,t+1} + \epsilon_{f,t+1} \tag{12}$$

We estimate this specification for several dependent variables ΔY_{t+1} one after the other. Each dependant variable is the change in a liability component between the year t and $t+1$, scaled by the total assets of year t.[14] The main explanatory variable is the changes in deflated fixed assets between the year t and $t+1$, scaled by the deflated total assets of year t. As funding and investment decision may be impacted by aggregate shocks or specific patterns related to business sector or firm age, we systematically include a range of fixed effects (FEs) for business sector, firm age, year and firm. Regressions also include a set of classical control variables (the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets.)

As reported in column (1) of table 8, for the average firm, a change in fixed assets corresponding to 1% of the total assets is associated with a change in bank credit corresponding to 0.51% of total assets. For the sake of simplicity, we say in the rest of the paper that the contribution of bank credit to the financing of fixed assets investment is 0.51, or alternatively that 51% of fixed assets investment is funded with bank credit. This result is computed over the 1990-2016 period for all firms in the sample. This result is illustrated by figure 4 where

[14] For all the variables, both the numerator and the denominator are deflated

the x-axis indicates the changes in fixed assets and the y-axis corresponds to the changes in bank credit stock. The economic intuition behind this result (that we consolidate through the next sections) is that half of the investment of firm is funded through bank credit.

The coefficients presented in columns (2) to (5) of table 8 indicate the contribution of the other funding sources to the financing of new fixed assets: respectively the changes in equity (col. (2)), other financial debts (col. (3)), trade payables (col. (4)) and residual liabilities (col. (5)). We observe that all the four alternative funding sources contribute much less to the financing of fixed assets investment than bank credit (the coefficient 0.513 in col.(1) is higher than the coefficients in columns (2) to (5)). For instance, the average firm finances 20% of its fixed assets investment using equity and 18% using trade payables. To be clear, we do not claims that firms systematically use equity financing to fund part of its capital expenditure. The coefficients tell us that, on average over the entire time period, when fixed assets varies by 1% of total assets, we observe large comovements in bank credit and a much smaller fluctuations of the alternative funding sources. Say differently, the main conclusion from this first table is that bank credit seems to play a leading role in the funding of capital expenditures.

Bank credit may also be used to fund other assets of the firm, so a correct assessment of the role of bank credit in the funding of asset components requires to estimate the full specification (see equation 10 and results in table 9). In table 9 we add all the other possible uses of funds as explanatory variables of each regression: the changes in inventories and trade receivables, the changes in cash reserves and the changes in the remaining assets. In column (1), the estimated contribution of bank credit to the financing of investment has an order of magnitude (0.48) very similar to the former result (0.51, cf. col. (1) of table 8). The second important message from this table is that the estimated contribution of bank credit to the funding of fixed assets (0.48, col. (1)) is the highest, by far, compared to the others uses of funds (col. (2) to (5)). Said differently, bank credit is the major funding source of fixed asset investment while the other assets are much less bank credit dependent. And bank credit seems to be a marginal source of funds when it comes to finance working capital (0.12, see col.(1)) or accumulation of cash (0.07, see col.(1)).

How do these results compare with the litterature? In Gatchev et al. (2010), the author

find that, to finance investment in net fixed assets, "*the average firm relies on \$0.19 of short-term debt, \$0.51 of long term borrowings, and \$0.39 of equity.*". We could observe that US firms tends to relies much more on equity financing than French firms do (0.39 vs. 0.20). However, the comparison is limited because the authors do not decompose further their long term debt into subcomponent. In contrast, we provide an assessment of the contribution of bank credit as opposed to other financial debts. This is all the more important that France is a typical country characterised by a *bank-based* financial system. It also worth to note that the leading role of bank credit in the funding of fixed assets investment contrasts with the much more limited share of bank credit among total assets (around 11%). Said differently, our finding show that the contribution of bank credit to the financing of investment cannot be assessed through the share of bank credit in the balance sheet of firms.

In appendix in table 13, we further breakdown the changes in equity into two subcomponents as explained in the section 4.2: changes in equity net of retained earnings (col. (5) of table 13) and retained earnings (col. (6)). Interestingly, the overall contribution of gross equity in the funding of capital expenditures (0.19, cf. col(2) of 9) is almost entirely driven by retained earnings (0.17 in col(6) of 13). Retained earnings, as we build it, can be seen as a proxy of cash flow, *i.e.* the part of current income available to finance various assets.[15] Hence, this specification can be interpreted in the spirit of the litterature about the investment-cash flow sensitivity (Fazzari et al. (1988), Kaplan and Zingales (1997), Almeida et al. (2004)). We come back on that in the next section where we explore to which extent those results vary with firm size classes.

5.2 How does the financing of fixed assets investment varies along with firm size ?

In this section, we decompose the contribution of bank credit to fixed assets investment by firm size class. For this purpose, we estimate the specification 11. Firm size classes are defined from quantiles of firm sales in the spirit of Covas and Haan (2011): $[p0 - p25($,

[15] Cash flow has several definitions depending on the perspective. On top of that, there exists important differences in the accounting norm across country and it is not a very challenging task to adapt the French accounting standards to the US ones.

$[p25-p50(, [p50-p75(, [p75-p90(, [p90-p95(, [p95-p100]$. The goal is to assess to what extent the importance of bank credit in the financing of capital expenditures varies along with firm size.

Table 10 reports the estimated contribution of bank credit to the funding of fixed assets by quantiles of firm size. In this table, we use a reference category that we define, without loss of generality, as the first quartile of firm size *i.e.* the 25% smallest firms. As shown in column (1) of tables 10 [16], the contribution of bank credit to the funding of investment is significantly different depending on firm size. The estimated contribution is significantly higher for the reference size class, *i.e.* the 25%-smallest firms (0.551), compared to the 5%-largest firms (0.251=0.549-0.298). More generally, we observe from column (1) in table 10 that the contribution of bank credit in the financing of fixed assets is monotonically and declining with firm size. These findings are illustrated with figures 4 and 5. Figure 4 shows how bank credit changes depending on fixed assets changes for all firms, while figure 5 decomposes that latter by firm size class. We clearly observe with figure 5 that the slops of the OLS-fitting lines are decreasing as firm size increases.

Since firms rely much less on bank credit to fund their fixed assets as firm size increases, larger firms must rely relatively more on alternative funding sources. In columns (2) to (5) of table 10 we quantify the contribution of the other funding sources to fixed assets investment for each firm size class. We observe that, the higher the firm size, the more equity and other financial debts are used to fund fixed asset investment. In contrast, the use of trade payables seems to be invariant across size class. As a result, an important conclusion from this section is that, while small firms rely heavily on bank credit to fund fixed assets, large firms have a more diversified financing mix.

The results of this section are summarized as follows. (i) The bank credit contribution to the financing of investment is decreasing with firm size from 0.55 for the 25% smallest firms to 0.25 for the 5% largest firms. (ii) The much more limited role of bank credit for the largest firms is compensated by a higher contribution of equity and other financial debts to fund fixed assets investment. Said differently, while the funding of investment of small firms is highly skewed toward bank credit, large firms have a much more diversified funding

[16] And table 14 in appendix

of their investment: 26% of new fixed assets are funded through bank credit, 24% through equity and retained earnings, and 26% through other financial debts. To consolidate that interpretation, in the robustness part we focus only on *positive* changes in fixed assets to concentrate the analysis on *investment* and its funding (as opposed to disinvestment)[17].

Before presenting additional results that complete the picture of the financing of fixed assets investment, we briefly examine to what extent the funding of working capital investment varies along with firm size.

5.3 Firm size and the funding of working capital investment

It is quite natural to ask whether the financing of the second major type of assets held by firms namely, the working capital assets defined as the sum of account receivable, advance on orders to suppliers and inventories, is also firm size-dependent. To answer to this question, we present the results of the specification 11 associated to the changes in working capital assets.

First of all, we learn from table 9 that, abstracting from firm size, the accumulation of working capital assets is mainly financed through the accumulation of trade payables: 47% of the accumulation of working capital assets is financed through changes in trade payables. However we do not find that the funding of changes in account receivable, advance on orders to suppliers and inventories varies in a significant way along the firm size distribution. In the table 11, we observe some statistically significant differences across size classes but the magnitude of these differences is far less sizable than it is for accumulation of fixed assets.

6 Additional results and robustness checks

This section is still a work in progress and will be completed in a future version of the paper

6.0.1 Breaking down bank credit by maturity

In the table 15 in appendix, we break down bank credit by maturity into changes in long term (LT) bank credit (*i.e.* credit with a maturity above a year) and short term (ST)

[17]This part will be added in the next version of the paper

bank credit (*i.e.* overdraft and credit with a maturity below a year). Results are repored respectively in columns (1) and (2).[18].

We observe that the reliance on LT and ST bank credit have two opposite patterns albeit not of the same ordrer of magnitude. As reported in column (1), small firms intensively use LT bank credit to finance capital expenditures: 52% of new fixed assets are funded through bank credit. While large firms rely significantly less on LT bank credit to finance fixed asset investment (0.148=0.521-0.373). As reported in column (2) small firm do not rely on ST bank credit at all to finance new fixed assets (0%), while large firms do but the coefficient is economically small (0.069=0.001+0.068).

Those findings confirm the widespread principle that LT bank credit is primarily used to finance long term fixed assets, *i.e.* investment in new equipment, machinery and property plants (see Hart and Moore (1994)). But, most importantly, we provide a quantification of the importance of LT bank credit for the accumulation of new fixed assets and we show that this pattern is very firm-size-dependent. Note that this result is consistent with the descriptive statistics (see table 5 and figure 3) showing that large firms use relatively less LT credit and relatively more ST credit than small firms.

6.0.2 Breaking down gross equity into net equity and retained earnings

In the table 15 in appendix, we further breakdown changes in equity into (i) changes in net equity (*i.e.* equity net of retained earnings and (ii) retained earnings, respectively in columns (3) and (4)[19].

As reported in column (3), small firms use virtually no net equity to finance capital expenditures (3% of new fixed asets are funded through net equity), while large firms rely significantly more on net equity to finance fixed asset investment (0.168=0.034+0.134).

In the contrary, as reported in column (4), small firm rely more on retained earnings, a proxy of cash flow, to finance new fixed assets: 14% of new fixed assets are funded through retained earnings. In the contrary, large firms rely less on retained earning than small firms

[18]Results without a reference category built on small firms, *i.e.* the absolute coefficients, are provided in 16.

[19]Results without a reference category built on small firms, *i.e.* the absolute coefficients, are provided in 16.

do (only 9%=14.0%-5.3%).

So we observe an increasing reliance on net equity and a slightly decreasing reliance on retained earnings to finance fixed asset investment as firm size increases.

6.1 Breaking down fixed assets into tangible fixed assets, intangible fixed assets and financial assets

Changes in fixed assets is made of changes in tangible fixed assets, intangible fixed assets and financial assets. In table 12, we present estimated contribution of changes in bank credit to the accumulation of each of these three type of fixed assets, broken down by firm size classes. This table provides several insights. First, abstracting from differences in firm size, it appears that the financing of investment in new tangible fixed assets is significantly more credit based. However, as previously, we observe a significant heterogeneity across firm sizes. Indeed, for small firms (*i.e.* the bottom 25%), changes in bank credit contributes to 60% of the financing of tangible fixed assets, 36% of intangible fixed assets and 18% of financial assets. For the largest firms, the contribution of bank credit is much more balanced across the three type of fixed assets: bank credit contributes to 27% of the financing of tangible fixed assets, 22% of the intangible fixed assets and 24% of the financial assets.

6.2 How does the contribution of various funding sources to fixed assets investment has evolved over the last 20 years

In this section, we investigate to which extentthe funding strategy of fixed assets has changed over the last 26 years: are the patterns that we uncover stable and invariant over time or fluctuating ?

To answer this question, we estimate an augmented version of the specification 10 where each of the funding sources are interacted with dummy variables for each year. The results of these regressions are summarized graphically in the figures 6 and 7. The main message arising from these figures is that the contribution of these funding sources to fixed assets accumulation is highly stable over time. We observe some fluctuations from one year to

another, but overall we do not observe any long-run or medium run trends in these figures. This is a bit surprising since it is generally admitted that we have observed major innovations in finance with a tremendous development of financial markets and sophisticated financial instruments over the last twenty years. Apparently, these innovations have not changed a lot the way each funding sources contribute to the financing of investment in new equipment, machinery and property plants.

6.3 Next steps

Here, we list briefly the next steps we are currently working on:

- Contrasting the results for gross and net investment
- Isolating the positive part of the changes in balance sheet items to focus on investment and flow of new credit as opposed to disinvestment and credit amortization.
- Dealing with the issues raised by group/subsidiaries relationship in investment and financing decision: a first step will consists in focusing on the independent firms

7 Concluding remarks

TBC

8 Bibliography

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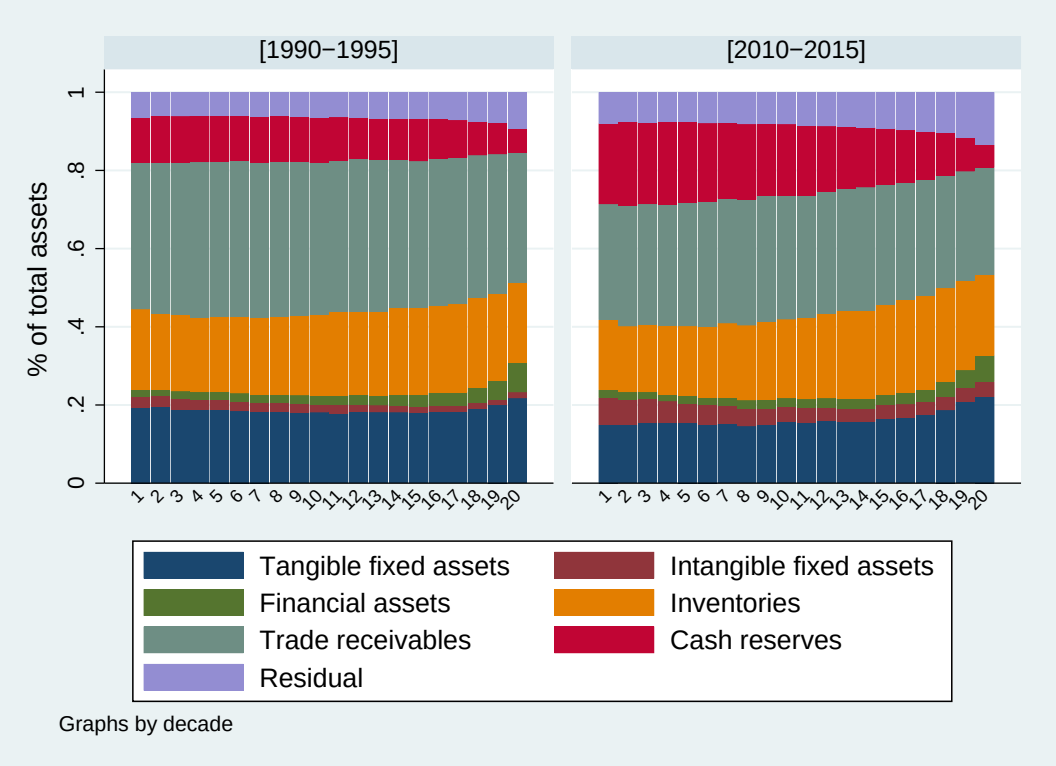
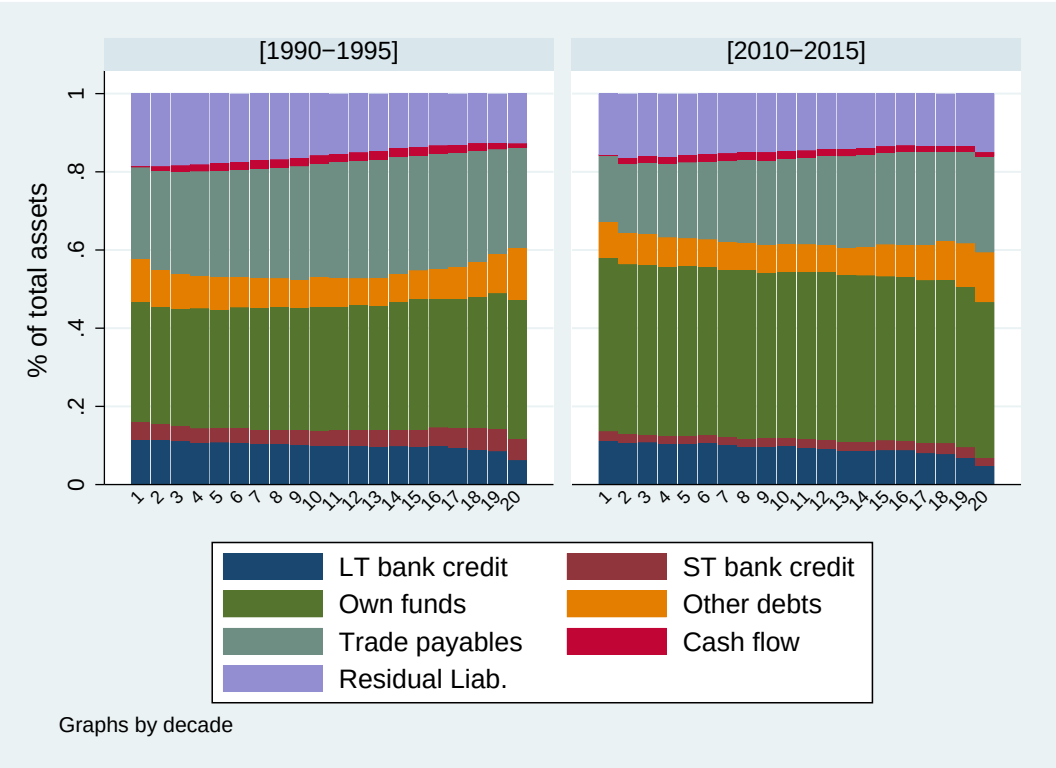
9 Figures

Figure 1: Decomposition of the assets held by firms: breakdown by quantiles of firm's sales



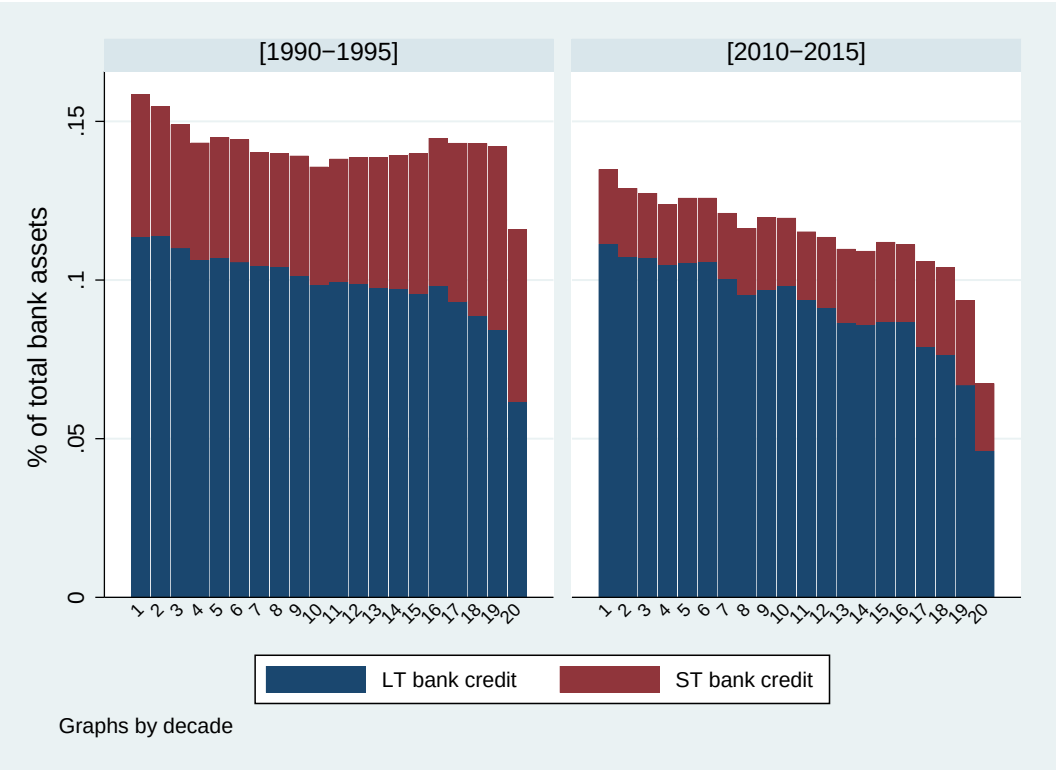
This graph shows the distribution of the asset side of the balance sheet of firms, how this distribution varies along with the size of firms, and how it has evolved over time. Each bar correspond to 5% of the population of firms based on total sales of firms. The graph plots the average share of each assets components within each 5%-quantile. The figure on the left shows the distribution over the period 1990-1995 ad the figure on the right shows the distribution over the period 2010-2015.
(last update: 14/01/2019)

Figure 2: Decomposition of the liabilities issued by firms: breakdown by quantiles of firm's sales



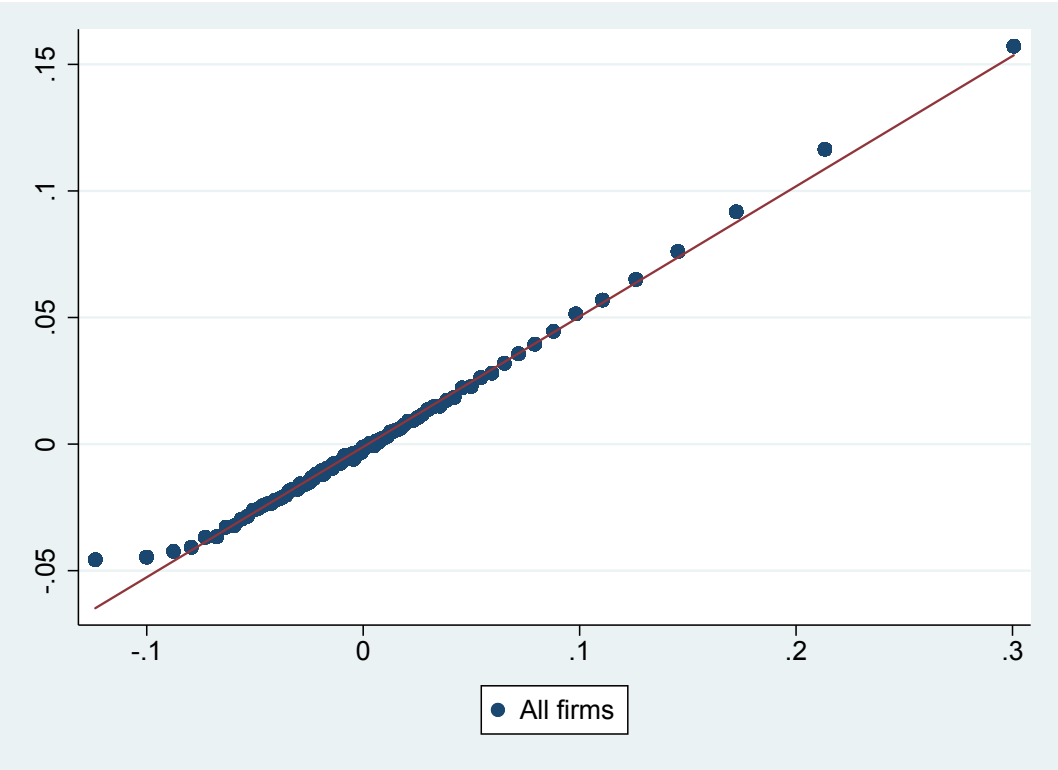
This graph shows the distribution of the liabilities side of the balance sheet of firms, how this distribution varies along with the size of firms, and how it has evolved over time. Each bar correspond to 5% of the population of firms based on total sales of firms. The graph plots the average share of each liabilities components within each 5%-quantile. The figure on the left shows the distribution over the period 1990-1995 ad the figure on the right shows the distribution over the period 2010-2015.
(last update: 14/01/2019)

Figure 3: Decomposition of the bank credit of firms: breakdown by quantiles of firm's sales



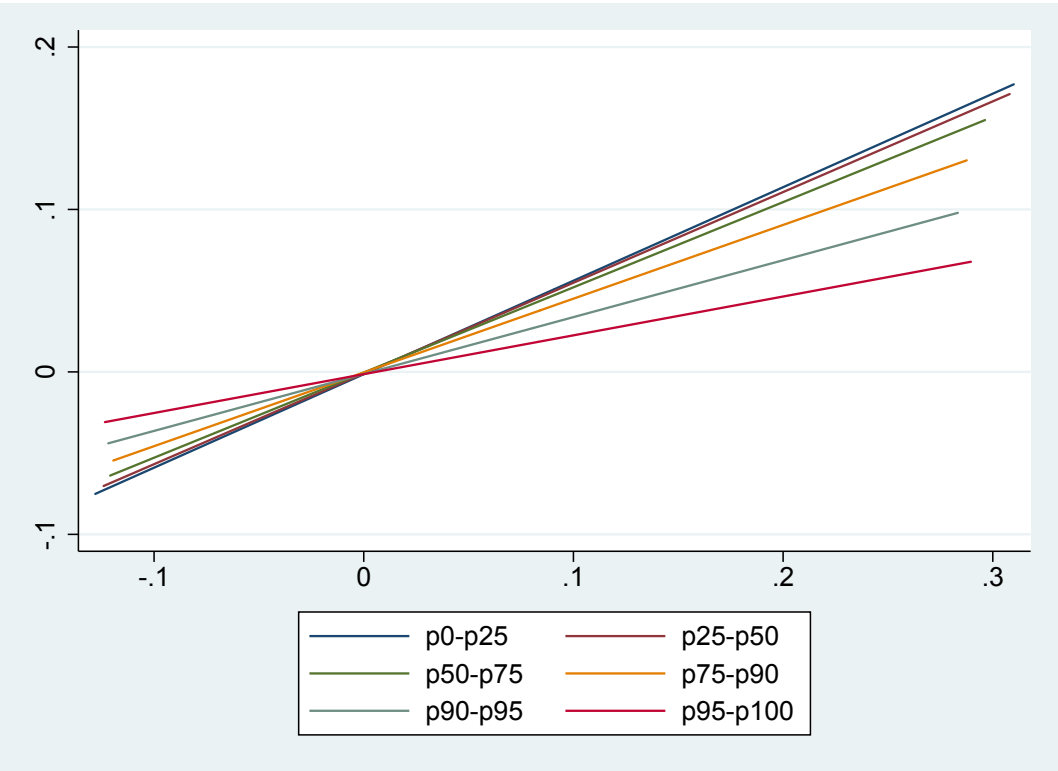
This graph shows the distribution of the bank credit used by firms, how this distribution varies along with the size of firms, and how it has evolved over time. Each bar correspond to 5% of the population of firms based on total sales of firms. The graph plots the average share of ST and LT bank credit (among total assets) within each 5%-quantile. The figure on the left shows the distribution over the period 1990-1995 ad the figure on the right shows the distribution over the period 2010-2015.
(last update: 14/01/2019)

Figure 4: Average change in credit depending on quatile of change in immo



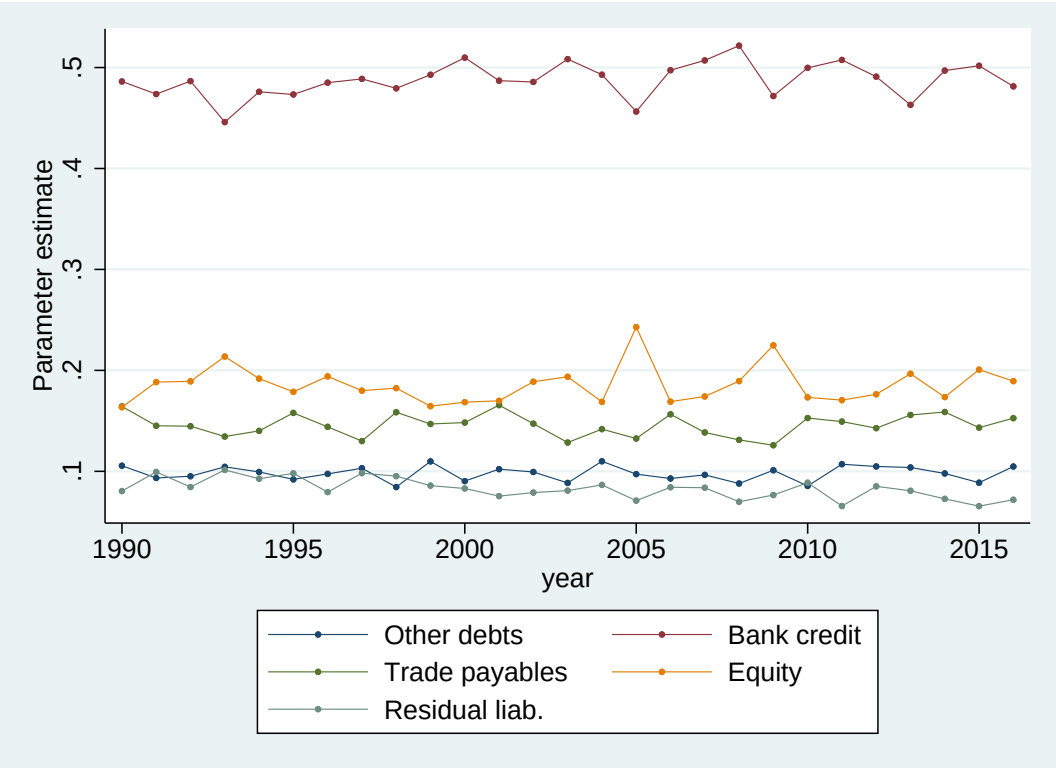
This Figure shows to what extent firm's fixed asset changes are associated with bank credit changes. On the x-axis are firm's fixed assets changes. To simplify the graphical display, firm's fixed assets changes are decomposed by percentile of changes and then averaged. On the y-axis are bank credit changes. For each value on the x-axis, the average changes in bank credit are computed. Evenually, to highlight the link between fixed asset changes and bank credit changes, an OLS-fitting line is plotted.
(last update: 14/01/2019)

Figure 5: Average change in credit depending on quatile of change in immo by firm size



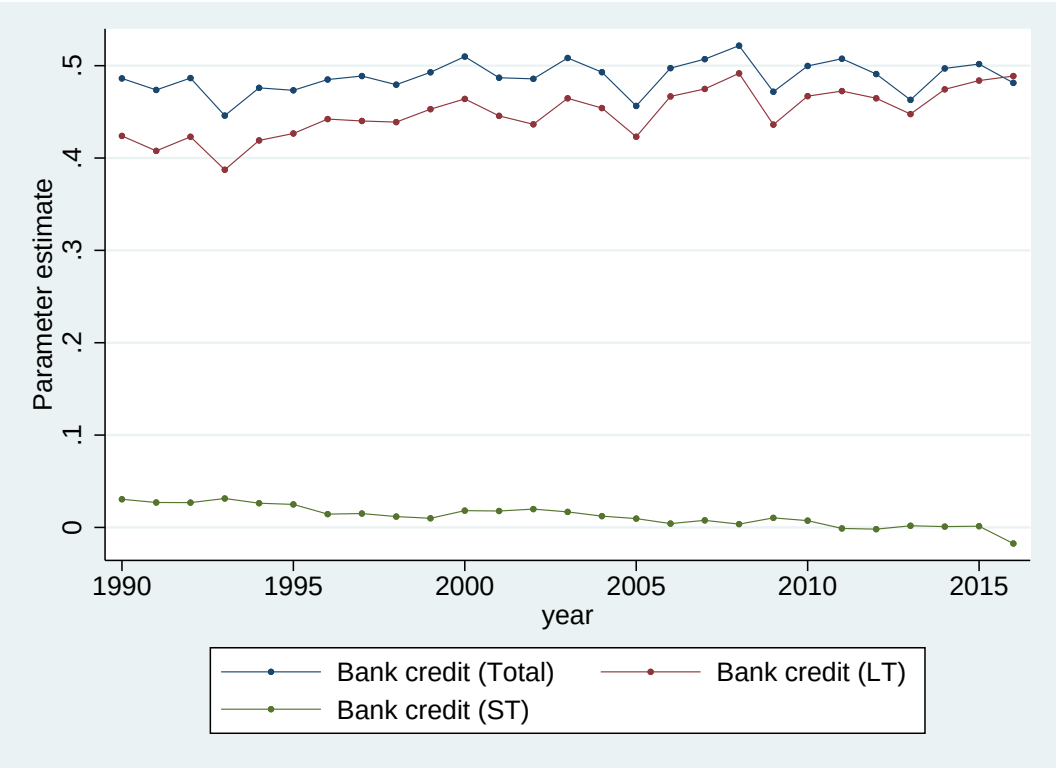
This Figure is similar to the Figure 4 but now the relation between fixed asset changes and bank credit changes is decomoposed by firm size classes: $[p0 - p25($, $[p25 - p50($, $[p50 - p75($, $[p75 - p90($, $[p90 - p95($, $[p95 - p100]$. To enlight the display, only the OLS-fitting line by firm size class are displaied.
(last update: 14/01/2019)

Figure 6: Evolution over the years of the contribution of various funding sources to the financing of fixed assets investment



This graph shows how the estimated contribution of various funding sources to the financing of fixed assets investment varies year after year over the last two decades. Each dot correspond to the coefficient estimated within a given year based on an augmented version of the specification 10 where each funding sources is interacted with dummy variable for each year. For the sake of clarity, we do not report 95% confidence bands.
(last update: 14/01/2019)

Figure 7: Evolution over the years of the contribution of ST and LT bank credit to the financing of fixed assets investment



This graph shows how the estimated contribution of total, ST and LT bank credit to the financing of fixed assets investment varies year after year over the last two decades. Each dot correspond to the coefficient estimated within a given year based on an augmented version of the specification 10 where each funding sources is interacted with dummy variable for each year. For the sake of clarity, we do not report 95% confidence bands.
(last update: 14/01/2019)

10 Tables

Table 1: Firms' total sales quantiles (nominal value in million of €; sample of manufacturing firms)

Year	p25	p50	p75	p90	p95
1990	1.68	3.24	8.10	24.80	56.64
1995	1.40	2.75	7.16	21.90	48.75
2000	1.51	2.97	7.54	23.25	50.44
2005	1.53	3.03	8.04	25.05	54.26
2010	1.48	2.97	7.98	25.74	56.98

Note: this table reports the entry thresholds for selected years associated to each firm size quantile based on the total sales of firms. The sample is limited to firms belonging to the manufacturing sector. (last update: 14/01/2019)

Table 2: Fixed assets and working capital assets, breakdown by sectors

Year	Sector (NACE code)	Share of fixed assets	Share of working capital assets
1990	Agriculture, forestry and fishing (AZ)	0%	1%
1990	Mining and quarrying (BZ)	3%	1%
1990	Manufacturing (CZ)	34%	47%
1990	Power, gas, steam and air conditioning supply (DZ)	20%	5%
1990	Water supply; sewerage; waste managment (EZ)	3%	1%
1990	Construction (FZ)	5%	9%
1990	Wholesale and retail trade; repair (GZ)	11%	25%
1990	Transporting and storage (HZ)	14%	3%
1990	Accommodation and food service activities (IZ)	1%	0%
1990	Information & communication (JZ)	2%	2%
1990	Scientific, administrative and support activities (MN)	4%	5%
1990	Public sector and healthcare (OQ)	1%	0%
1990	Others (RU)	0%	0%
2010	Agriculture, forestry and fishing (AZ)	1%	1%
2010	Mining and quarrying (BZ)	1%	0%
2010	Manufacturing (CZ)	22%	36%
2010	Power, gas, steam and air conditioning supply (DZ)	21%	6%
2010	Water supply; sewerage; waste managment (EZ)	2%	1%
2010	Construction (FZ)	2%	10%
2010	Wholesale and retail trade; repair (GZ)	11%	27%
2010	Transporting and storage (HZ)	16%	4%
2010	Accommodation and food service activities (IZ)	2%	0%
2010	Information & communication (JZ)	12%	5%
2010	Scientific, administrative and support activities (MN)	7%	8%
2010	Public sector and healthcare (OQ)	2%	1%
2010	Others (RU)	1%	0%

Note: This table provides a decomposition of the (net) fixed assets and (net) working capital assets across sectors (NACE code). The working capital assets are computed as the sum of account receivable, advance on orders to suppliers and inventories. (last update: 14/01/2019).

Table 3: Descriptive Statistics

Variable	N	Mean	Std. dev.
Share of fixed assets among total assets (TA)	655,688	0.238	0.156
Share of tangible fixed assets / TA	652,063	0.168	0.127
Share of intangible fixed assets / TA	651,486	0.033	0.067
Share of financial assets / TA	651,622	0.027	0.057
Share of inventories and trade receivables / TA	655,688	0.551	0.182
Share of inventories / TA	655,688	0.201	0.146
Share of trade receivables / TA	655,688	0.35	0.161
Share of cash reserve / TA	655,688	0.136	0.146
Share of bank credit / TA	655,688	0.108	0.112
Share of ST bank credit / TA	651,214	0.027	0.055
Share of LT bank credit / TA	653,826	0.077	0.09
Share of own funds (excluding undistributed profit) / TA	655,688	0.388	0.185
Share of cash flow / TA	655,688	0.018	0.068
Share of other debts / TA	655,688	0.08	0.103
Share of trade payables / TA	655,688	0.253	0.135

Note: this table report descriptive statistics for selected components of the balance sheet of firms (as a fraction of total assets) over the entire sample (1989-2016). The sample is limited to firms belonging to the manufacturing sector.
Source: Banque de France (FIBEN) and author's calculations
(last update: 14/01/2019)

Table 4: Descriptive Statistics

Variable	N	Mean	Std. dev.
Changes in fixed assets over total assets (TA)	655,688	0.003	0.06
Changes in tangible fixed assets / TA	651,589	0.001	0.051
Changes in intangible fixed assets / TA	645,944	0	0.007
Changes in financial assets / TA	647,822	0.001	0.013
Changes in inventories and trade receivables / TA	655,688	0.016	0.12
Changes in inventories / TA	649,616	0.007	0.053
Changes in trade receivables / TA	653,004	0.009	0.104
Changes in cash / TA	655,688	0.008	0.078
Changes in residual assets / TA	655,688	0.004	0.046
Changes in bank credit / TA	655,688	0.001	0.063
Changes in own funds (excluding undistributed profit) / TA	652,988	-0.004	0.081
Changes in other debts / TA	655,688	0.001	0.052
Changes in trade payables / TA	655,688	0.007	0.087
Changes in residual liabilities / TA	655,688	0.004	0.046

Note: this table report descriptive statistics for changes in selected components of the balance sheet of firms (as a fraction of total assets) over the entire sample (1989-2016). The sample is limited to firms belonging to the manufacturing sector.
Source: Banque de France (FIBEN) and author's calculations
(last update: 14/01/2019)

Table 5: Descriptive statistics, breakdown by size class

Average of:	$[p0; p25($	$[p25; p50($	$[p50; p75($	$[p75; p90($	$[p90; p95($	$[p95; p100]$
Share of fixed assets among total assets (/ TA)	0.241	0.223	0.221	0.24	0.28	0.328
Share of tangible fixed assets / TA	0.163	0.161	0.164	0.174	0.195	0.206
Share of intangible fixed assets / TA	0.045	0.035	0.027	0.025	0.025	0.027
Share of financial assets / TA	0.018	0.021	0.025	0.033	0.046	0.07
Share of inventories and trade receivables / TA	0.529	0.554	0.569	0.567	0.546	0.502
Share of inventories / TA	0.178	0.189	0.213	0.226	0.219	0.195
Share of trade receivables / TA	0.351	0.364	0.356	0.34	0.327	0.307
Share of cash reserve / TA	0.165	0.155	0.135	0.109	0.08	0.058
Share of bank credit / TA	0.112	0.109	0.107	0.109	0.104	0.083
Share of ST bank credit / TA	0.023	0.023	0.026	0.032	0.037	0.034
Share of LT bank credit / TA	0.085	0.083	0.078	0.072	0.062	0.044
Share of own funds (excluding undistributed profit) / TA	0.399	0.387	0.387	0.384	0.382	0.372
Share of cash flow / TA	0.015	0.022	0.021	0.017	0.013	0.008
Share of other debts / TA	0.081	0.072	0.071	0.085	0.105	0.13
Share of trade payables / TA	0.22	0.248	0.269	0.272	0.265	0.266

Note: this table reports their average value of selected components of the balance sheet of firms (as a fraction of total assets) computed within each firm size class (based on firm's sales) over the entire sample (1989-2016). The sample is limited to firms belonging to the manufacturing sector.
Source: Banque de France (FIBEN) and author's calculations
(last update: 14/01/2019)

Table 6: Descriptive statistics, breakdown by size class

Average of:	$[p0; p25($	$[p25; p50($	$[p50; p75($	$[p75; p90($	$[p90; p95($	$[p95; p100]$
Changes in fixed assets over total assets (TA)	-0.002	0.002	0.004	0.006	0.008	0.009
Changes in tangible fixed assets / TA	-0.003	0	0.002	0.003	0.004	0.004
Changes in intangible fixed assets / TA	0	0	0	0	0	0
Changes in financial assets / TA	0.001	0.001	0.001	0.001	0.002	0.003
Changes in inventories and trade receivables / TA	0.007	0.019	0.021	0.019	0.014	0.01
Changes in inventories / TA	0.006	0.008	0.009	0.008	0.006	0.004
Changes in trade receivables / TA	0.001	0.011	0.012	0.011	0.008	0.006
Changes in cash / TA	0.005	0.01	0.009	0.007	0.005	0.002
Changes in residual assets / TA	0.003	0.003	0.004	0.005	0.006	0.007
Changes in bank credit / TA	-0.003	0	0.002	0.002	0.001	0.001
Changes in own funds (excluding undistributed profit) / TA	-0.009	-0.004	-0.003	-0.001	0.001	0.003
Changes in other debts / TA	-0.001	0	0.001	0.003	0.004	0.004
Changes in trade payables / TA	0.002	0.008	0.009	0.008	0.007	0.006
Changes in residual liabilities / TA	0.001	0.005	0.005	0.005	0.004	0.005

Note: this table reports their average value of selected components of the balance sheet of firms (as a fraction of total assets) computed within each firm size class (based on firm's sales) over the entire sample (1989-2016). The sample is limited to firms belonging to the manufacturing sector.
Source: Banque de France (FIBEN) and author's calculations
(last update: 14/01/2019)

Table 7: Cumulative percentages by size class (2010)

Size class	Turnover	Total Assets	Net Fixed Assets	Inventories	Trade receivables	Total Bank Credit	ST Bank Credit	LT Bank Credit
$[p0 - p25($	0.9%	1.0%	0.7%	0.9%	1.1%	1.9%	1.0%	2.2%
$[p25 - p50($	2.0%	2.0%	1.3%	2.1%	2.4%	3.8%	2.2%	4.5%
$[p50 - p75($	4.8%	4.9%	3.1%	5.8%	5.7%	8.8%	6.6%	9.7%
$[p75 - p90($	8.5%	8.8%	6.3%	11.1%	9.6%	15.3%	14.4%	15.6%
$[p90 - p95($	7.8%	8.1%	6.9%	9.7%	8.1%	11.9%	13.0%	11.5%
$[p95 - p100]$	76.0%	75.2%	82.4%	70.4%	73.1%	58.3%	62.8%	56.4%

Note: this table reports the cumulative amount represented by each size class for selected components of the balance sheet of firms in 2010. The sample is limited to firms belonging to the manufacturing sector.
Source: Banque de France (FIBEN) and author's calculations
(last update: 14/01/2019)

Table 8: Contribution of funding sources to the financing of use of funds: the case of fixed assets investment

	Changes in ...				
	bank credit	equity	other debts	trade payables	residual liabilities
Changes in fixed assets	0.513***	0.201***	0.106***	0.175***	0.084***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
Observations	655,688	655,688	655,688	655,688	655,688
Adjusted R-squared	0.245	0.030	0.015	0.015	0.012
Control variables	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of a simplified version of the specification 10. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on the fixed assets investment, *i.e.* the changes in fixed assets from one period to another. All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 14/01/2019)

Table 9: Contribution of funding sources to the financing of use of funds: the general case

	Changes in ...				
	bank credit	equity	other debts	trade payables	residual liabilities
Changes in fixed assets	0.482***	0.187***	0.101***	0.149***	0.082***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)
Changes in inventories and trade receivables	0.118***	0.182***	0.079***	0.477***	0.144***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Changes in cash reserves	0.071***	0.295***	0.102***	0.343***	0.189***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Changes in residual assets	0.169***	0.163***	0.119***	0.459***	0.090***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Observations	693,959	693,959	693,959	693,959	693,959
Adjusted R-squared	0.365	0.466	0.105	0.502	0.205
Control variables	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of the full specification 10. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on the uses of funds, *i.e.* the changes in asset items from one period to another. All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 14/01/2019)

Table 10: Contribution of funding sources to the financing fixed assets investment: firm size heterogeneity

	Changes in ...				
	bank credit	equity	other debts	trade payables	residual liabilities
Changes in fixed assets (ref. category)	0.549***	0.173***	0.069***	0.136***	0.073***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p25-p50(	-0.021***	-0.001	0.008**	0.011**	0.004
	(0.005)	(0.004)	(0.004)	(0.005)	(0.003)
Changes in fixed assets · [p50-p75(	-0.054***	0.007*	0.017***	0.019***	0.011***
	(0.005)	(0.004)	(0.004)	(0.005)	(0.003)
Changes in fixed assets · [p75-p90(	-0.118***	0.026***	0.057***	0.008	0.026***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)
Changes in fixed assets · [p90-p95(	-0.211***	0.057***	0.115***	0.003	0.036***
	(0.009)	(0.007)	(0.008)	(0.007)	(0.006)
Changes in fixed assets · [p95-p100]	-0.298***	0.094***	0.181***	-0.010	0.032***
	(0.009)	(0.008)	(0.009)	(0.007)	(0.005)
Observations	653,738	653,738	653,738	653,738	653,738
Adjusted R-squared	0.380	0.465	0.110	0.508	0.211
Control variables	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of the specification 11. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on use of funds, *i.e.* the changes in asset items from one period to another, interacted with dummies for firm size classes. Only the coefficients associated with the changes in fixed assets are reported for the sake of brevity. The firm size classes are based on the distribution in firm's total sales. The coefficients associated to size classes are expressed relatively to a reference category (the first quartile). All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 14/01/2019)

Table 11: Contribution of funding sources to the financing working capital investment: firm size heterogeneity

	Changes in ...				
	bank credit	equity	other debts	trade payables	residual liabilities
Changes in working capital assets (ref. category)	0.115***	0.211***	0.062***	0.442***	0.170***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
Changes in working capital assets · [p25-p50(	-0.001	-0.024***	-0.001	0.036***	-0.010***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Changes in working capital assets · [p50-p75(	0.005**	-0.041***	0.010***	0.059***	-0.032***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Changes in working capital assets · [p75-p90(	0.020***	-0.054***	0.035***	0.054***	-0.056***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)
Changes in working capital assets · [p90-p95(	0.037***	-0.059***	0.075***	0.024***	-0.076***
	(0.004)	(0.004)	(0.005)	(0.005)	(0.003)
Changes in working capital assets · [p95-p100]	0.021***	-0.065***	0.113***	0.008	-0.078***
	(0.004)	(0.004)	(0.005)	(0.006)	(0.003)
Observations	653,738	653,738	653,738	653,738	653,738
Adjusted R-squared	0.380	0.465	0.110	0.508	0.211
Control variables	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of the specification 11. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on use of funds, *i.e.* the changes in asset items from one period to another, interacted with dummies for firm size classes. Only the coefficients associated with the changes in working capital assets are reported for the sake of brevity. The firm size classes are based on the distribution in firm's total sales. The coefficients associated to size classes are expressed relatively to a reference category (the first quartile). All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 14/01/2019)

Table 12: Contribution of funding sources to the financing fixed assets investment: type of fixed assets

	Changes in bank credit		
Changes in tangible fixed assets (ref. category)	0.599***		
	(0.004)		
Changes in tangible fixed assets · [p25-p50(	-0.020***		
	(0.005)		
Changes in tangible fixed assets · [p50-p75(	-0.047***		
	(0.006)		
Changes in tangible fixed assets · [p75-p90(	-0.110***		
	(0.007)		
Changes in tangible fixed assets · [p90-p95(	-0.220***		
	(0.011)		
Changes in tangible fixed assets · [p95-p100]	-0.327***		
	(0.011)		
Changes in intangible fixed assets (ref. category)		0.364***	
		(0.026)	
Changes in intangible fixed assets · [p25-p50(		0.039	
		(0.035)	
Changes in intangible fixed assets · [p50-p75(		0.008	
		(0.034)	
Changes in intangible fixed assets · [p75-p90(		-0.084**	
		(0.037)	
Changes in intangible fixed assets · [p90-p95(		-0.052	
		(0.052)	
Changes in intangible fixed assets · [p95-p100]		-0.149***	
		(0.050)	
Changes in financial assets (ref. category)			0.178***
			(0.017)
Changes in financial assets · [p25-p50(			0.053**
			(0.021)
Changes in financial assets · [p50-p75(			0.070***
			(0.020)
Changes in financial assets · [p75-p90(			0.086***
			(0.021)
Changes in financial assets · [p90-p95(			0.097***
			(0.024)
Changes in financial assets · [p95-p100]			0.065***
			(0.023)
Observations	624,256	624,256	624,256
Adjusted R-squared	0.375	0.375	0.375
Control variables	Yes	Yes	Yes
Time, Industry, Firm Age, Size and Firm FE	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level

Note: this table shows the result of the specification 11. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on use of funds, *i.e.* the changes in asset items from one period to another, interacted with dummies for firm size classes. Only the coefficients associated with the changes in tangible fixed capital assets (col. (1)), intangible fixed assets (col. (2)) and financial assets (col. (3)) are reported for the sake of brevity. The firm size classes are based on the distribution in firm's total sales. The coefficients associated to size classes are expressed relatively to a reference category (the first quartile). All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.

11 Appendix

11.1 Main variables definition

This section will be completed latter as we lack of accurate translation for several accounting terms.

In this short appendix, we present the main variables used in the paper. All the variable are constructed based on the "'Liasse fiscale"' available online here (in French only): `https://www.impots.gouv.fr/portail/files/formulaires/2050-liasse/2018/2050-liasse_2221.pdf`. All the variable we use are expressed in net term, *i.e.* they account for depreciations and provisions of assets components, especially fixed assets.

On the asset side, we use four main variables:

- Fixed assets (FA_t): the sum of net tangible fixed assets, net intangible fixed assets and net financial assets
- Working capital assets (WC_t): the sum of inventories, trade receivables and advance on orders to suppliers
- Cash reserves ($Cash_t$): TBA
- Residual assets (RA_t): the difference between the net total assets (TA_t) and the sum of fixed assets investment, working capital investment and cash reserves.

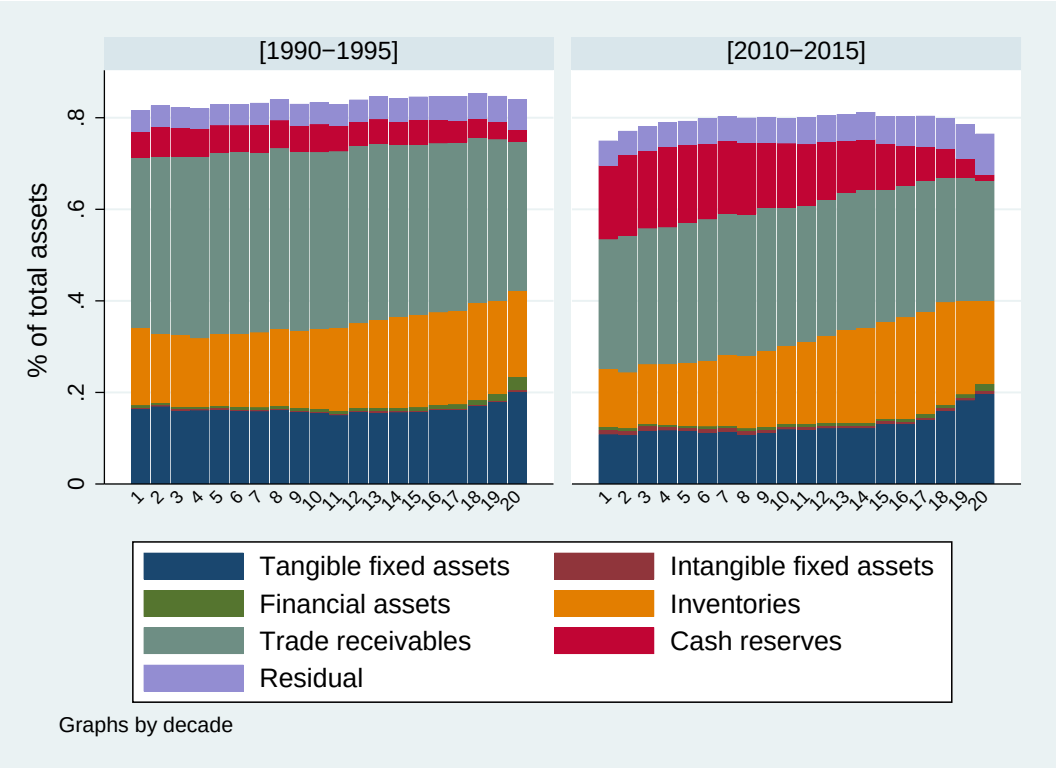
On the liability side, we use four main variables:

- Equity (own funds), net of retained earnings (E_t): equity, excluding "'provisions for risks and charges"' and the current income net of dividend paid out
- Bank credit (BC_t): the sum of long-term and short-term bank credit. This component does not include leasing, factoring and other off-balance sheet items akin to bank credit.
- Trade payables (TP_t): the sum of "'advances and down payments received"' and "'trade accounts payable"'
- Other financial debts (OD_t): bonds and similar debts
- Retained earnings (CF_t): the current income as reported in the balance sheet (usually considered as part of the own funds) less the dividend paid out.
- Residual liabilities (RL_t): the difference between the net total assets and the sum of bank credit, equity, trade payables, other debts and cash flows.

TBC

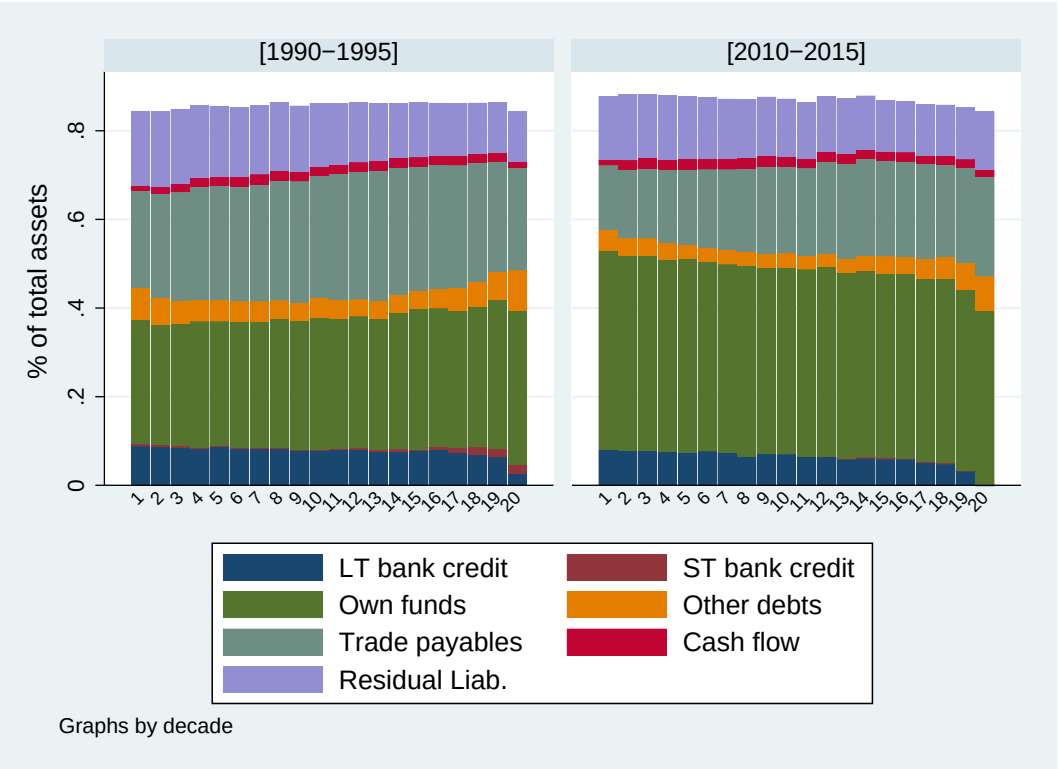
11.2 Additional Figures

Figure 8: Decomposition of the assets held by firms: breakdown by quantiles of firm's sales



This graphs shows the distribution of the asset side of the balance sheet of firms, how this distribution varies along with the size of firms, and how it has evolved over time. Each bar correspond to 5% of the population of firms based on total sales of firms. The graph plots the median share of each assets components within each 5%-quantile. The figure on the left shows the distribution over the period 1990-1995 ad the figure on the right shows the distribution over the period 2010-2015.
(last update: 08/01/2019)

Figure 9: Decomposition of the liabilities issued by firms: breakdown by quantiles of firm's sales



This graphs shows the distribution of the liabilities side of the balance sheet of firms, how this distribution varies along with the size of firms, and how it has evolved over time. Each bar correspond to 5% of the population of firms based on total sales of firms. The graph plots the median share of each liabilities components within each 5%-quantile. The figure on the left shows the distribution over the period 1990-1995 ad the figure on the right shows the distribution over the period 2010-2015.
(last update: 08/01/2019)

11.3 Additional Tables

Table 13: Contribution of funding sources to the financing of use of funds: the general case

	Changes in ...					
	bank credit	other debts	trade payables	residual liabilities	equity, net of retained earnings	retained earnings
Changes in fixed assets	0.493***	0.101***	0.125***	0.076***	0.030***	0.165***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)
Changes in inventories and trade receivables	0.093***	0.080***	0.477***	0.148***	0.165***	0.023***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Changes in cash reserves	0.044***	0.085***	0.316***	0.182***	0.303***	0.053***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Changes in residual assets	0.144***	0.118***	0.446***	0.093***	0.016***	0.166***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)
Observations	695,156	695,156	695,156	695,156	691,465	655,688
Adjusted R-squared	0.279	0.062	0.481	0.208	0.115	0.031
Control variables	No	No	No	No	No	No
Time FE	No	No	No	No	No	No
Industry FE	No	No	No	No	No	No
Firm Age FE	No	No	No	No	No	No
Size FE	No	No	No	No	No	No
Firm FE	No	No	No	No	No	No
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of a the full specification 10. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on the uses of funds, *i.e.* the changes in asset items from one period to another. All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 10/01/2019)

Table 14: Contribution of funding sources to the financing of use of funds: firm size heterogeneity

	Changes in ...				
	bank credit	equity	other debts	trade payables	residual liabilities
Changes in fixed asset · [p0-p25(	0.549***	0.173***	0.069***	0.136***	0.073***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p25-p50(	0.528***	0.172***	0.077***	0.147***	0.076***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p50-p75(	0.495***	0.180***	0.086***	0.155***	0.084***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p75-p90(	0.431***	0.199***	0.126***	0.145***	0.099***
	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)
Changes in fixed assets · [p90-p95(	0.338***	0.230***	0.184***	0.139***	0.109***
	(0.008)	(0.007)	(0.008)	(0.007)	(0.005)
Changes in fixed assets · [p95-p100]	0.251***	0.267***	0.250***	0.127***	0.104***
	(0.008)	(0.008)	(0.009)	(0.006)	(0.005)
Observations	653,738	653,738	653,738	653,738	653,738
Adjusted R-squared	0.380	0.465	0.110	0.508	0.211
Control variables	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of a the specification 11. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on use of funds, *i.e.* the changes in asset items from one period to another, interacted with dummies for firm size classes. Only the coefficients associated with the changes in fixed assets are reported for the sake of brevity. The firm size classes are based on the distribution in firm's total sales. All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 10/01/2019)

Table 15: Contribution of funding sources to the financing of use of funds: firm size heterogeneity

	Changes in ...						
	bank credit (long term)	bank credit (short term)	equity, net of retained earnings	retained earnings	other debts	trade payables	residual liab.
Change in fixed assets (ref. category)	0.521***	0.001	0.034***	0.140***	0.069***	0.136***	0.073***
	(0.004)	(0.002)	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
Change in fixed assets · [p25-p50(	-0.022***	0.002	0.008	-0.012***	0.008**	0.011**	0.004
	(0.005)	(0.002)	(0.005)	(0.004)	(0.004)	(0.005)	(0.003)
Change in fixed assets · [p50-p75(	-0.061***	0.009***	0.012**	-0.007	0.017***	0.019***	0.011***
	(0.005)	(0.002)	(0.005)	(0.004)	(0.004)	(0.005)	(0.003)
Change in fixed assets · [p75-p90(	-0.144***	0.029***	0.031***	-0.011**	0.057***	0.008	0.026***
	(0.006)	(0.003)	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)
Change in fixed assets · [p90-p95(	-0.258***	0.043***	0.087***	-0.040***	0.115***	0.003	0.036***
	(0.008)	(0.004)	(0.009)	(0.008)	(0.008)	(0.007)	(0.006)
Change in fixed assets · [p95-p100]	-0.373***	0.068***	0.134***	-0.053***	0.181***	-0.010	0.032***
	(0.007)	(0.005)	(0.010)	(0.008)	(0.009)	(0.007)	(0.005)
	648,792	646,940	651,015	653,738	653,738	653,738	653,738
	0.359	0.068	0.184	0.216	0.110	0.508	0.211
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of a the specification 11. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on the fixed assets investment, *i.e.* the changes in fixed assets from one period to another, interacted with dummies for firm size classes. The firm size classes are based on the distribution in firm's total sales. The coefficients associated to size classes are expressed relatively to a reference category (the first quartile). All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 10/01/2019)

Table 16: Contribution of funding sources to the financing of use of funds: firm size heterogeneity

	Changes in ...						
	bank credit (long term)	bank credit (short term)	equity, net of retained earnings	retained earnings	other debts	trade payables	residual liab.
Changes in fixed asset · [p0-p25(	0.521***	0.001	0.034***	0.140***	0.069***	0.136***	0.073***
	(0.004)	(0.002)	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p25-p50(	0.499***	0.003*	0.043***	0.128***	0.077***	0.147***	0.076***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p50-p75(	0.460***	0.010***	0.046***	0.133***	0.086***	0.155***	0.084***
	(0.004)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Changes in fixed assets · [p75-p90(	0.377***	0.030***	0.065***	0.129***	0.126***	0.145***	0.099***
	(0.005)	(0.002)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)
Changes in fixed assets · [p90-p95(	0.263***	0.044***	0.121***	0.100***	0.184***	0.139***	0.109***
	(0.008)	(0.004)	(0.009)	(0.007)	(0.008)	(0.007)	(0.005)
Changes in fixed assets · [p95-p100]	0.148***	0.069***	0.168***	0.087***	0.250***	0.127***	0.104***
	(0.006)	(0.004)	(0.009)	(0.007)	(0.009)	(0.006)	(0.005)
Observations	648,792	646,940	651,015	653,738	653,738	653,738	653,738
Adjusted R-squared	0.359	0.068	0.184	0.216	0.110	0.508	0.211
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level

Note: this table shows the result of a the specification 11. In this regression, the sources of funding, *i.e.* the changes in liability items from one period to another, are regressed on the fixed assets investment, *i.e.* the changes in fixed assets from one period to another, interacted with dummies for firm size classes. The firm size classes are based on the distribution in firm's total sales. All the variables are deflated and scaled by total assets of the previous period. All regressions includes the following control variables: the share of equity over total assets (TA), the share of cash over TA, the share of fixed assets over TA , the growth rate of sales and the log of total assets. The sample is limited to firms operating in the manufacturing sector. We trim all variables at the annual 1st and 99th percentiles.
Source: Banque de France (FIBEN) and author's calculations.
(last update: 10/01/2019)