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Financial Reliability and Firms' Export Activity

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Abstract

This paper assesses the importance of firms' financial resources that are necessary to overcome sunk entry costs associated with export. We propose a new methodology to identify *a priori* constrained firms, exploiting a rich data-set on Italian firms' assets and liabilities. We provide evidence that the entry probability is affected by the level of cash stock for the constrained firms: an increase of 10% in the cash stock of constrained firms raises by an additional 0.17% the entry probability of rationed firms, compared to unconstrained ones. Additionally, we find evidence that the liquidity is mainly used for investments in the development of new products for foreign markets. We do not find evidence that entry in the export market improves the firm's financial health, while *ex-ante* new entrants are relatively more leveraged.

Keywords: Credit constraints, Financial reliability, export Trade

JEL Classifications: F10, F12, F13, L25, M20

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1 Introduction

The current literature of international trade recognizes the central role played by sunk cost associated to investment such as export activity. Only recently, the attention has been devoted to understand how the firms covers these costs, especially if it exists a temporal discrepancy between present cost and expected future profits. In the case of exporting, (sunk) costs are certain and immediately paid , while revenues are uncertain and postponed in the future. This initial investment associated to export is not negligible. [1] Then, imperfect capital markets with information asymmetries may prevent firms to enter in the export market. If a firm is not able to cover actual sunk costs, the availability of financial resources relies on the evaluation that external investors made on the project of exporting. Therefore, a financially constrained firm finds less costly to use internal sources of financing compared to the external sources.

In this paper, using a representative sample of Italian firms, we analyze whether credit constrained firms increase their probability to entry in the export market, once they own a larger amount of internal financial resources. [2]

However, financial ties may not affect all firms to the same extent. Also the "non-constrained" firms prefer to finance their investments using internal resources (Kaplan and Zingales, 1997). We mainly focus on firms which are judged not reliable from the point of view of an external investor, and which are "constrained" to use own liquidity for the investments. Thus, the paper addresses also the question of identifying financially constrained firms. The first contribution is to define a methodology to identify *a priori* the degree of credit constraints. Employing a detailed information on asset and liabilities for small and medium sized Italian enterprises (SMEs), the risk of a firm is measured from the point of view of a potential lenders. [3] Such issue is of a particular concerns for Italian SMEs, which rely on local capital market[4] to finance their activities. In addition, the financial crisis, started in 2008, has negatively affected the amount of credit for the enterprises.

The present paper can be ideally placed in the between of two streams of literature. Firstly, since Fazzari et al.(1988), there is an extended literature that considers the investments' sensitivity to firms' cash flows as an indicator of credit constraints. [5] Similarly, we consider the entry in the export market as an investment, and we test if the entry probability is sensitive to the level of internal financing.

[1] Das et al.(2007) estimate around $400.000 the average value of sunk costs in the export activity for a sample of Mexican firms.

[2] We have no data about trade credits. Our research is not focusing on trade credits.

[3] For example, if a bank considers risky a loan, clearly it implies that the firm has to pay a higher price for external resources.

[4] Most of the time short term debts are used by firms to finance current operations of production process (Onida, 2003).

[5] Hubbard (1998) and Bond and Van Reenen (2005) for a literature review.

Secondly, the relationship between exporting and firms' financial health has been widely analysed. Such stream of literature may be classified into three subgroups of analysis. The first one analyses how credit availability affects the export's decisions (Campa and Shaver, 2003, Chaney, 2005, Manova, 2006, Múuls, 2008); the second describes whether the export activity eases credit constraints (Manole and Spatareanu, 2009); the third observes how financial health changes before and after entry into the export market (Greenaway et al., 2007; Bellone et al., 2010). For example, Bermann and Hericourt (2010) find evidence that credit access is an important factor in determining the entry into the export market for firms in developing countries; however, they also show that exporting does not improve firms' financial health *ex-post*.

Despite the increasing literature, the main conclusions remain contrasting. Greenaway et al. (2007), using a dataset for British firms, find that new exporters do not show a larger pool of financial resources than domestic firms (before the entry). However, long term exporters own more liquidity than domestic firms. Differently, Bellone et al. (2010), using French data, empirically show that new exporters have an *ex-ante* financial advantage compared to domestic firms, but not an *ex-post* effect. [6]. At the aggregate level, Manova (2006) shows that credit constraints determine both the zeros in bilateral trade flows, and the variations in the number of exported products as well as the number of destination markets. Finally, from the purely theoretical point of view, Chaney (2005) introduces liquidity constraints into a model of international trade with heterogeneous firms (Melitz, 2003), so that liquidity becomes a second source of heterogeneity across firms. [7]

Two papers are close to the present one, both in terms of data and research questions. First, Minetti and Zhou (2011) show that the probability of exporting and foreign sales are lower for credit constrained firms. They evaluate credit rationing using firms' responses to survey questions on the self-reported credit status. Differently from them, we assess credit status exploiting the information in the balance sheet data rather than using survey question. [8] Second, Caggese and Cunat (2013) develop a dynamic industry model where financing frictions affect the entry decision in the home market as well the riskiness of firms activity. Calibrating the model, they predict that financing friction reduce the likelihood of a given firm

[6]Similarly to Bellone et al.(2010), in the present paper we define an index of credit constraints using information on asset and liabilities; however we define thresholds for balance sheet indices such that we are able to define a clear-cut rule for credit constraint status. The thresholds are commonly defined as rule of thumb in business economics. As we illustrate in the next section, we assess credit constraints analyzing the firms from the point of view of a potential lender (bank).

[7]There exist a number of theoretical works in the field of financial development that deal with liquidity constraints as a source of comparative advantage (Matsuyama, 2005; Becker Greenberg, 2005); in a Ricardian comparative advantage framework, the basic prediction is that either all or no firms export in a given sector. Beck (2002, 2003) finds evidence of links between trade, financial development and credit access.

[8]However we are going to, use the same instrumental variable technique in the robustness check analysis.

to become an exporter, but the overall effect on the number of firms starting to export is ambiguous. [9] Using a similar dataset to Minetti Zhou (2011), their empirical analysis confirms the calibration findings.

The present paper differs from Minetti and Zhou (2011) and Caggese Cunat (2013) in several different directions, even if we use the same datasource (see Section 2). From the methodological point of view, we provide an alternative measure of credit constraints. Our approach measures firms' credit constraints using balance sheet data (as Bellone et al., 2010), instead of trusting in firms' self-reported credit status. Following the previous literature on investment models (Bond and Van Reenen, 2005), we aim to identify *a priori* the degree of constraints using widely available data (such as information on equity, short term debt or long term debt). Instead of creating a continuous index to measure credit constraints, we define four class of firms according to their financial reliability. We differentiate from previous literature also in term of research's objective. We focus our analysis on the relationship between credit constraints and the entry probability in the export market[10]. Then, we compare, between two periods, continuously domestic firms versus the new exporters in the second period: we aim at understanding if firm's financial health affects internationalization process, through the enterprise capacity to cover sunk costs associated to exports.

Our contribution, from methodological point of view, consists in suggesting a different strategy for testing the hypothesis of liquidity constraints and export. [11] We define four groups of firms, according to their financial reliability in the short and long run, and we directly estimate the impact of liquidity on the entry probability in the export market. [12] Moreover, we control for potential endogeneity of the firms' clustering. Similarly to Minetti and Zhou (2011), we use the same instrument set, but we proceed in a more rigorous way; since that we are going to estimate a non-linear model (probit) we prefer to follow a two stage residual inclusion approach (2SRI, Terza et al., (2008)) rather a two stage predictor inclusion, which provides uncorrected estimates (Wooldridge, 2002).

The main results of the paper are two. Firs, we find that the entry in the export market is affected by

[9] In addition they find that financing constraints distort selection in the export reducing the aggregate gains due to trade liberalization.

[10] We use a similar dataset as Minetti and Zhou (2011) for a sample of Italian SMEs

[11] Our approach is similar to models used to test investments sensitivity to cash flows. If financial constraints make investments sensitive to the level of internal liquidity, it is quite straightforward to assume the existence of a similar relationship between the export activity and the firms' financial constraints: exporting involves investments as other firms' projects.

[12] When we cluster firms in groups, we estimate the impact of internal liquidity on the export choice in each group. Besides a credit constraint index identifies an average affect across different firms, assuming a continuous relationship between credit constraints, liquidity, and export status. Cluster approach is more appropriate for our objectives, because we are able to describe the relation among credit constraints and export taking into account the heterogeneity across firms. Additionally, credit index may not be replicable across datasets, as in the case of survey questions. Therefore, we gain also in terms of comparability, because we can produce the same analysis using different dataset from different countries (if we have information on asset and liabilities).

the level of internal liquidity: the more constrained firms, especially in the long run, show that export's decision is sensitive to the amount of cash flows. More precisely, the entry probability for constrained firms raises compared to unconstrained firms, for higher level of liquidity. In particular, while the value of marginal effect remains constant across the different specifications, the magnitude of marginal effect increases after correcting for the endogeneity. In addition, the results are robust to different thresholds used to identify credit constrained firms, as well as to financial indices employed to evaluate the level of financial stability. Independently from the definition of credit constraints we use, the main massage does not change.

Second, we find that an expansion in additional markets is affected by internal liquidity, but the effect does not differ in function of firm's financial status. Interesting, the export activity in close market (EU15) does not depend on internal cash, conversely exporting in farer market depend on cash.

In conclusion, we claim that internal liquidity plays a crucial role in the process of internationalization, in particular for firms, which are not able to raise enough funding. We show in the paper that new exporters have to rely increasingly on internal cash. The present analysis also enlightens the role of the relationship bank-firms, in particular for SMEs. The results are of particular interest also for policy makers in order to understand one of the main obstacle in the process of internationalization of SMEs.

The rest of study is structured as follows. In Section 2 we present the data, describing the relevant characteristics and descriptive statistics. In Section 3 we introduce the motivations for the methodology proposed, and the strategy for identifying the credit constrained firms. In Section 4 we present the empirical specifications and we discuss the results. Finally, Section 5 deals with the endogeneity of clustering process, and Section 6 concludes.

2 Data description: Capitalia surveys

The main data source is the "Indagine sulle Imprese Manifatturiere", a survey conducted by the Italian bank *Capitalia* (formerly knew as *MedioCredito Centrale*): each survey is collected every three years. In the present paper, we are going to consider the 8th and the 9th wave of the survey, which cover respectively the period 1998-2000, and 2001-2003. Each wave collects data for manufacturing firms with more than 10 employees; a survey includes the universe of large firms, and a stratified sample[13] of firms with less than 500 employees. In each surveys we have a total of 4,680 firms, and the *Capitalia's* surveys

[13]The sample is stratified by gross product per employee, size, industry, and location.

can be matched among them every two waves.

An important feature of the survey is that it represents quite well the heterogeneity in the Italian manufacturing sector. Moreover, it allows to focus our analysis on medium and small sized firms: the median firm in the sample has 25 employees. We integrate our dataset with "Struttura funzionale e territoriale del sistema bancario italiano, 1936-1974" (SFT) from Bank of Italy, that includes our instrumental variables (Section 5). Firms are classified according with a two-digit ATECO 2002 industrial classification. The survey investigates different firms activities such as trade, R&D, or financial activities. The data are relative to year 2000 (8th wave) or 2003 (9th wave). It means that it is possible to observe only two time periods, even if the survey covers a three year period. For example, in the case of export the questionnaire asks: "Did the firm export at least part of its products in year 2000/2003?". In case of export activity, it implies that we are not able to identify in which exact year a firm starts to export; we define that an entrant firm (in the export market) was domestic in 2000, and the firm is reported as exporter in 2003.

The second main data source is the balance sheet dataset associated to surveys. The balance sheet dataset is collected on yearly basis, and it provides information on fixed assets and revenues[14], and most importantly it collects detailed data on firms financial activities such as short- and long-term debts, assets, and equity. Given that, survey data are collected every three years, there exists a problem of matching with balance sheet data, which are defined on yearly basis, i.e., we cannot associate the entry status with a financial variable (in balance sheet) for a specific year. As we mentioned, the entry in the export market may happen between 2001 and 2003: some firms probably start to export in 2001, others in 2002 or 2003. Therefore, we cannot associate a specific year of balance sheet variables with the entry status. To deal with it, we calculate, for each balance sheet item, the averages on the three years[15] (i.e. surveys coverage); in other words, we take balance sheet data, and we calculate the average value within a firm for periods 1998-2000, and 2001-2003. Then, we have two observational periods also for balance sheet data (1998-2000 and 2001-2003), and the surveys can be merged balance sheet datasets. The matching between the two waves, and the balance sheet dataset allows to follow 2263 firms across the two waves. Table A.2 presents the description of data used in the analysis, while in Table A.4 we report the descriptive statistics for the matched observations [16].

[14]The variables' deflators are sector-specific and they come form EU-Klems.
[15]In a former version of the current paper associate the export status in year 2003 with the level of cash in year 2002.
[16]For more details on data source look at Minetti and Zhou (2011).

3 Identification of constrained firms

Our main hypothesis is that the availability of financial resources affects the entry in the export market, through the sunk costs. If fixed investment is paid at the begin of export activity, the profits are uncertain and expected in the future, firms could not be indifferent among internal and external sources of financing in the presence of imperfect capital markets. Then, we estimate if entry probability (in the export market) is sensitive to the level of internal liquidity in particular for credit rationed firms, for whom external funds are relatively more expensive.

In order to analyze export sensitivity, we proceed similarly to Euler equation's models, which are designed to test the effect of credit constraints on investments' level[17] (Bond and Van Reenen, 2005). In the *"Euler equation model"*, financially constrained firms have to pay an higher price for external source of financing (issue new equity, or get new debt). Therefore, internal liquidity affects the rate of inter-temporal substitution between investment today and investment tomorrow; the more constrained the firm is, the larger is the impact of cash on the investment choice.[18]. For the empirical estimation, it is crucial to identify *a priori* firms' credit status, because the relationship between liquidity and investment is not monotonic and significant for all the cases; firms are heterogeneous in terms of financial health, so that investments' sensitivity varies with the potential availability of resources. Therefore, we address the role of liquidity for exporting, by clustering firms according to their level of financial reliability. The direct estimate of liquidity for the entry choice is biased. Let's assume, we estimate the impact of cash stock (CS) on the entry probability ($Enter$) for firm i as follows,

$$Pr(Enter|X, CS)_i = \alpha X_i + \beta CS_i + \epsilon_i \tag{3.1}$$

where X_i is a set of control variables. We have no *a priori* about β coefficient; then if firms are differently affected by cash in their entry decision, the β is biased. It may exist a positive and significant relationship for credit rationed firms, and a not significant effect for unconstrained ones. Therefore, if constrained and unconstrained firms are not differentiated in the empirical model, the effect of internal liquidity is

[17]The theory of investments and credit constraints has been applied to different field of research analysis (Konings et al., 2002; Love 2003; Forbes, 2007; Poncet et al., 2009).

[18]In the presence of perfect capital markets, financial variables should have no impact on the investment decisions of firms. If an investment is profitable, internal and external financing are supposed to be perfect substitutes with frictionless capital markets. Relaxing the assumption of perfect capital market, the cost of internal and external financing may differ for several reasons. An increase in cash stock lower the implied cost of capital, making investment today more attractive than investment tomorrow (by reducing the needs for of external resources).

biased across groups[19]. We may identify three different potential situations. At first, a not-constrained firm enters into the export market with a low level of liquidity, because the sources of external financing are not too costly. Second, an healthy firm can also self-finance its own export activity (Kaplan and Zingales (1997): in this case we observe a positive effect of liquidity on the entry probability. Finally, a credit constrained firm has to rely on internally generated resources: in this latter case we expect that entry is sensitive (positively) to internal liquidity.

Therefore, it is crucial to identify *a priori* firms' financial status to estimate the β's in equation 3.1 for each class of firms (class of financial status). We are going to develop and to test a new strategy for identifying *a priori* firms' financial reliability. We cluster firms in four groups according to their level of financial status, and for each group we assess the role of internal liquidity in the internationalization's process[20].

3.1 Identification Strategy

In the existing literature, many indices have been used to assess the financial health of a firm, as liquidity ratio or leverage ratio (Greenaway et al.,2007). However such ratios may generate biased results, because it is not necessarily true that highly leveraged firms, or with low liquidity are constrained. As Bellone et al.(2010) underline, these indices do not capture the differences between short term and long term financial stability. With the present methodology we aim to define credit status depending on different perspectives of financial stability (long and short term). In order to define financial reliability in time, we need to evaluate a firm's performances, and by exploiting information in the balance sheet we assess the degree of credit constraints; hence we evaluate a firm similarly to an external investor that decides to grant or not a loan. The information on asset and liabilities (balance sheet dataset) allow to calculate financial ratios, which are used to assess a firm' financial reliability. [21]. More recently, financial ratios are used by banks to assess the riskiness of granted loans; according to the principles imposed by Basel III agreement (Bank for International Settlements, 2006), banks have to manage the risk of credit by

[19]Moreover, it is not always true that constrained firms show a positive relationship between cash and investments. Kaplan and Zingales (1997) demonstrate the existence of a positive relationship also for "healthy" firms; they rank firms according to their level of credit status, and they find for a sample of large American enterprises that firms with a good financial situation invest more, if they own more liquid resources. The sample is composed by firms quoted in the stock market. Kaplan and Zingales explain that firms prefer to self-finance their investments to signal their good standing, and to keep on financial stability. However, our sample includes small and medium sized firms that are not in the stock market.

[20]In the previous literature, the common practice is to plug into the main equation an indicator for credit rationing, and then interact it with a measure of internal liquidity (Bellone et al., 2011; Minetti and Zhou, 2011). A continuous index for credit constraints is not able to capture potential not-monotonicity for the relationship between credit status, liquidity, and entry decision.

[21]For more specific discussion of this subject, see Brealey-Myers (1999).

using objective criteria as financial ratios. Therefore, we assess the degree of credit rationing through procedure used by potential external investors, which judge a firm's financial reliability from balance sheet data (and the correspondent ratios). To simplify the clustering process we consider two indices, for which conventional thresholds exist. The two ratios take into account respectively a firm's financial reliability in the long run and in the short run[22].

- The *Equity Ratio* (ER hereafter) is used to assess long term financial reliability. It is defined as the ratio between the total amount of internal resources (equity plus profits and reserves) and the total amount of capital invested (total assets). *ER* measures the proportion of the total assets that are financed by internal funds: it evaluates to what extent a firm is self-financing its economic activities. A ratio lower than .33 suggests a situation of sub-optimality, because a firm has a low capacity to self-financing; at least one third of firm's assets have be covered by internal resources in order to reach a financial stable situation in the long run (Brealey and Myers, 1999).

- The *Quick Ratio* (QR hereafter) assesses short term financial reliability, and it is a rough indicator of cash's availability; *QR* measures a company's ability to meet its short-term obligations with its most liquid assets. It is defined as the ratio of instantaneous liquidity or cash assets (cash, bank and current account) to short-term debts (interests, furniture, wages...). The optimal value is fixed greater than 1: if *QR* meets this criteria, a firm owns sufficient resources to face the daily cost of production process. In light of this, the ratio indicates a firm's chances of paying off short-term debts without the need for additional external funds.

It is intuitive that firm's financial health improves that when the ratios increase. Nonetheless, it is crucial test if the indices are reliable indicators for a firm's financial health. To test ratios, we are going to exploit information on credit rationing, provided by the survey data. Each survey (8th and 9th survey) report firms' response to the following questions. i)"In 2000 (or 2003), would the firm have liked to obtain more credit at the market interest rate ?" In case of a positive answer the following question is asked: ii) "In 2000 (or 2003), did the firm demand more credit than it actually obtained?" According to question(i) and (ii), we create two dummy variables, namely *Des* and *Ask*. *Des* is equal to one if a firm reply yes to question (i), otherwise zero; similarly *Ask* is equal to one if a firm reply yes to question (ii), otherwise zero. These two dummies are used by Minetti and Zhou (2011) to assess a firm's credit rationing; differently, we use such information to understand if *ER* and *QR* are able to approximate a

[22]In Table A.4 are reported the ratios' means, and the standard deviations.

firm's credit constraints. Hence, we estimate how ER and QR affect the probability to be credit rationed, and therefore we expect that for high values of ER and QR correspond a lower probability to answer yes to questions (i) and (ii). We estimate

$$Y_i = \alpha_0 + \alpha_1 Index_i + \gamma \overline{X} + \epsilon_i, \tag{3.2}$$

where Y_i represents the dummy Des or Ask, $Index_i$ is one of the two ratios, and $\overline{X}$ is a vector of control variables: we expect a negative sign for α_1, i.e. a negative correlation between financial ratios, and self-reported credit status. We estimate Eq. 3.2 for firms that appear in both surveys (8th and 9th)[23]. The dependent variable (credit status from survey) refers to year 2003, and it is explained by the correspondent financial ratios (year 2003); finally, in table B.1, we report the results for the probit estimation of Eq. 3.2, where Des dummy is the dependent variable[24].

TABLE B.1 HERE

The coefficients suggest that the degree of self-reported credit status is statistically correlated with the two ratios; as ER or QR raise, the probability to self-declare credit constrained reduces. However, we are mainly interested in the threshold associated to the ratios; for this reasons we define two dichotomous variables, respectively δER and δQR that identify if a firm satisfies or not the relative thresholds. More precisely, δER (δQR) is equal to one if a firm reports an ER (QR) ratio above the threshold of 0.33 (1), otherwise the dummy takes value zero. Table B.2 shows the new results for Eq. 3.2: as expected, the coefficients' sign for the two dummies is negative, so that a firm is less likely to self-report as credit constrained when a threshold is satisfied.

TABLE B.2 HERE

The previous results suggest that the ratios (and thresholds) are able to capture a firm's credit access. The coefficients of financial ratios have the expected (negative) sign, while the magnitude (of coefficients) does not change across the specifications. We conclude that the ratios and relative thresholds are able to capture firm's credit status. Therefore, in order to identify *a priori* the credit rationed firms, we employ ER and QR and thresholds to cluster firms in four different groups, according to the concept of short term and long term financial reliability. Hence, the most constrained firms do not satisfy the

[23] We keep number of observations constant across the regressions, because we do not observe all the control variables for all the firms. The results do not change even if the number of observations varies for each regression.

[24] Given that Des implies Ask,, we do not report results for also for the second dummy. In the previous working paper version are reported the results with both dummy variables (Des and Ask) for each observational year (2000 and 2003). The inclusion of Ask as dependent variable does not change the conclusions. Additional tables are available upon request.

conditions for both short term and long term financial reliability; firms in cluster 0 are defined as the most constrained firms, because they report an ER lower than 0.33, and QR smaller than 1. Table B.3 illustrates how clusters are constructed. We define with variable $Cluster$, the indicator that takes value 0,1,2, or 3 according to firm's financial reliability.

TABLE B.3 HERE

The clusters identify *a priori* whether a firm is potentially constrained or not; it is likely that a firm in group 0 or 1 faces difficulties to finance investments with external resources, because not reliable in the long term. We are going to test if the entry probability for these firms is sensitive to the level of internal liquidity[25].

Finally, it is important to underline that the dataset's characteristics require a particular data handling for the clustering process. As explained in Section 2, we need to match survey data with balance sheet data. The surveys report the export status for year 2000 (8th survey) and 2003 (9th survey); we know if a firm is domestic in 2000 and an exporter in 2003, however we do not observe the exact year of entry. Instead, financial variables are yearly defined through balance sheet. Obliviously, we cannot associate a financial variable to entry status for a given year. Thus, we take the averages of ER and QR within each survey period[26], and the clustering process refers to a period of three years (i.e., clusters refer to the three year period 2001-2003). If a firm belongs to cluster 0, it means that the average ratios of ER and QR are below the thresholds. Such procedure allows to have a correspondence between the two data sources[27]. In Table A.6 are reported the descriptive statistics by cluster.

3.2 Alternative Clusters

As we mention in the previous section, ER and QR thresholds are defined as rule of thumbs, so the clustering process is potentially arbitrary. In order to test the validity, we are going to specify two alternative clustering process; the main source of concern is the different capital intensity across sectors, so that a low value of ER or QR may not have the same implication for different firms[28].

[25] In the previous working paper version, we have verified the reliability of our clustering process by estimating a Euler equation for investments (see Hubbard et al., 1998 or Bond Van Reenen, 2053 for a survey). We have showed that there exists a positive and significant relationship between investment levels and cash stock for firms in cluster 0 and cluster 1, i.e. for credit constrained firms. The firms without a strong financial stability in the long term are constrained in their investments, given that the same investments depend on the internal level of financial resources.

[26] For the same reasons, we are going to consider the three year period averages also for the other variables reported in the balance sheet, such as capital intensity (KL) or labor productivity ($LabProd$).

[27] In a previous working paper version we define a time-invariant index, as in Kaplan Zingales (1997), i.e., the averages were defined for the all sample period (1998-2003). The results do not divert from the present ones, even if instrumental variable approach was not considered in the previous version.

[28] Manova (2010) suggests that more capital intensive sectors are more exposed by a limited access to credit.

For this reason, we consider different thresholds to define four alternative clustering processes[29]. In the first two cases, thresholds depend on the distribution of the ratios at sector level (Ateco 2); we identify critical values in the median or the 25th percentile of sector distribution. In the former case, the dummies δER and δQR assume value 0 (i.e. a firm is below the thresholds) if the ratios are below the median of sector distribution; then $Cluster(Med)$ identify a firm's financial reliability in function of sector's median values. In the second case, the dummies δER and δQR take value 0, whether the ratios are below the 25th percentile of sector distribution (otherwise zero); then $Cluster(P25)$ is defined by firm's ratios with respect to the threshold of 25th percentile[30].

For a third clustering process, we consider different financial ratios to measure liquidity and leverage level. Similarly to Greenaway et al. (2007), we calculate the liquidity ratio ($LiqRatio$) and the leverage ratio ($LevRatio$) at firm level; the former is the ratio of a firm's current assets minus its short-term debt to total assets, while the latter is the ratio of firm's short-term debt to current assets. According to previous literature, if $LiqRatio$ raises or $LevRatio$ decreases, a firm's financial reliability improves, because the level of liquidity increases or the relative amount of debt shrinks. In other words, firm' financial stability depends positively on liquidity level, and negatively on leverage level. Also in this case we specify four clusters. To define a threshold, we consider the median value of $LiqRatio$ or $LevRatio$ at sector level. In cluster 0, we include firms with a $LiqRatio$ below sector median, and a $LevRatio$ above sector median (i.e. in cluster 0 there are more rationed firms). In cluster 1 and 2 there are firms that do not respectively satisfy the thresholds for $LiqRatio$ and $LevRatio$. Finally, in cluster 3 there are firms that have both ratios above sector median.

For the fourth index we follows a different approach ($Cluster\ Cluster(P25)\ Cluster(Med)\ Cluster(StMed)$). In this final case, we want capture the idea of a variation in the financial reliability (long term perspective) across the two surveys: we aim to understand if internal liquidity affects also the entry probability for those firms that worsen their financial situation between the two observation periods, and consequently such firms find difficult to raise additional funds. It is possible that a firm does not satisfy long term financial reliability because it has raised the burden of debt in the previous period due to investments. In that case, we do not observe credit rationed firms, but firms that can afford a worsening of their financial health, before the entry in the export market. Therefore, we risk to consider among rationed

[29] All the financial ratios and respective thresholds are defined with averages for a three year period.

[30] For $Cluster(P25)$, the criteria for financial reliability are less stringent: only few firms per sector are identified as constrained. Instead, the second cluster process depends on the median value of ER or QR: in this case δER and δQR are equal to zero if a firm's ratio is below the median value so the criteria for financial reliability are more stringent, and it is more likely that a firm belongs to group 0 or 1. Looking at Table A.5, it is possible to notice that the larger pool of constrained firms if our original cluster process ($Cluster$), while the rationed firms reduces in $Cluster(P25)$ and $Cluster(Med)$.

firms, individuals that raised the role of external financing within a period. In order to consider it, we compare the ER ratio between the period 1998-2000 and 2001-2003, and we cluster firms according to an improvement or a worsening in long long term financial reliability. More precisely, we identify four groups. In the first one (group 0), we have firms that do not satisfy ER threshold (0.33) in both survey period: these firms are potentially credit rationed, because ER ratio is not above the threshold for a long period. In group 1, there are firms that worsen their ER ratio, i.e. these firms satisfy ER threshold (0.33) in the period 1998-2000, but not in the subsequent one. Finally in group 2 and group 3 there are respectively firms that improve their ER ratio, and firms that always show a good financial health (8th and 9th survey).

4 Analytical Framework

In this section, I describe how internal liquidity affects the entry in the export market for constrained firms. The main evidence if favor of this idea is that economic research has demonstrated the existence of a sunk investment associated with exporting. We test if financially constrained firms largely rely on internally generated cash to overcome sunk costs.

To show this, we estimate a discrete choice model (probit) among continuous non-exporters and new exporter. We observe 644 firms in twelve different manufacturing sectors, and 122 firms are reported as exporter in 2003 (i.e., reported domestic in the 8^{th} survey, and exporter in the 9^{th} survey)[31]. The basic model (4.1) follows the non-structural approach of Roberts et al.(1997) or Bernard and Jensen (1999), and it si

$$Entry_{i03} = \begin{cases} 1 & \text{if} \quad G\left(\alpha_0 CS_i + \sum_{c=0}^{3} \alpha_c X_c CS_i + \beta_n \mathbf{Z(n)}_i + \gamma + \epsilon_i\right) > 0 \\ 0 & \text{otherwise} \end{cases} \tag{4.1}$$

where $Entry_{i03}$ is the firm i export status in the 9^{th} survey (the G function is a normal distribution). Variable $Entry_{i03}$ assumes a value of 1 if a firm starts to export between the 8^{th}, and the 9^{th} survey, otherwise it assumes value of 0. X_c, with $c = 0, 1, 2, 3$, is a set of dummies that specify cluster membership; for example if $X_0 = 1$ a firm belongs to cluster 0 (depending on classification criteria). Our terms of

[31] More precisely, we consider as exporters, firms that report to sell abroad at least the 2% of their total revenues, in order to minimize the risk of temporary exporting activity.

interest are the coefficient of cash stock[32](α_0 for log of cash stock $Log(CS)$), and the interactions[33] between liquidity and clusters (α_c from $\mathrm{X_c Log(CS)}_{i00}$). The αs coefficients capture the effect of liquidity on entry probability, so that a positive sign indicates that the export probability rise when the level of internally generated cash increases; the interaction term is introduced to identity if cash stack has a different impact across clusters.

Eq. 4.1 includes also a vector of control variables, i.e. $\mathbf{Z(n)}$, while ϵ_i is the *i.i.d.* error term. The control variables are obtained from the Capitalia surveys, or from associated balance sheet dataset. The former group includes information about the number of banks ($Bank$), R&D indicator (dummy variable), or product innovation/upgrading dummy ($UpProd$ or $NewProd$); with the latter group we control for firm size ($Log(KL)$), efficiency ($LabProd$), or we define additional financial ratios as $LiqRatio$ and $LevRatio$ (Greenaway et al., 2007). The balance sheet controls are defined as averages for the three year period 2001-2003 (subscript 03). Sector and area dummies[34] (γ) are included in the estimation. Additionally, we cluster the error across regions, given that Italian economy is highly regionalized (Minetti and Zhou, 2011), in order to control the autocorrelation of ϵ_i.

TABLE B.4 HERE

In Table B.4, we directly report the marginal effects (average marginal effect) obtained by estimating Eq. 4.1 with a probit model; coefficients can be interpreted as the elasticities of cash with respect to entry probability. Each column represents a different regression, and clusters are defined according to the thresholds of 0.33 (for ER) and 1 (for QR). The first result is that the average level of cash stock has no effect on the entry probability, instead the interaction of cash with the dummy X_0 (and X_1) has a positive and significant coefficient. In column (1) the effect of cash cancels out across different groups. In the other specifications (from Col.(2) to Col.(7)), an increase by 10% in the level of cash stock raises the entry probability by almost 0.2% for credit-constrained firms in cluster zero (or firms without long- and short term financial reliability). Similarly, firms in cluster 1 raise their entry probability of 0.1%. In all the specifications cluster 3 is omitted (for reasons of multicollinearity), so that marginal effects have to be interpreted in comparison with the group of the less constrained firms. The coefficient for $Log(CS)$ is the average marginal effect for all the firms, while interacted terms report the extra gains

[32]Unlike the Euler equation for investment (Fazzari et al., 1988), we do not scale the level of cash with tangible assets; the fixed costs of exporting are assumed to be equal across firms. The results and conclusions do not change if we introduce a scaled measure of cash stock ($CSKB$). Results available upon request.

[33]Given the number of observations, we cannot run a regression for each group if we want to guarantee the efficiency of the estimator, so that we consider only interaction term.

[34]Areas: North East, North West, Center, South and Islands

for firms. Then, a 10% increase in cash raises the entry probability for constrained firms (in Cluster 1) by an additional 0.2% compared to the entry probability of not-constrained firms[35]. Additionally, the results are statistically more robust for firms in cluster 0 than in cluster1; this evidence may suggest as long term financial reliability plays a central role in the access to external credit. Finally, coefficients in Table B.4 are quite persistent across specifications[36], and they maintain same magnitude and sign. To test the robustness of previous results, we estimate equation 4.1 by using of different clustering approach. In Table B.5 firms are grouped according to the median value of ER and QR (i.e., $Cluster(Med)$).

TABLE B.5 HERE

Also in this case, both firms in cluster 0 and 1 raise their entry probability whether they own higher liquidity; the marginal effects do not change between group 1 and group 0 for all the specifications, and the results are statistically robust. Again, a 10% increase in cash stock raises the entry probability for constrained firms by an additional 0.2% by comparison with not-constrained firms (in omitted cluster). Compared to standard clustering, $Cluster(Med)$ includes less new exporters in the first two groups (61 vs. 72, from Table A.5), while more in the omitted group (14 vs. 8). When we define more stringent criteria to include firms in the credit rationed groups, we obtain stronger results. Alternatively, both firms in cluster 0 and 1 show an entry probability, which is more sensitive to internal liquidity (compared with Table B.4). When can conclude that long term financial reliability is crucial to access to external credit; in absence of financial reliability, firms find less costly to self finance its own investments, and the dependent variable is positively affected by cash stock[37].

Finally, we estimate Eq. 4.1, considering cross time variations in ER to define clusters. We notice that long term financial reliability plays a central role to determine the differences in the price among financing sources. However, it may happen that some firms worsen their financial reliability across two survey, because of large investments; from table A.4 we notice that new exporters have on average a lower QR or ER (or higher $LevRatio$) compared to other firms (both domestic and exporters). Therefore, if we consider a static approach to define clusters, we risk to include financially stable firms among rationed ones. These firms show in period 2001-2003 a weak financial structure, even if they can potentially tolerate it. As mentioned in previous section, we cluster firms in four groups. In group 0, there are firms that show low values of ER in both periods (below 0.33): these firms are still suspected to have an entry

[35] If we omit cluster 0 instead of 3, the signs of the coefficients become negative.

[36] Number of observations changes across columns because not all firms report surveys informations. If we keep constant the number of observations, the results do not change.

[37] We obtain the same results using $Cluster(P25)$ or $Cluster(StMed)$ in grouping process: see Table D.1 and Table D.2.

probability sensitive to the level of internal cash. Instead in cluster 1 there are firms that worsen their ER ratio, i.e. they have ER ratio below 0.33 just in period 2001-2003: in this case the effect of cash on entry probability should be low or less significant. Finally in group 2 and 3 there are respectively firms that improved long term reliability, and firms with reliable financial structure in both periods (omitted group).

TABLE B.6 HERE

The results are presented in Table B.6. Internal liquidity has a positive effect on the entry probability for not-reliable firms in both periods (cluster 0): an increase of 10% in cash stock raises the entry probability by an additional 0.17% (Column 2), in comparison with reliable firms (omitted group 3). Differently, the effect of cash is not strong for firms that worsen their financial situation: it suggests that among firms in cluster 1, there are some of them able to tolerate a situation of financial stress. In this latter case the price gap between internal and external source of financing is not large enough to determine a strong impact of cash stock. In conclusion, we may claim that credit access is an important factor to determine the first entry in the export market. If a firm is not reliable from a financial point of view (long term stability), it has to pay higher price for external financing, and it has to increasingly rely on internal funds. In such a framework, a credit rationed firm experiences difficulties to overcome sunk cost associated to trade (Melitz, 2003), and its entry probability raises with the level of internal liquidity.

4.1 Expansion in New Markets

We demonstrated in the previous section that the entry probability of credit constrained firms is affected by internal liquidity. Now we want to understand if trade activity of established exporters is affected by cash stock, and financial reliability too. In this section we exploit information about regions served by firms in our sample [38]. We perform three exercises, and in all of them we consider in our sample continuous exporters (firms that export in both observational periods), and therefore new exporters and domestic firms are excluded[39]. Finally in all the three exercise we follow our standard process of sorting ($Cluster$), i.e. the thresholds for ER and QR are respectively 0.33 and 1.

In the first exercise, we estimate the export status in a given region in function of cash stock (and

[38] Regions are Europe 15, East Europe, Russia, Asia, China, North America, South America, Oceania.

[39] Given that our aim is to understand whether the choice to serve an additional market involves an additional sunk cost, we focus only on the expansion of the extensive margin of trade (number of markets). Quitters, entrants and continuous domestic firms are excluded from the regression, in order to eliminate any type of noise that biases the estimation. The inclusion of new entrants, quitters, or domestic firms would have introduced firms' choices different from our main dichotomous choice, i.e., exporting in a new market or not.

interacted values): in this case the dependent variable is a dummy equal to one if a firm export in a region in 2003, otherwise the dummy takes value of zero. In the second exercise, we estimate if cash affects the entry probability in additional markets: here the dependent dummy variable takes value of one if a firm add new regions among its destination markets (in 2003), otherwise the dummy is equal to zero. The first two equations are similar to Eq. 4.1, and they are estimated with a probit model; what changes it the dependent variable and firms in the estimation sample. Table B.7 presents estimations' results for the first exercise. Each column represents an equation for each destination market[40]. Differently from the previous estimations, the control variables do not change across specifications; what changes is the dependent variable, given that it specifies the export status in each region for a continuous exporter i in 2003.

TABLE B.7 HERE

Cash stock coefficient turns to be positive and significant for all destination markets, with the exclusion of EU15 (column 1), while the interacted terms are not statistically significant (even if the test of joint significativity (χ^2) rejects the null in almost all the regressions). Compared to previous estimations, our sample is now composed by established exporters: given that we are not identifying causality effect, we are just observing that long term exporters own (on average) a higher liquidity (Greenaway et al., 2007) for each market they serve. Alternatively, an increase in liquidity is associated to a higher probability of exporting in a given market, EU15 excluded. This latter case suggests that farer markets require higher fixed cost, and therefore an higher level of liquidity[41]; exports in farer market generate higher cash stocks.

TABLE B.8 HERE

Table B.8 presents the results for the second exercise. In this case the dichotomous dependent variable ($NewMKT$) describes if an exporter enters in new markets between 2000 and 2003. Also in this case, cash stock coefficient ($Log(CS)$) is positive and significant for all the specifications, while interacted term not. Again, we observe a positive correlation between export activity and liquidity independently from firms' credit status: an expansion in the extensive margin of trade is associated to higher internal liquidity. Also this Finally, it is interesting to note that $R\&D$ activity plays an important role to expand regions of destinations (Column 5,6 and 7) ranter than to enter in the export market (Table **??**). Both $R\&D$ dummy and new product dummy $NewProd$ suggest a positive relationship between firms' innovation and exporting (Van Beveren an Vandenbussche, 2010), while product upgrading as no impact. Therefore, the

[40] We exclude South America and Oceania both for reasons of space and lack of variability in the dependent variable.
[41] As in the previous case, a firm is identified as exporter if it sells abroad at least 2% of its revenues.

development of new products seems important to enter in different destination markets[42]. Given that large the 77% of new entrants start to export in EU15 (TableA.4), i.e. in neighborhood markets, the two previous results suggest two conclusions. At first, entrants do not develop new products to begin export activity, but they prefer closer market (and closer taste) to test their ability; secondly, established exporters perform R&D to expand the destinations and reach farer markets. Internal liquidity is related to export activity, and the entry probability of rationed new exporters is sensitive to the level of cash stocks.

Finally, in the last exercise, we estimate the effect of financial variables on the number of new destination markets. We define the dependent variable as a discrete number of new regions served among established exporters (ΔDest_{i00}); it assumes value $1, 2, 3$ or 4 if a firm enters in four or more new regions[43]. Given the nature of the dependent variable (ordered and discrete) we are going to estimate Eq. 4.1 with and ordered logit model; compared to Eq. 4.1, the ordered logit model maintain the same vector of independent variables. Additionally, we report the coefficients and not marginal effects, given that we keep the parallel lines assumption. The results are reported in Table B.9.

TABLE B.9 HERE

The last exercise confirms the previous results. First of all, higher liquidity is associated to a a larger number of new regions, independently from credit status; secondly innovation activity facilitates the entry in more than one new markets (Columns 5, 6 and 7). We can conclude that credit constraints affect the entry in the export market for new exporters, rather than the increase in the extensive margin of export for established exports; in the former case rationed firms have an extra gain from internal liquidity in term of entry probability. It can depend on the fact that new entrants may offer few collaterals because have no experience of international markets, so for them internal financing are more convenient. .

5 Endogenous Clusters

Even if our clustering process is specified to be exogenous[44], firms' selection in groups may be endogenous to the entry in the export market. The endogeneity can be generated by two sources. The first is the omitted variable bias. Whether or not firms is constrained is likely to be correlated with several

[42] If we introduce $R\&D$ dummy in Table B.7 we obtain positive and significant coefficient for all the destinations.

[43] We consider only firm that decide to serve additional markets in 2003 compared to 2000. We exclude exporters that do not expand export activity in the next period: it would have included a first stage of self selection which is already exploited in Table B.8.

[44] It is exogenous because we are evaluating firms from the external point of view of an investor. Secondly, the use of averages for financial variables should reduce the concerns of endogenous clustering (Kaplan and Zingalses, 1998).

firm characteristics, even if we includes several controls. The second type of problem is that credit constraint status and entry decision may be jointly determined; as we have introduced with the cluster $VarationER$, a firms worsen its financial situation because of external financing. Therefore, financial ratios are endogenous to export status. A reader may be concerned by the fact that firms in lower clusters self-select in the export market through anticipated investments[45].

In order to tackle endogeneity, we introduce instrumental variable approach. We are going to define instruments that directly explain firm's ability top obtain financing (or to not be credit constrained), but uncorrelated with export status. As in Minetti and Zhou (2011), we are going to use a similar set of instruments[46] ("Struttura funzionale e territoriale del sistema bancario italiano, 1936-1974"). More precisely our set of instruments includes: (1) the number of savings banks in given province ($SavBank$); (2) the number of cooperative banks in given province ($CooBank$); (3) number of overall credit institute by region per, 1000 inhabitants (Reg_Pop); (4)average number of banks in provinces by region ($PrBan$). All the instruments refer to year 1936, when norms for the entry of banks into local credit markets was introduced[47].

The instruments are used to estimate in a first stage, the firm's probability to stay in one of the four clusters. Given that, the clustering process is a discrete (and not-ordinal) variable, we are going to estimate a multinomial probit in order to capture the sorting effect (assuming independence of irrelevant alternatives, I.I.A.). It is necessary to underline that both in first stage and second stage we are not estimating linear models; therefore, an approach similar to the two stage least square technique (2SLS) seems not appropriate for Eq. 4.1. Very recently, Terza et al. (2008) address this issue confronting two-stage residual inclusion (2SRI) and the two-stage predictor substitution[48] (2SPS).

The 2SRI estimator has the same first stage of a 2SPS, but in the second stage the endogenous variables are not replaced by their predicted values. Instead, the first-stage residuals are included in the second stage, reflecting the component of the error term that is correlated with the endogenous explanatory variables, and thereby correcting for endogeneity. Terza et al. (2008) support the use of 2SRI, showing that 2SRI is generally statistically consistent in the broader class of non-linear model, whereas 2SPS is not (they provide an example where the first stage is estimated with a multinomial probit and the second

[45] In a previous working paper version, we find that *ex-ante* new exporters are more likely to show high leverage ratios.

[46] Minetti and Zhou (2011) instrument the credit perception dummies Ask and Des. Here we instrument cluster inclusion, which is highly correlated by construction to credit perception dummies (Table B.1 and Table B.2).

[47] For further discussion look Guiso et al., 2004.

[48] In the first-stage a reduced form regressions are estimated with any consistent estimation technique, then the results are used to generate predicted values for the endogenous variables. In the second-stage, the endogenous variables are replaced by their predicted values obtained from the first-stage.

stage is a probit). Following their suggestion we use the 2SRI technique. Therefore, the main equation in our empirical model is

$$Entry_{i03} = \begin{cases} 1 & \text{if} \quad G\left(\alpha_0 CS_i + \sum_{c=0}^{3} \alpha_c X_c CS_i + \beta_n \mathbf{Z(n)}_i + \eta_n \mathbf{Res(c)}_i + \gamma + \epsilon_i\right) > 0 \\ 0 & \text{otherwise} \end{cases} \tag{5.1}$$

where $\mathbf{Res(c)}_i$ is a vector of residual from multinomial first stage estimation. Given that, in our first stage we estimate a multinomial probit, we obtain four vectors of residuals, one for each category. To calculate residuals' vectors, we use the formula for generalized residual for discrete choice models (Vella, 1989): because of *I.I.A.*, each residual vector is defined independently from other alternatives.

Table C.1 reports first stage estimations (we omit exogenous variables). We present the results for the instrumentation of *Cluster* considering group 3 as baseline choice. In the first three columns we use as instruments only credit data for Italian provinces in 1936 (as excluded instruments); in the last three columns we introduce the lagged values of *LevRatio* and *LiqRatio* as additional instruments (i.e. lagged averages for period 1998-2000). In the former case, Eq. 5.1 has one endogenous variable (clusters); in the latter case, additional endogenous variables are introduced in the second stage, i.e. *LevRatio* and *LiqRatio*. Therefore, the two additional variables are instrumented with their lagged values plus Italian credit data[49], as well as cluster sorting (*Cluster*). The coefficients show that instruments are correlated with endogenous sorting[50]. Additionally, we control for sector and area characteristics with dummy variables.

TABLE C.1 HERE

Given that, our instruments seem to have very high explanatory power, we include in the second stage residuals for alternatives 0, 1 and 2 in Eq. 5.1, and then we estimate it with probit technique (cluster 3 is omitted for multicollinearity). However, in order to retrieve robust standard errors, we bootstrap the entire two stage procedure stratifying the sample by regions (Terza, 2008; Wooldridge, 2008). Table C.2 presents the second stage results (marginal effect reported). In the first three columns we consider *Cluster* as endogenous sorting (for which we report first stage results), in columns 4, 5, and 6 the sorting process is defined by $Cluster(Med)$, while in the latter three columns $VariationER$ defines the firms' credit

[49] We assume that the average values of *LevRatio* and *LiqRatio* in 1998-2000 are uncorrelated with firm export status in 2003. Results available upon request.

[50] The first stage results for the other clustering processes as $Cluster(Med)$, $Cluster(P25)$, $Cluster(StMed)$, and $VariationER$ are correlated with instruments too. Results available upon request.

status.

TABLE C.2 HERE

The estimations confirm the previous intuitions, and the coefficients' sign do not change compared estimations from section 4. The cash stock and interacted terms are jointly significant (χ^2 I test). For all the specifications, an increase of liquidity raises the entry probability for constrained firms (group 0 and gruop 1). More precisely, if cash stock raises of 10%, the entry probability of rationed firms increases between 0.11% (column 1) and 0.07% (column 9).[51]. The not significativity of coefficient for cluster 1 in the first three specifications may depend on the fact that $Cluster$ criteria allows to define as credit rationed more firms compared to $Cluster(Med)$. It is interesting to note that also firms, which worsen their financial reliability in the long run (group 1 for $VariationER$), benefit from additional liquidity, compared to less constrained group. Finally, the additional controls (both exogenous and endogenous) have a negligible impact on the entry probability.

Some final comments concern 2SRI approach. In large part of the specifications, the joint significativity of residuals is rejected (χ^2 II, under the null the coefficient are jointly equal to zero). It suggests that our clustering process is potentially exogenous to the entry decision. Additionally, we control if instruments from first stage can explain additional cross section variability in the second stage (Eq. 5.1). Therefore, to control the validity of residuals as instrument we report the p-value of over-identification test [52] (LR $test$). The LR $test$ for over-identification suggests that instruments have not additional explanatory power in large part of regressions. This result reinforces the idea that the sorting process is relatively exogenous.

As last exercise, we implement the 2SRI approach also to analyze expansions of export activity in new regions; in particular we analyze the effect of financial variables on the export status for a given region, on the binary decision of expanding in new markets. In both cases, we compare firms that report export activity in both surveys; The results for the second stage[53] are presented in table C.3, and table C.4. For all the tables, we use $Cluster$ as credit constraints sorting rule. It is straightforward to notice that the coefficient sign and significativity do not change, when we deal with endogeneity. Similarly to previous

[51]Remember that, firms in group 0 for $VariationER$ do not satisfy the threshold of 0.33 in both observational periods. The omitted clustering process ($Cluster(P25)$ and $Cluster(StMed)$) provide the same results, even if less robust.

[52]In order to test over-identification we perform a likelihood ratio test. First of all, we calculate the log likelihood of second stage of Eq. 5.1(L_1). Then, we reestimate Eq. 5.1, by including also instruments of first stage ($SavBank$, $CooBank$, Reg_Pop, and $PrBan$), and we calculate again the log-likelihood (L_2). The likelihood ratio test is defined by $2 * (L_2 - L_1)$, and it is distributed as a χ^2 with degrees of freedom equal to the difference between the parameters in the first and second model. Under the null, the new instruments do not explain additional variability.

[53]First stage results are in table C.1.

analysis, cash stock is positive correlated with exporting. Moreover, residuals from first stage are not jointly significant, and the *LR Test* tells that instruments has no additional explicative power. It suggests that our clustering procedure could be assumed a reliable exogenous sorting process[54].

TABLE C.3 HERE

TABLE C.4 HERE

6 Conclusions

Exporting is an activity that entails several costs, and most of them are sunk costs associated with the first entry in the export. In real world, the new exporter faces a well defined entry costs against an uncertain future profit. If we assume the existence of asymmetric information and imperfect capital markets, not all potential exporters begin export activity. Throughout the paper, we discuss the impact of financial resources on the probability of entry into the export market, particularly for credit constrained firms. If we consider the entry costs as an investment, the entry choice may be sensitive to the level of internal liquidity. The contributions of this paper is twofold. On the one hand, we develop a methodology for identifying a priori the level of a firm's financial health, borrowing insights from the literature on investments' sensitivity on cash flows, and using ratios from business economics. On the other hand, we empirically evaluate whether the level of internal resources affects both first entry and extensive margin of trade. We find that the internal resources are an important factor for firms' internationalization, and in particular the entry is determined by the level of cash stock for those firms identified as credit-constrained. If cash stock increases of 10% the entry probability for firms without long term financial reliability raise by an additional 0.20% (Table B.4), compared to less constrained firms. If we define more severe criteria to rank firms as constrained, we find the same impact. Secondly, we find that internal liquidity is positively correlated with the extensive margin of trade: an expansion in new destination market is associated to higher liquidity. Finally, what differentiate first entry from new destination markets is the activity of R&D, which seems more crucial for success of established exporters. The results we find are robust also to concerns endogeneity . By implementing 2SRI approach, we instrument our clustering process, but we do not find significant changes in our main results. It confirms that the methodology developed to identify a priori the level of a firm's financial health is quite exogenous.

[54] Additionally, we analyze the impact of financial variables on the discrete decision to serve additional markets in 2003 (we exclude exporters that do not expand their export activity: self selection is already exploited in C.4). We estimate the discrete choice with a ordered logit model We report the marginal effects for each different category.

However, further work is needed to understand the mechanisms through which liquidity affects the internationalization process of medium and small-sized firms, with a more detailed dataset about export and asset/liabilities

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A Data Description

Table A.1: Sectors[‡].

ATECO CODE	Description	Firms	Percent	Turnover	Workers	AV	KL	Wage
DA	Food, Beverages & Tobacco	208	0.092	27392.4	105.2476	5911.774	100.6474	28.56413
DB	Textile and wearing apparel	259	0.114	22292.19	104.4471	5793.51	52.62781	41.73658
DC	Leather	107	0.047	9854.594	44.69425	2072.943	28.70581	28.16695
DD	Wood products	81	0.036	9691.896	49.82936	3036.866	51.28905	25.75072
DE	Publishing	116	0.051	17250.65	95.21667	5407.317	50.89548	29.3016
DG	Chemical products and synthetic fibers	103	0.045	77858.44	198.0095	15301.92	70.1662	43.44357
DH	Plastic and rubber products	123	0.054	13806.88	77.83333	4556.109	134.4707	84.49207
DI	Other non metallic and mineral products	137	0.060	22791.32	117.6132	8646.431	80.98741	29.86042
DJ	Manufacture of basic metallic products	370	0.163	17606.64	73.46323	3988.592	51.15189	30.68046
DK	Machinery and equipment	345	0.152	24302.69	136.1523	7972.321	311.8983	72.94967
DL	Manufacture of electrical machinery	197	0.087	34150.63	181.7331	12634.82	53.06444	45.16308
DM	Manufacture of motor vehicles	65	0.029	97607.76	318.9153	22979.71	58.27207	33.54279
DN	Other manufacture: house furniture	154	0.068	10846.89	55.06399	2864.089	39.68042	28.85527
	Total	2,263	100	25576.24	112.6791	6986.134	101.6882	42.54083

[‡] Data source: Capitalia Survey and balance sheet dataset. The observations used consider the firms present on both balance sheets (from 1991 to 2000 and from 2001 to 2003 for the 2263 matched firms). The first and last centile of observations are eliminated from the mean calculation to avoid outliers. The averages are calculated from 1996 to 2003.

Table A.2: Data Description[‡].

Name	Description	Details	Source
Log(Y)	Log of sales	Operating revenues	Balance Sheet
Log(KL)	Log of capital intensity	Ratio of fixed assets to labor force	Balance Sheet
Log(Age)	Log of age	Difference between year of reference and year of foundation	Balance Sheet
LabProd	Labor productivity	Value added per worker	Balance Sheet
ER	Equity Ratio	Look Section 3.1	Balance Sheet
QR	Quick Ratio	Look Section 3.1	Balance Sheet
Log(CS)	Log of Cash stock (broad measuere of liquidity)	$CS = Profits + DA + TFR$+liquid assets	Balance Sheet
CSKB	Cash stock divided by capital value at begin of period t	$CSKB = CS/KB$	Balance Sheet
Inv	Invesment in tangible fixed assets	$Inv_{it} = K_{it} - (1-\delta)K_{it-1}$ with $\delta = 0.1$	Balance Sheet
DA	Value of depreciation and amortization		Balance Sheet
TFR	Trattemento Fine Rapporto	Worker leave indemnity	Balance Sheet
KB	Fixed asset at begin of period t	$KB_{it} = K_{it} - Inv_{it} + DA_{it}$	Balance Sheet
LevRatio	Leverage Ratio	Ratio of firm's short-term debt to current assets	Balance Sheet
LiqRatio	Liquidity Ratio	Ratio of firm's current assets minus its short-term debt to total assets	Balance Sheet
Banks	Number of banks	Number of banks used by a firms	Survey
Share	Share of principal Bank	Share of debt owned by principal bank in percentage point	Survey
R&D	R&D activity dummy	Dummy variable equal to one if a firm invest in R&D activity	Survey
NewProd	Product innovation dummy	Dummy variable equal to one if a firm invest in product innovation	Survey
UpProd	Quality upgrading dummy	Dummy variable equal to one if a firm invest product upgrading	Survey
Expo	Export status	Dummy variable equal to one if a firm export at least the 2% of revenues	Survey
Ndest	Number of region covered by export	Europe 15, East Europe, Russia, Asia, China, North America, South America, Oceania	Survey
Cluster	Four cluster groups	Clusters defined by ER >0.3 and QR >1	Own Calculation
Cluster(Med)	Four cluster groups	Clusters defined by ER and QR greater sector median	Own Calculation
Cluster(P25)	Four cluster groups	Clusters defined by ER and QR greater sector 25th percentile	Own Calculation
Cluster(StMed)	Four cluster groups	Clusters defined by LevRatio and LiqRatio grater than sector median	Own Calculation
Variation ER	Four cluster groups based ER	Clusters defined by ER variation across two survey periods: Worsen, Bad Improve, Good	Own Calculation

[‡] Data source: Capitalia Survey and balance sheet dataset. We consider 2263 firms which are present both in 8th and 9th survey.

A.1 Data comparability

We control for the representativeness of the dataset. Even if the sample is stratified for different characteristics, we are going to confront firms in our samples with the average performances of Italian industrial sectors. In Table A.3, we compare the average growth rates of output per worker, and labour productivity (value added per worker) for the data the surveys with the correspondent values at the aggregated level (Source: EU-Klems). The surveys' averages are calculated using balance sheet information[55], while the aggregated averages are calculated from the EU-Klems data-set. Averages are reported for different sectors as well as at aggregated level (last row). We can observe that firms in the surveys grow three times more than the correspondent value at aggregate level; firms in the sample perform better that the economy in the whole. We can assume that the survey data represents the more active firms in the market. Therefore, the effect we are going to estimate represent a lower bound in our empirical relationship: laggard firms can rely more heavily on internal resources.

Table A.3: Average growth rates: comparative analysis from 1996 to 2003‡.

	Labor Productivity		Output Per Worker	
Sector	Capitalia	EU-Klems	Capitalia	EU-Klems
DA	0.119	0.035	0.077	0.035
DB	0.103	0.020	0.069	0.038
DC	0.090	0.039	0.365	0.038
DD	0.094	0.030	0.065	0.034
DE	0.044	0.024	0.102	0.039
DG	0.086	0.020	0.120	0.037
DH	0.087	0.006	0.085	0.019
DI	0.102	0.033	0.094	0.049
DJ	0.088	-0.019	0.067	0.012
DK	0.081	0.020	0.055	0.021
DL	0.135	0.026	0.107	0.026
DM	0.110	0.033	0.091	0.061
DN	0.082	0.028	0.057	0.030
Total	0.098	0.024	0.087	0.032

‡ Source: Our calculation from Capitalia and EU-Klems data-sets. Average growth rates by sector and for all manufactures are reported. Labor Productivity is value added per worker. Weighting the growth rates does not change the averages.

[55]The observations used consider the firms present on both balance sheets (from 1991 to 2000 and from 2001 to 2003 for the 2263 matched firms). The first and last centile of observations are eliminated from the mean calculation to avoid outliers. The averages are calculated from 1996 to 2003.

Table A.4: Descriptive Statistics 1: Averages by Export Status[‡].

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	Mean	S.D	Obs.	Min	Max	Domestic	Exporter	Cont.Dom	New Export.
Log(Y)	8.92	1.33	2553	3.97	15.69	8.23	9.01	8.19	8.49
Log(KL)	3.53	0.97	2553	0.85	12.18	3.48	3.49	3.44	3.59
Age	27.26	18.79	2553	4.00	313.00	24.88	27.74	24.21	28.93
LabProd	96.54	999.82	2553	-114.78	41191.38	52.61	133.21	51.83	54.43
δER	0.32	0.47	2553	0.00	1.00	0.33	0.32	0.35	0.14
δER	0.38	0.49	2553	0.00	1.00	0.44	0.38	0.46	0.21
North-West	0.37	0.48	2553	0.00	1.00	0.33	0.40	0.32	0.38
North-East	0.29	0.46	2553	0.00	1.00	0.26	0.31	0.25	0.33
Center	0.20	0.40	2553	0.00	1.00	0.21	0.18	0.22	0.13
South	0.13	0.34	2553	0.00	1.00	0.19	0.11	0.20	0.15
QR	1.06	0.83	2553	0.02	18.36	1.17	1.05	1.20	0.82
ER	0.26	0.20	2553	-4.06	0.90	0.25	0.27	0.26	0.18
Log(CS)	8.39	1.38	2550	3.09	14.55	7.74	8.46	7.71	7.87
CSKB	858.93	42459.52	2491	-6.64	2119159.00	3359.67	8.71	3887.95	7.11
LevRatio	0.49	0.94	2553	0.00	39.63	0.41	0.49	0.40	0.49
LiqRatio	0.14	0.22	2553	-3.76	0.85	0.11	0.16	0.12	0.04
IKB	0.14	0.33	2490	-0.95	7.51	0.17	0.13	0.16	0.11
Log(Debt)	5.08	2.68	2553	0.00	13.00	4.10	5.18	4.02	4.69
Banks	5.01	3.13	2006	1.00	25.00	4.20	5.38	4.10	4.75
Share	34.00	26.72	1811	0.00	100.00	35.54	33.23	36.28	39.66
R&D	0.42	0.49	2013	0.00	1.00	0.22	0.52	0.20	0.36
Ask	0.37	0.48	333	0.00	1.00	0.33	0.39	0.34	0.39
Des	0.17	0.37	1981	0.00	1.00	0.19	0.15	0.19	0.28
UpProd	0.57	0.50	2553	0.00	1.00	0.70	0.71	0.70	0.68
NewProd	0.43	0.50	2553	0.00	1.00	0.32	0.53	0.31	0.39
Expo	0.68	0.47	2015	0.00	1.00	0.00	1.00	0.05	1.00
NewExpo	0.13	0.34	644	0.00	1.00	0.00	1.00	0.00	1.00
Ndest	1.55	2.05	2553	0.00	9.00	0.00	2.86	0.00	1.45
Expo(EU15)	0.48	0.50	2553	0.00	1.00	0.00	0.89	0.00	0.77
Expo(EU-Rest)	0.15	0.36	2553	0.00	1.00	0.00	0.29	0.00	0.12
Expo(Russia)	0.18	0.38	2553	0.00	1.00	0.00	0.33	0.00	0.19
Expo(Asia)	0.16	0.37	2553	0.00	1.00	0.00	0.30	0.00	0.07
Expo(China)	0.05	0.22	2553	0.00	1.00	0.00	0.09	0.00	0.01
Expo(NorthA.)	0.20	0.40	2553	0.00	1.00	0.00	0.37	0.00	0.14

[‡] Data source: Capitalia Survey and balance sheet dataset. We consider 2263 firms which are present both in 8th and 9th survey. We consider 2263 firms which are present both in 8th and 9th survey. First five columns includes statistics at aggregate level. S.D.: Standard deviation. Exporter: Exporters in 2003. Domestic: non-exporting firm in 2003. New-Export: Exporting firm in 2003, but domestic in 2000. Cont.Dom.: Non-exporting firm in 2000 and 2003.

Table A.5: Descriptive Statistics 2: Firms by Cluster Type and Export Status[‡].

		Number of Firms				
Groups	Cluster type	0	1	2	3	Total
Overall	Cluster	1371	366	204	612	2553
	Cluster(Med)	922	353	348	928	2551
	Cluster(P25)	309	320	320	1602	2551
	Cluster(StMed)	821	454	449	827	2551
	Variation ER	1430	307	178	638	2553
Exporter	Cluster	748	179	99	341	1367
	Cluster(Med)	495	166	187	518	1366
	Cluster(P25)	171	152	162	881	1366
	Cluster(StMed)	423	219	273	451	1366
	Variation ER	777	150	104	336	1367
Domestic	Cluster	310	127	52	159	648
	Cluster(Med)	210	119	72	247	648
	Cluster(P25)	73	96	76	403	648
	Cluster(StMed)	171	178	64	235	648
	Variation ER	341	96	45	166	648
New Exporter	Cluster	62	10	4	8	84
	Cluster(Med)	42	19	8	14	83
	Cluster(P25)	21	19	6	37	83
	Cluster(StMed)	31	27	10	15	83
	Variation ER	57	15	3	9	84
Continuous Domestic	Cluster	256	110	45	149	560
	Cluster(Med)	173	105	58	224	560
	Cluster(P25)	56	85	61	358	560
	Cluster(StMed)	144	147	47	222	560
	Variation ER	283	83	45	149	560

		Frequency				
Groups	Cluster type	0	1	2	3	Total
Overall	Cluster	0.54	0.14	0.08	0.24	
	Cluster(Med)	0.36	0.14	0.14	0.36	
	Cluster(P25)	0.12	0.13	0.13	0.63	
	Cluster(StMed)	0.32	0.18	0.18	0.32	
	Variation ER	0.56	0.12	0.07	0.25	
Exporter	Cluster	0.55	0.13	0.07	0.25	
	Cluster(Med)	0.36	0.12	0.14	0.38	
	Cluster(P25)	0.13	0.11	0.12	0.64	
	Cluster(StMed)	0.31	0.16	0.20	0.33	
	Variation ER	0.57	0.11	0.08	0.25	
Domestic	Cluster	0.48	0.20	0.08	0.25	
	Cluster(Med)	0.32	0.18	0.11	0.38	
	Cluster(P25)	0.11	0.15	0.12	0.62	
	Cluster(StMed)	0.26	0.27	0.10	0.36	
	Variation ER	0.53	0.15	0.07	0.26	
New Exporter	Cluster	0.74	0.12	0.05	0.10	
	Cluster(Med)	0.51	0.23	0.10	0.17	
	Cluster(P25)	0.25	0.23	0.07	0.45	
	Cluster(StMed)	0.37	0.33	0.12	0.18	
	Variation ER	0.68	0.18	0.04	0.11	
Continuous Domestic	Cluster	0.46	0.20	0.08	0.27	
	Cluster(Med)	0.31	0.19	0.10	0.40	
	Cluster(P25)	0.10	0.15	0.11	0.64	
	Cluster(StMed)	0.40	0.41	0.13	0.06	
	Variation ER	0.51	0.15	0.08	0.27	

[‡] Data source: Capitalia Survey and balance sheet dataset. We consider 2263 firms which are present both in 8th and 9th survey.

Table A.6: Descriptive statistics 3: Statistics by Cluster.‡.

Cluster / Var.	Cluster				Cluster(P25)				Cluster(Med)				Cluster(StMed)				Variation ER			
	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3
Log(Y)	8.92	8.75	9.15	8.94	8.55	8.65	9.01	9.03	8.84	8.81	9.13	8.97	9.32	8.14	9.38	8.71	8.87	8.98	8.90	9.02
Log(KL)	3.58	2.99	4.20	3.50	3.56	3.08	4.03	3.51	3.57	3.01	4.10	3.46	3.93	3.49	3.40	3.21	3.42	3.63	3.58	3.70
Age	26.51	26.13	30.00	28.68	25.78	24.52	27.41	28.05	25.53	25.32	29.30	28.95	27.56	22.88	28.64	28.61	26.59	25.76	25.13	30.09
LabProd	69.48	102.05	266.70	97.16	98.05	51.33	182.55	88.17	77.24	52.26	178.52	101.99	145.60	49.46	128.27	56.72	59.11	156.67	60.53	161.59
δER	0	0	1	1	0.00	0.00	0.16	0.48	0.00	0.00	0.41	0.73	0.12	0.10	0.36	0.61	0.00	0.00	1.00	1.00
δER	0	1	0	1	0.00	0.18	0.00	0.57	0.00	0.55	0.00	0.84	0.06	0.10	0.49	0.80	0.20	0.28	0.64	0.78
North-West	0.35	0.41	0.36	0.39	0.39	0.38	0.32	0.38	0.36	0.36	0.32	0.40	0.36	0.35	0.39	0.38	0.36	0.39	0.43	0.37
North-East	0.31	0.31	0.22	0.27	0.31	0.28	0.29	0.29	0.32	0.35	0.22	0.27	0.29	0.28	0.31	0.30	0.32	0.26	0.26	0.26
Center	0.21	0.20	0.15	0.19	0.22	0.23	0.17	0.20	0.22	0.20	0.19	0.19	0.19	0.24	0.20	0.19	0.22	0.17	0.20	0.18
South	0.12	0.08	0.28	0.14	0.08	0.11	0.22	0.13	0.10	0.09	0.27	0.13	0.16	0.13	0.11	0.13	0.10	0.18	0.11	0.20
QR	0.68	1.32	0.76	1.86	0.50	0.91	0.53	1.31	0.63	1.11	0.68	1.62	0.70	0.72	1.02	1.64	0.81	0.84	1.21	1.69
ER	0.14	0.21	0.41	0.51	0.04	0.07	0.23	0.35	0.10	0.14	0.32	0.44	0.17	0.14	0.29	0.39	0.15	0.18	0.40	0.51
Log(CS)	8.19	8.21	8.78	8.80	7.63	7.93	8.30	8.64	8.05	8.18	8.63	8.72	8.66	7.45	8.83	8.40	8.17	8.34	8.51	8.88
CSKB	7.36	11.29	4.65	3547.25	5.19	9.23	3.63	1361.85	6.53	10.73	3.86	2343.74	5.10	5.54	9.86	2650.19	7.67	8.68	8.65	3426.11
LevRatio	0.60	0.34	0.72	0.28	0.66	0.49	0.75	0.41	0.62	0.41	0.68	0.33	0.93	0.14	0.60	0.20	0.55	0.53	0.39	0.39
LiqRatio	0.02	0.23	0.12	0.36	-0.09	0.06	0.00	0.23	-0.02	0.15	0.08	0.31	-0.02	-0.02	0.22	0.33	0.06	0.07	0.23	0.32
IKB	0.63	0.11	0.16	0.12	0.13	0.12	0.15	0.56	0.14	0.11	0.15	0.14	0.16	0.15	0.11	0.12	0.14	0.14	0.15	0.13
Log(Debt)	5.22	5.12	5.21	4.70	4.88	4.75	5.42	5.12	5.14	5.12	5.51	4.85	5.71	4.15	5.57	4.71	5.18	5.28	4.78	4.84
Banks	5.56	4.59	5.19	4.05	5.16	5.24	5.46	4.86	5.64	4.74	5.30	4.43	6.31	4.09	5.70	4.08	5.43	4.90	4.68	4.21
Share	35.33	34.76	36.17	30.06	36.84	35.06	38.13	32.45	35.77	32.80	37.29	31.60	35.25	36.34	33.55	31.70	35.33	34.55	33.03	31.01
R&D	0.44	0.38	0.43	0.41	0.41	0.34	0.42	0.44	0.42	0.45	0.45	0.41	0.49	0.30	0.53	0.38	0.44	0.36	0.40	0.42
Ask	0.42	0.24	0.30	0.20	0.49	0.45	0.42	0.25	0.45	0.29	0.33	0.21	0.38	0.47	0.25	0.26	0.42	0.32	0.27	0.24
Des	0.22	0.12	0.20	0.07	0.29	0.22	0.28	0.11	0.26	0.16	0.19	0.08	0.23	0.23	0.11	0.10	0.19	0.24	0.10	0.10
UpProd	0.55	0.57	0.50	0.61	0.56	0.53	0.54	0.58	0.54	0.58	0.53	0.60	0.54	0.59	0.56	0.58	0.56	0.55	0.60	0.58
NewProd	0.44	0.41	0.36	0.45	0.44	0.38	0.45	0.44	0.43	0.45	0.41	0.44	0.47	0.35	0.48	0.42	0.43	0.44	0.43	0.43
Expo	0.71	0.58	0.66	0.68	0.70	0.61	0.68	0.69	0.70	0.58	0.72	0.68	0.71	0.55	0.81	0.66	0.69	0.61	0.70	0.67
NewExpo	0.19	0.08	0.08	0.05	0.27	0.18	0.09	0.09	0.20	0.15	0.12	0.06	0.18	0.16	0.18	0.06	0.17	0.15	0.06	0.06
Ndest	1.55	1.39	1.43	1.67	1.46	1.17	1.46	1.66	1.49	1.32	1.62	1.66	1.54	1.05	1.96	1.60	1.58	1.25	1.64	1.60
Expo(EU15)	0.49	0.46	0.44	0.50	0.50	0.41	0.48	0.50	0.48	0.41	0.49	0.51	0.47	0.42	0.56	0.50	0.50	0.42	0.53	0.47
Expo(EU-Rest)	0.15	0.13	0.12	0.18	0.13	0.12	0.13	0.17	0.14	0.13	0.15	0.17	0.17	0.08	0.18	0.16	0.15	0.13	0.20	0.15
Expo(Russia)	0.19	0.17	0.15	0.18	0.20	0.15	0.17	0.18	0.19	0.17	0.16	0.18	0.19	0.13	0.22	0.17	0.19	0.13	0.18	0.17
Expo(Asia)	0.16	0.16	0.16	0.17	0.14	0.10	0.17	0.18	0.15	0.14	0.17	0.19	0.15	0.09	0.23	0.18	0.17	0.14	0.15	0.17
Expo(China)	0.04	0.05	0.05	0.06	0.03	0.04	0.03	0.06	0.04	0.05	0.04	0.06	0.04	0.03	0.07	0.06	0.05	0.02	0.06	0.06
Expo(NorthA.)	0.20	0.18	0.21	0.20	0.19	0.16	0.17	0.22	0.18	0.18	0.22	0.21	0.20	0.12	0.27	0.20	0.21	0.14	0.21	0.20

‡ Data source: Capitalia Survey and balance sheet dataset. We consider 2263 firms which are present both in 8th and 9th survey.

B Regression: baseline model

Table B.1: Credit needs: financial index dummies‡.

	(1)	(2)	(3)	(4)
	Des_{i00}	Des_{i00}	Des_{i00}	Des_{i00}
ER_{i00}	-0.943^a	-0.925^a	-0.912^a	-0.902^a
	[0.267]	[0.286]	[0.272]	[0.280]
QR_{i00}	-0.449^a	-0.450^a	-0.421^a	-0.428^a
	[0.152]	[0.143]	[0.142]	[0.151]
$Banks_{i00}$			0.029^b	0.029^b
			[0.015]	[0.015]
$Share_{i00}$			0.006^a	0.006^a
			[0.001]	[0.001]
$Expo_{i00}$				-0.032
				[0.102]
$NDest_{i00}$				-0.007
				[0.011]
$Log(Age)_{i00}$		0.153	0.125	0.128
		[0.096]	[0.102]	[0.099]
$Log(Y)_{i00}$		-0.107^a	-0.134^a	-0.128^a
		[0.026]	[0.038]	[0.041]
Cons.	-0.054	0.688	0.240	0.612
	[0.203]	[0.480]	[0.478]	[0.478]
Obs.	1,598	1,598	1,598	1,598
R^2	0.086	0.096	0.106	0.106

‡ Probit estimation. Clustered (across regions) robust standard error are in squared brackets. Sector, and area dummies included. The regressors are contemporaneous to the dependent variables, i.e. relative to 2003. ER_{i03} and QR_{i03} are respectively equity ratio and quick ratio. All balance sheet data are defined as averages for year 2001-2003. Significance level: c is the p-value<0.1, b is the p-value<0.05, and a is the p-value<0.01.

Table B.2: Credit needs: financial index dummies[‡].

	(1)	(2)	(3)	(4)
	Des_{i00}	Des_{i00}	Des_{i00}	Des_{i00}
δER_{i00}	-0.288^a	-0.271^a	-0.239^b	-0.235^b
	[0.084]	[0.088]	[0.094]	[0.092]
δQR_{i00}	-0.460^a	-0.496^a	-0.509^a	-0.503^a
	[0.080]	[0.081]	[0.096]	[0.098]
$Banks_{i00}$			0.034^b	0.034^b
			[0.014]	[0.014]
$Share_{i00}$			0.006^a	0.006^a
			[0.001]	[0.001]
$Expo_{i00}$				-0.002
				[0.102]
$NDest_{i00}$				-0.010
				[0.010]
$Log(Age)_{i00}$		0.122	0.113	0.121
		[0.082]	[0.102]	[0.102]
$Log(Y)_{i00}$		-0.126^a	-0.155^a	-0.151^a
		[0.021]	[0.034]	[0.038]
Cons.	-0.572^b	-0.247	0.489	0.444
	[0.246]	[0.294]	[0.490]	[0.477]
Obs.	1,598	1,598	1,598	1,598
Pseudo R^2	0.067	0.079	0.095	0.095

[‡] Probit estimation. Clustered (across regions) robust standard error are in squared brackets. Sector, and area dummies included. The regressors are contemporaneous to the dependent variables, i.e. relative to 2003. ER_{i03} and QR_{i03} are respectively equity ratio and quick ratio. All balance sheet data are defined as averages for year 2001-2003. Significance level: c is the p-value<0.1, b is the p-value<0.05, and a is the p-value<0.01.

Table B.3: Cluster definition

Cluster	0	1	2	3
	δER=0; δQR=0	δER=0; δQR=1	δER=1; δQR=0	δER=1; δQR=1
Description	Nor short term, nor long term reliability	No long term reliability	No short term reliability	Both ratios satisfied

Table B.4: Entry choice: baseline cluster index[‡].

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$
$Log(CS)_{i00}$	0.020	0.020	0.024	0.017	0.018	0.018	0.022
	[0.019]	[0.017]	[0.022]	[0.018]	[0.020]	[0.020]	[0.023]
$X_0Log(CS)_{i00}$		0.020^a	0.020^a	0.019^a	0.019^a	0.020^a	0.018^a
		[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
$X_1Log(CS)_{i00}$		0.009^c	0.010^b	0.008^c	0.009^b	0.009^c	0.008^c
		[0.005]	[0.005]	[0.004]	[0.004]	[0.004]	[0.005]
$X_2Log(CS)_{i00}$		0.007	0.008	0.007	0.007	0.006	0.008
		[0.005]	[0.006]	[0.005]	[0.005]	[0.005]	[0.006]
$Banks_{i00}$			-0.002				-0.010
			[0.033]				[0.029]
$Share_{i00}$			0.009				0.009
			[0.007]				[0.007]
$LiqRatio_{i00}$				0.013			-0.015
				[0.042]			[0.070]
$LevRatio_{i00}$				0.030			0.031
				[0.027]			[0.038]
$R\&D_{i00}$					0.047	0.059^c	0.036
					[0.032]	[0.031]	[0.030]
$NewProd_{i00}$					0.010		0.032
					[0.018]		[0.020]
$UpProd_{i00}$						-0.044^c	-0.033
						[0.024]	[0.022]
$Log(KL)_{i00}$	0.038^a	0.024^b	0.018	0.024^c	0.023^b	0.025^a	0.014
	[0.009]	[0.011]	[0.013]	[0.013]	[0.010]	[0.009]	[0.014]
$LabProd_{i00}$	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	641	641	563	641	520	521	446
Pseudo R^2	0.071	0.124	0.134	0.126	0.120	0.143	0.154
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000	0.000

[‡] Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table B.5: Entry choice: $Cluster(Med)^{\ddagger}$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$
$Log(CS)_{i00}$	0.020	0.023	0.026	0.023	0.023	0.023	0.027
	[0.019]	[0.016]	[0.022]	[0.015]	[0.019]	[0.019]	[0.021]
$X_0Log(CS)_{i00}$		0.017^a	0.015^a	0.013^a	0.017^a	0.017^a	0.010^b
		[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]
$X_1Log(CS)_{i00}$		0.016^a	0.016^a	0.014^b	0.016^a	0.016^a	0.011^b
		[0.006]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
$X_2Log(CS)_{i00}$		0.010^c	0.010^c	0.008	0.010^c	0.010^c	0.008
		[0.005]	[0.006]	[0.005]	[0.006]	[0.006]	[0.006]
$Banks_{i00}$			0.006				-0.004
			[0.030]				[0.026]
$Share_{i00}$			0.007				0.008
			[0.006]				[0.006]
$LiqRatio_{i00}$				-0.072			-0.111
				[0.057]			[0.076]
$LevRatio_{i00}$				0.032			0.032
				[0.026]			[0.036]
$R\&D_{i00}$					0.045	0.058^c	0.031
					[0.032]	[0.033]	[0.030]
$NewProd_{i00}$					0.016		0.034^c
					[0.018]		[0.020]
$UpProd_{i00}$						-0.032	-0.027
						[0.027]	[0.024]
$Log(KL)_{i00}$	0.038^a	0.029^a	0.025^b	0.021^c	0.026^a	0.029^a	0.011
	[0.009]	[0.011]	[0.011]	[0.012]	[0.010]	[0.009]	[0.010]
$LabProd_{i00}$	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	641	640	562	640	519	520	445
Pseudo R^2	0.071	0.115	0.125	0.118	0.117	0.131	0.143
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000	0.000

‡ Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table B.6: Entry choice: *Variation ER*[‡].

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$
$Log(CS)_{i00}$	0.020	0.019	0.022	0.021	0.018	0.018	0.026
	[0.019]	[0.017]	[0.022]	[0.016]	[0.020]	[0.020]	[0.022]
$X_0Log(CS)_{i00}$		0.017^a	0.017^a	0.013^a	0.017^a	0.017^a	0.012^a
		[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
$X_1Log(CS)_{i00}$		0.014^b	0.011^b	0.011	0.014^b	0.014^b	0.007
		[0.007]	[0.006]	[0.007]	[0.006]	[0.006]	[0.006]
$X_2Log(CS)_{i00}$		0.002	0.002	0.002	0.002	0.003	0.002
		[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
$Banks_{i00}$			0.011				-0.004
			[0.032]				[0.028]
$Share_{i00}$			0.009				0.009
			[0.008]				[0.007]
$LiqRatio_{i00}$				-0.086			-0.110^c
				[0.053]			[0.063]
$LevRatio_{i00}$				0.035			0.032
				[0.025]			[0.037]
$R\&D_{i00}$					0.052	0.063^c	0.039
					[0.033]	[0.033]	[0.030]
$NewProd_{i00}$					0.011		0.031
					[0.017]		[0.019]
$UpProd_{i00}$						-0.038	-0.032
						[0.025]	[0.023]
$Log(KL)_{i00}$	0.038^a	0.040^a	0.034^a	0.027^b	0.037^a	0.039^a	0.018
	[0.009]	[0.008]	[0.009]	[0.012]	[0.006]	[0.007]	[0.011]
$LabProd_{i00}$	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	641	641	563	641	520	521	446
Pseudo R^2	0.071	0.111	0.126	0.116	0.115	0.136	0.151
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000	0.000

[‡] Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: *a* is the p-value<0.01, *b* is the p-value<0.05, and *c* is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table B.7: Export status by destination market[‡].

	(1) EU15$_{i00}$	(2) RestEU$_{i00}$	(3) RussiaEU$_{i00}$	(4) Asia$_{i00}$	(5) China$_{i00}$	(6) NorthA$_{i00}$
Log(CS)$_{i00}$	0.004	0.052^{a}	0.028^{a}	0.053^{a}	0.020^{a}	0.046^{a}
	[0.007]	[0.010]	[0.009]	[0.008]	[0.005]	[0.012]
X$_0$Log(CS)$_{i00}$	-0.003	0.001	0.006	0.004	-0.001	0.007
	[0.002]	[0.004]	[0.004]	[0.003]	[0.003]	[0.004]
X$_1$Log(CS)$_{i00}$	-0.000	-0.002	0.001	0.002	0.001	0.001
	[0.003]	[0.004]	[0.004]	[0.004]	[0.003]	[0.004]
X$_2$Log(CS)$_{i00}$	0.003	-0.006	0.001	0.003	-0.000	0.012^{c}
	[0.005]	[0.006]	[0.007]	[0.008]	[0.002]	[0.007]
Log(KL)$_{i00}$	-0.004	-0.010	-0.021	-0.042^{b}	-0.011	-0.051^{a}
	[0.012]	[0.013]	[0.015]	[0.019]	[0.012]	[0.019]
LabProd$_{i00}$	-0.000	-0.000	0.000	0.000^{a}	-0.000^{b}	-0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	1353	1353	1353	1353	1353	1353
Pseudo R^2	0.037	0.040	0.041	0.046	0.083	0.062
χ^2 (4)	0.231	0.000	0.000	0.000	0.000	0.000

[‡] Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. Each column represent a regression for a specific area. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for Log(CS)$_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table B.8: Choice to enter in new markets[‡].

	(1) NewMKT$_{i00}$	(2) NewMKT$_{i00}$	(3) NewMKT$_{i00}$	(4) NewMKT$_{i00}$	(5) NewMKT$_{i00}$	(6) NewMKT$_{i00}$	(7) NewMKT$_{i00}$
Log(CS)$_{i00}$	0.048^{a}	0.046^{a}	0.056^{b}	0.041^{a}	0.037^{b}	0.037^{b}	0.034^{c}
	[0.015]	[0.015]	[0.023]	[0.014]	[0.016]	[0.015]	[0.019]
X$_0$Log(CS)$_{i00}$		0.004	0.004	0.006	0.003	0.003	0.007
		[0.006]	[0.006]	[0.007]	[0.005]	[0.005]	[0.007]
X$_1$Log(CS)$_{i00}$		0.012^{c}	0.008	0.013^{c}	0.010	0.010	0.010
		[0.007]	[0.007]	[0.008]	[0.008]	[0.007]	[0.008]
X$_2$Log(CS)$_{i00}$		0.006	0.009	0.007	0.005	0.005	0.010
		[0.006]	[0.006]	[0.006]	[0.006]	[0.006]	[0.007]
Banks$_{i00}$			-0.014				-0.035
			[0.036]				[0.039]
Share$_{i00}$			0.005				0.002
			[0.009]				[0.007]
LiqRatio$_{i00}$				0.074			0.120
				[0.135]			[0.130]
LevRatio$_{i00}$				0.023			0.023
				[0.082]			[0.075]
R&D$_{i00}$					0.104^{a}	0.123^{a}	0.097^{b}
					[0.040]	[0.036]	[0.049]
NewProd$_{i00}$					0.078^{b}		0.061
					[0.038]		[0.041]
UpProd$_{i00}$						0.062	0.039
						[0.052]	[0.050]
Log(KL)$_{i00}$	-0.006	-0.004	-0.008	0.002	-0.000	-0.000	0.005
	[0.033]	[0.035]	[0.032]	[0.034]	[0.037]	[0.038]	[0.035]
LabProd$_{i00}$	-0.000^{b}	-0.000^{b}	-0.000	-0.000^{b}	-0.000^{b}	-0.000^{b}	-0.000^{c}
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	878	878	791	878	728	707	632
Pseudo R^2	0.033	0.035	0.035	0.036	0.051	0.049	0.061
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000	0.000

[‡] Marginal effect reported. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for Log(CS)$_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table B.9: Number of new markets[‡].

	(1) $\Delta Dest_{i00}$	(2) $\Delta Dest_{i00}$	(3) $\Delta Dest_{i00}$	(4) $\Delta Dest_{i00}$	(5) $\Delta Dest_{i00}$	(6) $\Delta Dest_{i00}$	(7) $\Delta Dest_{i00}$
$Log(CS)_{i00}$	0.151^a	0.149^a	0.170^a	0.138^a	0.125^a	0.125^a	0.120^a
	[0.036]	[0.038]	[0.055]	[0.032]	[0.036]	[0.035]	[0.044]
$X_0Log(CS)_{i00}$		0.005	0.001	0.002	0.001	0.002	0.001
		[0.011]	[0.012]	[0.016]	[0.010]	[0.010]	[0.014]
$X_1Log(CS)_{i00}$		0.016	0.006	0.015	0.011	0.011	0.006
		[0.010]	[0.012]	[0.011]	[0.012]	[0.011]	[0.012]
$X_2Log(CS)_{i00}$		-0.001	0.001	-0.002	-0.003	-0.004	-0.001
		[0.012]	[0.013]	[0.013]	[0.013]	[0.012]	[0.016]
$Banks_{i00}$			-0.033				-0.084
			[0.109]				[0.112]
$Share_{i00}$			0.024				0.015
			[0.023]				[0.021]
$LiqRatio_{i00}$				0.071			0.121
				[0.311]			[0.300]
$LevRatio_{i00}$				0.127			0.121
				[0.141]			[0.136]
$R\&D_{i00}$					0.251^a	0.297^a	0.238^b
					[0.086]	[0.086]	[0.108]
$NewProd_{i00}$					0.189^a		0.158^b
					[0.068]		[0.078]
$UpProd_{i00}$						0.141	0.092
						[0.099]	[0.100]
$Log(KL)_{i00}$	-0.034	-0.028	-0.034	-0.029	-0.020	-0.020	-0.021
	[0.083]	[0.090]	[0.085]	[0.080]	[0.096]	[0.096]	[0.085]
$LabProd_{i00}$	-0.000^c	-0.000	-0.000	-0.000^c	-0.000^b	-0.000^b	-0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut(1)	1.441^a	1.478^a	1.632^a	1.442^a	1.481^a	1.494^a	1.468^a
	[0.307]	[0.333]	[0.366]	[0.304]	[0.327]	[0.327]	[0.353]
Cut(2)	2.151^a	2.189^a	2.357^a	2.153^a	2.206^a	2.218^a	2.202^a
	[0.324]	[0.350]	[0.375]	[0.323]	[0.345]	[0.344]	[0.368]
Cut(3)	2.663^a	2.701^a	2.867^a	2.665^a	2.727^a	2.739^a	2.721^a
	[0.312]	[0.338]	[0.362]	[0.312]	[0.337]	[0.335]	[0.362]
Obs.	879	879	792	879	872	872	790
Pseudo R^2	0.026	0.027	0.028	0.027	0.038	0.036	0.037
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000	0.000

[‡] Marginal effect reported. Ordered logit model. Cut_i is the cutoff for category i. Robust standard errors are clustered by regions and are reported in squared brackets. All balance sheet data are defined as averages for year 2001-2003. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

C Regression: IV model

Table C.1: New Entrants: First stage estimation for $Cluster^{\ddagger}$.

	(1) $CL0_{i00}$	(2) $CL1_{i00}$	(3) $CL2_{i00}$	(4) $CL0_{i00}$	(5) $CL1_{i00}$	(6) $CL2_{i00}$
SavBank	-0.027^{a}	-0.038^{a}	-0.045^{b}	-0.028^{a}	-0.032	-0.034^{c}
	[0.010]	[0.014]	[0.019]	[0.007]	[0.022]	[0.018]
CooBank	-0.001	0.032^{a}	0.035^{c}	-0.004	0.024^{c}	0.034^{b}
	[0.007]	[0.012]	[0.021]	[0.006]	[0.013]	[0.017]
Reg_Pop	-0.011	0.070	-0.357^{a}	0.240^{a}	0.225^{a}	-0.225^{b}
	[0.056]	[0.053]	[0.087]	[0.092]	[0.078]	[0.095]
PrBan	-0.001	-0.025^{b}	-0.040^{b}	-0.008^{a}	-0.016	-0.035^{b}
	[0.002]	[0.011]	[0.020]	[0.002]	[0.012]	[0.017]
LiqRatio_{i00}				-9.609^{a}	-4.513^{a}	-4.887^{a}
				[0.891]	[0.849]	[1.149]
LevRatio_{i00}				-0.066	0.257	-0.304
				[0.358]	[0.353]	[0.537]
Obs.	644	644	644	490	490	490

‡ Multinomial probit. Exogenous variables are omitted. Entrants and domestic firms are considered in the sample. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. Baseline choice, cluster 3. CL stays for cluster. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1.

Table C.2: New entrants (IV): second stage[‡].

	Cluster			*Cluster(Med)*			*VariationER*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$	$Expo_{i03}$
$Log(CS)_i$	0.083	0.141	0.206	0.110	0.142	0.270	0.097	0.107	0.269^b
	[0.105]	[0.126]	[0.140]	[0.100]	[0.131]	[0.167]	[0.096]	[0.123]	[0.129]
$X_0Log(CS)_{i03}$	0.112^a	0.112^a	0.110^a	0.103^a	0.096^a	0.086^b	0.101^a	0.099^a	0.076^b
	[0.028]	[0.029]	[0.027]	[0.028]	[0.027]	[0.035]	[0.022]	[0.026]	[0.030]
$X_1Log(CS)_{i03}$	0.041	0.049	0.023	0.089^a	0.089^a	0.064^b	0.077^b	0.066^b	0.093^b
	[0.027]	[0.033]	[0.039]	[0.029]	[0.025]	[0.027]	[0.038]	[0.033]	[0.038]
$X_2Log(CS)_{i03}$	0.031	0.036	0.023	0.051	0.057	0.059	0.011	0.010	0.018
	[0.034]	[0.041]	[0.048]	[0.035]	[0.038]	[0.049]	[0.029]	[0.038]	[0.056]
$Log(KL)_{i03}$	-0.026	0.039	-0.041	0.011	0.122	0.158	0.188^a	0.134	-0.003
	[0.195]	[0.189]	[0.210]	[0.290]	[0.274]	[0.245]	[0.071]	[0.100]	[0.145]
$LabProd_{i03}$	0.002	-0.002	-0.004	-0.002	-0.002	-0.004	-0.001	0.000	-0.002
	[0.006]	[0.006]	[0.005]	[0.006]	[0.007]	[0.005]	[0.004]	[0.005]	[0.004]
$Banks_{i03}$		0.128			0.155			0.287	
		[0.352]			[0.367]			[0.348]	
$Share_{i03}$		0.057			0.053			0.050	
		[0.067]			[0.079]			[0.077]	
$LiqRatio_{i03}$			1.101			1.717			-1.210
			[1.393]			[2.117]			[1.034]
$LevRatio_{i03}$			0.127			0.006			-0.008
			[0.346]			[0.367]			[0.342]
$Res(0)_i$	-1.153	0.268	-0.745^a	-0.299	0.144	-0.213	0.094	-0.128	-0.464
	[0.924]	[0.400]	[0.232]	[0.515]	[0.333]	[0.195]	[0.644]	[0.390]	[0.342]
$Res(1)_i$	0.293	0.126	0.389	0.513	0.070	-0.165	-0.061	0.136	0.015
	[0.349]	[0.252]	[0.246]	[0.508]	[0.263]	[0.267]	[0.386]	[0.320]	[0.224]
$Res(2)_i$	-0.011	-0.010	-0.052	0.149	0.023	-0.129	0.557^c	0.189	0.289
	[0.161]	[0.163]	[0.161]	[0.268]	[0.317]	[0.230]	[0.313]	[0.304]	[0.284]
$Res(LQ)_i$			0.190			0.280			0.270
			[0.601]			[0.577]			[0.609]
$Res(LV)_i$			-0.915			-2.218			0.055
			[1.701]			[2.484]			[1.500]
Obs.	642	642	490	640	640	488	641	641	489
Pseudo R^2	0.129	0.126	0.194	0.117	0.114	0.179	0.114	0.119	0.168
χ^2 I	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000
χ^2 II	0.531	0.821	0.001	0.724	0.894	0.529	0.320	0.790	0.805
LR Test	0.067	0.189	0.642	0.010	0.040	0.233	0.235	0.364	0..481

[‡] Marginal effect reported for probit estimation. Robust bootstrapped standard errors (200 replications stratified by regions). Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. $Res(x)$ is the residual from first stage equation. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 I reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables. The statistics is distributed as a χ^2: in the null the four coefficients are jointly not different from zero. The χ^2 II reports the p-value of joint significativity test for residuals. LR $Test.$ reports the p-value for the likelihood ratio test: under the null the instruments of first stage has no additional explicative power in the second stage.

Table C.3: Export status by destination market: second stage[‡].

	(1) EU15	(2) RestEU	(3) EastEU	(4) ASIA	(5) China	(6) NorthA.
Log(CS)_i	0.019	0.157[a]	0.078[a]	0.161[a]	0.148[a]	0.130[a]
	[0.030]	[0.028]	[0.029]	[0.028]	[0.030]	[0.034]
$\text{X}_0\text{Log(CS)}_i$	-0.009	0.003	0.016	0.013	-0.009	0.019
	[0.012]	[0.016]	[0.012]	[0.009]	[0.017]	[0.014]
$\text{X}_1\text{Log(CS)}_i$	0.000	-0.007	0.004	0.008	0.013	0.003
	[0.016]	[0.016]	[0.012]	[0.011]	[0.018]	[0.014]
$\text{X}_2\text{Log(CS)}_i$	0.010	-0.019	0.001	0.012	-0.002	0.031
	[0.029]	[0.019]	[0.022]	[0.028]	[0.014]	[0.023]
Log(KL)_i	0.096	0.086	-0.146	-0.383	-0.354[c]	-0.287
	[0.202]	[0.146]	[0.180]	[0.245]	[0.190]	[0.197]
LabProd_i	0.000	0.000	0.000	0.000	-0.000	0.000
	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]
Res(0)_i	-1.303	-1.670	-0.339	-4.912[a]	-1.961	-5.823[b]
	[1.890]	[1.390]	[1.751]	[1.660]	[3.142]	[2.521]
Res(1)_i	-0.098	0.088	0.035	0.260	0.489	0.128
	[0.276]	[0.221]	[0.218]	[0.357]	[0.306]	[0.262]
Res(2)_i	0.267	0.418	-0.186	-0.276	-0.221	-0.103
	[0.416]	[0.271]	[0.264]	[0.426]	[0.343]	[0.344]
Obs.	1,354	1,354	1,354	1,354	1,354	1,354
R^2	0.029	0.041	0.042	0.051	0.094	0.063
χ^2 I	0.669	0.000	0.000	0.000	0.000	0.000
χ^2 II	0.815	0.307	0.891	0.029	0.373	0.110
Overid. Test	0.002	0.478	0.890	0.008	0.102	0.043

[‡] Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. Each column represent a regression for a specific area. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for Log(CS)_{i00}, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table C.4: Choice to enter in new markets: second stage[‡].

	(1) NewMKT$_{i00}$	(2) NewMKT$_{i00}$	(3) NewMKT$_{i00}$
Log(CS)$_{i00}$	0.114^a	0.136^a	0.093
	[0.034]	[0.052]	[0.068]
X(0)Log(CS)$_{i00}$	0.010	0.010	0.023
	[0.017]	[0.017]	[0.027]
X(1)Log(CS)$_{i00}$	0.026	0.019	0.027
	[0.021]	[0.022]	[0.022]
X(2)Log(CS)$_{i00}$	0.013	0.022	0.050^c
	[0.018]	[0.021]	[0.030]
Log(KL)$_{i00}$	-0.009	-0.162	-0.094
	[0.131]	[0.123]	[0.142]
LabProd$_{i00}$	0.000	0.000	-0.000
	[0.001]	[0.001]	[0.001]
Banks$_{i00}$		-0.009	
		[0.120]	
Share$_{i00}$		0.005	
		[0.048]	
LiqRatio$_{i00}$			0.674
			[0.589]
LevRatio$_{i00}$			0.161
			[0.245]
Res(0)$_i$	-0.744	-0.085	-0.105
	[0.739]	[0.175]	[0.128]
Res(1)$_i$	0.186	0.198	0.089
	[0.178]	[0.139]	[0.112]
Res(2)$_i$	0.143	-0.148	-0.141
	[0.198]	[0.182]	[0.130]
Res(LV)$_i$			-0.203
			[0.391]
Res(LQ)$_i$			0.253
			[0.743]
Obs	870	870	713
R^2	0.036	0.037	0.040.
χ^2 I	0.002	0.002	0.048
χ^2 II	0.462	0.476	0.322
Overid. Test	0.460	0.766	0.737

[‡] Marginal effect reported. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for Log(CS)$_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

D Regression: additional tables

Table D.1: Entry choice: $Cluster(P25)^{\ddagger}$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$
$Log(CS)_{i00}$	0.020	0.034^{b}	0.035	0.035^{b}	0.031	0.032	0.037
	[0.019]	[0.017]	[0.026]	[0.015]	[0.019]	[0.019]	[0.024]
$X_0Log(CS)_{i00}$		0.018^{a}	0.016^{a}	0.012^{b}	0.018^{a}	0.018^{a}	0.011^{c}
		[0.004]	[0.005]	[0.005]	[0.004]	[0.004]	[0.006]
$X_1Log(CS)_{i00}$		0.015^{a}	0.014^{b}	0.011^{b}	0.015^{a}	0.015^{a}	0.010^{c}
		[0.005]	[0.006]	[0.005]	[0.005]	[0.005]	[0.006]
$X_2Log(CS)_{i00}$		-0.002	-0.002	-0.005	-0.002	-0.002	-0.004
		[0.006]	[0.006]	[0.005]	[0.006]	[0.006]	[0.006]
$Banks_{i00}$			0.011				-0.009
			[0.042]				[0.035]
$Share_{i00}$			0.008				0.008
			[0.006]				[0.006]
$LiqRatio_{i00}$				-0.132^{b}			-0.156^{b}
				[0.067]			[0.066]
$LevRatio_{i00}$				0.036			0.031
				[0.029]			[0.039]
$R\&D_{i00}$					0.066	0.076^{c}	0.042
					[0.041]	[0.042]	[0.037]
$NewProd(H)_{i00}$					0.011		0.028
					[0.018]		[0.020]
$UpProd(H)_{i00}$						-0.026	-0.021
						[0.027]	[0.024]
$Log(KL)_{i00}$	0.038^{a}	0.037^{a}	0.030^{b}	0.021^{c}	0.033^{a}	0.034^{a}	0.012
	[0.009]	[0.010]	[0.012]	[0.011]	[0.008]	[0.008]	[0.011]
$LabProd_{i00}$	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	641	640	562	640	519	520	445
Pseudo R^2	0.071	0.113	0.125	0.123	0.113	0.127	0.146
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000	0.000

‡ Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table D.2: Entry choice: $Cluster(StMed)^{\ddagger}$.

	(1)	(2)	(3)	(4)	(5)	(6)
	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$	$Expo_{i00}$
$Log(CS)_{i00}$	0.020	0.015	0.015	0.013	0.012	0.015
	[0.019]	[0.020]	[0.025]	[0.021]	[0.022]	[0.024]
$X_0Log(CS)_{i00}$		0.015^a	0.014^a	0.014^b	0.014^b	0.014^a
		[0.005]	[0.005]	[0.006]	[0.006]	[0.005]
$X_1Log(CS)_{i00}$		0.012^b	0.010^b	0.012^b	0.012^b	0.010^b
		[0.005]	[0.004]	[0.005]	[0.005]	[0.004]
$X_2Log(CS)_{i00}$		0.012^c	0.009	0.011	0.011^c	0.010
		[0.007]	[0.007]	[0.007]	[0.007]	[0.007]
$Banks_{i00}$			0.022			0.018
			[0.035]			[0.033]
$Share_{i00}$			0.009			0.009
			[0.007]			[0.007]
$R\&D_{i00}$				0.047	0.061	0.033
				[0.038]	[0.040]	[0.037]
$NewProd_{i00}$				0.017		0.035^c
				[0.018]		[0.020]
$UpProd_{i00}$					-0.038	-0.026
					[0.024]	[0.023]
$Log(KL)_{i00}$	0.038^a	0.016^c	0.012	0.015^b	0.017^b	0.010
	[0.009]	[0.009]	[0.008]	[0.007]	[0.007]	[0.007]
$LabProd_{i00}$	-0.000	-0.000	0.000	-0.000	-0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs.	642	641	563	638	638	561
Pseudo R^2	0.069	0.097	0.108	0.105	0.108	0.121
$\chi^2(4)$	.	0.000	0.000	0.000	0.000	0.000

‡ Marginal effect reported for probit estimation. Robust standard errors are clustered by regions and are reported in squared brackets. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. All balance sheet data are defined as averages for year 2001-2003. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for $Log(CS)_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.

Table D.3: Number of new markets: second stage[‡].

(a) Cutoff		(1) ΔDest$_{i00}$	(2) ΔDest$_{i00}$	(3) ΔDest$_{i00}$
1	Log(CS)$_i$	-0.080^a	-0.088^a	-0.082^a
		[0.020]	[0.024]	[0.025]
2	Log(CS)$_i$	0.023^a	0.025^a	0.023^a
		[0.006]	[0.007]	[0.008]
3	Log(CS)$_i$	0.026^a	0.029^a	0.028^a
		[0.006]	[0.010]	[0.007]
4	Log(CS)$_i$	0.031^a	0.034^a	0.030^a
		[0.009]	[0.010]	[0.011]
1	X(0)Log(CS)$_i$	0.000	0.004	0.011
		[0.005]	[0.005]	[0.009]
2	X(0)Log(CS)$_i$	-0.000	-0.001	-0.003
		[0.001]	[0.002]	[0.003]
3	X(0)Log(CS)$_i$	-0.000	-0.001	-0.004
		[0.002]	[0.002]	[0.003]
4	X$_0$Log(CS)$_i$	-0.000	-0.002	-0.004
		[0.002]	[0.002]	[0.003]
1	X(1)Log(CS)$_i$	0.010^c	0.014^b	0.018^b
		[0.006]	[0.006]	[0.008]
2	X(1)Log(CS)$_i$	-0.003^c	-0.004^b	-0.005^c
		[0.002]	[0.002]	[0.003]
3	X(1)Log(CS)$_i$	-0.003^c	-0.004^b	-0.006^b
		[0.002]	[0.002]	[0.003]
4	X(1)Log(CS)$_i$	-0.004^c	-0.005^b	-0.007^b
		[0.002]	[0.002]	[0.003]
1	X(2)Log(CS)$_i$	0.007	0.010	0.013
		[0.007]	[0.010]	[0.009]
2	X(2)Log(CS)$_i$	-0.002	-0.003	-0.004
		[0.002]	[0.003]	[0.003]
3	X(2)Log(CS)$_i$	-0.002	-0.003	-0.004
		[0.002]	[0.003]	[0.003]
4	X(2)Log(CS)$_i$	-0.003	-0.004	-0.005
		[0.003]	[0.004]	[0.004]
	Obs.	435	402	365
	R^2 I	0.035	0.040	0.036
	χ^2 I	0.000	0.002	0.000
	χ^2 II	0.528	0.611	0.761
	Overid. Test	0.658	0.484	0.460

[‡] Marginal effect reported. Ordered logit model. Cut_i is the cutoff for category i. Robust standard errors are clustered by regions and are reported in squared brackets. All balance sheet data are defined as averages for year 2001-2003. Sector and area dummies included. X_0, X_1, and X_2 are dummies that take value 1 if a firm is respectively in cluster 0, 1 and 2. Significance level: a is the p-value<0.01, b is the p-value<0.05, and c is the p-value<0.1. The χ^2 reports the p-value of joint significativity test for Log(CS)$_{i00}$, and three interacted variables; the statistics is distributed as a χ^2 with degrees of freedom in parenthesis, and in the null the four coefficients are jointly not different from zero.